Gordon Institute of Business Science
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The interrelationship between sustainable business practices and financial performance in an emerging market

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Abstract

This research report interrogates the linear association between sustainable business practices and corporate financial performance over an 11-year analysis of the JSE Socially Responsible Investment Index (SRI Index). The primary objective is to ascertain the difference in the financial performance of companies listed on the JSE SRI Index and companies not listed on the JSE SRI Index.

The financial performance of two groups of companies are compared in three periods through quantitative analysis. The three periods are 2004 to 2009 (39 pairings), 2010 to 2014 (67 pairings) and 2004 to 2015 (43 pairings). The percentage change in the financial performance between the SRI and son-SRI companies in each period is tested.

The secondary objective is to establish whether there was a difference in the financial performance of the sustainably advanced group of companies. A pre-2010 and post-2010 comparison of financial performance was quantitatively performed on 36 JSE SRI companies.

The principles of sustainability and corporate social responsibility provide a comprehensive business case for the inculcation and investment into its practices. Sustainable business practices are changing the orientation of business from short-term profit maximisation for shareholders to intergenerational equity for stakeholders.

The results of the study find that companies not listed on the JSE SRI Index are more profitable than the SRI companies over the 11-years. Furthermore, the pre-2010 SRI group financially outperform the post-2010 group as market conditions dictate financial performance.

Keywords

Sustainable business practices, sustainability, corporate social responsibility, corporate financial performance, socially responsible investing

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Abbreviations and acronyms

CFP: Corporate Financial Performance

CSR: Corporate Social Performance

CSR: Corporate Social Responsibility

DJGI: Dow Jones Global Indexes

DJSI: Dow Jones Sustainability Index

ESG: Environment, Social and Governance

JSE: Johannesburg Stock Exchange

SIC: Stakeholder Influence Capacity

SPSS: IBM SPSS Statistics software tool

SRI: Socially Responsible Investment Index

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Chapter 1: Introduction to the Research Problem

1.1 Introduction to the research problem

The search for methods to measure the linear association between advanced sustainability business practices and corporate financial performance (CFP) is a present day paradigm that firms, investors and stakeholders seek to overcome (López, Garcia, & Rodriguez, 2007). It is requisite that emerging market businesses demystify the association between investments into sustainability, corporate social responsibility (CSR), and triple-bottom line orientation and CFP. This is in order to establish a compelling business case for addressing socio-economic inequality, environmental degradation, stakeholder centricity, long-term economic sustainability and intergenerational equity (Bansal & DesJardine, 2014).

The primary objective of this research report is to investigate the equivocal relationship between sustainability and its association with financial performance. Thus, this business paradox presents the opportunity to contribute to an area of empirical research that has deliberated the financial influence of sustainable practices for over 40 years. Business is changing its focal point and evolving from primary shareholder centricity to an inclusive stakeholder and value-creation orientation that adjoins capital with a social resolve (Porter & Kramer, 2011).

Neo-classical economic theory identifies the terse purpose of business as primarily economic gain demonstrated through the creation of profits for shareholder (Barnett & Salomon, 2012; Brammer & Millington, 2008; Carroll, 1979). Ansoff (1965) has described the principle of a business as an economic institution, and the measurement of an economic institutions efficiency is profit, or profit maximisation.

Friedman (1962) spearheaded the social responsibility and shareholder profit debate by arguing:

> Few trends could so thoroughly undermine the very foundations of our free society as the acceptance by corporate officials of a social responsibility other than to make as much money for their stockholders as possible. (p. 133)

Friedman (1970) presented one of the earliest economic views on the role of business in engaging in social responsibility activities. He believed that business has one social responsibility, which is to apply commercial actives to the generation of profits for its

shareholders. In contrast, an element of corporate governance can be identified as he also contended that the commercial activities of business should not fall outside of the ambit of free market principles and legal custom.

Ansoff (1965) presented one of the earliest stakeholder and sustainability premises and argued that the changing orientation of business from profit orientation to business principles centred by equal responsibility to all stockholders is key to the long-term survival of the firm. Through amicable relationships between interested parties, a firm's long-term economic viability is achieved (Ansoff, 1965). Bansal and DesJardine (2014) provided a more recent principle for business to adopt, through their understanding of the short-term and long-term role of business. They extended Ansoff's founding principles of sustainability and proposed the role of the firm is to seek short-term needs without compromising the needs of future generations.

Pursuant to Ansoff, Friedman (1970) contradicted the widely supported interpretation of *The New York Times* article titled 'The social responsibility of business is to increase its profits', by openly embracing the principles of CSR through the adjoining of economic gain with ethical and legal conduct. He extended the duties of corporate executives by stating that their "responsibility is to conduct the business in the accordance with their desires, which generally will be to make as much money as possible while conforming to the basic rules of society, both those embodied in law and those embodied in ethical custom." (p. 33).

Carroll (1979; 1991; 2010) identified an underlying philosophy that dilutes the more widely held interpretation of economists and capitalists in that the role of business is to generate profits for shareholders. He proposed an alternative state for business, one that is socially centric and that is aligned to business ethics and stakeholder engagement by identifying four social responsibilities of business, namely ethical and philanthropic responsibilities and economic and legal responsibilities (Carroll & Shabana, 2010)

Sustainable development was earlier conceptualised through the publication of the *Brundtland Report* by the World Commission on Environment and Development in 1987 (Bansal, 2005). The report called for the concurrent pursuit and rationalisation of the conflict between environmental, social and economic objectives (Bansal, 2005). The report entitled *Our Common Future*, laid the foundation for the United Nations Earth Summit in 1992 (Ameer & Othman, 2012). A decade later Elkington (1997) made a valuable contribution to academic literature by defining the triple bottom line principle. Elkington (2006) summarised the value proposition of triple bottom line orientation by

stating, “The TBL [triple bottom line] concept basically expresses the fact that companies and other organisations create value in multiple dimensions” (p. 523). The dimensions he referred to are economic, social and environmental value creation.

Elkington (2006) proposed that corporate governance and sustainable development goals combine with the goals of business in order to shift from an unsustainable state to a more sustainable state. The role of business has morphed following the introduction of the triple bottom line concept, which supports the merging of economic prosperity with environmental consciousness and social justice (Jeurissen, 2000).

Basal (2005) contended that corporate sustainability is realised when the principles of environmental integrity, social equity and economic prosperity converge. The benefits of corporate sustainability accumulate over the long-term and dissipate with advances in corporate reputation and social capital. Unfortunately, conflict between capitalist ideologies and the normative motives of business have created an unresolved dichotomy between shareholder profit maximisation and the inclusive creation of value for stakeholders (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010; Purnell & Freeman, 2012).

1.2 Purpose of the study

The business paradox that requires comprehensive interrogation is whether the investment by companies into sustainability and social responsibility delivers returns greater than the market and thereby aids the realisation of a competitive advantage (Porter & Kramer, 2006). Scarce capital and resources are being allocated to the preservation and restoration of the environment in order to contribute to the upliftment of society and communities (Bansal, 2005) and to create value for all stakeholders (Freeman et al., 2010; Porter & Kramer, 2011). Companies allocate resources and capital to sustainability practices in varying degrees.

Thus, this study focuses on establishing whether financial returns are associated with advanced levels of sustainable business practices. It seeks to interrogate the financial performance of companies that invest in advanced sustainability practices in relation to those that do not (López et al., 2007).

Smith (2012) cited an intriguing proposition: “In today’s reputation economy, what you stand for as a corporation often matters more than what you produce and sell.” (para. 1). In a study of 47 000 consumers across 15 markets conducted by the Reputation

Institute, respondents ranked multinational companies into the world's top 100 most reputable companies. The study found that respondents were 60% more likely to work for, recommend, purchase the products and services from, and invest in companies based on their perception of the company over their perception of the products/services (Smith, 2012).

Considering the advancements in socially conscious consumerism (Perrini, Russo, Tencati, & Vurro, 2011), reputational economies (Snyder & Jones, 2015) and the prominence of socially responsible investment, sound motive is established for companies to invest in sustainable business practices. However, the financial return of the implementation of a sustainability strategy remains largely undecided.

1.3 Research motivation

The economic significance of sustainability practices has been comprehensively demonstrated in a report published by Arabesque Partners, a London-based asset management firm, (Clark, Feiner, & Viehs, 2014). Based on a meta-analysis of 190 studies, the report established "a remarkable correlation between diligent sustainability business practices and economic performance" (p. 6). The primary results of the meta-study are as follows:

- 90% of the cost of capital studies proved that advanced levels of environment, social, and governance (ESG) standards reduced the costs of capital.
- 88% of the studies revealed that ESG practices delivered improved operational performance, and
- 80% of the studies found that stock price performance was positively correlated with sustainability practices (Clark et al., 2014, p. 44).

Carroll and Shabana (2010) found a wide range of business cases for social responsibility, and most refer to the financial implications of socially responsible practices for business. However, they contended that, "There is no single business case for CSR – no single rationalization for how CSR improves the bottom line" (p. 92). In addition, Carroll and Shabana (2010) motivated their business case by reviewing the four benefits of CSR as presented by Kurucz, Colbert, and Wheeler (2008). Kurucz et al. (2008) argued that CSR generates four benefits for a firm namely, a reduction in costs and risk, the strengthening of legitimacy and a firm's reputation, the ability to sustain a competitive advantage, and creating reciprocal

scenarios through value creation. Carroll and Shabana (2010) have found that not all CSR activities result in an improved financial performance, and it is imperative that firms understand the type of CSR activity that delivers the most promising economic results from free market mechanisms, joining the economic and social imperatives of business.

Financial performance is the predominant measurement of a firm's success, based on accounting principles that value the firm's revenue and profitability. Bansal and DesJardine (2014) have proposed that research is required to develop a broader measurement of a firm's value including the sustainability of earnings. Profitability as a single unit of measuring performance is a flawed measurement of a firm's sustainability. An improved method of measuring a firm's financial performance is the inclusion of sustainability practices as long-term drivers of economic value for stakeholders. Most firms have a short-term view on profitability, which is neither sustainable nor a good strategic decision, and a longer-term orientation will naturally align the objectives of the firm to that of society.

The need for business to understand the effects of sustainability practices on their financial performance provides an emphatic argument for the growth of sustainable business practices, environmental awareness, social consciousness, and socially responsible investing. If advanced sustainability business practices do not benefit the financial performance of a company then there is a need for business to understand how to invest more effectively other than qualifying for a socially responsible investment index.

1.4 Research objectives

The directional relationship between CFP and sustainability practices remains an undetermined notion for business and academia with many empirical studies delivering contrasting results (Barnett & Salomon, 2006; Brammer & Millington, 2008; Carroll & Shabana, 2010; Girerd-Potin, Jimenez-Garcès, & Louvet, 2014; López et al., 2007; Margolis & Walsh, 2003; Orlitzky, Schmidt, & Rynes, 2003; Pava & Krausz, 1996; Peng & Yang, 2014). The argument for using capital for regenerative and intertemporal value creation is credible as a means to providing a sustainable and profitable end for all stakeholders (Bansal & DesJardine, 2014).

A large number of internal and external factors influence CFP. The degree of influence that sustainable business practices have on CFP is the primary concern of this study. The researcher intended to understand the directional relationship within the South African and emerging market context.

Thus, the desired outcome of this research was to understand whether South African companies, having implemented sustainability practices over an 11-year period, have seen improved financial performance. Does a relationship exist between the accounting profitability of a firm and the market reward for implementing sustainable business practices?

The studies by Ameer and Othman (2012), Barnett and Salomon (2012) and López et al. (2007) provided valuable insight into the performance of firms having inculcated sustainability practices within developed markets. This research relies on an adaptation of the three studies within the context of the JSE SRI Index, in order to explore the following research objectives:

i. Establish whether a directional relationship exists between companies that have implemented advanced sustainable business practices, and companies that have not, in respect of their CFP;

ii. Investigate whether the directional relationship is particular to a variety of six accounting measurements of CFP;

iii. Determine whether a temporal effect persists in the CFP of companies that have implemented advanced sustainable business practices and companies that are classified as having not employed advanced sustainability practices by dissecting the study into three time-based periods;

iv. Interrogate if the companies that have implemented advanced sustainable business practices have seen an improvement in their CFP over the 11-year study period;

v. Offer an alternative emerging market model for sustainability and corporate governance principles to include the measurement of investment value and financial performance.

1.5 Research scope

In order to appropriately explore the research objectives, this study builds on previous empirical research that has explicitly tested the relationship between sustainable business practices, including the derivatives of sustainability, such as CSR and the associated financial performance. A quantitative research methodology has been deployed to examine this premise. Thus the study was designed to test hypotheses pertaining to two categories of companies and their respective financial performance.

The two categories are companies with advanced sustainable business practices and companies classified as less advanced in their sustainability practices (López et al., 2007). The financial performance of the two categories of companies is corroborated by using the following accounting measurements: Revenue, Profit Before Tax, Earnings Per Share, Cash Flow Per Share, Return On Assets, and Return On Equity.

The scope of the research is to interrogate whether a directional relationship exists between companies that have adopted advanced sustainable business practices and their respective CFP, in comparison to companies categorised as less advanced and their financial performance.

The CFP of JSE listed and SRI indexed companies was used as the *priori* for companies having implemented advanced sustainability business practices (López et al., 2007). The performance of the SRI indexed companies was then contrasted against companies controlled for market sector and size, which were not SRI indexed (López et al., 2007).

A longitudinal study was constructed using secondary data collected for both the SRI sample and the control sample from 2004 (the year of inception for the JSE SRI Index) to 2014, providing 11 years of financial data. The SRI sample and control sample were analysed to ascertain whether a temporal influence exists, evident in slack resource theory or a latent financial return for sustainable business practices (Bansal, 2005).

This was also done to test for externalities, such as the advancements of the King III Code on Corporate Governance in 2009 (Institute of Directors in Southern Africa, 2009), which has resulted in all JSE companies being predisposed to an integrated corporate governance framework and the market conditions during the study period which included the global financial crisis in 2009. The research set out to deductively test an existing construct within the context of an emerging market.

A second research scope was included in the research report. This part of the research presented a comparison of financial performance between the same groups of companies as a proxy for interrogating of the temporal effects of sustainable business practices on financial performance.

1.6 Conclusion

Chapter One has purposively described the historical development of the principles of sustainability and the present day business dichotomy of the association between sustainability principles and financial performance. The research objectives and scope have presented a comparison between the financial performance of sustainably advanced companies and companies that are classified as sustainable less advanced. In addition, the research objectives and scope compared the same group of sustainably advanced companies over the period of 11-years.

This chapter has also demonstrated the need for the research for business, management, investors, sustainability practitioners and other stakeholders to ascertain the interrelationship between sustainable business practices and financial performance within the context of an emerging market.

The following chapter presents a review of the literature from the origins and founding principles of sustainability, CSR, and stakeholder theory. It culminates with present day advances in the theories and the prerequisite context of social responsible investing, CFP, and the King III Code on Corporate Governance. The literature review creates a sound foundation in which to build the study's design and methodology in response to the defined research objectives.

Chapter 2: Literature Review

2.1 Introduction

The introduction to the research problem and the business need for the research, as discussed in Chapter One, is extended in Chapter Two to include the body of theoretical knowledge and empirical research. The literature review presents the interrelated constructs of stakeholder theory, CSR, sustainability, socially responsible investing, and the King Code on Corporate Governance for South Africa. This chapter establishes the basis for defining the research questions in Chapter Three.

2.2 Introduction to stakeholder theory

In its most pragmatic construct, stakeholder theory is a method of integrating business and ethics, and progressing from a state of conflict between the corporate objectives of financial viability and social responsibility to an understanding of their relationships (Freeman et al., 2010; Freeman, Rusconi, Signori, & Strudler, 2012). The virtues of stakeholder theory and sustainable development are synonymous. The conflict that arises between different stakeholders due to each possessing contrasting objectives, and the interrelationship between corporate and stakeholder motives is an intriguing aspect of the theory adjoining both ethics and capitalism (Freeman et al., 2012).

In an instrumental sense, stakeholders share an interest in a firm's financial performance and sustainability practices, and each has the potential to influence the firm's future (Donaldson & Preston, 1995). It is through stakeholder engagement that a firm has the ability to understand the present and future points of conflict (Freeman et al., 2012) and the motives influencing the long-term financial success

The 21st century is pockmarked with both corporate scandals and the global financial crisis highlighting the influence of managerial decisions on a broader group of affected parties. This has resulted in both business and academics reassessing organisational responsibilities (Freeman et al., 2010). Freeman et al. (2010) cited stakeholder theory as an appropriate means to:

> …understand and remedy three interconnected business problems – the problem of understanding how value is created and traded, the problem of connecting ethics and capitalism, and the problem of helping managers

> think about management such that the first problems are addressed. (p. 409)

The complex nature of stakeholder theory requires an analysis of its origins to provide a richer understanding of the recent literature conducted by leading academics and new contributors within this field. Furthermore, the theory aligns the proposed study to the well-established and widely accepted theoretical principles pertaining to CSR, Corporate Social Performance (CSR) and sustainable development.

Freeman's (1984) use of the term "survival" (p. 33) presents one of the early signals that stakeholder engagement may develop into a component of sustainable development and integral for the long-term success of the firm in a capitalist system (Freeman & McVea, 2001; Freeman et al., 2010). He further defined a stakeholder as "any group or individual who can affect or is affected by the achievements of the organisations objectives" (1984, p. 46).

A play on the word "stockholder" progressively altered the lens of strategic management to include a broader group of economically interested or affected parties (Freeman & McVea, 2001). A stakeholder approach to strategic management provided a framework for managing the external environment and relationships for the preferment of common interests (Freeman & McVea, 2001). The shared interests of a multitude of stakeholders should be prevalent in a firm's strategy, with the various stakeholder interests considered equal without one being preferred over the other.

Freeman (1984) introduced the notion of legitimacy, and claims that a stakeholder may possess a legitimate or illegitimate stake in the firm. Stakeholders who possess an illegitimate stake in the firm should be allocated sufficient time and resources by management because they nonetheless have the ability to affect the future of the firm. The paradigm shift from strategic planning to strategic management realises a move from stakeholder orientation to stakeholder management.

Stakeholder management embraces the need for firms to manage stakeholders in an action-orientated manner. Firms are therefore required to include processes and techniques into the strategic management of stakeholders (Freeman, 1984). It is important to note that Freeman's (1984) broad-based view on stakeholders includes groups affected by the firm and groups that can affect the future of the firm. This inclusive definition of affected parties ensures that strategic management models consider all affected stakeholders and aligns the theory to present day sustainable development goals.

The application of stakeholder theory is validated throughout the management sciences, and appears in strategic management, financial management, accounting, marketing, management and in "understanding the economics of markets" (Freeman et al., 2010, p. 433). The influence of the theory on business ethics and the evolution of capitalistic objectives is idyllically phrased by Freeman (2010):

> By appealing to some principle of responsibility, eschewing the separation fallacy, and simply realising that stakeholders and business people share a common humanity, we can build more effective methods of value creation that forge a conceptual and practical link between capitalism and ethics. (p. 433)

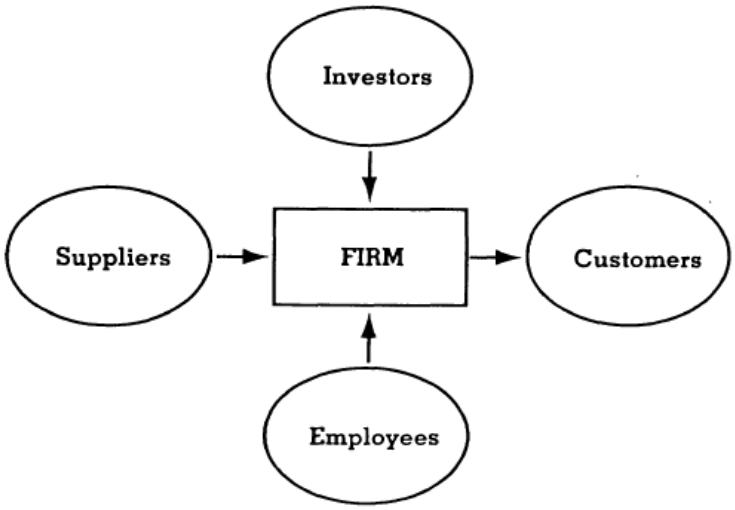
2.3 A stakeholder-centric approach to business

Stakeholder engagement provides a complex challenge for firms as conflict is created between the normative interests and the instrumental demands of an inclusive group of stakeholders. However, through a stakeholder centric approach, business has a common language to conceptualise, analyse, and prioritise organisational relationships and corporate strategy (Carroll, 1991).

Carroll (1991) has provided further insight into stakeholder theory through a succinct definition of a stakeholder as "those groups or persons who have a stake, a claim, or an interest in the operations and decisions of the firm" (p. 43). Stakeholder theory contributes to resolving the conflict between business and ethics as a counter argument to the singular interests of shareholders or a firm's profit motive lens (Donaldson & Preston, 1995; Freeman et al., 2010; Purnell & Freeman, 2012).

Donaldson and Preston's (1995) taxonomy of the Contrasting Models of the Corporation conceptualises the changing nature of business objectives. Depicted in Figure 1, the traditional input-output model of a firm and the centricity of producing goods and services for customers is highlighted. The model defines the inputs in a firm as investors, suppliers and employees. Each contributor commits its resources to the firm with the majority of the economic benefit delivered to the customer.

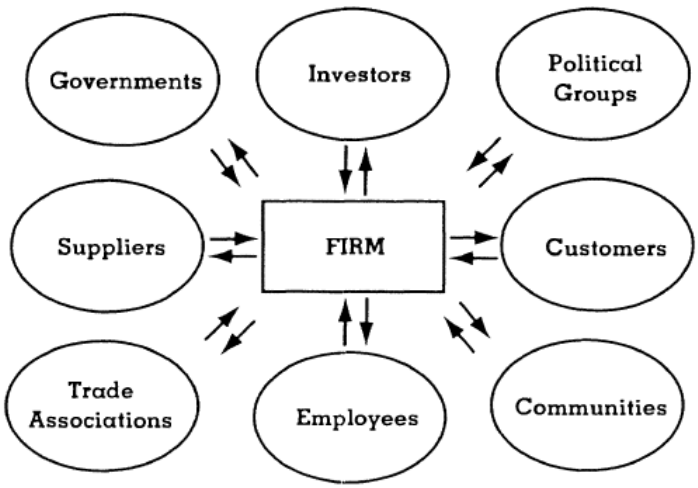
Figure 1: Contrasting Models of the Corporation: Input-Output Model



Source: Donaldson and Preston (1995, p. 68)

Donaldson and Preston (1995) also contributed to stakeholder theory through a comparison of the input-output model with the stakeholder model, which is depicted in Figure 2. The stakeholder model proposes that all legitimate stakeholders are entitled to economic benefits from a firm's activity. Each stakeholder is entitled to benefit from their input into the firm's activity. Furthermore, Donaldson and Preston (1995) did not consider stakeholder benefits in terms of a hierarchy of priority as benefits are considered comparable and not preferential.

Figure 2: Contrasting Models of the Corporation: The Stakeholder Model



Source: Donaldson and Preston (1995, p. 69)

Stakeholder theory is applied in three methods namely, descriptive, instrumental, and normative (Donaldson & Preston, 1995; Freeman et al., 2010; Freeman et al., 2012). A descriptive approach introduces stakeholder theory as a mechanism to explain the conduct and distinguishing nature of a firm (Donaldson & Preston, 1995; Freeman et al., 2010). Stakeholder theory in an instrumental sense analyses the interrelatedness of the theory and corporate objectives and performance.

According to Freeman (2010), “Stakeholder theory offers a new way to think about management theory” (p. 410). It forms a valuable link between the instrumental analysis and the normative core of the theory, “such that enacting these norms and principles is likely to help the firm generate economic value to remain a sustainably profitable enterprise” (p. 410).

Stakeholder engagement and the classification of stakeholder interests provides the foundation for firms to adjust their objectives from a shareholder-centric focus, and input-output model, to an inclusive stakeholder orientated organisation (Donaldson & Preston, 1995; Freeman et al., 2010; Freeman et al., 2012; Purnell & Freeman, 2012).

2.4 The link between stakeholder theory and CSR

The concept of CSR shifts the purpose of business to a more inclusive, broad-based social and environmental state of consciousness wherein financial motives are not the single motivation behind being economically active. Freeman (2010) found that "Stakeholder language has been critical to helping CSR scholars identify and specify the 'social' obligations of business, both conceptually and empirically" (p. 412).

The 2008 global financial crisis raises concerns over organisations that embrace CSR activity but fail to ethically create value for stakeholders. Profit maximisation defines the economic existence of firms, which has led to the CSR and CFP legitimacy debate. The debate is intertwined with the normative burden on the firm from stakeholders and Freeman (2010) contended that "any set of actions, for any stakeholder, has a blend of financial and moral consequences" (p. 414). Freeman (2010) further found that "the issue is not just when purely 'financial' and purely 'social' tensions conflict, but when specific stakeholder conceptions, which have both financial and social dimensions, conflict with each other" (p. 414). It is therefore imperative to view financial and social concerns as interdependent and not mutually exclusive along with instrumental and normative logic when considering stakeholders and CSR.

The ability for CSR to reduce costs or increase revenues presents the clearest business case for socially responsible firms (Barnett, 2007). Barnett (2007) proposed that firms accumulate stakeholder influence capacity (SIC) over a period. He added that CSR does not generate an improved CFP but indirectly affects it through the development of influential relationships with stakeholders. Barnett (2007) defined SIC as "a multidimensional, firm-level construct composed of the dynamic relationship a firm has with its myriad stakeholders" (p. 803).

Barnett and Salomon (2012) declared the relationship between CSR and CFP to be negatively or positively associated depending on the firm's ability to capitalise on socially responsible investments. They found that SIC "once adequately accrued, enables a firm to assimilate and exploit knowledge and thereby profit from its research investments, an adequate stock of SIC enables a firm to assimilate and exploit stakeholder favour and thereby profit from its social investments" (p. 1304).

Stakeholder theory's fixation with creating value for all interested parties while achieving the best interests of the firm (Donaldson & Preston, 1995; Freeman, 1984)

links directly to CSR and the business case for CSR. If there is no linear relationship between CSR and the financial performance of a firm, then why consider CSR a worthy investment?

Barnett's (2007) premise is that the influence of CSR on CFP depends considerably on one variable: the development of meaningful relationships between the firm and its stakeholders. The outcome of developing a strong and trustworthy relationship with stakeholders is the reduction of inherent risks and transaction costs.

Certain types of social spending will have no effect on CFP, and this type of spending is termed an "Agency loss" (Barnett, 2007, p. 799). In contrast, a positive correlation between CSR and CFP is more probable if the discretionary social spending is invested in building relationships with key stakeholders that result in decreased costs and an improvement in income resulting in a variable but positive effect on CFP (Barnett, 2007).

Perrini et al. (2011) proposed a stakeholder-founded business case for CSR, depicted in Figure 3, and motivated the influence of the theory on CFP by identifying six economic drivers, which are outlined as follows:

i. *CSR organisational drivers and employees:* a key driver of financial performance is a firm's competitive advantage, and a critical source of that advantage is the quality of the firm's knowledge workers. The impact of CSR on organisational values, culture, and systems is evident in the behaviour of employees and their loyalty and positive association with the firm. A firm's CSR orientation enables a social and ethical value system that noticeably influences employee commitment, job satisfaction, motivation, wellbeing, and behaviour. CSR has the ability to influence performance through a firm developing a competitive advantage and operational efficiency when employees are aligned to a firm's values, integrity, and CSR. An environment that is non-discriminatory, ethically sound and boasts a diverse workplace will result in a positive rapport with the labour market that assists the firm by attracting better-skilled knowledge workers over its competitors.

ii. *CSR customer drivers and customers*: CSR has a valuable role to perform in the age of consumerism and in markets where brands compete for consumer loyalty and brand equity. The heightened level of consumer consciousness and sophistication has resulted in brands being mindful of their environmental and

social impact. Consumers have become more aware of green washing marketing campaigns (Kotler & Keller, 2012). CSR positively impacts attitudes towards a firm, enabling customers to foster a deeper emotional attachment by altering the brand positioning and perceptions of product and service quality and trust. Through an open dialogue with consumers, a firm has the ability to closely meet their needs and build sustainable relationships that yield a greater customer lifetime value (Kotler & Keller, 2012). CSR is a key driver for obtaining a competitive advantage and for building consumer loyalty, the result of which is an improved financial performance for the firm.

iii. *CSR supply chain drivers and suppliers*: performance-related consequences of ethical supply chain practices are becoming an important context for firms undergoing a globalisation strategy. Supply chain partners have the ability to influence the sustainability of a firm and are essential to a stakeholder-centric firm. The importance of visibility and the close monitoring of global suppliers and their social conduct and environmental impact is an important component in securing a sustainable supply of inputs free from reputational risk.

Under the construct of stakeholder theory, the supplier's conduct has progressed to become an extension of a firm's social and environmental responsibility, conduct and CSR practices. The impact of both reputation risk and supply interruptions can negatively affect the firm's financial performance and the resulting damage may be long term depending on the scale of the social or environmental travesty. In contrast, long-term partnerships with sustainable and socially responsible suppliers will create a relationship built on knowledge transfer and competency and will positively influence the financial performance of the firm and customer satisfaction as supply chain objectives change from cost reduction to enhancing the quality of the offering.

iv. *CSR society drivers and society:* Perrini et al. (2011) stated, "In both the local and global communities, encouragement of stakeholder dialogue and interaction, and collaboration with society at large have been shown to support consensus management, strengthening firms' license to operate" (p. 66). Porter and Kramer (2011) found that the short-term focus of markets on financial performance creates a situation whereby "not all profit is equal" (p. 9).

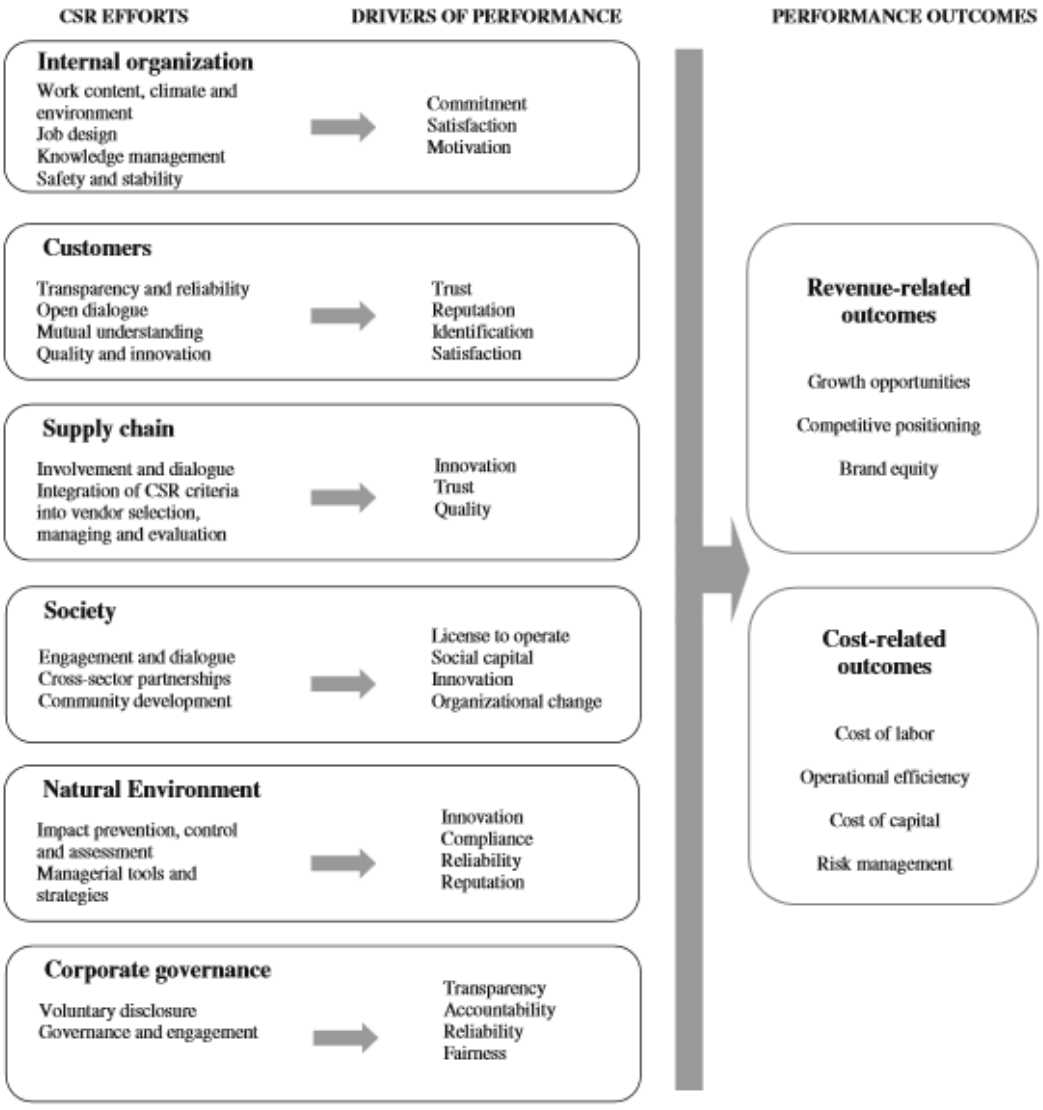
The ability of a firm to advance economically by creating value for society aids a firm's understanding of its customers' needs and the external stakeholders that impact corporate achievement (Porter & Kramer, 2011). A business model that delivers to a societal need presents an opportunity that is greater in scalability, is demand driven, introduces new markets and customers, and improves methods of viewing the value chain (Perrini et al., 2011; Porter & Kramer, 2011). The competitive advantage of a creating an ethos of shared value is evident in a more sustainable outcome, one far richer than cost reduction and quality improvements alone (Porter & Kramer, 2011).

v. *CSR natural environment drivers and the environment:* a firm's awareness of the impact of its economic activity on the natural environment presents a further lever for driving competitive advantage. Promulgating a firm's competitive advantage within this context is the search for new methods of improving production processes, promoting product innovation, and realising new markets. Therefore, an environmental programme further benefits the firm through cost reductions and improved productivity associated with the improved use of production materials and reduced energy consumption (Perrini et al., 2011; Porter, 1995). Environmental management practices enhance corporate image and reduce reputational risks, which positively influence the long-term sustainability of a firm.

vi. *CSR governance drivers and transparency:* The concepts of corporate governance and CSR merge through a firm's reprioritisation of short-term financial objectives to include longer-term sustainable development goals (Jamali, Safieddine, & Rabbath, 2008). While firms hold onto the primary objective of delivering profits to shareholders, the concepts of corporate governance and CSR address the questions of accountability, transparency, the fair treatment of all stakeholders (Freeman, 1984) and the adoption of high ethical standards (Jamali et al., 2008). The firm's license to operate is dependent on remaining within the boundaries of society's regulatory framework. Jamali et al. (2008) phrased the interrelatedness as, "Businesses have to also keep their activities attuned to society's ethical, legal, and communal aspirations" (p. 444).

The principles of corporate governance play an important role in formulating an adequate response to stakeholders (Jamali, 2008; Perrini et al., 2011) and creating visibility and focus on socially acceptable conduct (Jamali et al., 2008; Perrini et al., 2011). CSR therefore performs two important tasks in this discussion. Firstly, it is a key driver of governance systems for firms whose objective it is to conduct responsible and transparent stakeholder engagement (Jamali et al., 2008). Secondly, CSR embodies relationship investing and shareholder loyalty whilst employees, customers, suppliers and other stakeholders are part of a long-term association with the firm (Perrini et al., 2011).

Figure 3: The CSR-CFP multilelvel framework: efforts, drivers, and outcomes



Source: Perrini et al. (2011)

The positive consequences and business case for CSR include revenue-related outcomes (growth opportunities, competitive positioning and brand equity) and cost-related outcomes (cost of labour, operational efficiency, cost of capital and risk management) (Perrini et al., 2011). Firms are required to focus on the most sustainable means of generating profits, otherwise greater opportunities will be sacrificed (Porter & Kramer, 2011). In this regard, Porter and Kramer (2011) asserted:

> We need a more sophisticated form of capitalism, one imbued with a social purpose. But that purpose should arise not out of charity but out of a deeper understanding of competition and economic value creation. (p. 17)

2.5 The influence of stakeholders

In so far as the literature review has demonstrated the business case for CSR and the anticipated positive relationship between CSR and CFP, there remains merit in analysing the case of a poor performing firm and the influence of stakeholder theory under adverse business conditions. Both a competitive advantage for the firm (Perrini et al., 2011) and a barrier to entry for competitors is established as stakeholder relationships take time to develop and are expensive to emulate or substitute (Choi & Wang, 2009).

As an example, strong stakeholder relationships are more likely to retain key resources such as employees, customers and suppliers, who remain loyal to a firm and therefore enable the firm to sustain a performance advantage over competitors (Choi & Wang, 2009). Choi and Wang (2009) therefore proposed a positive relationship between stakeholder relationships and the ongoing superior financial performance of a firm.

Girerd-Potin et al. (2014) found that financial markets and market investors allocate a higher risk premium to firms that neglect the three dimensions of social responsibility, (Girerd-Potin et al., 2014). In the purest economic sense, firms and managers will focus on the greatest marginal return for their effort from business, societal and financial stakeholders (Girerd-Potin et al., 2014).

At the other end of the spectrum, established stakeholder relations improves the speed at which a firm recovers from a period of poor performance (Choi & Wang, 2009). A decline in a firm's financial performance is indicative of a failing strategic plan and the recovery will depend of the firm's ability to change and adapt its strategy (Choi &

Wang, 2009). The strength of well-established stakeholder relationships allows the firm to access internal and external sources of knowledge vital to a timeous recovery in financial performance abetted by the change of corporate strategy (Choi & Wang, 2009).

The perceptive argument proposed by Lange, Lee, and Dai (2011) is that corporate reputation results in a positive economic outcome for a firm and supports a firm's recovery from a negative public relations event. By generating an understanding of a firm's historical actions, stakeholders will analyse a firm's reputation as a means to predicting future engagement and expectations of the firm's behaviour (Lange et al., 2011; Wang & Berens, 2014). Corporate reputation is a probable outcome of the evaluation process conducted by stakeholders as perceptions of the firm are developed (Wang & Berens, 2014).

Financial stakeholders are concerned with CFP outcomes including business growth, financial performance, creating wealth and corporate governance practices (Wang & Berens, 2014). Contrary to the financial focal point, public stakeholders prioritise the normative principles of responsible capitalism and ethical conduct, and a firm must commit to these principles in order to gain public stakeholders' trust and approval (Wang & Berens, 2014).

The common perception of financial stakeholders is that social spending diverts valuable resources away from the economic objectives of the firm and therefore negatively affects CFP (Wang & Berens, 2014). Public stakeholders expect firms to confirm to social norms thereby establishing a position of conflict between the interests of the two stakeholder groups (Wang & Berens, 2014). In the most practical sense, firms will move to satisfy the interests of one group over the other through the allocation of constrained resources thereby swaying stakeholder perceptions (Wang & Berens, 2014).

Wang and Berens (2014) cited Carroll's (1991) four categories of CSR, namely economic, legal, ethical and philanthropic responsibilities, and hypothesised that the greater a firm's social performance in economic and legal CSR, the greater the effect on reputation as perceived by financial and public stakeholders, and hence an improved CFP.

The theoretical hypothesis for ethical and philanthropic responsibility is phrased differently. This view of financial stakeholders is that ethical CSR is ambiguous, subjective and an overextension of resources in order to achieve a level of compliance

over and above what is required (Wang & Berens, 2014). Equally, Wang and Berens (2014) suggested philanthropic performance detracts from corporate reputation among financial stakeholders and therefore has a negative impact on a firm's financial performance but a positive influence on corporate reputation with public stakeholders.

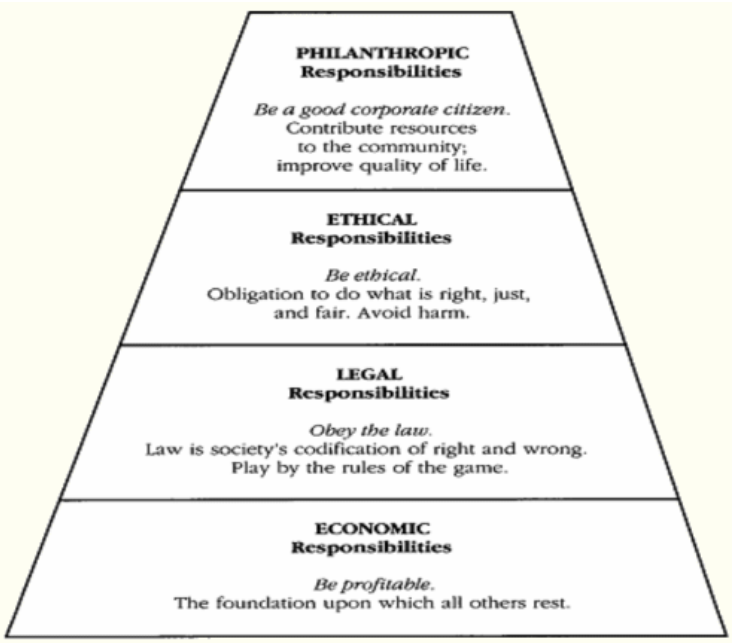
2.6 The social responsibility of business

Bowen (1953) coined the phrase "the social responsibilities of businessmen" and defined the term as "the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (p. 6). The social responsibility of business has been defined by Wood (1991) as, "The basic idea of corporate social responsibility is that business and society are interwoven rather than distinct entities; therefore, society has certain expectations for appropriate business behaviour and outcomes" (p. 695).

A firm's undertaking to be socially responsible is established by Carroll (1979) who introduced four obligations – economic, legal, ethical, and discretionary (philanthropic) responsibilities – that business must embrace in order to be socially responsible and "fully address the entire range of obligations business has to society" (p. 499).

The interpretation of Carroll's (1979; 1991; 2004) CSR pyramid, shown in Figure 4, must be viewed in the broader context of business ethics, sustainability, or sustainable development of which the terms form a "multiplicity of aligned terms" (Visser, 2006, p. 32). Crane and Matten (2007) found that Carroll's four-layered pyramid is "probably the most established and accepted model of CSR" (p. 53).

Figure 4: The Pyramid of Corporate Social Responsibility



Source: Carroll (1991)

The four categories of a firm's social responsibility as proposed by Carroll (1979; 1991; 2004) are summarised as follows:

i. The *economic responsibility* is viewed as the primary concern of the firm which is to provide its products and services to customers;
ii. The *legal responsibility* forms the foundation for the social contract between business and society. Coupled with society's endorsement of the firm, business is expected to conduct itself under the auspices of the rule of law and respect for regulation;
iii. The *ethical responsibility* refer to society's moral expectations that are above and beyond the rule of law; and
iv. The *discretionary responsibility* quantifies the philanthropic and voluntary contribution of business to society.

Visser's (2006) review of Carroll's (1979; 1991; 2004) CSR pyramid recognised the importance of the cultural context in prioritising the four interrelated categories of CSR. Within the African context, the categories of CSR carry a different weighting to the conventional pyramid with economic responsibility remaining as the most important

(Visser, 2006). However, the importance of philanthropic responsibilities is raised to second place in the African pyramid as the socio-economic needs of the continent prescribe that discretionary contributions be viewed as a prevalent norm (Visser, 2006). Furthermore, Visser (2006) contended that businesses "cannot succeed in societies that fail, and philanthropy is seen as the most direct way to improve the prospects of the communities in which business operates" (p. 40).

Free market forces are the determining factor in evaluating the authenticity and success of a firms CSR activity (Carroll & Shabana, 2010). The firm requires economic reward for its CSR contribution and allocation of capital. Therefore, free market factors will determine if the firm's CSR activity contributes to its financial performance (Carroll & Shabana, 2010). It is then plausible to infer that a firm's selection and implementation of socially responsible practices is intrinsically linked to the financial performance.

If business adopts the principles of stakeholder theory and aligns stakeholder interest to the objectives of Carroll's (1979; 1991; 2004) CSR pyramid the financial objectives of the firm will be in accord with stakeholder interests.

2.7 Sustainability – securing intergenerational equity

Within the context of this study, the concept of sustainability is widely used as a proxy for the interrelated constructs of stakeholder theory, CSR, CSR, triple bottom line, and socially responsible investing. The review of the literature thus far has provided the motivation for congregating a multitude of concepts into one amenable term, namely 'sustainable business practices'.

CSR frames CSR in both a normative and descriptive manner, emphasising the achievement and results of CSR practices (Carroll & Shabana, 2010). Carroll and Shabana (2010) asserted that the terms are synonymous and interchangeable but that CSR is the dominate term used in academic literature.

Business sustainability is the capability of firms to meet short-term financial objectives without conceding on the capability to meet their future needs and those of others (Bansal & DesJardine, 2014). Firms belong to a broader ecosystem (Moore, 1993) and in order to survive, managers must ensure that the capital invested for short-term profit gains agrees to shareholder motives of profit-maximisation, and furthermore has the

ability to secure long-term profits for the firm (Bansal & DesJardine, 2014). Bansal and DesJardine (2014) extended the definition to include "sustainability aims to secure intergenerational equity" (p. 72).

Bansal (2005) presented three congruent principles for sustainable development namely, environmental integrity, social equity, and economic prosperity. The principles are interrelated and in order for business to achieve economic prosperity, it is a prerequisite that each principle be present (Bansal, 2005). The principles are summarised as follows (Bansal, 2005):

i. *Environmental integrity*: the natural environment has limited resources and the capacity for it to be regenerative is restricted. The preservation of economic prosperity is therefore intrinsically linked and dependent on the sustainability of the natural environment.
ii. *Social equity*: all chapters of society are entitled to have equitable rights to resources and opportunities, including future generations. A core value of sustainable and responsible corporate citizenship is the commitment to all stakeholder rights and expectations.
iii. *Economic prosperity*: through the production of goods and services, firms deliver value to customers. The trade is value delivery for economic gain to the benefit of the firm. The principle requires that firms trade at a value greater than the cost of production, therefore materialising economic value. The reciprocal nature of the trade is that customers receive value from the goods or services delivered by the firm.

Bansal and DesJardine (2014) argued that the source of the triple bottom line concept is founded in a firm's actions being responsible but not necessarily sustainable. The conclusion is largely due to triple bottom line not grasping the "intertemporal trade-offs" (Bansal & DesJardine, 2014, p. 71).

A shortcoming of CSR tends to be the firm's inability to deliver value to competing stakeholders interests, while thwarting the intertemporal trade-off affecting future stakeholders (Bansal, 2005; Bansal & DesJardine, 2014). A firm's tendency to be myopic in strategic decision-making leads to the concentration of capital being deployed in an incremental manner, as opposed to the capital being utilised to reframe the firm's activity for the long term (Bansal & DesJardine, 2014). Commonly labelled as

a shortcoming of CSR activity, short-termism, and a narrow instrumental view (Gao & Bansal, 2013) lead to the perception of a negligible return from CSR investment.

This creates the misconception concerning the direction of the causal relationship (Gao & Bansal, 2013). Bansal and DesJardine (2014) find that firms making short-sighted investment decisions have the propensity to be exposed to greater risks in the pursuit of "windfall gains" (p. 73) and may experience returns on investments that are increasingly marginal over time (Bansal & DesJardine, 2014).

Further to the profound concept of intergenerational equity as delivered by Bansal and DesJardine (2014), the time-based influence of sustainable business practices is imperative to this study. Basal (2005) believed that the financial effects of sustainable business practices materialise over time. The following comment from Bansal and DesJardine (2014) underpins the essence and importance of studies of this nature: "Short-termism is the arena in which strategy comes up against sustainability" (p. 74).

2.8 The relationship between corporate social responsibility and corporate financial performance

The relationship between CSR and CFP remains ambiguous after 40 years of empirical studies. The equivocal and contradicting views of academic literature and empirical research depict a mystifying relationship between corporate performance and sustainability practices (Barnett & Salomon, 2006; Brammer & Millington, 2008; Carroll & Shabana, 2010; Girerd-Potin et al., 2014; López et al., 2007; Margolis & Walsh, 2003; Orlitzky et al., 2003; Pava & Krausz, 1996; Peng & Yang, 2014).

Previously published empirical studies have delivered inconsistent results for the relationship between CSR and CFP (Barnett & Salomon, 2012). Barnett and Salomon (2012) found that, "Hundreds of published empirical studies have tested the relationship between various types of CSR and CFP" (p. 1306) and determined that "after more than 30 years of research, we cannot clearly conclude whether a one-dollar investment in social initiatives returns more or less than one dollar in benefit to the shareholder" (p. 794). Margolis and Walsh (2003) believed the empirical confusion is continuous and that each study's commitment to definitively resolving the debate only creates "tensions surrounding the corporate response to social misery" (p. 278)

In the pursuit of demystifying prior conflicting CSR and CFP empirical studies, Orlitzky et al. (2003) conducted a meta-analysis of the population of primary quantitative data

published, which included 52 studies and 33,878 observations. Orlitzky et al. (2003) relied on the proposition that a "psychometric meta-analysis quantifies the impact of theoretical and methodological deficiencies in a given line of inquiry and is, therefore, at present, the most sophisticated research-integration technique" (p. 423). The meta-analysis of 30 years of research delivered the following salient findings:

- Across a multitude of sectors and studies, a positive association subsists between CSR and CFP. Orlitzky et al. stated, "We demonstrate that the universally positive relationship varies (from highly positive to modestly positive) because of the contingencies, such as reputation effects, market measures of CFP, or CSR disclosures" (p. 423).
- A stronger correlation is present in the market-related measurements of CFP and the influence of CSR on a firm's reputation, than the traditional accounting measurements of CFP and the influence of CSR on reputation.
- Moreover, the relationship between CSR and CFP is bi-directional. This means that, "CSR and CFP mutually affect each other through a virtuous cycle: financially successful companies spend more because they can afford it, but CSR also helps them become a bit more successful" (p. 424).

Business should therefore realise that free markets and the advent of consumerism will not penalise a firm for investing in CSR and will reward firms for this form of investment, as demonstrated through CSR being a powerful "reputational lever" (Orlitzky et al., 2003, p. 426).

In the much-publicised report by Margolis and Walsh (2003), the authors reviewed both empirical research, and the influence of stakeholder theory, by analysing 127 published CFP and CSR relational studies conducted from 1972 to 2002. The findings of their analysis presented the following patterns:

- In 109 of the 127 studies where CSR acted as the independent variable (CSR as the predictor variable and CFP as the outcome variable), 54 (50%) showed a positive linear relationship between CSR and CFP; seven (6%) of the studies reported a negative relationship; 28 (26%) of the studies showed an indifferent relationship and 20 (18%) of the studies delivered varying results.
- In 22 of the 127 studies, CFP acted as the independent variable (CFP as the predictor variable and CSR as the outcome variable). In these studies, 16 (73%) represented a positive correlation between CFP and CSR.

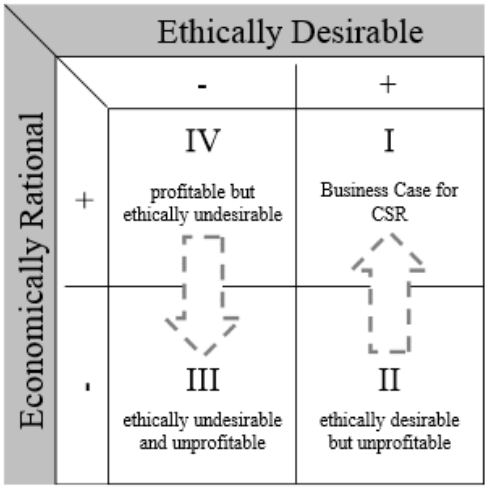
Margolis and Walsh (2003) summarised the findings of their analysis by stating, “A clear signal emerges from these 127 studies. A simple compilation of the findings suggest there is a positive association, and certainly very little evidence of a negative association, between a company’s social performance and its financial performance” (p. 277).

The relationship between a firm’s accounting profitability and the market reward for implementing sustainable practices is subject to a large number of internal and external factors that influence corporate performance (Girerd-Potin et al., 2014). The degree of influence that sustainability practices have on corporate performance is the primary concern of the study. The argument for using capital for regenerative and intertemporal value creation is credible as a means to providing a sustainable and profitable end for all stakeholders (Bansal & DesJardine, 2014).

Schreck, van Aaken and Donaldson (2013) used positive economics as a method to explain how, when and why firms participate in CSR. Hausman (1994) proposed, “Positive economics is in principle independent of any particular ethical position or normative judgements” (p. 146). The principal inference obtained by Schreck et al. (2013) is that firms do not engage in unproductive CSR.

A firm’s intrinsic purpose is profit-maximisation as embedded in economic theory (Friedman, 1970; Schreck et al., 2013). The assumption is therefore that unprofitable CSR activity does not exist whereby CSR creates value, and from an economic perspective, the moral and social conscious of a firm is desirable in the pursuit and expectations of superior profits (Schreck et al., 2013). Schreck et al. (2013) depicted the alignment of the economic value-maximising goals of the firm and ethically desirable conduct in the Economic Rationality, Ethical Desirability, and Effects of Institutional Changes model, which is presented in Figure 5.

Figure 5: Economic Rationality, Ethical Desirability, and Effects of Institutional Changes Model



Source: Schreck et al. (2013, p. 309*)*

2.9 The interrelationship between sustainability and financial performance

The abandonment of classical economic theory and the fundamental change to developing corporate strategies that honour a firms commitment to creating value for a wider group of stakeholders is an underpinning theme in creating long-term profitability for shareholders. This occurs through the systemic inculcation of both economic and sustainability practices in corporate management (Bansal, 2005; López et al., 2007; Michael & Gross, 2004).

The metamorphosis of corporate social philosophy has had an effect on environmental awareness, employee satisfaction, employee loyalty and retention, reputation risk mitigation and community upliftment. Conversely, social and corporate changes will not always have an effect on the economic indicators (López et al., 2007).

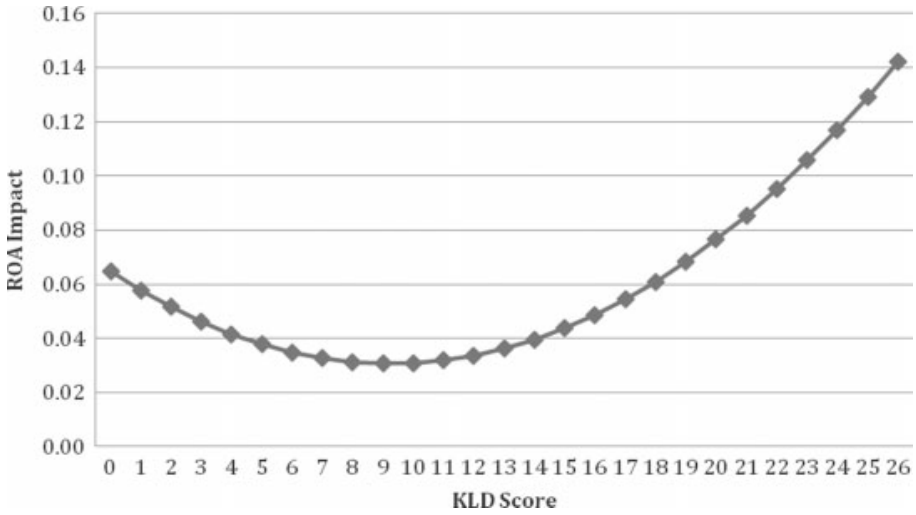
The outcome of the Ameer and Othman (2012) study is that firms that emphasise sustainable practices deliver increased and continuous financial performance over time when compared to firms that have not embraced sustainability practices (Ameer & Othman, 2012). Their study confirmed Orlitzky et al. (2003) premise and found a bi-directional relationship between corporate sustainability and corporate performance (Ameer & Othman, 2012).The underpinning supposition of the study is that firms that undertake advanced sustainability practices will achieve improved financial

performance in relation to firms that do not engage in sustainability practices (Ameer & Othman, 2012).

In a study based on 1,214 firms and 4,730 firm-year observations between 1998 and 2006 Barnett and Salomon (2012) established a U-shaped and non-symmetrical relationship between CSR and CFP. CSR is a costly investment and the resulting benefits are critical to a firm's financial performance, therefore firms that fail to maximise the benefits of CSR, and do not generate SIC are predisposed to an imperceptible investment and diminishing financials performance (Barnett & Salomon, 2012). Once SIC is accumulated, firms have the ability to exploit preferential stakeholder relationships and capitalise on CSR investments.

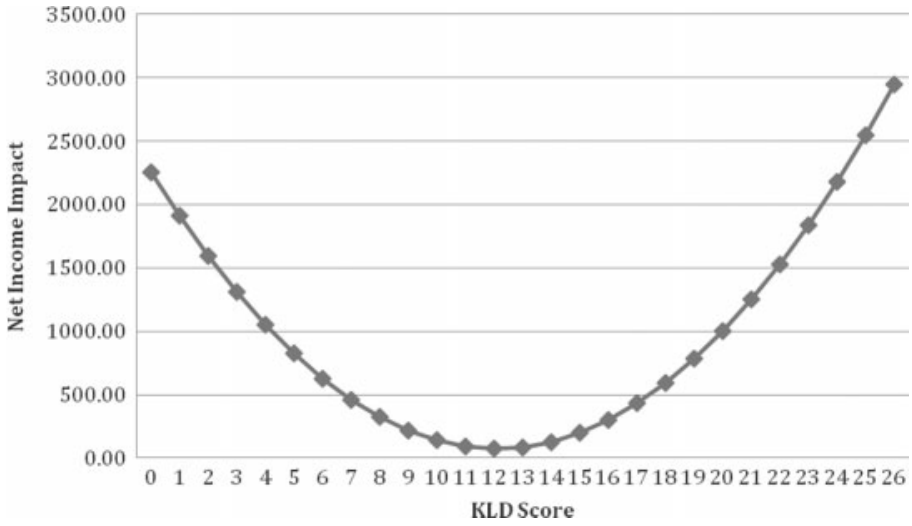
In support of the U-shaped relationship as shown in Figures 6 and 7, firms that invest substantially in CSR will witness a high CFP return outweighing the marginal costs of the investment (Barnett & Salomon, 2012). Barnett and Salomon (2012) found that the extremities of CSR investment generate the highest correlation with CFP, and they proposed that the relationship is in fact not a dichotomous relationship but rather a range of stakeholder influence determined by the SIC of the firm. The findings of the study suggested that CSR should not be viewed as a short-term investment as it takes time to build sufficient SIC through CSR investment.

Figure 6: Relationship between KLD and ROA



Source: Barnett and Salomon (2012)

Figure 7: Relationship between KLD and Net Income Impact



Source: Barnett and Salomon (2012)

2.10 Socially responsible investing

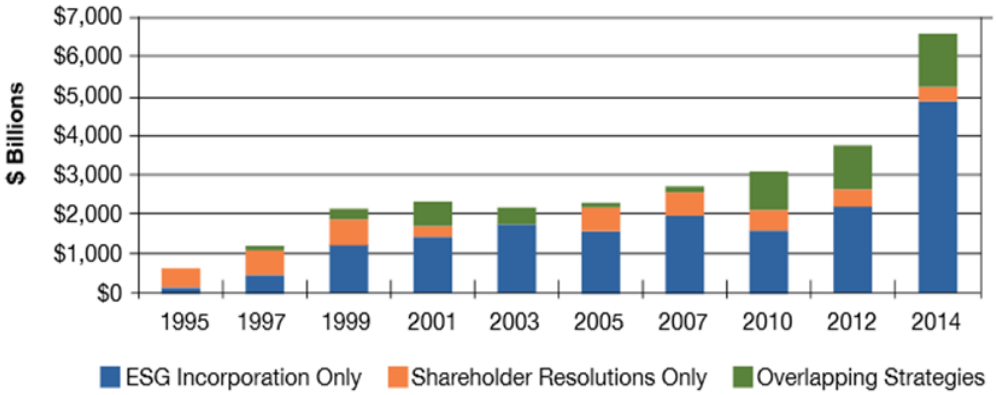
By 2014, asset managers represented the DJSI franchise in 16 countries, providing the foundational means for assessing the relationship between sustainability practices and market performance (Hashmi, Damanhouri, & Rana, 2015). The advent of sustainable investing has altered the nature of capitalism, transforming the individual and institutional investor into a conscious capitalist who is greatly aware of "consumer rights, environmental management, and social justice" (Haigh & Hoffman, 2012, p. 126).

As institutional and private investors place increasing value on both financial and social interest, the 2008 global financial crisis and recession has heightened the importance and interest in SRI (von Wallis & Klein, 2014) and propelled its inclusion across the major international security exchanges. To illustrate the dramatic growth in SRI, the recently published *Report on US Sustainable, Responsible, and Impact Investing Trends 2014* (US SIF Foundation, 2014), quoted the US domiciled SRI investment portfolios having increased by 76% in the last two years.

The 2014 report cites that SRI directly impacts one in every six dollars under professional management and has seen a significant increase in portfolio size from $600 billion in 2003, $3.07 trillion in 2010, $3.74 trillion in 2012 and most recently $6.57

trillion in 2014 (see Figure 8) while traditional markets have retracted in most instances (Haigh & Hoffman, 2012; US SIF Foundation, 2014). The underlying assumption supporting the trend behind SRI is that shareholders are investing in long-term sustainable businesses (López et al., 2007) that carry a risk-adjusted return (Fowler & Hope, 2007).

Figure 8: Sustainable and Responsible Investing in the United States from 1995 to 2014



Source:US SIF Foundation (2014)

In most instances, the shares selected by the funds represent superior companies by virtue of the companies being well established, stable, well managed, and robust in strategy and organisation structure, in comparison to the general market (Barnett & Salomon, 2006). Intuitively, over a period well-managed, stable companies, as selected by the SRI funds, should deliver favourable financial returns (Barnett & Salomon, 2006).

2.11 JSE Social Responsible Investing Index

The JSE SRI Index provides the framework for investors and companies to respectively inculcate sustainability risk management and promote responsible investing (JSE Limited, 2015b). With 84 constituents in 2014 and a market capitalisation of R4 812 986 910 203, in comparison to the market capitalisation of the exchange of

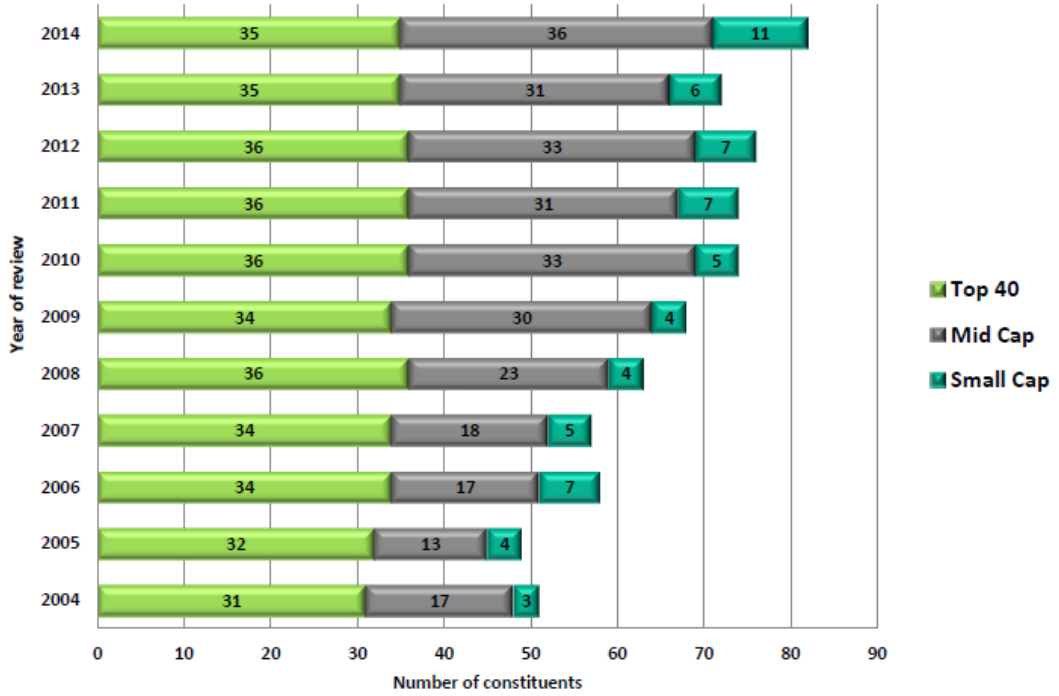
R6 775 549 891 87 (JSE Limited, 2015a), the JSE SRI is a sound proxy for companies practicing advanced sustainability and triple bottom line strategies.

The primary aim of the JSE SRI index is to achieve the following objectives (JSE Limited, 2014b):

- To identify companies listed on the JSE that incorporate the principles of triple bottom line and corporate governance into their organisational structures and commercial activities;
- To provide the domestic market with an all-encompassing, globally aligned but localised, assessment tool for corporate responsibility standards;
- To present investors with “non-financial risk variables to include in investment decisions” (p. 2);
- To contribute to the founding of responsible business practices in South Africa and abroad.

Sonnenberg and Hamann (2006) found that the SRI index has increased the awareness of sustainability practices for JSE companies that may not have been exposed to ESG themes and hence “has increased awareness of corporate citizenship” (p. 316) albeit “the largest listed companies, specifically those in the Top 40, are more likely to participate in the index” (p. 316). Figure 9 depicts the composition of the JSE SRI index from inception, graphically representing the initial bias of the index towards the JSE Top 40 (large market capitalisation) companies and the growth in middle market capitalisation constituents in the past five years.

Figure 9: JSE SRI Index Constituents by Size over Index Life



Source: JSE Limited (2014a, p. 9)

2.12 The King III Code on Corporate Governance for South Africa

The King III Code on Corporate Governance for South Africa 2009 was implemented effective 1 March 2010 as a result of the Companies Act no. 71 of 2008 and changes in international governance trends (Institute of Directors in Southern Africa, 2009). The code introduced robust codes for companies to implement a best-practice sustainability framework. The underlying principles of the code include leadership, sustainability, and corporate citizenship (Institute of Directors in Southern Africa, 2009).

The code found ethical and moral leadership as the imperative to the economic, social, environmental and governance imperative for JSE companies (Institute of Directors in Southern Africa, 2009). Closely attuned to the concepts presented by Bansal and DesJardine (2014), the code introduced the intertemporal role of business. It asserted that, “Broads should no longer make decisions based solely on the needs of the present because this may compromise the ability of future generations to meet their own needs” (p. 11).

Furthermore, the code compels boards of companies to ensure that economic activity is inclusive of all stakeholders and to not focus solely on the interests of shareholders thereby ensuring that the economic interests of the company are pursuant to the interests of all stakeholder considerations (Institute of Directors in Southern Africa, 2009).

Among the code's many recommendations, a more comprehensive response to ESG reporting. From 2010 onwards, companies were compelled to report on their sustainability efforts including environmental impact, social contribution, and governance policies. In the same way that the SRI Index requires, the report compels companies to report in a progressive manner on their ESG activities and compliance.

As an outcome of the code, South Africa has benefited from foreign investment inflows and has presented domestic and international investors with a well-governed private sector (Institute of Directors in Southern Africa, 2009). Through the King III codes, South Africa has advanced in corporate governance, stakeholder inclusiveness, sustainability practices and reporting and adjusted the principles of economic activity.

The time-based analysis of the JSE SRI is influenced by the two editions of the King III Codes on Corporate Governance namely, King II in 2002 and King III in 2009 (Institute of Directors in Southern Africa, 2009).

2.13 The measurement of corporate financial performance

Orlitzky et al. (2003) cited three methods for measuring CFP within the context of their meta-analysis of 52 corporate social and financial performance studies. These are "market based (investor returns), accounting-based (accounting returns), and perceptual (survey methods) measures" (p. 407).

Market-based metrics include Earnings Per Share and Share Price Appreciation, and represent the observations and sentiments of the market based on the past and future performance of the company (Orlitzky et al., 2003). The accounting-based metrics represent indices of internal competencies and the efficiency of the firm and the management structures in respect of allocating capital and resources (Orlitzky et al., 2003). The accounting-based metrics include Return On Assets, Return On Equity and Earnings Per Share (Orlitzky et al., 2003). Lastly, the perceptual measures retrieve a

subjective perspective from respondents concerning a firm's financial position and assets usage (Orlitzky et al., 2003).

For the purpose of measuring CFP of companies and the relationship with advanced sustainability practices, this study uses the accounting-based metrics, which are Revenue, Profit Before Tax, Earnings Per Share, Cash Flow Per Share, Return On Equity and Return On Assets. López et al. (2007) use profitability and revenue trends to test for a significant difference in firms listed on the Dow Jones Sustainability Index (DJSI) paired with a control sample of Dow Jones listed companies. Ameer and Othman's (2012) hypotheses include Revenue growth, Return On Assets, Profit Before Tax and Cash Flows from operating activities to test sustainable practices and CFP.

In a meta-study of 21 studies conducted by Pava and Krausz (1996), six of the 21 studies analysed financial accounting returns including Return On Assets, Return On Equity and Earnings Per Share. Barnett and Salomon (2012) tested the influence of CSR on CFP using Return On Assets and Net Income as the depending variables.

The link between management practices and the financial performance of a company extends to the allocation of resources and capital and further to advanced sustainability practices. Therefore, the influence and effectiveness of management is represented in the profit and loss of the business (Ameer & Othman, 2012; López et al., 2007) and in the sweating of its assets.

McGregor BFA (2009) devised two types of financial statements and ratios, namely published, and standardised. McGregor BFA (2009) advised using the standardised financial statements and ratios as the means to comparing the financial performance of companies in order to create a consistent interpretation of accounting practices.

McGregor BFA (2006, p. 62; 2008, p. 52) defined the formulas and descriptions for the standardised general ratios and financial statements as follows:

- Turnover

  This figure represents the total turnover as reflected in the published financial statements of the company or group. It may be reflected as "Revenue" and in the case of life insurance companies the amount used is "Gross Recurring Premiums". Banking companies do not disclose any form of turnover due to the nature of their business.

- Profit Before Tax

  This is the net profit for the year, including realised profits and all losses of an extraordinary nature, after interest paid, but before providing for taxation for the period.

- Earnings Per Share (Earnings/Share (C))

  ([Headline Earnings Per Share])

  This represents the “headline Earnings Per Share” or the “adjusted headline Earnings Per Share” if that is the only “headline earnings” disclosed for the period under review for the Company/Group as per the published financial statements. The net weighted average number of ordinary shares in issue at period-end is used by the Company/Group in this calculation.

- Cash Flow Per Share (Cash Flow/Share (c))

  *(([Cash Ex Operations] – ([Net Interest Paid/Received] – ([Taxation Paid]) / ([Ordinary Shares in Issue @Year End after Split Adjustment]) * 100*

- Return On Assets (Return On Assets %)

  *((([Profit Before Interest And Tax (EBIT)]+([Extraordinary Losses]-([Total Profits Extraordinary Nature])/([Total Assets])*100)*

- Return On Equity (Return On Equity %)

  *(([Profit Ordinary And Preference Shares]-([Preference Dividend])/([Ordinary Shareholders Interest & Funds]) * 100*

These accounting-based measurements present an adequate set of metrics with which to measure CFP. Founded by previous CFP, sustainable practices and CSR studies, the accounting measurements have the ability to establish whether companies with advanced sustainability practices outperform companies classified as less advanced and if there is a directional influence in CFP through investing in sustainability.

The following descriptions of the accounting-based measures pronounce a holistic and integrated synopsis of company performance and a sound platform for interrogating the research subject (Ameer & Othman, 2012; López et al., 2007):

- Revenue indicates the ability of a company to generate income from its assets (Graham & Winfield, 2010).
- Profit is described by López et al. (2007) as an efficient use of resources resulting in the reduction of costs. This is pivotal to the study as advanced sustainability practices may incur additional costs in the early phases of implementation, with the benefits of increased sales through an increasing competitive advantage taking time effect.
- Return On Assets provides the observer with an indication of a company's ability to sweat its assets and a measure of the investments and their operating usage (Graham & Winfield, 2010).
- As a key driver of share price, Return On Equity signals the return for the shareholders or the business owners (Graham & Winfield, 2010).
- Earnings Per Share will be used as a further proxy for Profit, indicating the profitability trend in relation to the number of ordinary shares in issue (Graham & Winfield, 2010).
- Cash Flow Per Share is similarly used as a proxy for cash generated from operating activities. However, further intrinsic benefits are established by Peiró-Signes, Segarra-Oña, Mondéjar-Jiménez and Vargas-Vargas (2012) who cited, "Cash Flow Per Share is a measure of financial strength. Unlike Earnings Per Share, this indicator is difficult to manipulate and is a useful measure for the strength of a firm and the sustainability of its business model." (p. 107).

2.14 Conclusion

The literature review has provided the foundation for understanding current developments within the sustainability, stakeholder and social responsibility and financial performance debate. Furthermore, the literature explored in this chapter provides business with a deductive and empirical means to frame the interrelationship between stakeholder theory, the principles of social responsibility, sustainable business practices, and the business case for sustainability and socially responsible investing. Sustainability is deployed as an inclusive proxy for stakeholder centricity, CSR, and the

principles of triple bottom line, representing a multi-dimensional, all-encompassing protagonist for the study.

Progressing from the neoclassical economic doctrine of Friedman (1970), whereby the purpose of business is to ensure profits for shareholders, the role of business has morphed to a stakeholder-centric purpose (Freeman et al., 2010), integrating both business and ethics (Freeman et al., 2012). Stakeholder engagement and the prioritisation of stakeholder interests provide a foundation for business to adjust their objectives from a shareholder-centric focus to an inclusive stakeholder orientated organisation. The objectives of business should be viewed within the paradigm of being purpose-driven for economic gain within the confines of legal, ethical, and discretionary custom (Carroll, 1979).

The interchangeable concepts of CSR and sustainable business practices lean on stakeholder theory to ensure that the actions of business create value for all stakeholders including the triple bottom line objectives of community and employees (social), the environment and shareholders (profits) (Bansal & DesJardine, 2014).

Perrini et al. (2011) presented a compelling business case promoting a symbiotic relationship between the company and stakeholders through six economic drivers, namely, employees, customers, suppliers, society, the natural environment, and corporate governance standards and reporting, all resulting in value creation and economic benefit to the company and its stakeholders. Bansal and DesJardine (2014) summarised the aim of sustainability as preserving the intergeneration equity permitting business to be economically prosperous in the short term, while ensuring no sacrifice is made by future generations for present day economic activity.

A sound business case for the organisational inculcation of CSR, sustainability and stakeholder engagement business practices was established. However, the financial return on investment and CFP of companies having implemented and invested in such practices remains inconclusive (Barnett & Salomon, 2012). Empirical research and meta-studies have failed to deliver a consensus on the relationship for return on investment for sustainable business practices, finding positive, negative, and indifferent relationships between sustainable business practices and CSR, and CFP (Barnett & Salomon, 2006; Barnett & Salomon, 2012; Brammer & Millington, 2008; López et al., 2007; Marom, 2006; Pava & Krausz, 1996; Perrini et al., 2011).

Through the advent of the socially responsible investing indices, recent studies have adopted the *priori* that the ESG qualifying criteria and reporting standards provide a

sound basis for defining companies as advanced in their sustainable business practices (López et al., 2007).

The 11-year presence of the JSE SRI Index provided the basis in which company's financial performance is analysed to determine the association, if any, between advanced sustainable business practices and financial performance in pursuit of a deeper understanding of the directional relationship and the accounting measurements that are predisposed to the investment.

The literature reviewed in this chapter has created a deductive framework in which to construct the research objectives and questions. Borrowing from the body of knowledge on the subject, the research questions asked by both business and academia are presented in the following chapter.

Chapter 3: Research Hypotheses and Questions

3.1 Introduction to the research hypotheses and questions

The aim of this chapter is to define the research questions as the basis for subsequent chapters to provide empirical evidence pertaining to the interrelationship between the sustainability practices of companies and financial performance. The preceding literature review detailed the interconnected concepts and components of sustainability practices, including the noticeable presence of stakeholder theory and CSR. It was found that previous empirical meta-studies present an ambiguous relationship between sustainable and socially responsible business practices and financial performance (Margolis & Walsh, 2003; Orlitzky et al., 2003).

The objective of this research is to glean an understanding of the much-deliberated relationship within the context of South Africa's securities exchange, representative of an emerging market. The research seeks to provide a business case for organisations investing resources and capital into sustainability practices and environmental, social and governance reporting.

The research questions have been established as a means of determining the relationship between companies that have adopted advanced sustainability practices and those that have not, and a comparison of the financial performance between the two categories of companies. The research questions have been structured into three time-based periods including 2004 to 2009, 2010 to 2014 and 2004 to 2014.

The three periods provide a platform for opposing the two categories of companies in different periods to test for externalities such as the influence of the King III Code on Corporate Governance (Institute of Directors in Southern Africa, 2009), varying market conditions, the temporal influence of advanced sustainable business practices and the development of sufficient stakeholder influence and capacity. In addition, a comparison of the same group of sustainably advanced companies is structured pre-2010 and post-2010 to test the aforementioned externalities within the same category of companies.

Rejecting or failing to reject the null hypotheses detailed in this chapter will establish meaningful insight into the directional relationship between the financial performance of sustainably advanced companies and companies categorised as less advanced and an improved empirical understanding of the interrelationship between advanced sustainable business practices and financial performance.

Thus, the study aims to provide business with an understanding of whether:

- A significant difference in financial performance exists between namely SRI companies and non-SRI companies over the 11-year study period.
- A difference exists in each of the three time-based periods of analysis structured as 2004 to 2009, 2010 to 2014, and 2004 to 2014.
- A difference exists in financial performance between the two categories of companies and is associated with a particular accounting measurement.
- A difference in financial performance exists within the same group of sustainably advanced companies, namely the SRI companies, over the 11-year study period through the analysis of the SRI companies in two time-base periods designed as 2004 to 2009 and 2010 and 2014.
- There is a difference in the financial performance of SRI companies, whether the difference in financial performance relates to a particular accounting measurement thereby establishing an association between SRI companies and the accounting variable or variables that are influenced over time by the advancement of sustainable business practices.

In accordance with the motivation, research objectives, and literature review, the following hypotheses are analysed in the study.

3.2 Research Question 1

Research Question 1 asks whether there is a directional relationship between companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) in respect of their Revenue trend for the periods 2004 to 2009, 2010 to 2014, and 2004 to 2014.

Hypothesis 1a: The null hypothesis states that there is no significant difference between the Revenue trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2009.

Hypothesis 1b: The null hypothesis states that there is no significant difference between the Revenue trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2010 to 2014.

Hypothesis 1c: The null hypothesis states that there is no significant difference between the Revenue trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2014.

3.3 Research Question 2

Research Question 2 asks whether there is a directional relationship between companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) in respect of their Profit Before Tax trend for the periods 2004 to 2009, 2010 to 2014, and 2004 to 2014.

Hypothesis 2a: The null hypothesis states that there is no significant difference between the Profit Before Tax trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2009.

Hypothesis 2b: The null hypothesis states that there is no significant difference between the Profit Before Tax trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2010 to 2014.

Hypothesis 2c: The null hypothesis states that there is no significant difference between the Profit Before Tax trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2014.

3.4 Research Question 3

Research Question 3 asks whether there is a directional relationship between companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) in respect of their Earnings Per Share trend for the periods 2004 to 2009, 2010 to 2014, and 2004 to 2014.

Hypothesis 3a: The null hypothesis states that there is no significant difference between the Earnings Per Share trend of companies listed on the JSE SRI Index (SRI

companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2009.

Hypothesis 3b: The null hypothesis states that there is no significant difference between the Earnings Per Share trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2010 to 2014.

Hypothesis 3c: The null hypothesis states that there is no significant difference between the Earnings Per Share trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2014.

3.5 Research Question 4

Research Question 4 asks whether there is a directional relationship between companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) in respect of their Return On Assets trend for the periods 2004 to 2009, 2010 to 2014, and 2004 to 2014.

Hypothesis 4a: The null hypothesis states that there is no significant difference between the Return On Assets trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2009.

Hypothesis 4b: The null hypothesis states that there is no significant difference between the Return On Assets trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2010 to 2014.

Hypothesis 4c: The null hypothesis states that there is no significant difference between the Return On Assets trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2014.

3.6 Research Question 5

Research Question 5 asks whether there is a directional relationship between companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) in respect of their Return On Equity trend for the periods 2004 to 2009, 2010 to 2014, and 2004 to 2014.

Hypothesis 5a: The null hypothesis states that there is no significant difference between the Return On Equity trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2009.

Hypothesis 5b: The null hypothesis states that there is no significant difference between the Return On Equity trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2010 to 2014.

Hypothesis 5c: The null hypothesis states that there is no significant difference between the Return On Equity trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2014.

3.7 Research Question 6

Research Question 6 asks whether there is a directional relationship between companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) in respect of their Cash Flow Per Share trend for the periods 2004 to 2009, 2010 to 2014, and 2004 to 2014.

Hypothesis 6a: The null hypothesis states that there is no significant difference between the Cash Flow Per Share trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2009.

Hypothesis 6b: The null hypothesis states that there is no significant difference between the Cash Flow Per Share trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2010 to 2014.

Hypothesis 6c: The null hypothesis states that there is no significant difference between the Cash Flow Per Share trend of companies listed on the JSE SRI Index (SRI companies) and companies listed on the JSE (non-SRI companies) for the period 2004 to 2014.

3.8 Research Question 7

The accounting performance of companies listed on the JSE SRI Index (SRI companies) pre 2010 and post 2010 is of particular interest to this study. Research Question 7 tests the *priori* that the financial benefits of sustainably advanced business practices are long-term in nature. This is coupled with externalities such as the introduction of the ESG reporting requirements of the King III Code on Corporate Governance in 2009 (Institute of Directors in Southern Africa, 2009) and the financial market performance post the 2008 global financial crisis.

Therefore, Research Question 7 asks whether there is a directional trend of companies listed on the JSE SRI Index (SRI companies) in respect of their accounting related accounting metrics pre 2010 (2004 to 2009) and post 2010 (2010 to 2014).

Hypothesis 7a: The null hypothesis states that there is no significant difference between the Revenue trends of companies listed on the JSE SRI Index (SRI companies) pre 2010 (2004 to 2009) and post 2010 (2010 to 2014).

Hypothesis 7b: The null hypothesis states that there is no significant difference between the net Profit Before Tax trends of companies listed on the JSE SRI Index (SRI companies) pre 2010 (2004 to 2009) and post 2010 (2010 to 2014).

Hypothesis 7c: The null hypothesis states that there is no significant difference between the Earnings Per Share trends of companies listed on the JSE SRI Index (SRI companies) pre 2010 (2004 to 2009) and post 2010 (2010 to 2014).

Hypothesis 7d: The null hypothesis states that there is no significant difference between the Return On Assets trends of companies listed on the JSE SRI Index (SRI companies) pre 2010 (2004 to 2009) and post 2010 (2010 to 2014).

Hypothesis 7e: The null hypothesis states that there is no significant difference between the Return On Equity trends of companies listed on the JSE SRI Index (SRI companies) pre 2010 (2004 to 2009) and post 2010 (2010 to 2014).

Hypothesis 7f: The null hypothesis states that there is no significant difference between the Cash Flow Per Share trends of companies listed on the JSE SRI Index (SRI companies) pre 2010 (2004 to 2009) and post 2010 (2010 to 2014).

3.9 Conclusion

The research hypotheses contained in Chapter Three seek to explore the complexities of the relationship between sustainable business practices and CFP as established by the literature review. Chapter Four presents the research methodology and design for the purpose of generating the prerequisite data and analysis methodology as required for the analysis and interpretation of the inferential statistics.

Chapter 4: Research Methodology and Design

4.1 Introduction to the research methodology

The objective of this chapter is to define the research methodology and design, while describing the study's alignment to the research objectives. The following sections are included in this chapter: description of the methodology is described in terms of the unit of analysis, population, sample size and method, research instruments, and data collection and analysis. The chapter concludes with the limitations of the methodology.

The literature review presents a quandary for academic researchers and business who recognise the importance of understanding the linear association between advances in the sustainable business practices of firms and financial performance. The inconclusiveness of historical empirical studies is largely due to the inconsistencies in the methodological approaches to the studies (Carroll & Shabana, 2010).

A meaningful contribution to the research methodology of this study is the work of López et al. (2007). Their primary concern was to find empirical evidence that the adoption of advanced sustainability practices has a positive influence on the performance trends of traditional accounting indicators, namely revenue and profitability. Ameer and Othman (2012) also studied the linear association between sustainability practices and CFP using similar accounting measurements. They suggested future research is required to understand whether a directional relationship exists between conscientious firms and their profitability within an emerging market.

4.2 Research methodology and design

The stringent qualifying criteria of socially responsible investing for the JSE SRI Index permitted the researcher to rely on the principle that companies that meet the ESG qualifying criteria of the JSE SRI Index are advanced or "superior" (Ameer & Othman, 2012, p. 73) in their sustainability practices. The companies classified as sustainably advanced could then be compared to companies that did not qualify or elected not to qualify for the Index. This is an important consideration for investors searching for long-term value creation. The principle is extended to incorporate not only advanced sustainability practices but also progressive reporting standards, corporate governance and levels of transparency to all stakeholders (López et al., 2007).

Moreover, the research methodology interrogated the financial gains attributed to the investment into advanced sustainable business practices and corporate governance for companies that qualified for SRI indices and those that did not (Ameer & Othman, 2012; López et al., 2007). Qualifying companies were recognised by this study as highly sophisticated on the sustainability continuum (Ameer & Othman, 2012). Contrastingly, the CFP of non-SRI companies was used as the proxy to analyse companies that were classified as less advanced in terms of their sustainability practices by either voluntarily or involuntarily not being represented on the SRI Index (López et al., 2007). The empirical research presents a pragmatic, though not exhaustive, means of understanding this enduring and relevant business dichotomy within the context of an emerging market.

Zikmund, Babin, Carr, and Griffin (2012) defined business research as, “The application of the scientific method in searching for the truth about business phenomena. These activities include defining business opportunities and problems, generating and evaluating ideas, monitoring performance, and understanding the business process” (p. 5). Vis (2012) reasoned that in research design, the method of explanation is qualitative research, which adopts a “causes-of-effects approach” (p. 171), whereby the goal of research is to find “meaningful patterns in the cases under study” (p. 171). In contrast, quantitative research substantiates an “effects-of-causes” (p. 171) of independent variables on dependant variables within a particular sample.

Studies that explore the interrelationship between a company’s investment into sustainability practices and financial performance have relied on empirical quantitative methods (Orlitzky et al., 2003). Thus, this study makes use of a quantitative methodology.

Zikmund et al. (2012) found that research is either exploratory or confirmatory in terms of its objectives, and proposed, “Most exploratory research design produces qualitative data” (p. 136) best suited for the formulation of the constructs that generate hypotheses, while “confirmatory research then tests these hypotheses with quantitative data” (p. 136). The research hypotheses of this study, broadly categorised in academic research as the linear relationship between CSR and CFP, were well established through empirical constructs, albeit the empirical results have been inconsistent. The design of the study made use of a deductive process, described by Baker (2001) as the defining of hypotheses that are relevant to the study’s objectives followed by the collection of data to either prove or disprove the hypotheses. Thus, the study leaned firmly towards a confirmatory or quantitative research design. The use of a deductive

quantitative method of data analysis allowed for the statistical enquiry into the relationships between the outcome and predictor variables (Field, 2013), "confirming the initial general theory or modifying it in the light of the findings" (Saunders & Lewis, 2012, p. 108).

The hypothesis testing relied on univariate statistical analysis using interval data (Zikmund et al., 2012). The data was categorised as interval data as it was possible for the financial performance trends, more specifically the accounting measurements of company performance, to be negative and less than zero.

To determine and measure CFP, six dependant variables were selected for hypotheses testing as the assigned accounting measurement of financial performance. The accounting dependant variables incorporated were Revenue, Profit Before Tax, Return On Equity, Return On Assets, Earnings Per Share and Cash Flow Per Share. The accounting measurements and ratios were borrowed from previous studies within this field of academic research as considered in the literature review (Ameer & Othman, 2012; López et al., 2007).

The purpose of the independent variable in hypothesis testing is to determine if the independent variable affects the dependant variable in a certain manner (Zikmund et al., 2012). The independent variable used was companies with advanced sustainable business practices, by virtue of their listing on the JSE SRI Index, and conversely, companies with less advanced sustainable business practices by virtue of not being listed on the JSE SRI Index. This *priori* was referred to as SRI companies and non-SRI companies (López et al., 2007).

4.3 Population and unit of analysis

The population consisted of companies listed on the main board of JSE during the financial periods from 2004 to 2014. The unit of analysis was at a company level. The population of JSE companies was selected due to its emerging market relevance and the accessibility of accounting data by virtue of the companies being publicly listed. According to the Johannesburg Stock Exchange (2013), the JSE is the 20th largest stock exchange in the world and the largest on the African continent. Table 1 details the number of companies listed on the JSE, the FTSE All-Share Index (ALSI) and the SRI Index (JSE Limited, 2015a). The table represents the population size, namely the JSE, and the sample size being the SRI Index.

Table 1: The JSE, All-Share Index and SRI Index constituents

	SRI Index	All Share	SRI %	ALL JSE	SRI %
31 December 2004	49	163	30%	403	12%
30 December 2005	49	162	30%	388	13%
29 December 2006	60	165	36%	401	15%
31 December 2007	59	166	36%	422	14%
31 December 2008	62	166	37%	425	15%
31 December 2009	70	163	43%	410	17%
31 December 2010	76	164	46%	407	19%
30 December 2011	77	164	47%	406	19%
31 December 2012	79	164	48%	400	20%
31 December 2013	73	165	44%	389	19%
31 December 2014	85	167	51%	391	22%
30 September 2015	84	170	49%	388	22%

Source: JSE Limited (2015a)

4.4 Sampling

Similar to the López et al. (2007) study and sampling technique, two sample sub-groups of companies were selected from the population of this study. A judgement sampling technique was used for the selection of the two groups. Zikmund et al. (2012) defined judgment (purposive) sampling as a "nonprobability sampling technique in which an experienced individual selects the sample based on his or her judgement about some appropriate characteristics required of the sample member" (p. 396). The sampling frame for the study formed two sample sub-groups.

The first sub-group comprised companies listed on the JSE SRI Index during the period 2004 to 2014 that met the study's qualifying criteria in respect of the minimum number of years on the JSE SRI Index. This was referred to as the SRI sample and is detailed in Table 2. The second sub-group, referred to as the control sample, comprised companies listed on the main board of the JSE that were not part of the SRI Index for the same period, or were present on the SRI Index during the study period but failed to meet the qualifying criteria.

Table 2: SRI and non-SRI sample and pre and post-2010 sample

	Period 1 (2004 to 2009)	Period 2 (2010 to 2014)	Period 3 (2004 to 2014)
SRI & Non-SRI Sample			
SRI sample companies	39	67	44
Control sample companies	39	67	44
Total number of companies	**78**	**134**	**88**
Pre & Post 2010 SRI Sample	**36**	**36**	

4.5 SRI sample and control sample process of selection

4.5.1 The SRI sample

In order to analyse the temporal financial performance and effects of sustainably advanced business practices on the SRI sample, the sample frame of SRI companies was divided into three time-based groups of companies. Table 2 shows the number of companies on the SRI Index for each time-based group under review. In order to stress test the longitudinal data for hypothesis events, the companies listed on the SRI Index from 2004 to 2014 were grouped into three time-based sub-groups in accordance with the following processes:

- Process 1: The companies listed on the SRI Index were grouped into three sub-groups for the period 2004 to 2009 (Period 1), 2010 to 2014 (Period 2) and 2004 to 2014 (Period 3).
- Process 2: The three sub-groups of SRI companies were analysed to only include companies that were listed on the Index for 80% or more of the years in each period.

Therefore, companies that were present on the SRI Index for less than 80% of years in each of the three periods were disqualified. The purpose of the disqualification process was to ensure that the companies selected for the SRI sample represented the most superior and advanced companies in respect of their sustainability practices and consistent achievement of the ESG reporting requirements of the JSE SRI Index. This

premise was adapted from the methodology of the Ameer and Othman (2012) and López et al. (2007) studies.

The deductive reasoning applied to the selection of the SRI sample was that firms that qualify for listing on the SRI Index were differentiated in comparison to those that did not qualify, or chose not to qualify, by the virtue of their transparency and sustainability reporting disclosures (López et al., 2007). Accordingly, the sample was selected in close alignment to the selection criteria of the López et al. (2007) study.

The inclusion of companies into the SRI Index sample that had an 80% representation on the SRI Index for each of the three periods was unique to this study. It was also justified considering the stringent ESG requirements and controls of the SRI Index and the need to segment the sample as 'advanced' in respect of their sustainable business practices.

In effect, the companies excluded from the SRI sample had ceased to qualify for the Index for more than two years out of six in Period 1, one year out of five in Period 2, and three years out of 11 in Period 3. The sub-groups were representative of 39 companies in Period 1 (Appendix 1), 67 in Period 2 (Appendix 2), and 44 in Period 3 (Appendix 3). The outcome of the selection and qualifying process was an SRI sample for Period 1, Period 2 and Period 3 that represented companies with the most advanced sustainable business practices.

For the purpose of clarity, it should be mentioned that the control sample was only selected after the definition of the SRI sample. It was assumed at this juncture, for the appropriate pairing of the SRI sample to the control sample, that the control sample companies had a corresponding market capitalisation and shared similar market sectors to the SRI sample. In other words, the sample frame notionally differentiated the SRI sample and control sample from the remainder of population and created two group of companies, individually homogeneous and differentiated by their SRI and non-SRI categorisation only.

4.5.2 The control sample

A control sample was selected for each of the three time-based periods. The control sample was defined as a group of companies that were homogenous for appropriately comparing the differences between the two groups (López et al., 2007).The selection of the control sample, although based on the substantiated criteria of market sector and

market capitalisation (López et al., 2007), relied on judgement sampling (Zikmund et al., 2012) and a subjective selection process. The sample selection process formed an individually paired control sample for each period, resulting in three sub-groups. As required for the statistical analysis of financial performance between the three time-based paired groups, the SRI and control samples are detailed in Appendices 1, 2 and 3.

The control sample companies were selected from the population and paired to each SRI company based on a purposive sample technique (Zikmund et al., 2012) applying four concurrent processes. It must be stated that in order to create the most appropriately paired samples, the control sample companies were paired on more than one occasion against the SRI sample companies. The pairing process established the most suitable control company for each SRI company in respect of market capitalisation and market sector, albeit systemic limitations exists as result of size and structure of the JSE. The four processes deployed for the pairing of SRI companies and control companies, are described as follows:

- Process 1: The companies that did not meet the minimum requirements of this study in respect of an SRI Index listing of 80% or more years in each of the three time-based periods were eligible for control sample selection.
- Process 2: The companies were selected purposively based on the JSE's sector and sub-sector classification and were paired on an individual basis with the SRI sample in accordance with their respective sector classification (López et al., 2007). Sub-sectors such as Industrial Metals and Mining, Mining, Beverages, Health Care Equipment and Services, Pharmaceuticals and Biotechnology, Mobile Telecommunications, Banks, Nonlife Insurance, Life Insurance and Financial Services were most difficult to pair within the JSE sub-sectors and in these instances, the pairing relied on the primary sector classification.
- Process 3: The control sample companies were purposively paired on an individual basis with the SRI sample based on a best attempt to right size the two paired-companies on market capitalisation in order to create a degree of homogeneity within the two samples (López et al., 2007).

  In most instances, the SRI companies listed on the JSE Top 20 did not have a control sample pairing (non-SRI) with a similar market capitalisation from the same sector or sub-sector. The market capitalisation for both the SRI sample

and control sample in 2009 and 2015 was used as the market capitalisation benchmark for the purposed of pairing the two samples.

The pairings were evaluated in multiple iterations in order to establish the best-suited control company for each SRI company. This phase of the sampling process was further hindered by the limited number of companies in each sector on the JSE, and the disparity in market capitalisation within the sectors.

The requirement for the SRI and control sample companies to have sufficient financial data across the three time-based periods, as required to represent a financial trend compounded the selection criteria dilemma. This circumstance arose primarily due to companies listing on the JSE, or delisting from the JSE, inside of the three time-based periods and not because of missing data. In these instances, the SRI sample and the control sample were paired equitably and the periods adjusted to resemble an equal number of years in each period (refer to Appendix 4).

Furthermore, because of certain companies in the financial services sector not reporting revenue or turnover, the affected pairings where either disqualified or paired on Investment Income, Interest and Finance Charges, a standardised financial measurement provided by McGregor BFA. The SRI and control sample companies that were subject to an adjustment in the years paired are detailed in Appendix 4.

- Process 4: Failing Process 2 and 3 delivering an appropriate control sample company for the SRI company, the decision was taken to disqualify the pair from the study. This disqualification process was implemented to ensure the integrity of the SRI and control sample pairing and the efficacy of the sampling process and subsequent exactitude for statistical analysis. The SRI sample companies disqualified due to the lack of appropriate control sample pairings are detailed in Appendix 4.

The four processes applied by the judgement sampling technique generated 39 pairings in Period 1, 67 pairings in Period 2 and 44 pairings in Period 3 (refer to Appendices 1,2 and 3).

4.6 The SRI sample for the pre-2010 and post-2010 selection

To address the research objective pertaining to the comparison of the financial performance of SRI companies over two time-based periods and the temporal influence of advanced sustainability practices on financial performance for SRI companies, the data collection, and company selection process for the statistical analysis of the SRI sample was structured according to the methodology.

To compare the CFP of the same sample of SRI companies between Period 1 (2004 to 2009) and Period 2 (2010 to 2014), two homogeneous groups were formed to include one sample of identical SRI companies. Therefore, Group 1 represented SRI companies for the period 2004 to 2009 and Group 2 the same SRI companies for the period 2010 to 2014. The qualifying criteria prescribed that the company had to be present in the SRI sample in both periods. All SRI companies that did not qualify for the SRI sample in both periods were disqualified.

The sample was refined to include the most advanced companies in respect of their sustainability practices. The sample consisted of 34 companies for the revenue dependant variable and 36 companies for the Profit Before Tax, Return On Assets, Return On Equity, Earnings Per Share and Cash Flow Per Share dependant variables. The independent variable was SRI pre-2010 and SRI post-2010. Noticeably, Investec Ltd and Investec PLC were excluded from the revenue comparison, as these companies did not report revenue.

The same accounting data and percentage change calculation for each dependant variable was used as previously collected for the SRI sample and control sample comparison and a single data sheet collated for statistical analysis. The 36 SRI sample companies that qualified for the pre- and post-test analysis are detailed in Appendix 5.

4.7 Data collection and analysis

In preparation for the statistical analysis, financial data was collected for each of the companies included in the SRI sample and the control sample. More than 10 000 data points for SRI and control sample companies were collected for the dependant variables. The data constituted six financial metrics from 2004 to 2014 for each of the companies included in the SRI sample and control sample.

The following accounting measurements selected were in accordance with the research objectives and hypotheses: Revenue, Profit Before Tax, Return On Assets Return On Equity, Earnings Per Share and Cash Flow Per Share. The market capitalisation and JSE sector were recorded for the pairing process.

In order to glean the dependant variable trend for each of the six accounting measurements, the percentage change for the period was calculated for each period. The percentage change was used as a proxy for the trend in financial performance. This was alternatively phrased as the change in the accounting value of the dependant variables over each of the three time-based periods. A single data sheet was prepared for the statistical analysis of the six accounting metrics for the SRI and control sample for each of the three study periods.

Once the datasheet was compiled and the percentage change calculated, a further analysis was conducted to ensure that the data recorded was accurate. This final process of validating the data required that the researcher re-check the accounting data and the SRI and control sample in order to ensure that the correct accounting values had been inputted.

4.8 Independent samples t-test and Mann-Whitney U tests (Phase 1)

Phase 1 of the statistical analysis was designed to test the data for a significant difference in the mean between the SRI sample and the control sample. The mean discussed herein refers to the percentage change in the six accounting measurements across the three time-based periods, namely Period 1 (2004 to 2009), Period 2 (2010 to 2014) and Period 3 (2004 to 2014).

An independent-samples t-test was selected as a suitable method of identifying whether a significant difference existed in the continuous dependant variables of the means of the two groups (Laerd Statistics, 2013a). For the first phase of hypothesis testing, the nominated statistical method of analysis was an independent samples t-test. Zikmund et al. (2012) defined the independent samples t-test as, “A test for hypotheses stating that the mean scores for some interval- or ratio-scaled variable grouped based on some less-than interval classificatory variable” (p. 534).

The independent samples t-test is customarily used when a researcher wishes to test the differences between the mean of two independent samples or groups (Zikmund et al., 2012). The small sample size meant that the Central Limit Theorem was no longer

applicable to ensuring that the samples means were normally distributed (Mendenhall, Beaver, & Beaver, 2006). According to Mendenhall et al. (2006) the assumptions of the test is that the two samples were characterised by normally distributed populations, the data consisted of random independent samples, the variances were equal and populations had the same shape. The ability to analyse a significant difference in the means between the SRI sample and the control sample using a parametric test such as the independent-samples t-tests was subject to the assumption of normal distribution (Laerd Statistics, 2013a). In the event that the distribution was not found to be of normal distribution, through the analysis of the descriptive statistics, namely Shapiro-Wilk test of normality and a visual inspection of the histogram, the use of a non-parametric statistical method was required to analyse the data (Laerd Statistics, 2013e; Mendenhall et al., 2006).

A non parametric statistical test circumvented the parametric assumptions of normality and made use of general assumptions such as population distribution indicating “a measure of association that is useful in determining whether one variable increases as the other increases or whether one variable decreases as the other decreases” (Mendenhall et al., 2006, p. 630). Mendenhall et al. (2006) stated, “Some statisticians advocate the use of nonparametric procedures in preference to their parametric counterparts” (p. 630).

The recommended nonparametric alternative to the independent-samples t-test that was the Mann-Whitney U test, which was found to be a suitable replacement for testing the difference between the dependant variables of the two groups(Laerd Statistics, 2013b; Mendenhall et al., 2006). Laerd Statistics (Laerd Statistics, 2013b) stated that, “In practice, the Mann-Whitney U test is more broadly used to interpret whether there are differences in the “distributions” of the two groups or differences in the “medians” of the two groups”.

The interpretation of the distribution and medians was largely dependent on the shape of the distributions (Laerd Statistics, 2013b) . The assumptions of the Mann-Whitney U test were achieved by the design of the study, namely, each hypothesis tested one dependant continuous variable at a time (accounting measurements), one independent variable was represented by two groups (the SRI sample and the control sample), and the paring of the SRI companies with control companies ensured that there was independence of observations (Laerd Statistics, 2013b).

The statistical analysis described was conducted using the p-value as the basis to reject or fail to reject the null hypotheses described in Chapter Three. Zikmund et al. (2012) defined the p-value as "probability-value, and is essentially another name for an observed or computed significance level" (p. 510). The significance level has been defined by Zikmund et al. (2012) as "a critical probability associated with a statistical hypothesis test that indicates how likely it is that an inference supporting a difference between an observed value and some statistical expectation is true" (p. 510). The significance level selected for testing the hypotheses was 0.05 (López et al., 2007), resulting in the acceptance of null hypotheses that returned p-values greater than the significance level of 0.05 (fail to reject) and the rejection of null hypotheses that returned p-values less than the significance level of 0.05 (Zikmund et al., 2012).

The hypotheses were tested for significant differences between the SRI sample and control sample for Periods 1, 2 and 3 for all six accounting measurements of financial performance. The testing of means and mediums between the two groups was key to deciphering the short-term and long-term difference in CFP behaviour, determining if sustainably-advanced companies had performed financially better or worse in comparison to the control sample.

Phase 1 of statistical analysis responded to the following hypotheses and made use of the nonparametric Man-Whitney U test for significant difference in the medians of the SRI and control samples:

- Hypothesis testing for Revenue, Profit Before Tax, Return On Assets, Return On Equity, Earnings Per Share and Cash Flow Per Share (dependant variables) for the SRI sample and control sample (independent variable) for Period 1 (2004 to 2009);
- Hypothesis testing for Revenue, Profit Before Tax, Return On Assets, Return On Equity, Earnings Per Share and Cash Flow Per Share (dependant variables) for the SRI sample and control sample (independent variable) for Period 2 (2010 to 2014);
- Hypothesis testing for Revenue, Profit Before Tax, Return On Assets, Return On Equity, Earnings Per Share and Cash Flow Per Share (dependant variables) for the SRI sample and control sample (independent variable) for Period 3 (2004 to 2014).

4.9 Paired-sample t-test and Wilcoxon signed-rank test for paired groups (Phase 2)

Phase 2 was structured as a temporal pre- and post-test using the two time-based periods as the hypotheses externality. According to Zikmund et al. (2012), a paired-sample t-test is an "appropriate test for comparing the scores of two interval variables drawn from related populations" (p. 539), which allowed the researcher to the select a paired samples t-test for the Phase 2 analysis. According to Laerd Statistics (2013c), the paired-samples t-test is the appropriate method of testing the mean difference between the same groups of SRI companies tested across two different time-based periods (pre and post-2010) whereby the groups are paired on a similar characteristic such as SRI listing.

The assumptions that needed to be satisfied for the use of the paired-samples t-test included: a continuous dependant variable, an independent variable that was categorical by nature for the identical SRI groups, the presence of significant outliners that may have disrupted the validity of the results, and the normal distribution of the data (Laerd Statistics, 2013c; Mendenhall et al., 2006).

After the analysis of the descriptive statistics, namely a review of the Shapiro-Wilk test of normality and a visual review of the histogram, it was determined that a paired-samples t-test was not applicable, as the data did not meet the requirements of all four assumptions. The prescribed alternative, Wilcoxon signed-rank test was used to test the difference in medium (Laerd Statistics, 2013f; Mendenhall et al., 2006). An assumption was required to satisfy the use of the Wilcoxon signed-rank test was that the data had to be symmetrical in shape (Laerd Statistics, 2013f).

The data collected for Phase 1 was used for the Phase 2 tests The independent variable was altered from SRI and non-SRI companies to SRI companies pre 2010 (Group 1) and post 2010 (Group 2). The dependant variables remained the same as the Phase 1 t-tests. The significance level selected for testing the hypotheses was 0.05 (López et al., 2007), resulting in the acceptance of the null hypotheses that returned p-values greater than the significance level of 0.05 (fail to reject) and the rejection of null hypotheses that returned p-values less than the significance level of 0.05 (Zikmund et al., 2012).

Phase 2 of the statistical analysis included six Wilcoxon signed-rank tests described as follows:

- Hypotheses testing for Revenue, Profit Before Tax, Return On Assets, Return On Equity, Earnings Per Share and Cash Flow Per Share (dependant variables) for the two groups of SRI sample (independent variable) for Group 1 (pre 2010) and Group 2 (post 2010).

4.10 Research validity and reliability

In studies of this nature, the use of secondary data is effective in that it has the ability to provide the researcher "with comparative and contextual data" (Saunders & Lewis, 2012, p. 34). Secondary data has been successfully utilised to examine the same research question in previous quantitative studies (Ameer & Othman, 2012; Barnett & Salomon, 2012; López et al., 2007; Orlitzky et al., 2003) delivering consistency between research objectives and methodology. McGregor BFA Research Domain (2015) was used as the source of financial data for the SRI sample and control sample of JSE listed companies. According to Venter, Emanuel and Cahan (2014), the McGregor BFA database "is the pre-eminent provider of stock market data, fundamental research data and news to the financial sector and the corporate market in South Africa" (p. 8).

Gray, Kouhy and Lavers (1995) collected accounting information as published by the sampled companies so that the database was characterised by the use of common terminology and concurrent structures and was unified in its approach. To further reinforce the consistency of the financial data, standardised financial ratios and data were used opposed to published company financial data. Due to the varying applications of the Generally Accepted Accounting Practices (GAAP), McGregor BFA (2008) proposed the use of the standardised financial ratios as the most appropriate method of comparing JSE companies.

In addition, the research instrument and methodology had to be transparent and replicable as far as possible (López et al., 2007). The studies conducted by López et al. (2007) and Barnett and Salomon (2012) motivated the use of secondary data as published by the respective sample companies. The secondary data made publicly available by the SRI sample and control sample companies answered the research questions set out, and the longitudinal study provided insight into the transformation of the accounting data over a period of 11 years.

According to Ameer and Othman (2012), “Reliability refers to the purity and consistency of a measure, to repeatability, to the probability of obtaining the same results again if the measure were to be duplicated” (p. 67). The research covered in the literature review found that the use of secondary financial data from credible financial databases, to be a reliable source of data. The robust nature of the data is recognised if other researchers’ repeat the study and the same results are achieved (Saunders & Lewis, 2012).

In this instance, the use of secondary data analysis provided the ability to repeat the study with the same or similar results depending on the nature of the sampling technique disposed. The validity of the research has been protected as secondary data was used resulting in no event or subject biases that could influence the outcomes of the study (Saunders & Lewis, 2012).

4.11 Research limitations

The research was subject to intrinsic limitations because of the nature of the research design, the dynamics of the JSE as the population for the study, and the sampling methods deployed to test the research objectives.

First and most importantly, the sample size of the SRI samples used in Period 1, Period 3 and the pre-2010 and post-2010 testing must be recognised as an inherent limitation. A relatively small number of companies are represented in some of the sectors and sub-sectors of the JSE, creating structural limitations to the pairing of the SRI sample to control sample companies. This limitation affected the process of selecting the control sample for pairing with the SRI sample from the same sub-sector. As a result, the pairing of the SRI and control sample was broadened to pair on the same sector classification.

In some instances, companies selected for the control sample where present on the JSE SRI for one of the time-based periods but did not achieve a listing of 80% or more years in each period as a key qualifying criteria of the SRI samples. Therefore, the control sample was representative of SRI companies that were classified as less advanced in respect of their sustainable business practices and were subsequently disqualified from the SRI sample.

The design of the study makes use of an imperfect proxy in the form of the SRI sample being classified as companies that possessed advanced sustainable business practices, and the control sample classified companies as less advanced in their sustainable business practices. The pairing of the two samples and the stringent qualifying criteria of the SRI sample attempted to counteract and control the SRI sample to represent the upper echelon of sustainable businesses.

However, on further interrogation of the control sample, it was noted that companies may have had advanced sustainable business practices through their adoption of the King III Corporate Code on Corporate Governance (Institute of Directors in Southern Africa, 2009) and other internal business practices. Alternatively, companies within the SRI sample that were disqualified may have had sustainable business practices. The differentiation of SRI and control sample companies was an effective, although imperfect, proxy for the measurement of CFP between sustainably advanced companies and those that opted not to pursue a listing on the SRI Index or did not met the qualifying criteria required to be classified as sustainably advanced.

The JSE is limited in respect of the number of control sample pairing options in each sub-sector that share a similar market capitalisation with the SRI sample. JSE sectors that presented such challenges were Banking, Life Insurance, Diversified Industrials, Mining, and Telecommunications, which intrinsically have a limited number of SRI and control sample pairing options when controlled for sector and market capitalisation simultaneously. The limitation was further compounded by virtue of SRI companies representing the largest market capitalisation companies on the JSE and for each sector and sub-sector.

This limitation made the pairing difficult; however, the judgemental sampling process attempted to counter the limitation by creating individual and unique pairings that retained the efficacy of the study. This limitation resulted in companies being paired by sector and not sub-sector and created company pairings that did not service the same market and operated in different industries. Due to this limitation, a single sector analysis was not possible.

A study of this structure may have provided insight into the performance of the SRI sample and the control sample within the confines of one sector such as Mining or Banking. In additional, it was not possible to pair the SRI sample companies listed on the JSE Top 20 companies by market capitalisation with a similar sector control company resulting in a broader pairing than initially intended or the disqualification of the SRI company altogether.

Due to the limited size of the JSE sectors, sample companies were repeated and paired on more than one occasion with a SRI company where the pairing was most relevant and in instances where an alternative company from the same sector could not be found. A larger study population, proportionately distributed across all sectors and sub-sectors, and a less oligopolistic market structure in South Africa would provide for a more comprehensive pairing process and for a more robust statistical analysis of SRI and control company financial performance.

The ability to conduct the longitudinal study over a period greater than 11 years would contribute to a more robust study as this would increase the insights gleaned from the study. This limitation is a restrictions of the JSE SRI Index, which has a defined sample, with approximately 80% of JSE listed companies voluntarily or involuntarily not being represented on the Index. The inception of the SRI Index was in 2004 and because of this the longitudinal study includes only 11 years of data, once more limiting the variation and sample size of companies paired in the study.

The study made use of the López et al. (2007) premise that companies with advanced sustainable business practices, specifically ESG reporting, are superior in their sustainability practices. A study with the objective of measuring the CFP of sustainable companies using sustainability-ranking data, such as the Morgan Stanley Capital International (MSCI) ESG sustainability rankings data that rates companies on levels of sustainability, would provide a richer paradigm through which to analyse CFP. The cost of the MSCI data is prohibitive and beyond the scope of this research project.

Adding to this development is the ability to determine the relationship between the value of investment into ESG reporting and the subsequent return on investment in the form of CFP. A study designed to understand how CFP is influenced by varying levels of sustainability practices of a homogenous population would further advance the argument for business investing into sustainability practices.

According to the South African investment management company, Courtney Capital (2013):

> The Top 40 Index is a fair reflection of what happens to the South African stock market as a whole, because even though it contains only 40 out of the roughly 400 shares listed on the JSE, it represents over 80% of the total market cap of all JSE listed companies.

Large market capitalisation companies dominate the JSE SRI whereby as much as 60% of all companies in 2004 and 42% of all companies in 2014 as listed on the SRI Index are categorised as large market capitalisation companies. A comparative study of the sustainability practices and CFP including a more diverse SRI sample including medium and small market capitalised companies would altered the composition of the JSE SRI away from tracking the ALSI. Moreover, a comparison of the CFP between the small, medium, and large market capitalisation SRI companies would provide a valuable understanding of sustainable business practices and which size of organisation gains a financial advantage.

Presenting the JSE constituents as an emerging market study is a limitation. The study is framed as an emerging market study by limiting the population to companies listed on the JSE. The JSE permitted listings by foreign firms in 2004 resulting in the representation of large international multinational enterprises such as British American Tobacco, SABMiller, GlencoreXstrata and BHP Billiton (JSE Limited, 2013). A number of the companies listed on the JSE have foreign investments contributing to their financial performance. The JSE as a population is not exclusively represented by emerging market earnings because of the income received from foreign markets. The exclusion of companies with foreign investments would have resulted in the SRI sample being too small to offer statistical insight.

A further limitation is identified in the categorisation of SRI companies as sustainably advanced and the control companies as sustainably less advanced. The progressive improvements in the reporting standards and disclosures of publicly listed companies across the JSE has compelled firms to focus varying degrees of emphasis and company resources on matters of sustainability, corporate governance, CSR and ethics.

The ability to compare SRI and non-SRI companies has a limited shelf life and over time will become an obsolete measure as all JSE listed companies are compelled to advance, albeit at varying degrees, towards best practice ESG reporting. The categorisation of the SRI sample as sustainably advanced companies will therefore be diluted, because of the requirements of the King III Code on Corporate Governance (Institute of Directors in Southern Africa, 2009). In time, all companies will become more advanced than their present state in their sustainability practices by default.

4.12 Conclusion

The structure of the research methodology and design has ensured an appropriate and accurate response to the objectives of the study, which is to investigate the relationship that exists between the accounting measurements of financial performance of companies with advanced levels of sustainability practices and those without.

The research methodology and design described present the robust process that was required to create the SRI and control sample, the collection of the financial data, and the process of statistical analysis. All of the components of the research methodology and design are directly positioned to respond to the research objectives. Various studies with this field of research have been adapted to form a compelling means of interrogating the research questions.

The iterative processes of selecting the paired samples for each time-based period, the inter-period analysis of the SRI sample and the subsequent statistical analysis of both constructs provide a comprehensive platform for presenting the findings in the next chapter.

Chapter Five: Results

5.1 Introduction

Chapter Five presents the outcomes of the statistical analysis conducted in accordance with the research methodology and design described in the previous chapter and the hypotheses presented in Chapter Three.

The results of the statistical analysis in Phase 1 are presented in response to the research objectives defined in Chapter One, namely, the investigation into the directional relationship between the SRI sample and a control sample. Moreover, the first battery of statistical analysis interrogates the temporal influence of sustainable business practices on financial performance over the three time-based periods between the two groups.

Phase 2 provides the statistical analysis for comparing a paired sample of SRI companies. These tests add further insight into the performance of the same group of companies as a proxy for determining whether time is a factor in generating a financial return for sustainable business practices or if macro externalities place a far greater influence on financial performance.

The hypotheses are collectively presented in sequential order according to periods, namely Period 1 (2004 to 2009), Period 2 (2010 to 2014), Period 3 (2004 to 2014) and then pre-2010 and post-2010 for the SRI sample. The statistical analysis for each period includes six accounting measurements of financial performance namely, Revenue, Profit Before Tax, Return On Assets, Return On Equity, Earnings Per Share and Cash Flow Per Share. The hypotheses are presented in sequential order of the four methods of enquiry, instead of grouping the results per dependent variable as presented in Chapter Three. This provides a more logical presentation of the study results as well as the continuation into the interpretation of the results and the business proposition to be discussed in Chapter Six.

5.2 Phase 1 of the statistical analysis

Phase 1 of the statistical analysis was designed to test the data for a significant difference in the mean and median of the dependant variables (accounting measurements) over the periods, and between the two samples. The mean and

median discussed herein refers to the percentage change in the six accounting measurements within the three time-based periods. The hypotheses were tested for significant differences in the percentage change of the accounting measurement. Furthermore, through the analysis of the means and medians of the two samples, inferences were made into the directional relationship of the financial performance between the SRI sample and the control sample. This allowed the researcher to determine whether the sustainably advanced companies were associated with a better or worse financial performance in comparison to the control sample.

5.2.1 Statistical analysis of Period 1 (2004 to 2009)

The SRI sample and control sample represented 39 company pairings for the period 2004 to 2009. The two groups constituted 39 companies in the SRI sample and 39 companies in the control sample. The Revenue dependent variable was disqualified for the Investec Limited and PSG Group Limited and the Investec Plc and Brait SE pairs because both Investec Plc and Investec Limited did not report their revenue in the period and a suitable alternative accounting measurement for revenue (such as Investment Income, Interest and Finance Charges) could not be established for both companies in each pair.

Therefore, 37 company pairings were tested for the percentage change in revenue and 39 company pairings were tested for the remaining five dependent variables namely Profit Before Tax, Return On Assets, Return On Equity, Earnings Per Share and Cash Flow Per Share. Table 3 depicts these variables. The percentage change for each dependent variable for the SRI sample companies and control sample companies for Period 1 was inputted into the IBM SPSS Statistics (SPSS) software tool for statistical analysis at a 95% Confidence Interval of the Difference ($p < 0.05$).

Table 3: Period 1 sample size

		Cases					
		Valid		Missing		Total	
1 = SRI 2=NON SRI		N	Percent	N	Percent	N	Percent
REV	1	37	100.0%	0	0.0%	37	100.0%
	2	37	100.0%	0	0.0%	37	100.0%
PBT	1	39	100.0%	0	0.0%	39	100.0%
	2	39	100.0%	0	0.0%	39	100.0%
EPS	1	39	100.0%	0	0.0%	39	100.0%
	2	39	100.0%	0	0.0%	39	100.0%
ROA	1	39	100.0%	0	0.0%	39	100.0%
	2	39	100.0%	0	0.0%	39	100.0%
ROE	1	39	100.0%	0	0.0%	39	100.0%
	2	39	100.0%	0	0.0%	39	100.0%
CPS	1	39	100.0%	0	0.0%	39	100.0%
	2	39	100.0%	0	0.0%	39	100.0%

5.2.2 Process of statistical analysis, descriptive statistics and tests for normal distribution of Period 1

The selection of parametric or nonparametric tests is prescribed by the normality of distribution of the data. Furthermore, the directional relationship between the independent and dependent relationships is determined by the means and median of the dependent variables for the SRI and control sample.

The descriptive statistics detailing the means and medians for each accounting measurement for the two samples are detailed Table 4. The data recording the percentage change in dependent variables for the SRI sample and the control sample were not normally distributed, as assessed by the visual inspection of their histograms (Laerd Statistics, 2013e). (Refer to Appendices 6, 7, 8, 9, 10 and 11)

Table 4: Period 1 descriptive statistics

1 = SRI 2=NON SRI (ALL)			Statistic	Std. Error
REV	1	Mean	197.5852634	56.87490994
		Median	98.8486966	
	2	Mean	185.5194171	43.02754522
		Median	119.3191176	
PBT	1	Mean	633.0639447	173.05798558
		Median	136.6161616	
	2	Mean	288.2176903	102.28842449
		Median	87.3144081	
EPS	1	Mean	200.8473381	83.17556550
		Median	89.0728477	
	2	Mean	495.0187306	232.01205611
		Median	70.1115786	
ROA	1	Mean	-2010.4739893	2037.82627746
		Median	11.4740369	
	2	Mean	13.0571108	13.66222332
		Median	2.0283976	
ROE	1	Mean	1358.1979875	1286.29579070
		Median	-12.0000000	
	2	Mean	5.2723542	12.16366745
		Median	-26.4136718	
CPS	1	Mean	355.0974043	159.89457637
		Median	119.8491752	
	2	Mean	795.3422621	526.54184477
		Median	189.1225480	

A further numerical method of assessment was conducted to test the data for normal distribution. The data for the SRI and the control sample were not normally distributed as determined by the Shapiro-Wilk test ($p < 0.05$) (Laerd Statistics, 2013e) detailed in Table 5. Therefore, the data did not meet the requirements of the assumptions for the parametric independent-samples t-test. The alternate nonparametric Mann-Whitney U test was used to establish the significant difference in median between the two groups (Laerd Statistics, 2013b).

Table 5: Period 1 Shapiro-Wilk test of normality

1 = SRI 2=NON SRI		df	Sig.
REV	1	37	.000
	2	37	.000
PBT	1	39	.000
	2	39	.000
EPS	1	39	.000
	2	39	.000
ROA	1	39	.000
	2	39	.002
ROE	1	39	.000
	2	39	.059
CPS	1	39	.000
	2	39	.000

a. Lilliefors Significance Correction

According to Laerd Statistics (2013b), "The Mann-Whitney U test (also called the Wilcoxon-Mann-Whitney test) is a rank-based nonparametric test that can be used to determine if there are differences between two groups of a continuous or ordinal dependent variable" (Para. 1). The data satisfactorily met the assumptions for the Mann-Whitney U test. The data was continuous in nature; the independent variable for the SRI and control sample was categorical; there was independence of observations and the distributions of the SRI and the control sample was similar in shape (Laerd Statistics, 2013d). A visual inspection of the shape of the distribution of each group found similarity as per the fourth assumption of the Mann-Whitney U test. (Refer to Appendices 6, 7, 8, 9, 10 and 11.)

5.2.3 Period 1 hypotheses results for Mann-Whitney U test

The hypotheses results for Period 1 non-parametric Mann-Whitney U test for significant differences in the medians are presented here. The results relate to the null hypotheses articulated in Chapter Three. Each hypothesis was subjected to a Mann Whitney U test to determine if there were differences in percentage change in the dependent variable between the SRI sample and the control sample. Tables 6 and 7 reflect these results.

Hypothesis 1a – Revenue: The percentage change in Revenue was not statistically significant between the SRI sample (Mdn = 98.8486966) and the control sample (Mdn = 119.3191176), U = 760, z = .816, p = .414. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 2a – Profit Before Tax: The percentage change in Profit Before Tax was not statistically significantly different between the SRI sample (Mdn = 136.6161616) and control sample (Mdn = 87.3144081), U = 637, z = -1.234, p = .217. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 3a – Earnings Per Share: The percentage change in Earnings Per Share was not statistically significantly different between the SRI sample (Mdn = 89.0728477) and control sample (Mdn = 70.1115786), U = 818, z = .575, p = .565. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 4a – Return On Assets: The percentage change in Return On Assets was not statistically significantly different between the SRI sample (Mdn = 11.4740369) and control sample (Mdn = 2.0283976), U = 709, z = -.515, p = .607. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 5a – Return On Equity: The percentage change in Return On Equity was not statistically significantly different between the SRI sample (Mdn = -12.0000000) and control sample (Mdn = -26.4136718), U = 672, z = -.885, p = .376. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 6a – Cash Flow Per Share: The percentage change in Cash Flow Per Share was not statistically significantly different between the SRI sample (Mdn = 119.8491752) and control sample (Mdn = 189.1225480), U = 800, z = .395, p = .693. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Table 6: Hypothesis test summary (Period 1)

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REV is the same across categories of 1 = SRI 2=NON SRI (REV).	Independent-Samples Mann-Whitney U Test	.414	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 7: Hypothesis test summary (Period 1)

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PBT is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.217	Retain the null hypothesis.
2	The distribution of EPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.565	Retain the null hypothesis.
3	The distribution of ROA is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.607	Retain the null hypothesis.
4	The distribution of ROE is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.376	Retain the null hypothesis.
5	The distribution of CPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.693	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

5.2.4 Statistical analysis of Period 2 (2010 to 2014)

The SRI sample and control sample for Period 2 constituted 67 individual company pairings for the period 2010 to 2014. The two groups represented 67 companies in the SRI sample and 67 companies in the control sample. The Revenue dependent variable was disqualified for DRDGold Limited and Randgold & Exploration Co Limited, Discovery Limited and Brait SE, Investec Limited and PSG Group Limited, Investec Plc and Brait SE, MMI Holdings Limited and PSG Group Limited and JSE Limited and SASFIN Holdings Limited due to these companies either not reporting revenue on their income statements or not generating revenue in the period.

Therefore, 61 company pairings were tested for the percentage change in revenue and 67 company pairings (Table 8) were tested for the remaining five dependent (see tables). The percentage change for each dependent variable for the SRI sample companies and control sample companies for Period 2 was inputted into SPSS for statistical analysis at a 95% Confidence Interval of the Difference ($p < 0.05$).

Table 8: Period 2 sample size

		Cases					
		Valid		Missing		Total	
1 = SRI 2=NON SRI		N	Percent	N	Percent	N	Percent
REV	1	61	100.0%	0	0.0%	61	100.0%
	2	61	100.0%	0	0.0%	61	100.0%
PBT	1	67	100.0%	0	0.0%	67	100.0%
	2	67	100.0%	0	0.0%	67	100.0%
EPS	1	67	100.0%	0	0.0%	67	100.0%
	2	67	100.0%	0	0.0%	67	100.0%
ROA	1	67	100.0%	0	0.0%	67	100.0%
	2	67	100.0%	0	0.0%	67	100.0%
ROE	1	67	100.0%	0	0.0%	67	100.0%
	2	67	100.0%	0	0.0%	67	100.0%
CPS	1	67	100.0%	0	0.0%	67	100.0%
	2	67	100.0%	0	0.0%	67	100.0%

5.2.5 Process of statistical analysis, descriptive statistics and tests for normal distribution for Period 2

The descriptive statistics for the SRI sample and the control sample for the dependent variables are presented in Table 9 . As per the requirements of the Independent-samples t-test and the Mann-Whitney U test, the mean and median of the SRI sample is stated in the descriptive statistics tables. Determined by both a review of the two samples histograms (Appendices 12, 13, 14, 15, 16 and 17) and by the Shapiro-Wilk test ($p < 0.05$) in Table 10, the data for the SRI and the control sample were not normally distributed as a prerequisite assumption for the parametric Independent-samples t-test. The alternative, Mann-Whitney U test, was selected to test for significant difference in the medians of the six dependent variables between the two samples. A visual inspection of the shape of the distribution of each group found similarity as a required assumption of the Mann-Whitney U test, as indicated in Appendices 12, 13, 14, 15, 16 and 17.

Table 9: Period 2 descriptive statistics

1 = SRI 2=NON SRI			Statistic	Std. Error
REV	1	Mean	47.9383541	5.91422988
		Median	43.5782348	
	2	Mean	104.7060988	21.26922854
		Median	50.1129199	
PBT	1	Mean	46.4248507	20.92353135
		Median	36.3173133	
	2	Mean	216.2129884	37.41327345
		Median	121.0275449	
EPS	1	Mean	364.4044503	312.65744962
		Median	43.3395580	
	2	Mean	272.8419498	95.13837939
		Median	60.9523810	
ROA	1	Mean	-18.2334925	16.64734134
		Median	-26.0508309	
	2	Mean	-168.6042429	145.72924350
		Median	-8.7616822	
ROE	1	Mean	15.1266107	29.57381450
		Median	-14.0625000	
	2	Mean	38.8921760	49.97373276
		Median	1.4054814	
CPS	1	Mean	44.9941562	10.16204583
		Median	31.6864878	
	2	Mean	133.1983475	53.99339681
		Median	42.3955432	

Table 10: Period 2 Shapiro-Wilk test of normality

		Shapiro-Wilk		
1 = SRI 2=NON SRI		Statistic	df	Sig.
REV	1	.913	61	.000
	2	.829	61	.000
PBT	1	.615	67	.000
	2	.862	67	.000
EPS	1	.137	67	.000
	2	.426	67	.000
ROA	1	.383	67	.000
	2	.197	67	.000
ROE	1	.510	67	.000
	2	.605	67	.000
CPS	1	.902	67	.000
	2	.445	67	.000

a. Lilliefors Significance Correction

5.2.6 Period 2 hypotheses results Mann-Whitney U test

The results in this section relate to the null hypotheses articulated in Chapter Three. Each hypothesis was subjected to a Mann Whitney U test to determine if there were differences in percentage change in the dependent variable between the SRI sample and the control sample. These results are represented in Tables 11 and 12.

Hypothesis 1b – Revenue: The percentage change in Revenue was not statistically significantly different between the SRI sample (Mdn = 43.5782348) and control sample (Mdn = 50.1129199), U = 195.259, z = .592, p = .554. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 2b – Profit Before Tax: The percentage change in Profit Before Tax for Period 2 was statistically significantly different between the SRI sample (Mdn = 36.3173133) and the control sample (Mdn = 121.0275449), U = 2.965, z = 3.207, p = .001. The null hypothesis is therefore rejected as p < 0.05.

Hypothesis 3b – Earnings Per Share: The percentage change in Earnings Per Share for Period 2 was statistically significantly different between the SRI sample (Mdn = 43.3395580) and the control sample (Mdn = 60.9523810), U = 2.711, z = 2.076, p = .038. The null hypothesis is therefore rejected as p < 0.05.

Hypothesis 4b – Return On Assets: The percentage change in Return On Assets was not statistically significantly different between the SRI sample (Mdn = -260.0508309) and control sample (Mdn = -8.7616822), U = 2.676, z = 1.920, p = 0.055. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 5b – Return On Equity: The percentage change in Return On Equity was not statistically significantly different between the SRI sample (Mdn = -14.0625000) and control sample (Mdn = 1.4054814), U = 2.480, z = 1.048, p = .295. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 6b – Cash Flow Per Share: The percentage change in Cash Flow Per Share was not statistically significantly different between the SRI sample (Mdn = 31.6864878) and control sample (Mdn = 42.3955432), U = 2.250, z = .0.24, p = .980. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Table 11: Hypothesis test summary (Period 2)

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REV is the same across categories of 1 = SRI 2=NON SRI (REV).	Independent-Samples Mann-Whitney U Test	.554	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 12: Hypothesis test summary (Period 2)

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PBT is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.001	Reject the null hypothesis.
2	The distribution of EPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.038	Reject the null hypothesis.
3	The distribution of ROA is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.055	Retain the null hypothesis.
4	The distribution of ROE is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.295	Retain the null hypothesis.
5	The distribution of CPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.980	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

5.2.7 Statistical analysis of Period 3 (2004 to 2014)

The SRI sample and control sample for Period 3 consisted of 44 individual company pairings for the period 2004 to 2014. The Revenue dependent variable was disqualified for DRDGold Limited and Randgold & Exploration Co Limited, Discovery Limited and Brait SE, Investec Limited and PSG Group Limited, Investec Plc and Brait SE, MMI Holdings Limited and PSG Group Limited and JSE Limited and SASFIN Holdings Limited and Liberty Holdings Limited and SASFIN due to the companies either not reporting revenue on their income statements or not generating revenue in the period.

Therefore, 40 company pairings were tested for the percentage change in revenue and 44 company pairings were tested for the remaining five dependent variables (see Table 13). The percentage change for each dependent variable for the SRI sample companies and control sample companies for Period 3 was inputted into SPSS for statistical analysis at a 95% Confidence Interval of the Difference ($p < 0.05$).

Table 13: Period 3 sample size

		Cases					
		Valid		Missing		Total	
1 = SRI 2=NON SRI		N	Percent	N	Percent	N	Percent
REV	1	40	100.0%	0	0.0%	40	100.0%
	2	40	100.0%	0	0.0%	40	100.0%
PBT	1	44	100.0%	0	0.0%	44	100.0%
	2	44	100.0%	0	0.0%	44	100.0%
EPS	1	44	100.0%	0	0.0%	44	100.0%
	2	44	100.0%	0	0.0%	44	100.0%
ROA	1	44	100.0%	0	0.0%	44	100.0%
	2	44	100.0%	0	0.0%	44	100.0%
ROE	1	44	100.0%	0	0.0%	44	100.0%
	2	44	100.0%	0	0.0%	44	100.0%
CPS	1	44	100.0%	0	0.0%	44	100.0%
	2	44	100.0%	0	0.0%	44	100.0%

5.2.8 Process of statistical analysis, descriptive statistics and tests for normal distribution of Period 3

The descriptive statistics for the SRI sample and the control sample for the dependent variables are presented in Table 14. Per the requirements of the Independent-samples t-test and the Mann-Whitney U test, the mean and median of the SRI sample is stated in the descriptive statistics tables. Determined by both a review of the two samples histograms (Appendices 18, 19, 20, 21, 22 and 23) and by the Shapiro-Wilk test ($p < 0.05$) in Table 15, the data for the SRI and the control sample were not normally distributed as a prerequisite assumption for the parametric Independent-samples t-test. The alternative, Mann-Whitney U test, was selected to test for significant difference in the medians of the six dependent variables between the two samples. A visual inspection of the shape of the distribution of each group found similarity as a required assumption of the Mann-Whitney U test, as indicated in Appendices 18, 19, 20, 21, 22 and 23.

Table 14: Period 3 descriptive statistics

1 = SRI 2=NON SRI			Statistic	Std. Error
REV	1	Mean	350.5311297	91.43975401
		Median	188.3185826	
	2	Mean	557.3782840	96.34209750
		Median	339.7726475	
PBT	1	Mean	702.9691223	216.82678006
		Median	167.8769393	
	2	Mean	1660.5391280	457.38066003
		Median	521.8905979	
EPS	1	Mean	464.7690355	178.69253299
		Median	92.9910801	
	2	Mean	978.8740464	259.29456288
		Median	369.1462656	
ROA	1	Mean	-1556.3334026	1534.13766593
		Median	-4.7196830	
	2	Mean	-47.9138238	37.86430925
		Median	-32.2419812	
ROE	1	Mean	762.8289573	761.97109571
		Median	-6.9547352	
	2	Mean	93.3856721	72.57259696
		Median	-35.1169065	
CPS	1	Mean	457.1285437	166.40306341
		Median	236.8723025	
	2	Mean	2155.7331808	1994.99034214
		Median	106.4620355	

Table 15: Period 3 Shapiro-Wilk test of normality

1 = SRI 2=NON SRI (REV)		Shapiro-Wilk		
		Statistic	df	Sig.
REV	1	.513	40	.000
	2	.843	40	.000
PBT	1	.558	44	.000
	2	.539	44	.000
EPS	1	.464	44	.000
	2	.613	44	.000
ROA	1	.153	44	.000
	2	.644	44	.000
ROE	1	.173	44	.000
	2	.355	44	.000
CPS	1	.611	44	.000
	2	.172	44	.000

a. Lilliefors Significance Correction

5.2.9 Period 3 hypotheses results Mann-Whitney U test

The results in this section relate to the null hypotheses articulated in Chapter Three. Each hypothesis was subjected to a Mann Whitney U test to determine if there were differences in percentage change in the dependent variable between the SRI sample and the control sample. Tables 16 and 17 provide summaries of these results.

Hypothesis 1c – Revenue: The percentage change in Revenue for Period 3 was not statistically significantly different between the SRI sample (Mdn = 188.3185826) and control sample (Mdn = 339.7726475), U = 871, z = .684, p = .494. The null hypothesis is therefore retained (fail to reject) as $p > 0.05$.

Hypothesis 2c – Profit Before Tax: The percentage change in Profit Before Tax for Period 3 was statistically significantly different between the SRI sample (Mdn = 167.8769393) and the control sample (Mdn = 521.8905979), U = 1378, z = 3.423, p = .001. The null hypothesis is therefore rejected as $p < 0.05$.

Hypothesis 3c – Earnings Per Share: The percentage change in Earnings Per Share for Period 3 was statistically significantly different between the SRI sample (Mdn =

92.9910801) and the control sample (Mdn = 369.1462656), U = 1283, z = 2.630, p = .009. The null hypothesis is therefore rejected as p < 0.05.

Hypothesis 4c – Return On Assets: The percentage change in Return On Assets for Period 3 was not statistically significantly different between the SRI sample (Mdn = -4.7196830) and control sample (Mdn = -32.2419812), U = 867, z = -.843, p = .399. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 5c – Return On Equity: The percentage change in Return On Equity for Period 3 was not statistically significantly different between the SRI sample (Mdn = -6.9547352) and control sample (Mdn = -35.1169065), U = 841, z = .1.060, p = .289. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 6c – Cash Flow Per Share: The percentage change Cash Flow Per Share for Period 3 was not statistically significantly different between the SRI sample (Mdn = 236.8723025) and control sample (Mdn = 106.4620355), U = 850, z = -.985, p = .325. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Table 16: Hypothesis test summary (Period 3)

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REV is the same across categories of 1 = SRI 2=NON SRI (REV).	Independent-Samples Mann-Whitney U Test	.494	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 17: Hypothesis test summary (Period 3)

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PBT is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.001	Reject the null hypothesis.
2	The distribution of EPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.009	Reject the null hypothesis.
3	The distribution of ROA is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.399	Retain the null hypothesis.
4	The distribution of ROE is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.289	Retain the null hypothesis.
5	The distribution of CPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.325	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

5.3 Validation check for control sample limitation

In order to address an identified limitation and to ensure that the results of Phase 1 of the study were robust, an additional battery of statistical tests were performed on a modified version of the data. In Chapter Four a limitation concerning the control sample was established. During the statistical analysis, the researcher identified that this limitation should be tested to ensure that the process of selecting the control sample had not altered the results of the SRI and control sample nonparametric tests.

The identified limitation was the duplicate use of companies in the control sample in the same period in to order to compare a logical pairing of SRI companies to control companies. The pairing of each SRI company with the most logical pairing of control company resulted in control sample companies occurring more than once. The concern was that the duplication of the control sample companies had affected the distribution of the data, the tests for significant difference and the medians of the two samples when inferring a directional relationship.

The data was therefore screened and all duplicate control sample companies were removed from each period thereby reducing the size of the control sample and ensuring that each company's percentage change trend only appeared once in the period. This process was performed for Period 1, 2 and 3.

The method of statistical analysis was structured in accordance with the analysis methodology of Phase 1 and was repeated for Periods 1, 2 and 3 using the adjusted control sample. The results of a further 18 hypotheses tests were found to be consistent with the currently methodology and sampling process and proved to not disrupt or alter the results of the study précised as follows:

- The Period 1 validation compared 37 SRI sample companies with 26 control sample companies (Appendix 24). The data was found to be not normally distributed (Appendix 25) and no significance was established by the Mann-Whitney U test (Appendix 26). The results were consistent with the results of the Period 1 tests in which the total control sample of 37 companies was included in the statistical analysis.
- The Period 2 validation compared 67 SRI companies with 36 control sample companies (Appendix 27). The data was found to be not normally distributed (Appendix 28) and a significant difference was established for Profit Before Tax and Return On Assets post the completion of a Mann-Whitney U test (Appendix 29).

  The null hypotheses was therefore rejected for Profit Before Tax and Return On Assets. On comparison of the medians for the two groups, the results were consistent with the results of Phase 1 Period 2, except for the inclusion of Return On Assets and the exclusion of Earnings Per Share. The control sample had a higher median than the SRI sample for the dependent variables where a statistical significant difference was established, and more importantly, for Profit Before Tax (see Table 18).

Table 18: Validation check Period 2 (Profit Before Tax and Return On Assets)

1 = SRI 2=NON SRI (ALL)			Statistic	Std. Error
PBT	1	Mean	46.4248507	20.92353135
		Median	36.3173133	
	2	Mean	207.4594946	50.90237470
		Median	118.2573897	
ROA	1	Mean	-18.2334925	16.64734134
		Median	-26.0508309	
	2	Mean	-290.5792739	270.28861462
		Median	12.0248820	

- The Period 3 validation compared 44 SRI companies with 27 control sample companies (Appendix 30). According to the Shapiro-Wilk test for normality, the data was found to be not normally distributed (Appendix 31). A significant difference was established for Profit Before Tax post the completion of a Mann-Whitney U test (Appendix 32). The null hypotheses was therefore rejected for Profit Before Tax were a significant difference was established. On comparison of the medians for the two groups, the results were consistent with the results of Period 3 as the control sample had a higher median than the SRI sample for Profit Before Tax (see Table 19).

Table 19: Validation check Period 3 (Profit Before Tax)

1 = SRI 2=NON SRI (ALL)			Statistic	Std. Error
PBT	1	Mean	705.2170228	216.71079261
		Median	194.0236381	
	2	Mean	1963.5182706	775.44931593
		Median	488.0145242	

The results of the additional 18 hypotheses remain consistent with the results of Phase 1 Period 1, Period 2 and Period 3 when using the full complement of paired control companies and allowing the control companies to be paired on a repeated basis with the SRI sample companies. The control sample has a higher median than the SRI sample for Period 2 and 3 for the dependent variable Profit Before Tax.

5.4 Phase 2 statistical analysis SRI pre-2010 and post-2010

Phase 2 of the statistical analysis addressed the research objective of determining if the same sample of SRI companies performed better or worse financially within the 11-year study period. Through the comparison of the same group of SRI companies' percentage change across the six dependant variables (accounting measurements), the study strives to support or disprove the premise that the corporate financial benefit of sustainable business practices to SRI companies is long term in nature and the influencing role of macro-externalities in financial performance.

Through the analysis of the CFP of the sample, pre-2010 and post-2010, Phase 2 established the directional effects of sustainable business practices on financial performance, thereby determining if a temporal influence existed and which group had financially outperformed the other. The mean and median discussed herein refers to the percentage change in the six accounting measurements (dependant variables). Phase 2 differentiated the sample into two time-based groups (pre and post-2010) and found significant differences in the performance of some of the dependent variables, which determined the accounting measurements that were significantly different and the direction of the difference.

5.4.1 Process of statistical analysis, descriptive statistics and tests for normal distribution

The pre and post-test of the SRI sample included 36 companies that met the qualifying criteria. This selection process established which of the companies were present in both Period 1 and Period 2 and had met the qualifying criteria of 80% in both periods. The two groups of 36 SRI companies (independent variable) were paired on the six accounting measurements (dependent variables) for the period 2004 to 2009 and the period 2010 to 2014. Investec Limited and Investec Plc were disqualified from the Revenue sample as these companies did not report revenue and this accounting measurement was missing from the data.

Table 20 details the sample size across the six accounting measurements of financial performance. The dependant variables remained consistent with the dependant variables in Phase 1. The percentage change in the accounting measurements was used to compare means and medians between the two groups. The percentage

change for each of the SRI sample companies for Period 2 was inputted into SPSS for statistical analysis at a 95% Confidence Interval of the Difference ($p < 0.05$).

The ability to establish normality of distribution, as a necessary assumption for the use of a paired-samples t-test, required an additional process to compute the differences between the two variables (i.e. the difference in revenue percentage change between Period 1 and Period 2). The difference between the dependent variable pre 2010 and the same dependent variable post 2010 was computed in SPSS, termed the 'difference score' (Laerd Statistics, 2013f). Laerd Statistics (2013f) recommended subtracting the post-value from the pre-value when calculating the 'difference score' for the two related groups.

The descriptive statistics for the 'difference score' are detailed in Table 19. As a precursor to establishing whether the distribution of the data is normal, the descriptive statistics generated from the 'difference score' provided the Shapiro-Wilk test of normality as detailed in Table 21. The 'difference scores' for all dependent variables were not normally distributed for the two groups, as assessed by the Shapiro-Wilk test ($p < 0.05$) (Laerd Statistics, 2013e).

Table 20: SRI pre-2010 and post-2010 test sample size

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
REV PERIOD1(2004-2009)	34	91.9%	3	8.1%	37	100.0%
REV PERIOD2(2010-2014)	34	91.9%	3	8.1%	37	100.0%
PBT PERIOD1(2004-2009)	36	97.3%	1	2.7%	37	100.0%
PBT PERIOD2(2010-2014)	36	97.3%	1	2.7%	37	100.0%
EPS PERIOD1(2004-2009)	36	97.3%	1	2.7%	37	100.0%
EPS PERIOD2(2010-2014)	36	97.3%	1	2.7%	37	100.0%
ROA PERIOD1(2004-2009)	36	97.3%	1	2.7%	37	100.0%
ROA PERIOD2(2010-2014)	36	97.3%	1	2.7%	37	100.0%
ROE PERIOD1(2004-2009)	36	97.3%	1	2.7%	37	100.0%
ROE PERIOD2(2010-2014)	36	97.3%	1	2.7%	37	100.0%
CPS PERIOD 1(2004-2009)	36	97.3%	1	2.7%	37	100.0%
CSP PERIOD 2(2010-2014)	36	97.3%	1	2.7%	37	100.0%

Table 21: SRI pre-2010 and post-2010 Descriptives (difference score)

		Statistic	Std. Error
Difference Rev	Mean	-161.8024	62.12833
	Median	-54.0156	
Difference EPS	Mean	-183.5356	98.66509
	Median	-37.9443	
Difference PBT	Mean	-682.3214	198.85650
	Median	-128.3492	
Difference ROA	Mean	2278.2129	2338.92233
	Median	-38.8882	
Difference ROE	Mean	-1477.7261	1478.59925
	Median	-5.0980	
Difference CSP	Mean	-334.6603	186.01067
	Median	-116.3832	

Table 22: Shapiro-Wilk test of normality (difference score)

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
DifferenceRev	.280	34	.000	.632	34	.000
DifferenceEPS	.271	34	.000	.729	34	.000
DifferencePBT	.244	34	.000	.792	34	.000
DifferenceROA	.510	34	.000	.186	34	.000
DifferenceROE	.488	34	.000	.202	34	.000
DifferenceCSP	.244	34	.000	.781	34	.000

a. Lilliefors Significance Correction

5.4.2 SRI pre-2010 and post-2010 hypotheses results of Wilcoxon signed-rank test

Due to the non-normal distribution of the data (difference scores) the paired-samples t-test is not the appropriate statistical test to compare the means and medians for the SRI sample (Laerd Statistics, 2013c). The alternate non-parametric test used as prescribed by Laerd Statistics (2013f) is the Wilcoxon signed-rank test. This test is

suitable for determining whether there is a significant difference in the median between the two matched SRI groups.

The Wilcoxon signed-rank test effectively tested the same group twice under different circumstances across the six dependent variables. The difference circumstances being the periods. The data meets all the assumptions of the Wilcoxon signed-rank test (Laerd Statistics, 2013f), namely one continuous dependent variable, one independent variable representing two categorical, related groups or matched pairs and the shape of the distribution of the differences is roughly symmetrical (Laerd Statistics, 2013f) as determined by a visual inspection of the 'difference score' histograms (Appendix 33, 34, 35, 36, 37 and 38). The medians for the SRI sample pre-2010 and post-2010 are defined in Table 23. The hypotheses results for Phase 2 are presented in Table 24.

Table 23: Median values for SRI pre-2010 and post-2010 test

	REV PERIOD1 (2004-2009)	REV PERIOD2 (2010-2014)	PBT PERIOD1 (2004-2009)	PBT PERIOD2 (2010-2014)	EPS PERIOD1 (2004-2009)	EPS PERIOD2 (2010-2014)
N	34	34	36	36	36	36
Median	102.0989639	44.6542460	140.9866983	21.6561867	90.0565681	32.1558184

ROA PERIOD1 (2004-2009)	ROA PERIOD2 (2010-2014)	ROE PERIOD1 (2004-2009)	ROE PERIOD2 (2010-2014)	CPS PERIOD 1(2004-2009)	CSP PERIOD 2(2010-2014)
36	36	36	36	36	36
9.3486507	-26.6567891	-5.1896503	10.1548697	132.2763675	31.6890226

The results in this section relate to the null hypotheses articulated in Chapter Three.

Hypothesis 7a – Revenue: A Wilcoxon signed-rank test determined that there was a statistically significant median change in the Revenue trend (difference score *Mdn* = -54.0156) when comparing the SRI sample Pre-2010 (102.098) to the Post-2010 (44.654), z = -2.795, p = 0.05. The null hypothesis is therefore rejected as $p < 0.05$.

Hypothesis 7b – Profit Before Tax: A Wilcoxon signed-rank test determined that there was a statistically significant median change in the Profit Before Tax trend (difference score *Mdn* = -128.3492) when comparing the SRI sample Pre-2010

(140.986) to the Post-2010 (21.656), z = -3.111, p = .002. The null hypothesis is therefore rejected as p < 0.05.

Hypothesis 7c – Earnings Per Share: A Wilcoxon signed-rank test determined that there was a statistically significant median change in the Earnings Per Share trend (difference score *Mdn* = -37.9443) when comparing the SRI sample Pre-2010 (90.056) to the Post-2010 (32.155), z = -2.2072, p = .043. The null hypothesis is therefore rejected as p < 0.05.

Hypothesis 7d – Return On Assets: A Wilcoxon signed-rank test determined that there was no statistically significant median change in the Return On Assets trend (difference score *Mdn* = -38.888) when comparing the SRI sample Pre-2010 (9.348) to the Post-2010 (-26.656), z = - 1.681, p = .093. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 7e – Return On Equity: A Wilcoxon signed-rank test determined that there was no statistically significant median change in the Return On Equity trends (difference score *Mdn* = -5.098) when comparing the SRI sample Pre-2010 (-5.189) to the Post-2010 (10.154), z = -1.068, p = .285. The null hypothesis is therefore retained (fail to reject) as p > 0.05.

Hypothesis 7f – Cash Flow Per Share: A Wilcoxon signed-rank test determined that there was a statistically significant median change in the Cash Flow Per Share trend (difference score *Mdn* = -116.383) when comparing the SRI sample Pre-2010 (132.276) to the Post-2010 (31.689), z = -2.231, p = .026. The null hypothesis is therefore rejected as p < 0.05.

Table 24: SRI pre-2010 and post-2010 test hypothesis test summary

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between REV PERIOD1(2004-2009) and REV PERIOD2(2010-2014) equals 0.	Related-Samples Wilcoxon Signed Rank Test	.005	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between PBT PERIOD1(2004-2009) and PBT PERIOD2(2010-2014) equals 0.	Related-Samples Wilcoxon Signed Rank Test	.002	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between EPS PERIOD1(2004-2009) and EPS PERIOD2(2010-2014) equals 0.	Related-Samples Wilcoxon Signed Rank Test	.043	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between ROA PERIOD1(2004-2009) and ROA PERIOD2(2010-2014) equals 0.	Related-Samples Wilcoxon Signed Rank Test	.093	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between ROE PERIOD1(2004-2009) and ROE PERIOD2(2010-2014) equals 0.	Related-Samples Wilcoxon Signed Rank Test	.285	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between CPS PERIOD 1(2004-2009) and CSP PERIOD 2(2010-2014) equals 0.	Related-Samples Wilcoxon Signed Rank Test	.026	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

5.5 Conclusion

In conclusion, the statistical results of Phase 1, the SRI and control sample tests, have presented interesting insight into the financial performance of the two groups of companies, where a statistical difference in median is evident, and importantly the direction of the financial performance towards the control sample. Furthermore, the pre-2010 and post-2010 test clarifies the financial performance of the same group of SRI companies over the 11-year period, finding statistical difference in medians and the direction of the financial performance to the Pre-2010 group. Both phases of statistical testing disprove previously held assumptions and provide an enticing foundation on which to interpret the results in Chapter Six within the context of the body of knowledge presented earlier in Chapter 1 and 2.

This chapter forms the foundation for Chapter Six, which will detail the outcomes of the statistical analysis, including descriptive statistics, tests for normality and tests for the difference in the means and medians between the SRI sample and the control sample (Phase 1) and a pre-2010 and post-2010 SRI sample (Phase 2) are presented in Chapter Six.

Chapter 6: Discussion of Results

Chapter Five presented the process of statistical analysis in accordance with the tests performed on the SRI sample and the control sample under the auspices of four contrarily structured proceedings. The findings of the four batteries of statistical analysis established the correct treatment of the data for statistical analysis and the hypotheses results in direct response to the research objectives defined in Chapter One and the research questions proposed in Chapter Three.

Chapter Six contextualises these results and states the outcome of the hypotheses testing in a practical sense, linking the data to the literature and providing succinct conclusions to the research objective. It generates new insights into the results, which contradict previously held assumptions and the findings of previous development market studies.

6.1 Characteristics of the SRI and control samples

The samples selected through the nonprobability process of purposive sampling (Zikmund et al., 2012) generated an SRI sample that is truly representative of companies that have implemented advanced levels of sustainable business practices consistently within the three periods. The screening methods applied to the selection of the SRI sample for Phase 1 of statistical analysis (the SRI and control sample tests) generated a concise and accurate sample of the most advanced JSE listed companies in respect of their sustainable business practices.

The screening process of Phase 2 of the statistical analysis (SRI sample pre and post 2010) further reinforced the quality of the SRI sample by pairing the SRI companies that met the qualifying criteria of Phase 1 and that were present in both periods. Similarly, the SRI sample tested in Phase 2 refined the previous sample and further reinforces the quality of sustainably advanced companies listed on the JSE SRI Index selected for the pre and post-2010 test.

According to the proxy created by López et al. (2007), companies listed on the SRI Index are classified as having adopted advanced levels of sustainable business practices, characterised by the ESG reporting requirements of the SRI indices. The judgemental sampling process (Zikmund et al., 2012) and the screening criteria for the

SRI sample generated a progressive category of sustainable companies within the context of an emerging market.

The control sample was selected through a process of judgemental sampling (Zikmund et al., 2012) as required for the paired tests in Phase 1. The researcher endeavoured to provide the most relevant pairings of SRI companies to control companies. The heterogeneous control sample created the alternative to the proxy and categorised companies as 'less advanced' in respect of their sustainable business practices by virtue of the company not being listed on the JSE SRI Index or falling out of the JSE SRI Index during the study period.

The control sample was further selected according to sector and market capitalisation in order to obtain the most relevant pairings for comparison of financial performance. This concept of paring companies based on sector and market capitalisation controls was borrowed from Ameer and Othman (2012).

The Phase 1 sample size for Period 1 was 39 SRI and control sample pairings, for Period 2 was 67 SRI and control sample pairings, and for Period 3 was 44 SRI and control sample pairings. The size of the sample for Phase 2 was 36 SRI companies for Period 1 and Period 2.

The final sample sizes for Period 1, Period 2 and the pre and post-2010 test were marginally smaller than the sample compiled in the study conducted by López et al. (2007). In that study, the comparison of CFP was structured using 55 European companies listed on the DJSI and 55 companies listed on the Dow Jones Global Indexes (DJGI).

The screening process of this study established a refined sample of JSE SRI Index companies and further reinforces the premise of advanced sustainable business practices. The average number of companies listed on the JSE SRI Index was 57 in Period 1, 76 in Period 2 and 66 in Period 3. The samples generated for this research project were representative of the average number of companies listed on the JSE SRI Index for each period and were reasonably close to the sample size used in the López et al. (2007) study. However, the sample was profoundly representative of sustainably advanced companies because of the selection and screening criteria.

Therefore, the sample sizes of the four periods were sufficient to produce valid and reliable results for analysis. Similar to the study by López et al. (2007), the data was not normally distributed and nonparametric tests were used to establish statistical

differences in the medians across the six accounting measurements (dependent variables). The median was used as an additional proxy for the CFP trend of the companies that comprise the various SRI samples and control samples.

6.2 Phase 1 of statistical analysis: SRI and control sample test

Phase 1 of the statistical analysis of the data investigated the directional relationship and performance trends between the SRI sample and the control sample in respect of the six accounting measurements of financial performance. The performance trends were measured by the percentage change in the accounting measurements over the three time-based periods. Phase 1 of the statistical analysis responds to the research objectives stated in Chapter Three. The research objectives are contextualised as a continuation to the proposition to business which will follow in Chapter seven. Succinctly, the research objectives are refined as:

- What is the difference in the financial performance between companies listed on the JSE SRI and companies not listed on the JSE SRI Index?
- Which accounting measures influence the difference between the SRI companies and the Non SRI companies?

These research objectives interrogated the linear association between sustainable business practices and CFP. The relationship between advanced sustainable business practices and an improved corporate performance (López et al., 2007) is invaluable to business.

However, for over 40 years, researchers have toiled with contrasting views and varying empirical results (Barnett & Salomon, 2012) into the linear association between sustainable business practices and CSR and CFP (Barnett & Salomon, 2006; Brammer & Millington, 2008; Carroll & Shabana, 2010; Girerd-Potin et al., 2014; López et al., 2007; Margolis & Walsh, 2003; Orlitzky et al., 2003; Pava & Krausz, 1996; Peng & Yang, 2014).

Phase 1 of statistical testing comprised 18 hypotheses is summarised as follows:

- Period 1 (2004 to 2009): There was no significant difference in the performance trend of the accounting measurements (Revenue, Profit Before Tax, Earnings

Per Share, Return On Assets, Return On Equity and Cash Flow Per Share) between the SRI companies and non-SRI companies.

- Period 2 (2009 to 2014): There was no significant difference in the performance trend of the accounting measurements (Revenue, Profit Before Tax, Earnings Per Share, Return On Assets, Return On Equity and Cash Flow Per Share) between the SRI companies and non-SRI companies.
- Period 1 (2004 to 2014): There was no significant difference in the performance trend of the accounting measurements (Revenue, Profit Before Tax, Earnings Per Share, Return On Assets, Return On Equity and Cash Flow Per Share) between the SRI companies and the non-SRI companies.

6.2.1 Period 1 (2004 to 2009)

Period 1 interrogated the linear association of financial performance and sustainable business practices between the SRI and the control sample's for the period 2004 to 2009. The nonparametric tests for significant difference in the median of the six accounting measurements delivered no statistical difference and all six null hypotheses were retained (fail to reject) as presented in Table 6 and Table 7.

Therefore, it was not possible to establish the difference in financial performance between the two samples nor the accounting measurement that influenced the difference. No further insight into the linear relationship between sustainable business practices and CFP could be established.

6.2.2 Period 2 (2010 to 2014)

Period 2 interrogated the financial and sustainable business practices and linear association between the SRI and non-SRI companies for the period 2010 to 2014. Period 2's non parametric tests established a significant difference in the median for the accounting measurements of Profit Before Tax and Earnings Per Share as depicted in Table 12. The null hypotheses for Profit Before Tax and Earnings Per Share were rejected at a significance level of $p < 0.05$.

The nonparametric tests did not establish a significant difference for the accounting measurements of Revenue (Table 11), Return On Assets (Table 12), Return On Equity (Table 12) and Cash Flow Per Share (Table 12). The null hypotheses for these accounting measurements were retained (fail to reject). This result meant that no

further statistical analysis could be conducted into the direction of the median difference between the two samples for Revenue, Return On Assets, Return On Equity and Cash Flow Per Share.

For the accounting measurements where a significant difference had been established, namely Profit Before Tax and Earnings Per Share, the medians of the SRI sample and control sample were compared in order to determine what is the difference in the financial performance. On review of the medians in Table 9 the following difference in financial performance are established as follows:

- The control sample median for Profit Before Tax (Mdn = 121.027) was higher than the SRI sample median for Profit Before Tax (Mdn = 36.317) for the period 2004 to 2009. Therefore, it is inferred that the non-SRI companies outperformed the SRI companies in terms of the profitability trend in Period 2.
- The control sample median for Earnings Per Share (Mdn = 60.952) was higher than the SRI sample median for Earnings Per Share (Mdn = 43.339) for the period 2004 to 2009. Therefore, it is inferred that the non-SRI companies outperformed the SRI companies in terms of the Earnings Per Share trend in Period 2.

6.2.3 Period 3 (2004 to 2014)

Similar to Period 1 and 2, Period 3 tested the linear association between the two samples' financial performance for the period 2004 to 2014, which was the full 11-year period of the study in comparison to six years and five years in Period 1 and Period 2 respectively. Once again, the nonparametric tests established a significant difference in the median of the accounting measurements of Profit Before Tax and Earnings Per Share (Table 17). The null hypotheses for these two accounting measurements were rejected at a significance level of $p < 0.05$.

The nonparametric tests did not establish a significant difference for the accounting measurements of Revenue (Table 16), Return On Assets (Table 17), Return On Equity (Table 17) and Cash Flow Per Share (Table 17). The null hypotheses for the these accounting measurements were retained (fail to reject). This result meant that no further statistical analysis could be conducted into the direction of the median difference between the two samples for Revenue, Return On Assets, Return On Equity and Cash Flow Per Share.

Correlating directly with the results of Period 2, the accounting measurements of Profit Before Tax and Earnings Per Share delivered a significant different in median and were therefore inclined to further statistical enquiry. In order to determine which sample had outperformed the other in respect of the median percentage change in Profit Before Tax and Earnings Per Share over the 11 years, the medians in Table 21 where analysed, establishing the following outcomes:

- The control sample median for Profit Before Tax (Mdn = 521.890) was higher than the SRI sample median for Profit Before Tax (Mdn = 167.876) for the period 2004 to 2014. Therefore, it was inferred that the non-SRI companies outperformed the SRI companies in terms of the profitability trend in Period 3.
- The control sample median for Earnings Per Share (Mdn = 369.146) was higher than the SRI sample median for Earnings Per Share (Mdn = 92.991) for the period 2004 to 2014. Therefore, it was inferred that the non-SRI companies outperformed the SRI companies in terms of the Earnings Per Share trend in Period 2.

There was a significant difference in the Profit Before Tax and Earnings Per Share performance between the non-SRI companies and SRI companies in Periods 2 and 3. The direction of the financial difference was consistently towards to the non-SRI companies. It is therefore inferred that the non-SRI companies outperformed the SRI companies in respect of Profit Before Tax and Earnings Per Share, a finding that is in contradiction to the literature reviewed and previously held assumptions but consistent with the López et al. (2007) study.

6.3 Phase 2 of statistical analysis: pre and post-2010 test

Phase 2 of statistical analysis interrogated the financial performance of the same SRI group of companies within the 11-year study period. The SRI sample for this phase of analysis was well established as representing the most advanced JSE companies in respect of their sustainability practices and this phase compared the financial performance of the JSE companies with most advanced sustainability practices between the periods 2004 to 2009 and 2010 to 2014. The research objectives defined in Chapter Three are contextualised as follows:

- What is the difference in the financial performance between the same group of SRI companies between the two periods?
- Which accounting measures influence the difference between the same group of SRI companies between the two periods?

Phase 2 of the statistical analysis of the data investigated the directional relationship and performance trends between the same SRI sample in respect of the six accounting measurements of financial performance. Following a similar data collection process as Phase 1, the performance trends were measured by the percentage change in the accounting measurements over Period 1 and Period 2 (pre and post 2010).

The structure of the research methodology and the method of statistical analysis were designed to cross-examine the various constructs introduced in the literature review. The constructs were firstly, whether time was indeed a factor for sustainable businesses in their pursuit of gaining a competitive advantage and enhanced financial returns on their investment into sustainability (Bansal & DesJardine, 2014; Barnett & Salomon, 2006; Barnett & Salomon, 2012) and secondly, whether sustainable businesses were less susceptible to market related shocks and more resilient to external factors (Bansal & DesJardine, 2014).

The assumption held was that the SRI group would deliver an increased financial performance in Period 2 when compared to Period 1 as the effects of advanced sustainable business practices influence the financial performance of the organisation. The assumption is significantly influenced by the theory of Perrini et al. (2011) who proposed improved internal and external effectiveness and competitive advantages in the form of employee relations, supply chain relationships, societal engagement, enhanced corporate image and reduced risk profile through environmental risk management, transparency to all stakeholders and increased customer loyalty and brand equity.

The reliance of the literature on developed market principles underpins the value of this research, which is contextualised within an emerging market. The results of the hypotheses tested in Phase 2 disproved the literature and delivered a contrasting linear association between the financial performance of the same group of companies.

Phase 2 of statistical testing comprised six hypotheses summarised as follows:

- There was no significant difference in the performance trend of the accounting measurements (Revenue, Profit Before Tax, Earnings Per Share, Return On Assets, Return On Equity and Cash Flow Per Share) between the SRI sample between Period 1 (2004 to 2009) and Period 2 (2010 to 2014).

Phase 2's nonparametric tests established a significant difference in the median for the accounting measurements of Revenue (see Table 24), Profit Before Tax (see Table 24), Earnings Per Share (see Table 24) and Cash Flow Per Share (see Table 24). The null hypotheses for the accounting measurements of Revenue, Profit Before Tax, Earnings Per Share and Cash Flow Per Share were rejected at a significance level of $p < 0.05$.

The nonparametric tests did not establish a significant difference for the accounting measurements of Return On Assets (Table 24) and Return On Equity (Table 24). This result meant that no further statistical analysis could be conducted into the direction of the median difference between the pre-2010 and post-2010 groups for the these accounting measurements.

Where a significant difference had been established for the accounting measurements, namely Revenue, Profit Before Tax, Earnings Per Share and Cash Flow Per Share, the medians of the pre-2010 and post-2010 groups were compared in order to determine what the difference in financial performance. On review of the medians in Table 23, the following differences in financial performance were established:

- The pre-2010 group median for Revenue (Mdn = 102.098) was higher than the post-2010 group median for Profit Before Tax (Mdn = 44.654). Therefore, it was inferred that the pre-2010 group outperformed the post-2010 group in terms of its Revenue trend.
- The pre-2010 group median for Profit Before Tax (Mdn = 140.986) was higher than the post-2010 group median for Profit Before Tax (Mdn = 21.656). Therefore, it was inferred that the pre-2010 group outperformed the post-2010 group in terms of its profitability trend.
- The pre-2010 group median for Earnings Per Share (Mdn = 90.056) was higher than the post-2010 group median for Earnings Per Share (Mdn = 32.155). Therefore, it was inferred that the pre-2010 group outperformed the post-2010 group in terms of its profitability trend.

- The pre-2010 group median for Cash Flow Per Share (Mdn = 132.276) was higher than the post-2010 group median for Cash Flow Per Share (Mdn = 31.689). Therefore, it was inferred that the pre-2010 group outperformed the Post 2010 group in terms of its profitability trend.

The results of Phase 2 of statistical analysis found a resounding financial performance in favour of the pre-2010 group across the four statistically different accounting measurements.

6.4 Contextualising the results through empirical research and academic literature

6.4.1 The business case for sustainable business practices advancing financial performance

According to Freeman et al. (2010), the interrelationship between business and stakeholders provides an integral link between capitalism and ethics. Evident in the global financial crises of 2008, business leaders must reprioritise their responsibilities and recognise the interconnected relationships that exist with a variety of stakeholders (Freeman et al., 2010). They described the evolving role of business and finds stakeholder theory as "an alternative "theory of the firm", contra the shareholder theory of the firm." (p. 406). They argued:

> "We think that any set of actions, for any stakeholder, has a blend of financial and moral consequences. One can increase wealth for shareholders or serve the community out of instrumental *and* normative reasons. So the issue is not just when purely "financial" and purely "social" tensions conflict, but when specific stakeholder conceptions, which have both financial and social dimensions, conflict with each other." (p. 414)

Their statement summarised the business paradox, protesting that the conflicting relationship between the instrumental and normative actions of business cannot replace organisational preservation and the need to eschew commercial abstinence. Stakeholder theory provides a valuable frame through which ethics and value creation for all stakeholders are intertwined (Freeman et al., 2010). The robustness of the

theory provides little reason for the related management practices to not contribute to the long-term economic viability for businesses that inculcate its principles.

Further reinforcing this argument, Farrell (2015) defined the concept of 'conscience capitalism' as:

> "…what unites the different proponents of conscience capitalism is belief that market capitalism and areas of conscience (concerns for social and environmental problems) should be linked and, more specifically, that the 2008 financial crash demonstrates the necessity of this shift." (p. 258)

Farrell (2015) found that conscience capitalism is an integrative theory that links CSR to a profit orientation that merges business and ethics.

Perrini et al. (2011) presented a stakeholder-founded arbitrage for socially responsible activity as a driver of corporate performance. Their CSR-CFP Multilevel Framework identified six economic drivers and a comprehensive business case to marry socially responsible efforts to performance outcomes. The framework is summarised as follows:

i. Socially responsible firms attract and retain knowledge workers as a key source of competitive advantage. Through the alignment of socially responsible goals and values, the firm can *inter alia* influence employee commitment, improve job satisfaction, and influence the ethical conduct of its knowledge workers.
ii. Within the age of consumerism and in highly competitive markets, brands can differentiate themselves and increase customer loyalty by achieving heightened levels of perceived product and service quality, while building trust with consumers resulting in a competitive advantage.
iii. The ability to form long-term partnerships with suppliers has the capacity to create relationships that ensure the reliability of supply while reducing the risks associated with the social and environmental impacts of production. A firm's ability to engage with suppliers creates economic value through innovative engagement, trust, and improved quality.
iv. Society provides a valuable source of social capital and grants business the license to operate. A business model that meets the needs of society is greater in scalability and is demand driven at its core. Porter and Kramer (2011) contributed to the theory presented by Perrini et al. (2011) through their concept of creating shared value. They proposed that businesses that create value for

society develop long-term sustainable business models (Porter & Kramer, 2011).

v. A firm's appropriate management of its environmental impact is invaluable in managing reputation risk and enhancing corporate image, and both factors impact the long-term sustainability of the firm.

vi. Corporate governance is a substantial creator of economic benefit. A transparent relationship with investors, employees and other stakeholders creates a durable corporate philosophy of accountability and fairness as a key driver of an economically sustainable and long-term orientated firm. The relationship with interested parties is in return more sustainable and reciprocal in nature.

These six key drivers of economic advantage arguably have a positive impact on both revenue-related outcomes, such as growth opportunities, competitive positioning and brand equity, and cost-related outcomes, such as the cost of labour, operational efficiency, cost of capital and risk management (Perrini et al., 2011, p. 69). The relationship between the socially responsible efforts of business and these performance outcomes provides a well-established business case for companies investing in sustainable business practices that are thoughtful about the financial return of the investment.

The business case for sustainable business practices and financial performance is further reinforced by the introduction of the theory of positive economics (Schreck et al., 2013). This theory adds considerable insight to the debate and the reasons business is prepared to engage in practices that are socially responsible in nature.

Schreck et al. (2013) proposed that the normative role of CSR is a fallacy and inferred the principles of positive economics to argue in favour of CSR activity. The principles of positive economics prescribe that business would not invest in an unproductive and unprofitable set of activities, and if an activity were to be established as unprofitable, the unproductive and unprofitable activity would be altered (Schreck et al., 2013).

The role of the firm is thus unashamedly profit maximisation (Schreck et al., 2013), and if sustainable business practices provide one of the many means to a profitable end, then unprofitable and unproductive CSR and sustainability practices will not occur, or will be changed if they occur. Therefore, business would not tolerate a trade-off between profitability and sustainable business practices. Such practices can only be for a positive economic advantage.

Margolis and Walsh (2003) established in a meta-study of 127 studies that there was a positive association between CSR and CFP and that there was only slight evidence of a negative association between the two variables. The meta-study provided an overwhelming result with 54% of the 109 studies delivering a positive linear relationship and only 6% of the studies delivering a negative linear association for CSR, as the independent variable, and CFP as the dependent variable (aligned to the structure of this study).

Through a meta-analysis of 52 directional studies into CSR and CFP, Orlitzky et al. (2003) proved that a positive linear relationship exists. Furthermore, the positive association is more strongly correlated in market measurements than accounting measurements. They suggested that the relationship is in fact bi-directional and found that the more financially successful businesses become, the more their investment into CSR is increased, resulting in a virtuous cycle of improved financial performance.

In a more recent meta-study conducted by Clark et al. (2014), 190 studies were analysed establishing that there was a positive association between sustainable business practices and commercial performance, a reduction in the cost of capital, improved operational performance and a positive directional effect on the share price.

Even in the presence of stakeholder centricity (Freeman et al., 2010), the outcomes of stakeholder theory and competitive advantage (Perrini et al., 2011), and positive economics (Schreck et al., 2013), the non-SRI companies outperformed the SRI companies providing one of the contrasting results of this study. Sustainable business practices, stakeholder orientation, and socially responsible business provide a compelling motivation for the previously held assumption of advanced financial returns to its constituents.

The internal and external organisational impact of the management practice provides sound and rational reason for an ever-advancing competitive advantage, which relates to an improved financial performance. The meta-studies conducted by Orlitzky et al. (2003), Margolis and Walsh (2003) and Clark et al. (2014), among others, found a positive relationship between CSR, sustainable business practices and financial performance.

The preoccupation of this emerging market study was to determine whether advanced sustainable business practices resulted in the SRI companies outperforming non-SRI companies since the inception of the JSE SRI Index.

The result of Phase 1 of the study established that in spite of the literature and meta-studies, the control sample, representative of the non-SRI companies, had in fact outperformed the SRI companies is both Period 2 and Period 3 in respect of profitability, with no significant difference being established in Period 1. The 'profitability victor' was further validated by the Earnings Per Share measurement, which similarly indicated that the non-SRI companies outperformed the SRI companies in Period 2 and 3. The pre-2010 group indisputably outperformed the post-2010 group in all four of the accounting measurements where a statistical difference was established.

In contradiction to previously held assumptions, the alternative argument pertaining to the negative impact of sustainable business practices on the financial performance of SRI companies and the interpretation of the pre-2010 performance is presented in the next section.

6.4.2 The business case for sustainable business practices detracting from financial performance

Bansal and DesJardine (2014) argued that CSR's inclination towards stakeholders is a limitation of the theory. They contended, "CSR aims to create shared value by addressing competing stakeholder interests; however, the focus on *current* stakeholder interests can obscure intertemporal trade-offs" (p. 72). They argued that sustainability should not be confused with a sustainable competitive advantage but rather "whether competitive advantage can be sustained over a long period of time" (p. 74). They also found that a competitive advantage is the ability of business to be sustainable through economic cycles as evident in their resilience to organisational shocks.

Of importance to the results of this study, they found that profitability is an inaccurate measure of a company's sustainability. The returns from investing in sustainable business practices should be viewed in the long term. Bansal and DesJardine (2014) criticised the common practice of evaluating earnings using discounted rates whereas organisations that apply advanced levels of sustainability practices should see future earnings at an equal or increase valuation. Bansal and DesJardine (2014) termed the complexities of earnings valuation by stating, "At the heart of most strategic performance measures are assumptions that might be at odds with sustainability" (p. 75). They found the movement towards a longer-term view of financial performance is a growing trend supported by business leaders such as Warren Buffet. By shifting strategic thinking to more long-term horizons, business orientation will shift naturally

towards the principles of sustainability. Through the inclusion of time, management will benefit from an integration of strategy and sustainability (Bansal & DesJardine, 2014).

Barnett and Salomon (2012) maintained that there is an equivocal relationship between sustainable business practices and financial returns to companies. They held a conflicted position in the CFP-CSR debate whereby little justification has been created for an equitable financial return for the investment into CSR. They established a U-shaped relationship between CSR and CFP in which the results of their empirical research established that companies with low levels of CSR generate higher levels of CFP than companies with moderate levels of CSR.

Conversely, companies with high levels of CSR generate the highest CFP returns. Furthermore, companies may need to undergo periods of decreased CFP in order for the benefits of stakeholder influence capacity (SIC) and investments into social responsibility to be realised. “Those who rely on measures of near-term financial returns to justify investment in any particular social action are likely to be disappointed” (p. 1318).

A number of internal and external factors that influence the accounting profitability of a company and the market reward for sustainable business practices (Girerd-Potin et al., 2014). López et al. (2007) argued that no singular measurement of sustainability exists for management practitioners. Barnett and Salomon (2006) added that the returns for sustainable business practices depends largely on the company’s ability to capitalise on their endeavour, with the long-term investment into influencing stakeholders only delivering financial returns in the future once sufficient capacity has been developed.

Furthermore, Barnett and Solomon (2006) delved into the profitability of SRI Indexed companies that are subject to socially responsible investment screenings and reporting requirements. They asserted, “As a result, SRI funds intentionally select firms that are likely to have above-average operating costs and so, all else equal, below average financial performance” (p. 1103). The López et al. (2007) study found that sustainability practices had a negative impact on accounting profitability in the short-term, albeit the study period referred to ‘short-term’ as four years (divided into two time intervals of three years).

A significant difference was established in the second time period interval, namely 2002 to 2004 (three years) whereby the sustainability index had a negatively associated financial performance (López et al., 2007). They explained the reduced profitability as follows, “The introduction of the philosophy of sustainability involves a

cost or reallocation of resources that negatively affects the firm's performance" (p. 292). In comparison with the data collected for this research report, the periods are longer for Period 1 (six years) and Period 2 (11 years).

The results of this study found that sustainability practices did not guarantee that the SRI companies would have a better financial performance over the non-SRI sample. This is supported by López et al. (2007). They propositioned that in the short term, companies do not make provisions for the additional assets and expenses for sustainability practices and suggested, "The expenses that firms incur as a result of their socially responsible actions can place them at an economic disadvantage with respect to other, less responsible firms, at least in the short term" (p. 296). This premise is evident in the non-SRI companies outperforming the SRI companies over the 11-year period.

Furthermore, the competitive advantage did not materialise for SRI companies over the 11 years as stakeholders may have been slow to recognise the value of the activity. In accordance with Bansal and DesJardine (2014), the returns from sustainable business practices may be longer-term. Within an emerging market, the U-shaped relationship between CSR and CSR (Barnett & Salomon, 2012) may result in an increased financial performance for companies that have low levels of investment into CSR and sustainability (therefore do not spend profits on such activity). Whereas, SRI practices are resource intensive and raise the operating expenses of companies thereby reducing profitability (Barnett & Salomon, 2006).

The advent of the King III Code on Corporate Governance for South Africa (Institute of Directors in Southern Africa, 2009) may have created a more profitable means for companies to ensure sound corporate governance practices while concurrently addressing sustainable business practices and ESG reporting requirements. Through the adoption of robust corporate governance standards, JSE constituents have become far more stakeholder centric and have directly or indirectly harnessed the intrinsic benefit of stakeholder relationships for economic benefit (Perrini et al., 2011). Thus, they experience a directional impact on financial performance without the detraction of profitability levels through increased operating expenses. Conversely, JSE SRI companies have invested resources and sacrificed short-term profitability to be listed on the JSE SRI Index.

The results of the SRI paired study (Phase 2) can be interpreted in light of the literature from Bansal (2005) as well as Bansal and DesJardine (2014). The results established that the financial effects of sustainable business practices must be viewed in longer

economic cycles and rather than short-term financial periods such as the six and five-year periods analysed in this study. Furthermore, a company's profitability is not an appropriate measure of its sustainability and its contribution to intergeneration equity. The integration of strategy and time presents the most compelling argument for business naturally assuming sustainable business practices.

The results of this research report have been interpreted within the context of SRI companies being reliant and susceptive to market conditions and macro-economic shocks along with all listed and privately held companies. The results of Phase 2 of the study found that the SRI companies were not detached from the ebb and flow of economic and markets cycles. In fact, movements in markets post the 2008 global financial crisis negatively affected the SRI Index. Tables 25 and 26 depict the Capital Index and the Market Capitalisation of the JSE SRI Index (J100), the JSE Top 40 (J200) and the ALSI (J203) (JSE Limited, 2015a).

The Capital Index (see Table 25) of the three JSE indices finds that JSE SRI Index 'tracks' the Top 40 Index and the ALSI for the period 2004 to 2015. However, on visual comparison of the three indices the JSE SRI Index has experienced a plateau in the trend from 2008 to 2015, in comparison with the ALSI and the Top 40 Index, which has a similar market-trend but has been growing at a higher rate by comparison.

The trend in Table 25 supports the results of the pre and post 2010 analysis of the SRI sample. The SRI Index, which constitutes the sample of SRI companies that performed well in Period 1 (2004 to 2014) and mirrors the growth of the ALSI and Top 40 Index, despite the global financial crisis in 2008 which affected all three indices by an equitable volatility.

For the period 2010 to 2014, the SRI Index was flatter in comparison to the ALSI and the Top 40 Index. Although following a similar market trend, the SRI Index performed noticeably worse than the other two indices and returned no economic gains from 2013 onwards.

The poor performance of the JSE SRI Index can be analysed in two ways. Firstly, the trend from 2010 and the poor performance of the JSE SRI provides additional insight into the control sample being more profitable than the SRI sample in Period 2 (2010 to 2014) and Period 3 (2004 to 2014) in respect of the change in percentage for Profitability and Earnings Per Share between the two periods. Secondly, the results of the study were consistent and statistically demonstrated the decline in accounting growth over the period as the pre 2010 SRI group outperformed the post 2010 group in

all four of the accounting measurements where a statistical significant difference was established.

The Market Capitalisation of the JSE SRI Index, ALSI and Top 40 Index (see Table 26) are similar for all three indices, which inclusively represent SRI companies, in particular the JSE large capitalisation companies dominate all three indices.

Table 25: Capital Indices of the JSE SRI Index, All-Share Index and Top 40 Index

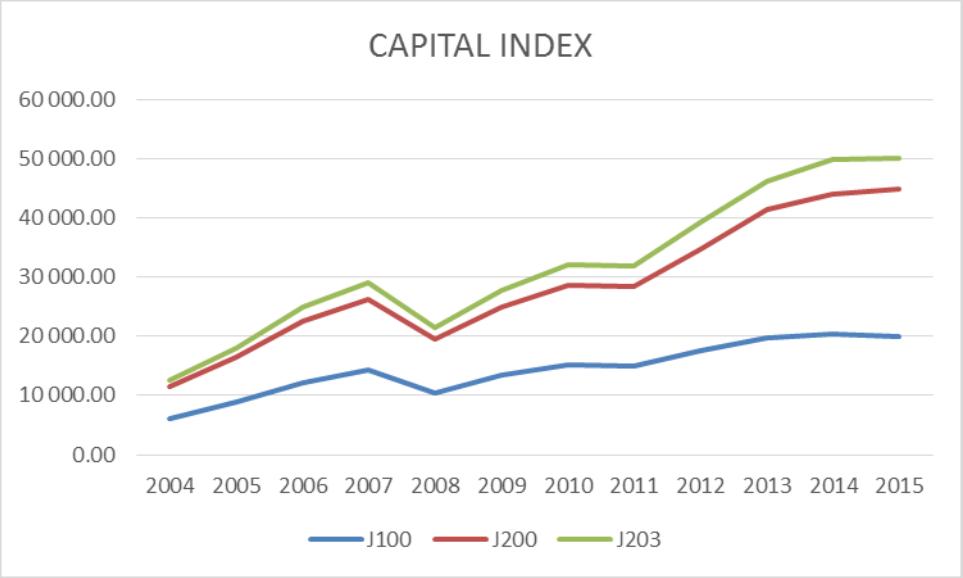
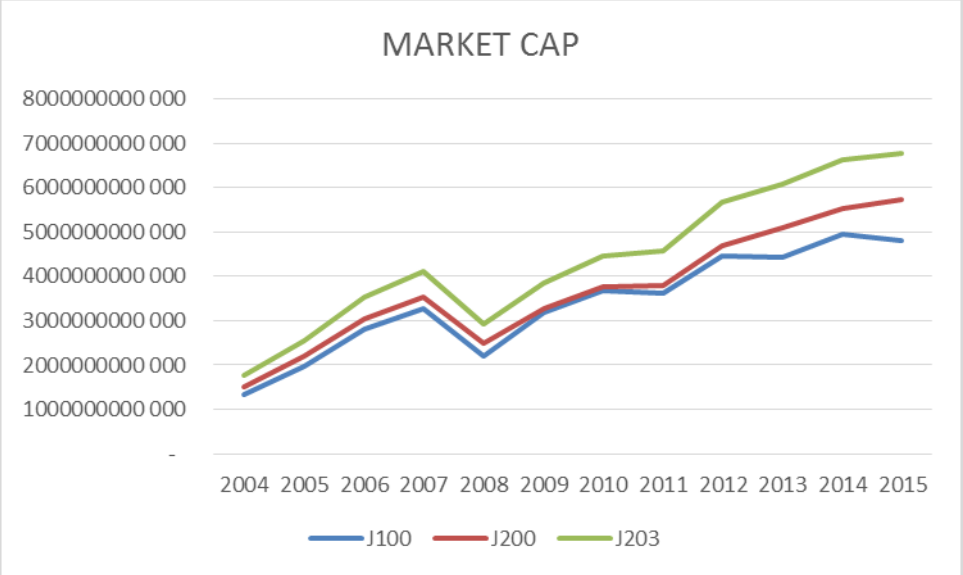


Table 26: Market Capitalisation of the SRI Index, All-Share Index and Top 40 Index



6.5 Results and literature conclusion

The findings of the SRI and control sample nonparametric tests supported López et al. (2007) for Period 2 and Period 3. They found a short-term negative impact on the profitability of companies listed on the DJSI when compared to a control sample of companies listed on the DJSI.

The findings established in Phase 1 of statistical analysis identified that the non-SRI companies outperformed their SRI counterparts for the measurements of profitability thereby collaborating the López et al. (2007) study results within an emerging market context. The U-shaped model of Barnet and Solomon (2012) (whereby the financial return for not investing in sustainable business practices may outweigh the financial returns of investing in sustainable business practices) further underpins the results of this study.

Furthermore, the advent of the King III Code on Corporate Governance for South Africa may have created a more profitable means for improving stakeholder relationships without the burden of the SRI screening and reporting criteria. The findings of Phase 2 of statistical analysis, the paired SRI-sample nonparametric tests within the 11-year period, support the premises of Bansal (2005), and Bansal and DesJardine (2014) whereby financial performance is not a true measure of a company's long-term profitability, which is better understood over longer economic cycles.

Chapter Seven offers further granularity to the interpretation of the results in light of the academic literature and empirical research presenting the principle argument generated by the research, the implications for management science and suggestions for future research.

Chapter 7: Conclusion

7.1 Principle findings of the study

The literature provided by Bansal (2005) and Bansal and DesJardine (2014) in part described the complexities of measuring the economic value of sustainable business practices in the short-term. Contextualised in the results of this research report, the non-SRI companies were more profitable than the SRI companies were over the 11-year period.

The principles of triple bottom line (Elkington, 1997), stakeholder centricity (Freeman et al., 2010), sustainability (Bansal & DesJardine, 2014), social responsibility, environmental, social, and governance reporting, and conscience capitalism (Farrell, 2015) persist as key drivers for the long-term economic viability for business. Substantiating the argument is intergenerational equity, which can only be viewed as a strong by-product of sustainable business practices that create regenerative value for the future generations (Bansal & DesJardine, 2014). The sustainability imperative is on par with the principles of mainstream management science practices such as human resources management, marketing management, financial management, and other organisational disciplines. The principles are too robust and the literature and empirical research too categorical to be out-rightly ignored by management practitioners.

However, this study disproves previously held assumptions. Although the literature creates a strong business case for sustainable business practices, the visible outperformance of sustainably advanced companies by the less advanced companies argues against this premise, as supported by the outcome of the Lopez et al. (2007) study. The results are in contrast to Ameer and Othman (2012) who found in their study that sustainable companies outperform the control sample in certain sectors.

It is submitted that the results of this study may be evidence of the dynamics of an emerging market. The question raised is whether emerging market investors and shareholders are profit orientated or stakeholder centric in nature (Barnett & Salomon, 2012) and thereby fail to reward companies for their adoption of sustainable business practices. Moreover, are emerging market employees and consumers as socially and sustainably conscious, as one would like to believe?

The results of this research suggest that consumers are not rewarding companies for their sustainability practices and that shareholders are singularly profit orientated. The

same notion is raised for other stakeholder management practices that may be perceived as nonessential to generating profits for shareholders such as 'advanced' levels of CSR, corporate governance, occupational health and safety, and environmental risk management.

In the era of a reputational economy (Smith, 2012), the side effects of not investing in these disciplines are a sure way to permanently erode shareholder wealth and the long-term viability of companies. However, the results of this research suggest that within an emerging market context, companies may not receive higher than market spoils for advanced levels of investment into sustainable business practices in the short-term.

Suggestions have been made that an appropriate level of investment into corporate governance principles may deliver an improved balance between stakeholder engagement and the short-term economic needs of the firm. Inferences are made into the financial losses attributed to sustainable business practices due to the increase in resource costs and the redirection of capital flows to sub-economical corporate endeavours.

Additionally, the difference in the profitability of the non-SRI companies, which comply with the King III Code on Corporate Governance (Institute of Directors in Southern Africa, 2009), in comparison with the SRI companies that implement advanced levels of sustainable business practices, is well established through the consistency of results. In Periods 2 and 3, this study has proven a positive linear association between non-sustainability practices and the financial performance for the non-SRI companies for Profit Before Tax and Earnings Per Share.

The requirements of the SRI Index may negatively affect the profitability of the SRI companies. Hence, the SRI Index may be a collection of companies with above average operating expenses (Barnett & Salomon, 2006) whereby the ESG requirements of the Index result in increased resource allocations to initiatives that are not central to profit-maximisation. Consistent with the results, companies that invest nothing or very little may receive the greatest economic advantage through lower operating expenses and the appropriate allocation of resources.

The increased operating expenses associated with being listed on a socially responsible investment index (Barnett & Salomon, 2006) suggests that the SRI companies included in the study were carrying an operating and administrative burden that reduces profitability without the increase in revenue to underpin the investment.

Conversely, the advent of the King III Code on Corporate Governance may provide listed companies with sufficient structure and stakeholder centricity to maintain or increase revenue performance while not incurring the retraction in profitability as attributed with a socially responsible investing index (Institute of Directors in Southern Africa, 2009).

In accordance with Barnett and Salomon's (2012) empirical research into the U-shape relationship between CSR and CFP, the results of this research inferred that the association between sustainable business practices and financial performance might resemble a U-shaped return on investment. The performance of the non-SRI companies established reasonable evidence that the financial returns of low levels of sustainability practices – with sufficient levels of governance (e.g. the influence of the King III Code) – may be greater than the financial return on higher levels of sustainable business practices (the stringent ESG requirements of the JSE SRI Index).

7.2 The temporal effects of sustainability on financial performance

The findings of this study supported and contrasted the theoretical principles of Bansal (2005) and Bansal and DesJardine (2014) through the analysis and comparison of identical groups of SRI companies' pre-2010 and post-2010 financial performance. In this phase of statistical testing, the pre-2010 group outperformed the post-2010 group in four of the six accounting measurements.

Firstly, the findings showed that the results are aligned to the premise that the financial effects of sustainability may only accrue over a long period thereby supporting the ideology of intergeneration equity and long-term sustainability (Bansal & DesJardine, 2014). According to Bansal (Bansal, 2005) and Bansal and DesJardine (Bansal & DesJardine, 2014), society and business have two very different time horizons. The use of capital and resources for regenerative and intergeneration equity underpins the value of sustainable business practices, which prescribes that companies be financially sustainable in the short-term (short-term needs) while not compromising the long-term need of society and the environment (long-term needs).

The future of the business ecosystem (Moore, 1993) is threatened and the viability of free market capitalism is in question if the business environment is confronted by a defunct society, a degraded environment and broken stakeholder relations. The argument for business being concerned with intergenerational equity is sound. Without

an equitable society or a stable natural environment, business will not have an ecosystem in which to generate commercial rents at feasible production costs. It is imperative that business positions itself as a critical contributor to changing the extractive history of capitalism and moves towards a regenerative economy whereby the needs of future generations of stakeholders are of primary concern.

The results of the study inferred that the negative profitability trend between the pre-2010 and post-2010 SRI groups of companies was not indicative of ineffective sustainability practices. The literature argued that the time in which to measure the impact of sustainable business practices must be altered to longer economic cycles. The study period used in this research may to be too short-term to assume anything further than that the financial performance of the SRI companies is indicative of the economic cycles affecting our capital markets.

The SRI Index resembles a large component of the JSE ALSI by market capitalisation and is not removed from the trends of our markets. However, on visual inspection of the SRI Index, it performed worse in comparison with the ALSI and the Top 40 Index in the period 2009 to 2014 (JSE Limited, 2015a).

The findings in this study disagree with Bansal (2005) and Bansal and DesJardine (2014) who contended that sustainable companies may be as susceptible to organisational shocks as non-sustainable companies, specifically in an emerging market. The emerging market context may be of the utmost importance for this inference whereby in more advanced economies the effects of market and organisation shocks may be less prevalent for sustainably advanced companies (Bansal & DesJardine, 2014).

The results agree with the proposition by Bansal and DesJardine (2014) that financial performance is not an appropriate measurement of business sustainability and continuity. Support for this theory is evident in profitable businesses catalysing the global financing crisis. An advancing and retracting profitability trend should not be viewed as an increase or decrease in business sustainability and long-term economic viability.

In summary, the results of the study have found that the period of investment into sustainability practices has not created a financial advantage for the SRI group of companies. The previously held assumption was that the SRI group of companies would financially outperform in the second period (post 2010) as the influence of sustainability practices start to gain momentum. The outcome of the study has found

that the companies were subject to economic cycles, were predisposed to the market trends, and from 2009 to 2014, performed worse than the market. The premise concerning the SRI companies being less profitable because of the increased operating expenses and allocation of resources into sustainable business practices is neutralised by comparing the same group of SRI companies both subjected to the aforementioned variables.

With all further variables remaining constant for the SRI group, anecdotally it is stated that the retraction in revenue, profitability, and cash flow generation in the second period is strongly associated with market conditions, economic cycles, and the SRI sample performing worse than the market. Period 1 of the study was representative of strong market conditions rather than the economic value created by sustainable business practices in the first six years of the JSE SRI Index.

7.3 Implications for business management, investors and other stakeholders

The implications for management are clear. If management prioritises the association between sustainable business practices and financial performance, the investment must be viewed as a long-term strategy and not as an exercise to increase short-term revenue growth or profitability.

Furthermore, if management is truly absorbed by the sustainability of the business as the key strategic outcome, then measuring profitability is the incorrect means for evaluating the investment. Alternative measures of business sustainability should be proposed. Profitability at a point in time is not a true measure of a company's sustainability and the positive effects on earnings multiples is a more suitable measure (Bansal & DesJardine, 2014).

The traditional corporate finance method of valuing a businesses on an earnings multiples formula presents a more compelling means to valuing business with advanced business practices than profitability. Bansal and DesJardine (2014) argued that the earnings multiple valuation for an advanced sustainability business should have been higher for the SRI group of companies whose earnings should be viewed as more sustainable over time. The SRI companies had the organisational ethos, strategic vision and management practices to ensure long-term sustainable economic value for all stakeholders. Bansal and DesJardine (2014) aptly closed this argument by stating, "Sustainability is more than just a fad. It is surfacing a new paradigm that acknowledges the complexity of systems and the inequities or imbalances that can undermine their sustainability" (p. 76).

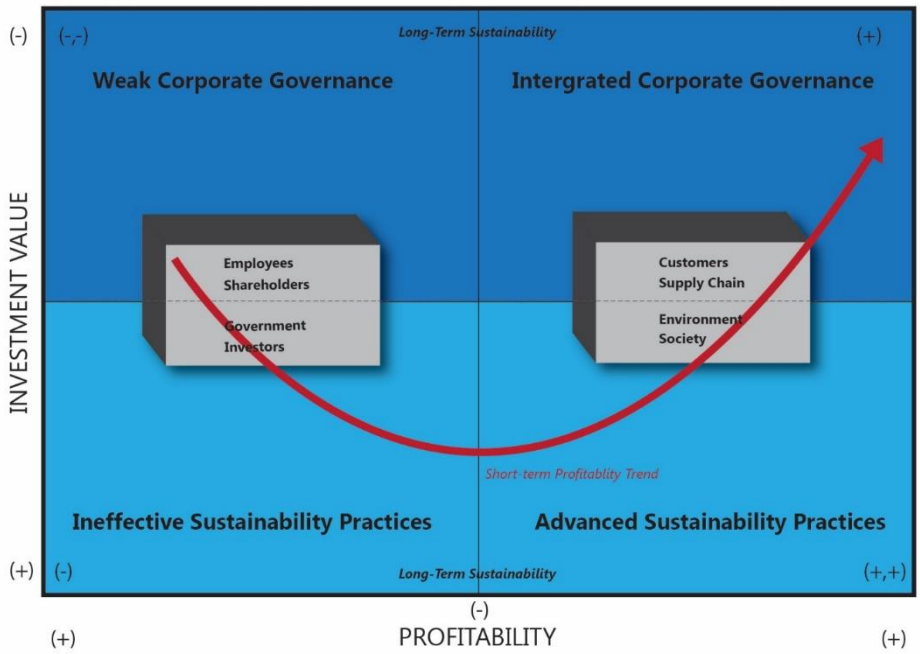
7.4 An emerging market model for sustainable business practices and financial performance

7.4.1 Description of the model

The models previously presented in the literature have been amended and integrated to present a revised emerging market model, which is depicted in Figure 10. The results of this study and inferences made from the literature are presented in an integrated model, which has borrowed from models by Perrini et al (2011), Schreck et al. (2013), and Barnett and Salomon (2012).

The model, titled The Corporate Governance and Sustainability: Profitability and Investment Model, attempts to depict the 'financial relationship' between corporate governance, sustainable business practices, the levels of investment into organisational disciplines, and the levels of profitability attributed to such investments. The model is based on a subjective view, underpinned by the results of the study and the literature, and is intertwined with the assumptions and inferences made into the association between sustainable business practices and financial performance.

Figure 10: The Corporate Governance and Sustainability: Profitability and Investment Model



The research has created a simple taxonomy for management to interpret the relationship between the variables, and possible outcomes to their actions. The model's taxonomy and meaning is explained as follows:

A. Y-axis

a. The quantum of investment is quantified on the Y-axis inversely from a high level of investment to a low level of investment, and is labelled as Investment Value. This depicts the quantum of resources and capital invested into the two organisational disciples.
b. The Investment Value refers to the investment made into two related organisational disciplines, namely corporate governance and sustainability practices.
c. A company can select to invest a high value (+) or a low value (-) of resources and capital with corresponding effects.

B. X-axis

a. The X-axis depicts the level of profitability as a proxy for return on investment or otherwise stated as the outcome of the level of investment made into the two organisation disciplines.
b. At either end of the X-axis is a positive outcome (+) and in the centre is a negative outcome (-). The corresponding profitability of the two organisational disciples is defined within a range of the highest level of profitability (+) and lowest level of profitability (-).

C. Four quadrants

a. The two organisational disciplines are differentiated into four quadrants, namely Weak Corporate Governance and Integrated Corporate Governance, and Ineffective Sustainability Practices and Advanced Sustainability Practices.
b. The long-term sustainability of organisations that implement the respective organisational discipline is proposed in a linear means from least sustainable in the short-term to most sustainable in the long-term as follows: Weak Corporate Governance (-,-), Ineffective Sustainability Practices (-), Integrated Corporate Governance (+) and Advanced Sustainability Practices (+, +). Advanced

Sustainability Practices is proposed as the highest level of long-term economic orientation.

D. Stakeholders

a. The business stakeholders most negatively affected by the 'disciplines' of Weak Corporate Governance and Ineffective Sustainability Practices are mentioned in the left quadrants namely Employees, Shareholders, Government and Investors.
b. Conversely, the business stakeholders most positively affected by the disciplines of Advanced Sustainability Practices and Integrated Corporate Governance are defined as Customers, Suppliers, the natural Environment and Society.

E. Short-term profitability trend

a. Aligned to the results of this study and the inferences proposed, and Barnett and Salomon's (2012) U-shape relationship between net income and CFP, the trend line represents the short-term impact on profitability resulting from the implementation, or the lack of implementation, of one of the two categories of corporate governance and sustainability practices.
b. The profitability trend argues that the implementation of Weak Corporate Governance practices is most profitable, or the least cost intensive, in comparison with Ineffective Sustainable Business Practices that are relatively more cost intensive but have no significant positive effects of profitability by comparison. The profitability trend line therefore declines as company's progress from Weak Corporate Governance Practices to Ineffective Sustainability Practices as the costs increase with diminutive return from the investment.
c. Progressing to incline of the profitability trend, it is argued that Integrated Corporate Governance is less cost intensive and more profitable in comparison to Advanced Sustainability Practices. This assumption pivots on the results of the study in which the non-SRI companies, which have adopted the King III Code on Corporate Governance outperformed the SRI companies, which have implemented advanced sustainable business practices over the period of this study.
d. The short-term profitability trend thereby classifies Integrated Corporate Governance as more profitable, or less cost intensive, in comparison to

Advanced Sustainability Practices which are more cost intensive and less profitable.

7.4.2 Interpretation of the emerging market model

The interpretation of the model, within the context of the results of the study and the literature, denotes an important methodology for business, management, and investors. The interpretation of the taxonomy is simply phrased as: it is more profitable (or costs a company less) to invest nothing into governance and sustainability than it is to invest in a trivial manner. Furthermore, it is more profitable (or less cost intensive) to invest in progressive corporate governance practices than it is to implement advanced levels of sustainability practices.

This study has provided sound reason for Integrated Corporate Governance, as established in the review of the King III Code on Corporate Governance (Institute of Directors in Southern Africa, 2009), delivering the highest financial returns in the short-term within an emerging market. The ability of the non-SRI group of companies to be more profitable than the SRI group of companies provides support of this theory. The decrease in the profitability of the SRI group is established in the literature review as resulting from the costs associated with being listed on JSE SRI and the allocation of resources into sustainable business practices thereby increasing operating expenses.

However, aligned to the literature, the taxonomy argues that Advanced Sustainability Practices supplement decreased short-term profitability with long-term sustainability and economic viability. Business, managers, investors, employees and other stakeholders should make a decision as to the culture of organisation they wish to be associated with, and the time horizon for the association.

Integrated Corporate Governance creates shareholder value without the impact of increased operating expenses in the short-term. The relationship risk profile for stakeholders will increase as attributed to the long-term economic sustainability of the company. Ineffective Sustainability Practices and Weak Corporate Governance are associated with the most improbable business case for long-term sustainability.

It is proposed that Weak Corporate Governance (similar to Integrated Corporate Governance) incur negligible costs in the short-term and is therefore a counterpart of the non-SRI group. When exposed to short-term profitability with high-risk profiles,

stakeholders should raise concerns about the high possibility of organisational shock, failure, or extinction.

7.5 Limitations

The research methodology and sampling process is subject to limitations, as disclosed in Chapter Four. This section contextualises and refines the limitations of the research.

The structure of a paired sample statistical analysis has resulted in both the SRI and control samples being relatively small. The screening that was applied to the SRI sample further reduced the size of the sample, and indirectly the pairing with non-SRI sample.

Although relatively small, the screening and pairing process was a best effort to create two comparable heterogeneous groups thereby meeting the objectives of the study. Including all SRI companies, or companies that had been listed on JSE SRI for less than 80% of the years in each period, would have resulted in the dilution of the proxy that SRI indexed companies are more advanced in respect of their sustainable business practices and would have contaminated the efficacy of the outcomes.

The requirements of the comparison of SRI companies within the 11-year period had an equal effect on the sample size for this battery of statistical analysis. Through the screening of the SRI companies for an 80% representation on the SRI Index and preparation of two identically matched groups of companies, the sample for Phase 2 of statistical analysis was subjected to further a reduction in size. However, the efficacy was maintained, as this group of companies presented what is arguably the most sustainably advanced group on the SRI Index.

The limitations of the size of JSE in terms of overall number of companies and the number of companies in some of the sectors and sub-sectors and the disparity of market capitalisation of the companies in each sector and sub-sector further affected the pairing process. The control variables for the sampling process for the non-SRI group of companies were found to make the pairing difficult. The control sample pairing process found the most logical pairs; however, the like-for-like comparison was compromised by this pragmatic approach to pairing.

In certain instances, SRI companies were disqualified from the study as a logical pairing could not be achieved meaning that the SRI group was not an accurate

representation of the selection criteria established in Chapter Four. It is believe that this disqualification of a small number of companies did not affect the outcome of the study in a material manner.

A related limitation was the uneven sector distribution of the SRI Index with some sectors being over represented in comparison with other sectors, which had limited companies in the SRI sample. This limitation created an SRI sample that was not proportionately representative of sustainably advanced companies and sector neutral. The SRI and control sample through the pairing process retained an inherent sector bias due to the lack of sector diversity within the SRI.

A previously held limitation concerning the efficacy of the results, which may have been compromised through the duplication of the same control companies in each period, has been clarified. The concern was eliminated through the inclusion of a further 18 hypotheses tests after the removal of the duplicate companies. The results established statistical difference and the directional trend of the SRI and non-SRI groups to be consistent with the original methodology. The original sampling process was retained, as the tests were proven robust.

The screening process of 80% representation in each period disqualified companies that had previously been listed on the JSE SRI Index. Albeit, the SRI sample proxy relied on this process to hypotheses test the most advanced sustainability companies with a less advanced control sample, there was an element of SRI versus SRI comparison in each period. The disclosures made into the pairings and disqualified companies assist with understanding the pairing process and its limitations.

The SRI Index may be viewed as an imperfect proxy for advanced sustainability practices (Ameer & Othman, 2012), as companies that have comprehensively implemented the ESG requirements of corporate governance arguably have adopted the principles of sustainability. Furthermore, companies that are not listed on the JSE SRI Index may also be advanced in sustainability practices but may choose not be represented on the JSE SRI Index due to the costs associated with the listing.

A further imperfect proxy for financial performance trend was identified in the hypotheses testing of the dependant variables (accounting measurements of financial performance). The research was not structured to measure market performance in the form of share price and focuses on the accounting measurements. This inclusion of an additional financial metric which measures market reaction to sustainable business practices, presents an interesting angle for future research.

Due to the JSE SRI Index being greatly representative of the large market capitalisation companies of the JSE, the SRI Index is to a degree illustrative of the market's performance. This limitation has significantly influenced the performance of the SRI group of companies over the 11-year period, as found in the results of the pre-2010 and post-2010 statistical analysis. Although the results contradicted a previously held assumption that sustainable companies are less susceptible to market or organisational shocks (Bansal & DesJardine, 2014), the positive effects of sustainable business practices on SRI companies over time is inadequately advanced.

Finally, the research was framed as an emerging market study, however, companies listed on the JSE, JSE SRI Index and in particular, the large capitalisation companies, generate income from a wide-array for foreign interests. The proxy that the JSE represents an emerging market study is therefore imperfect as revenue and profits are included in an all-encompassing manner bundling both domestic, emerging and developed market revenue streams.

7.6 Suggestions for future research

Although the research objectives of this study have been achieved, the research has created a further set of unanswered questions, which present compelling opportunities for future research. The list of future research objectives are linked to this study's limitations and the learnings of the research report.

A study of similar research objectives, with the appropriate level of intervention in narrowing the impact of the limitations, would be well suited to a longer period of 20 or 30 years thereby offering business a view of the financial performance between an SRI and a non-SRI group over a longer economic cycle.

The SRI sample contained companies that had failed, such as African Bank Limited, a company listed on the SRI Index that was placed into business rescue in 2015. Insight into why sustainable businesses fail would offer sustainability practitioners with interesting evidence into the pitfalls and limitations of the sustainability business model and whether sustainable company failures are related to poor management decisions or a sustainability hubris. A historical review of sustainable businesses that fail over the longest period practical would aggregate the research into meaningful learning for business.

A study that differentiates sustainably advanced sectors, such as the mining sector, with sectors predisposed to sustainably less advanced practices, such as the property sector, would quell the limitations of pairing the SRI companies with control companies. Furthermore, a study to interrogate the performance of sustainably advanced companies aggregated into a sector or industry unit of analysis would provide insight into the effects of sustainability practices on the financial performance across different sectors. An industry or sector analysis would thereby create the means to establish an understanding of whether the returns from sustainability practices are equal or disproportionate depending on the type of industry.

Deciphering the financial performance of different levels of sustainable investment and practices would offer business and sustainability practitioners with a benchmarking system to determine the amount of return generated from varying levels of sustainable business practices. Such a study would also be able to address the imperfect proxy of the SRI Index as an indication of advanced levels of sustainable business practices.

The sustainability-ranking data as used by Barnett and Salomon (2012), whereby sustainable companies are not considered equal and are rated according to their level of sustainability implementation and practices, would provide insight into the quantum of investment and the type of investment required to generate the highest yield in financial performance. Retaining the factor of time (Bansal & DesJardine, 2014), empirical research into the ranking-data of sustainable companies in an emerging market would be beneficial to building a business case for the financial return from various levels of sustainability practices and stakeholder value creation.

The bias of the JSE and JSE SRI Index towards large market capitalisation companies has presented no understanding into the financial impact of sustainable practices between the large, medium, and small market capitalisation companies. Research objectives that test this financial relationship may deliver insight into which market capitalisation group is positively or negatively affected by their investment into sustainable business practices and to what degree. The limitation of controlling the company pairings for market capitalisation would therefore be eradicated if the unit of analysis were altered to market capitalisation.

Contextualising the emerging market requires inclusion of foreign earnings into the accounting measurements of financial performance. In the most practical manner, the exclusion of foreign earnings from developed economies would retain a far more robust emerging market context. Furthermore, a comparison between other emerging markets' socially responsible investment indices and a broader base of SRI and control

constituents would add considerable value. This would be seen in increasing the sample size and establishing if the results of this study are specific to the JSE or consistent with other emerging market securities exchanges. A larger study population across multiple emerging markets' indices would indirectly establish a more even sector distribution and dilute the JSE's oligopolistic structure.

The impact of the King III Code on Corporate Governance on the financial performance of JSE listed companies presents an interesting and topical advancement of this research. The inferences made into the role of the code on the financial performance of JSE listed companies, specifically the control sample, requires appropriate empirical research in order to advance this inference to a categorical position.

It is suggested that market related measurements should be analysed as further proxies for CFP in order to address the concerns of Bansal and DesJardine (2014), who found profitability and other accounting measures as an inappropriate measure of long-term sustainability. Further research into share price performance and earning multiple valuations may provide insightful discoveries into whether sustainable businesses are valued higher than non-sustainable business and whether the market values the stocks and earnings multiples differently. The reason for the SRI Index performing worse than the market and directionally being in a sub-economic trend since 2009 provides an intriguing point of departure for future research.

Finally, the role of qualitative research is imperative in order to stress test the Perrini et al. (2011) business case for CSR and the premise of the six economic drivers of financial performance. The ability to differentiate between the various stakeholders (namely, employees, customers, suppliers, society, the natural environment and corporate governance) and the drivers of economic performance would offer a framework for companies to create shared value for stakeholders (Porter & Kramer, 2011). Research objectives that determine the order of stakeholder priority, the appropriate value of investment, and the impact on financial performance would assist business and management in creating a hierarchy of stakeholders' priorities and the corresponding returns from their investment types that would advance Carroll's (1991) Pyramid of Corporate Social Responsibility.

7.7 Conclusion

The interrelationship between sustainable business practices and CFP within an emerging market context presents interesting findings and inferences for business, management, investors, and sustainability practitioners. Contrasting previously held assumptions and positions established by leading academics within this field of study, the results have shown that companies not listed of the JSE SRI Index financially outperform companies listed on the JSE SRI Index and have been more profitable since the inception of the Index.

The results pivot on the premise that the JSE SRI Index has formed a group of companies that incur additional expenses through the allocation of resources that reduce the profitability of its constituents in comparison with the non-SRI companies, which have not incurred the additional expenses but have benefited in part from the advent of the King III Code on Corporate Governance. A positive inference has been proposed for sustainable business practices. While sustainably advanced companies face a reduction in profitability in the short-term, these companies simultaneously improve the long-term economic viability as they inculcate an ethos of stakeholder centricity.

The comparison of the same SRI companies over the 11-years found that the pre-2010 group outperformed the post-2010 group, a finding that is once again in contrast to previously held assumptions in the literature reviewed. In this instance, the SRI companies were found to be susceptible to market related shocks and economic cycles (Bansal & DesJardine, 2014). The literature prescribed that the period for measuring the impact of sustainability be extended substantially to include intergenerational equity and the regenerative deployment of capital and resources (Bansal & DesJardine, 2014). The literature also found the dependant variables of the hypotheses, financial performance, to be an inappropriate measure of long-term sustainability.

This integrated research report has provided an accurate response to the research objectives and has presented a comprehensive and thorough analysis of the relationship between sustainable business practice and financial performance. The integrated research report has devised a guide for business and its stakeholders to navigate through this complex aspect of management science through the overview of academic literature, empirical research, meta-studies and newly established results and inferences.

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Appendices

8.1 Appendix 1 Period 1 SRI and control sample pairing

PERIOD 1 2004-2009	
SRI SAMPLE	**CONTROL SAMPLE**
ABSA Group Limited/Barclays Africa Group Limited	Capitec Bank Holdings Limited
African Bank Investment Limited	Capitec Bank Holdings Limited
African Oxygen Limited	AECI Limited
Allied Electronics Corporation Limited	Reunert Limited
Allied Technologies Limited	Reunert Limited
Anglo American Plc	African Rainbow Minerals Limited
Anglo American Platinum Limited	Lonmin Plc
AngloGold Ashanti Limited	Assore Limited
Aveng Limited	Group Five Limited
Barloworld Limited	KAP Industrial Holdings Limited
BHP Billiton Plc	African Rainbow Minerals Limited
Discovery Limited	Santam Limited
Firstrand Limited	Capitec Bank Holdings Limited
Gold Fields Limited	Exxaro Resources Limited
Harmony Gold Mining Company Limited	Exxaro Resources Limited
Illovo Sugar Limited	RCL Foods Limited
Impala Platinum Holdings Limited	Lonmin Plc
Investec Limited	PSG Group Limited
Investec Plc	Brait SE
Kumba Iron Ore Limited	Exxaro Resources Limited
Liberty Group Limited	MMI Holdings Limited
Liberty International Plc	MMI Holdings Limited
Massmart Holdings Limited	Truworths International Limited
Merafe Resources Limited	Petmin Limited
Murray & Roberts Holdings Limited	Wilson Bayly Holmes-Ovcon Limited
Nampak Limited	Astrapak Limited
Nedbank Limited	Capitec Bank Holdings Limited
Netcare Limited	Mediclinic International Limited
Oceana Group Limited	Astral Foods Limited
Old Mutual Plc	MMI Holdings Limited
Pick n Pay Holdings Limited (PIKWIK)	The SPAR Group Limited
PPC Limited	Afrimat Limited

Remgro Limited	The Bidvest Group Limited
Sanlam Limited	Santam Limited
Sappi Limited	Mondi Limited
Sasol Limited	AECI Limited
Standard Bank Group Limited	Capitec Bank Holdings Limited
Tongaat Hulett Limited	AVI Limited
Woolworths Holdings Limited	Shoprite Holdings Limited
39	39

8.2 Appendix 2 Period 2 SRI and control sample pairing

PERIOD 2 2010 - 2014	
SRI SAMPLE	**CONTROL SAMPLE**
ABSA Group Limited/ Barclays Africa Group Limited	Capitec Bank Holdings Limited
AdvTech Limited	Curro Holdings Limited
AECI Limited	Omnia Holdings Limited
African Bank Investments Limited	Capitec Bank Holdings Limited
African Oxygen Limited	Omnia Holdings Limited
African Rainbow Minerals Limited	Assore Limited
Allied Electronics Corporation Limited	Reunert Limited
Anglo American Plc	Assore Limited
Anglo American Platinum Limited	Assore Limited
AngloGold Ashanti Limited	Assore Limited
Aspen Pharmacare Holdings Limited	Adcock Ingram Holdings Limited
Aveng Limited	Raubex Group Limited
Barloworld Limited	KAP Industrial Holdings limited
BHP Billiton Plc	Assore Limited
The Bidvest Group Limited	KAP Industrial Holdings limited
Business Connexion Group Limited	EOH Holdings Limited
Clicks Group limited	The SPAR Group Limited
Discovery Limited	Briat SE
DRDGOLD Limited	Randgold & Exploration Co Limited
Exxaro Resources Limited	Coal of Africa Limited
Firstrand Limited	Capitec Bank Holdings Limited
The Foschini Group Limited	Mr Price Group Limited
Gold Fields Limited	Assore Limited
Grindrod Limited	Super Group Limited
Group Five Limited	Wilson Bayly Holmes-Ovcon Limited
Growthpoint Properties Limited	Redefine Properties Limited
Harmony Gold Mining Company Limited	Aquarius Platinum Limited

Illovo Sugar Limited	Astral Foods Limited
Impala Platinum Holdings Limited	Aquarius Platinum Limited
Imperial Holdings Limited	Super Group Limited
Investec Limited	PSG Group Limited
Investec Plc	Briat SE
JSE Limited	SASFIN Holdings Limited
Kumba Iron Ore Limited	Assore Limited
Lewis Group Limited	Cashbuild Limited
Liberty Holdings Limited	Clientèle Limited
Lonmin Plc	Aquarius Platinum Limited
Massmart Holdings Limited	Mr Price Group Limited
Merafe Resources Limited	Petmin Limited
Mediclinic International Limited	Life Healthcare Group Holdings Limited
MMI Holdings Limited	PSG Group Limited
Nedbank Limited	Capitec Bank Holdings Limited
MTN Group Limited	Blue Label Telecoms Limited
Murray & Roberts Holdings Limited	Wilson Bayly Holmes-Ovcon Limited
ArcelorMittal South Africa Limited	Hulamin Limited
Netcare Limited	Life Healthcare Group Holdings Limited
Northam Platinum Limited	Aquarius Platinum Limited
Oceana Group Limited	Astral Foods Limited
Old Mutual Plc	Coronation Fund Managers Limited
Pick n Pay Stores Limited (PICKNPAY)	The SPAR Group Limited
PPC Limited	Afrimat Limited
RCL Foods Limited	Astral Foods Limited
Remgro Limited	KAP Industrial Holdings limited
RMB Holdings Limited	Capitec Bank Holdings Limited
Sanlam Limited	Coronation Fund Managers Limited
Santam Limited	Zurich Insurance Company Limited
Sappi Limited	Mondi Limited
Sasol Limited	Omnia Holdings Limited
Standard Bank Group Limited	Capitec Bank Holdings Limited
Steinhoff International Holdings Limited	Compagnie Financière Richemont SA
Sun International Limited	Tsogo Sun Holdings Limited
Telkom SA SOC Limited	Blue Label Telecoms Limited
Tiger Brands Limited	Pioneer Food Group Limited
Tongaat Hulett Limited	AVI Limited
Truworths International Limited	Mr Price Group Limited
Vodacom Group Limited	Blue Label Telecoms Limited
Woolworths Holdings Limited	Shoprite Holdings Limited
67	67

8.3 Appendix 3 Period 3 SRI and control sample pairing

PERIOD 3 2004 to 2014	
SRI SAMPLE	**CONTROL SAMPLE**
ABSA Group Limited/ Barclays Africa Group Limited	Capitec Bank Holdings Limited
AdvTech Limited	Adcorp Holdings Limited
African Bank Investment Limited	Capitec Bank Holdings Limited
African Oxygen Limited	Omnia Holdings Limited
African Rainbow Minerals Limited	Assore Limited
Allied Electronics Corporation Limited	Reunert Limited
Allied Technologies Limited	Reunert Limited
Anglo American Plc	Assore Limited
Anglo American Platinum Limited	Assore Limited
AngloGold Ashanti Limited	Assore Limited
ArcelorMittal South Africa Limited	Assore Limited
Aveng Limited	Wilson Bayly Holmes-Ovcon Limited
Barloworld Limited	KAP Industrial Holdings Limited
BHP Billiton Plc	Assore Limited
The Bidvest Group Limited	KAP Industrial Holdings Limited
Discovery Limited	Brait SE
Firstrand Limited	Capitec Bank Holdings Limited
Gold Fields Limited	Assore Limited
Grindrod Limited	Super Group Limited
Harmony Gold Mining Company Limited	Aquarius Platinum Limited
Illovo Sugar Limited	Astral Foods Limited
Impala Platinum Holdings Limited	Aquarius Platinum Limited
Investec Limited	PSG Group Limited
Investec Plc	Brait SE
Kumba Iron Ore Limited	Assore Limited
Liberty Holdings Limited	SASFIN Holdings Limited
Massmart Holdings Limited	Mr Price Group Limited
Merafe Resources Limited	Petmin Limited
MTN Group Limited	Blue Label Telecoms Limited
Murray & Roberts Holdings Limited	Wilson Bayly Holmes-Ovcon Limited
Nedbank Limited	Capitec Bank Holdings Limited
Northam Platinum Limited	Aquarius Platinum Limited
Oceana Group Limited	Astral Foods Limited
Old Mutual Plc	Coronation Fund Managers Limited
PPC Limited	Afrimat Limited

Remgro Limited	KAP Industrial Holdings Limited
Sanlam Limited	Coronation Fund Managers Limited
Santam Limited	Zurich Insurance Company South Africa Limited
Sappi Limited	Mondi Limited
Sasol Limited	Omnia Holdings Limited
Standard Bank Group Limited	Capitec Bank Holdings Limited
Telkom SA SOC Limited	Blue Label Telecoms Limited
Tongaat Hulett Limited	AVI Limited
Woolworths Holdings Limited	Shoprite Holdings Limited
44	44

8.4 Appendix 4 adjusted and disqualified pairings

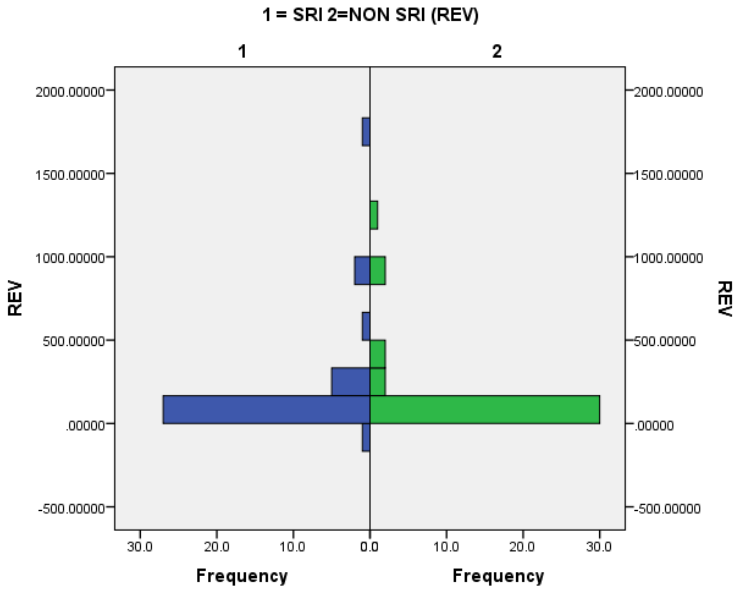
SRI Sample	Control Sample			Dependant variable(s)
Period 3 (2004-2014)				
African Bank Investment Limited	Capitec Bank Holdings Limited	2004	2013	All dependant variables
Allied Electronics Corporation Limited	Reunert Limited	2004	2013	All dependant variables
Discovery Limited	Brait SE			Revenue disqualified
Harmony Gold Mining Company Limited	Aquarius Platinum Limited	2005	2014	All dependant variables
Impala Platinum Holdings Limited	Aquarius Platinum Limited	2005	2014	All dependant variables
Investec Limited	PSG Group Limited			Revenue disqualified
Investec Plc	Brait SE			Revenue disqualified
Kumba Iron Ore Limited	Assore Limited	2006	2014	All dependant variables
Liberty Holdings Limited	SASFIN Holdings Limited	2008	2014	All dependant variables
Mediclinic International Limited	No control sample			Disqualified
MTN Group Limited	Blue Label Telecoms Limited	2008	2014	All dependant variables
Netcare Limited	No control sample			Disqualified
Northam Platinum Limited	Aquarius Platinum Limited	2005	2014	All dependant variables
PPC Limited	Afrimat Limited	2007	2014	All dependant variables
SABMiller Plc	No control sample			Disqualified
Sappi Limited	Mondi Limited	2007	2014	All dependant variables
Telkom SA SOC Limited	Blue Label Telecoms Limited	2008	2014	All dependant variables
Period 2 (2010-2014)				
AdvTech Limited	Curro Holdings Limited	2011	2014	All dependant variables
African Bank Investments Limited	Capitec Bank Holdings Limited	2010	2013	All dependant variables
AngloGold Ashanti Limited	Assore Limited	2010	2013	ROE
Discovery Limited	Briat SE			Revenue disqualified
DRDGOLD Limited	Randgold & Exploration Co Limited			Revenue disqualified
Investec Limited	PSG Group Limited			Revenue disqualified
Investec Plc	Briat SE			Revenue disqualified
JSE Limited	SASFIN Holdings Limited			Revenue disqualified
MMI Holdings Limited	PSG Group Limited			Revenue disqualified
SABMiller Plc	No control sample			Disqualified
Period 1 (2004-2009)				
Kumba Iron Ore Limited	Exxaro Resources Limited	2006	2009	All dependant variables
Investec Limited	PSG Group Limited			Revenue disqualified
Investec Plc	Brait SE			Revenue disqualified
MTN Group Limited	No control sample			Disqualified
Pick n Pay Holdings Limited (PIKWIK)	The SPAR Group Limited	2006	2009	Revenue & ROA
PPC Limited	Afrimat Limited	2007	2009	All dependant variables
SABMiller Plc	No control sample			Disqualified
Sappi Limited	Mondi Limited	2007	2009	All dependant variables
Telkom SA SOC Limited	No control sample			Disqualified
Tongaat Hulett Limited	AVI Limited	2004	2008	All dependant variables

8.5 Appendix 5 pre-2010 and post-2010 sample

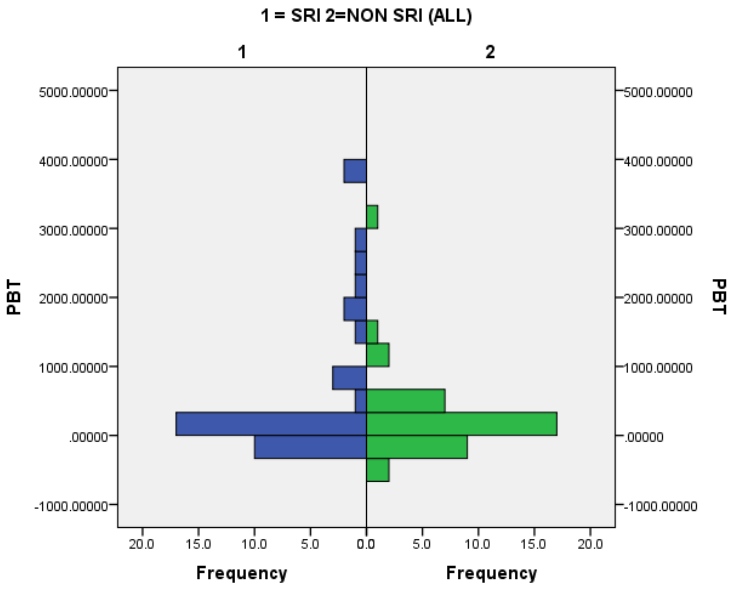
Pre 2010 and post 2010 testing of the SRI sample
ABSA Group Limited/ Barclays Africa Group Limited
African Bank Investment Limited
African Oxygen Limited
Allied Electronics Corporation Limited
Anglo American Plc
Anglo American Platinum Limited
AngloGold Ashanti Limited
Aveng Limited
Barloworld Limited
BHP Billiton Plc
Discovery Limited
Firstrand Limited
Gold Fields Limited
Harmony Gold Mining Company Limited
Illovo Sugar Limited
Impala Platinum Holdings Limited
Investec Limited
Investec Plc
Kumba Iron Ore Limited
Liberty Holdings Limited
Massmart Holdings Limited
Merafe Resources Limited
Murray & Roberts Holdings Limited
Nedbank Limited
Netcare Limited
Oceana Group Limited
Old Mutual Plc
Pick n Pay Holdings Limited (PIKWIK)
PPC Limited
Remgro Limited
Sanlam Limited
Sappi Limited
Sasol Limited
Standard Bank Group Limited
Tongaat Hulett Limited
Woolworths Holdings Limited
36

8.6 Appendices Period 1 histograms for SRI and control sample

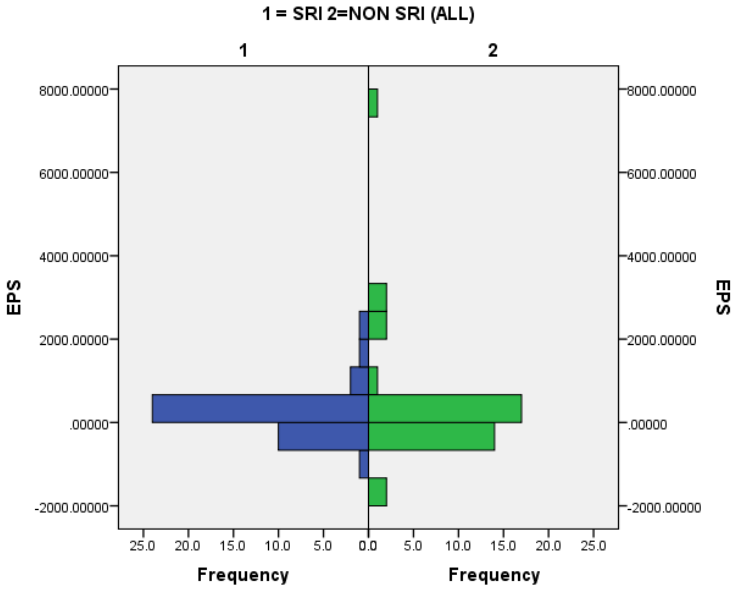
Appendix 6 Period 1 histogram for SRI and control sample Revenue



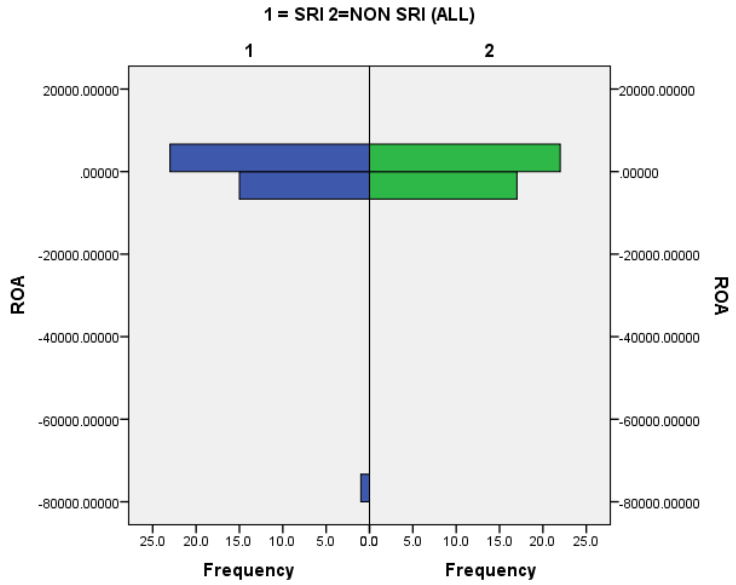
Appendix 7 Period 1 histogram for SRI and control sample Profit Before Tax



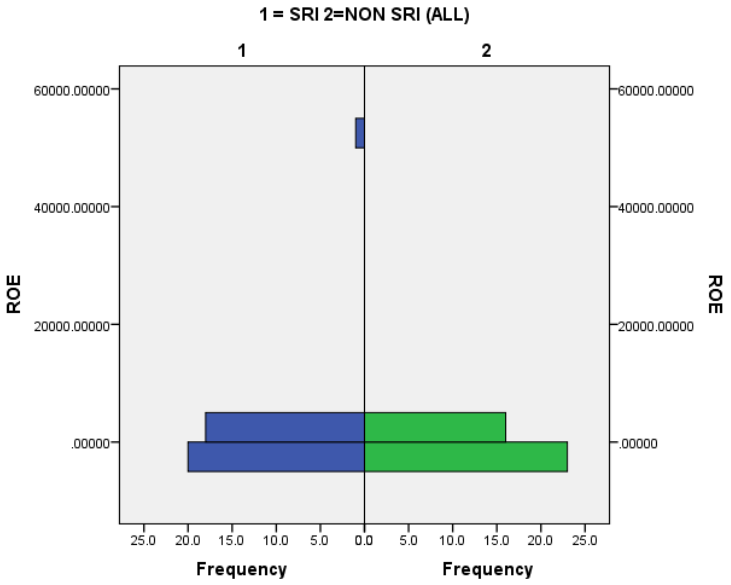
Appendix 8 Period 1 histogram for SRI and control sample Earnings Per Share



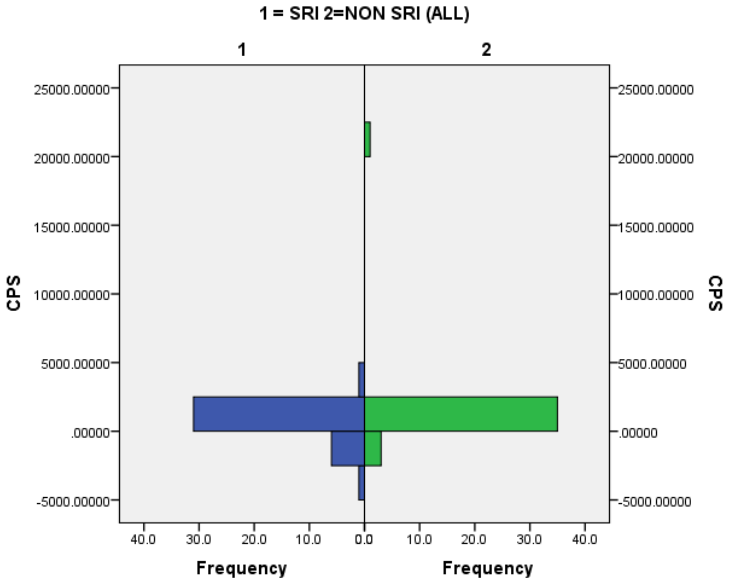
Appendix 9 Period 1 histogram for SRI and control sample Return on Assets



Appendix 10 Period 1 histogram for SRI and control sample Return on Equity

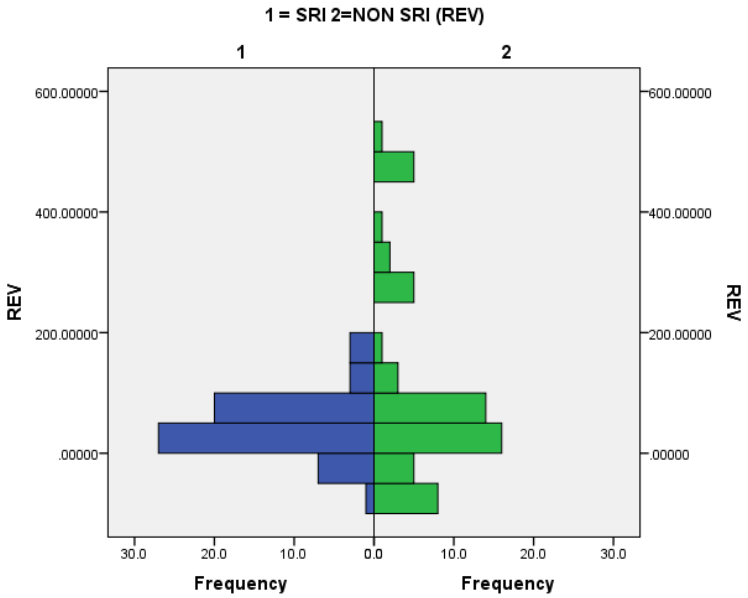


Appendix 11 Period 1 histogram for SRI and control sample Cash Flow Per Share

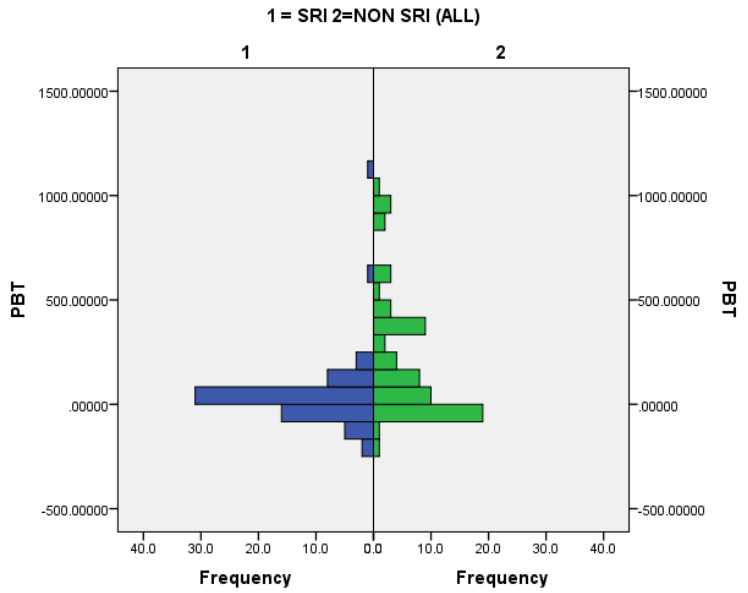


8.7 Appendices Period 2 histograms for SRI and control sample

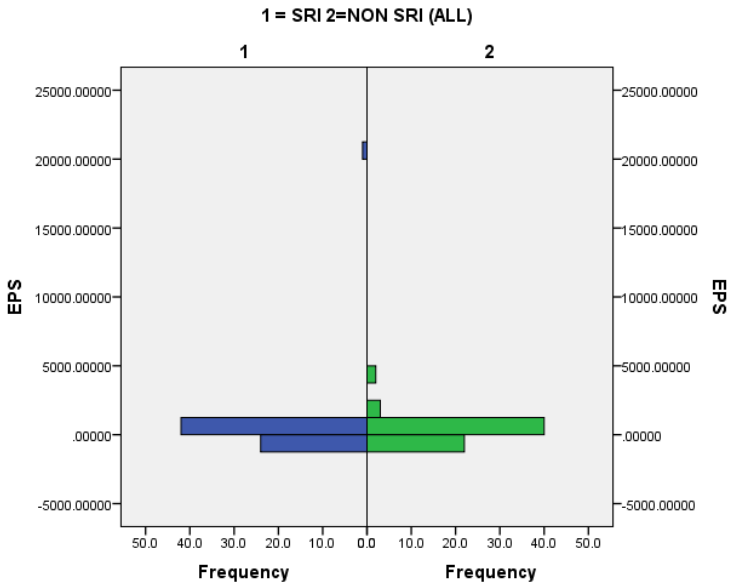
Appendix 12 Period 2 histogram for SRI and control sample Revenue



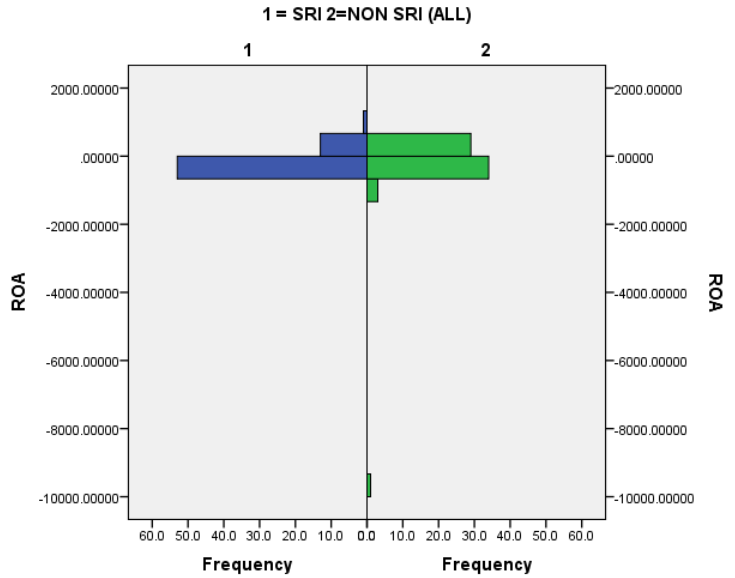
Appendix 13 Period 2 histogram for SRI and control sample Profit Before Tax



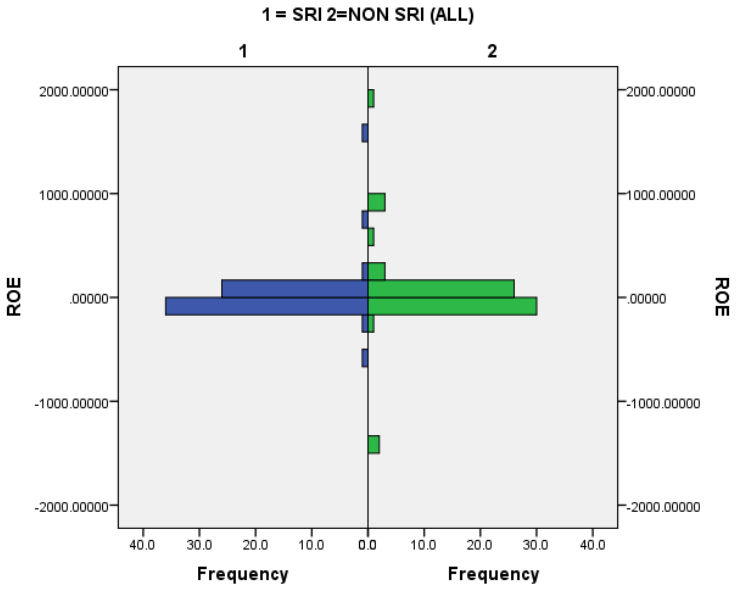
Appendix 14 Period 2 histogram for SRI and control sample Earnings Per Share



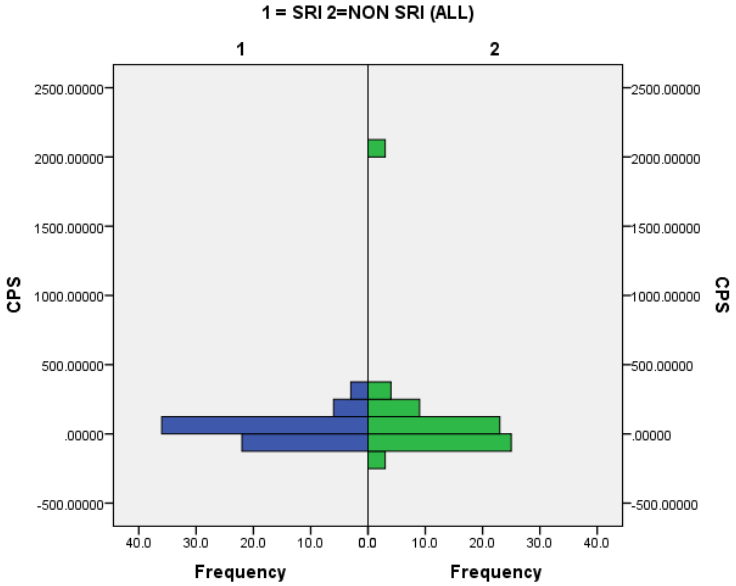
Appendix 15 Period 2 histogram for SRI and control sample Return on Assets



Appendix 16 Period 2 histogram for SRI and control sample Return on Equity

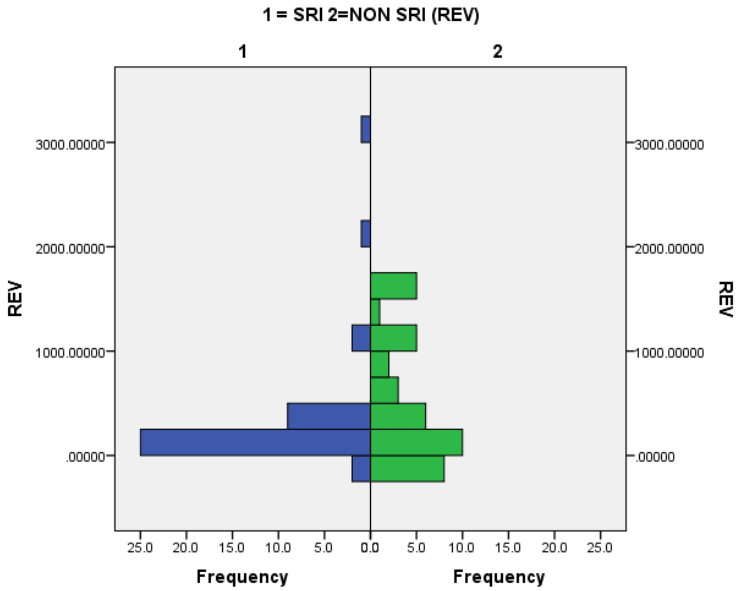


Appendix 17 Period 2 histogram for SRI and control sample Cash Flow Per Share

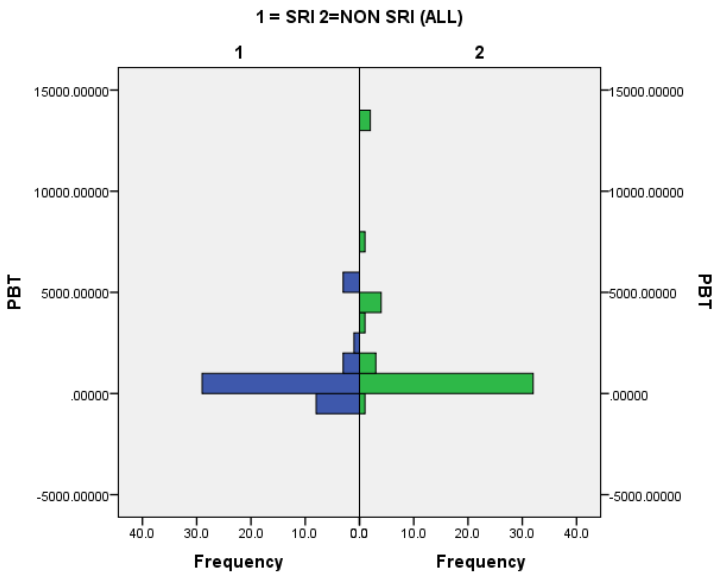


8.8 Appendices Period 3 histograms for SRI and control sample

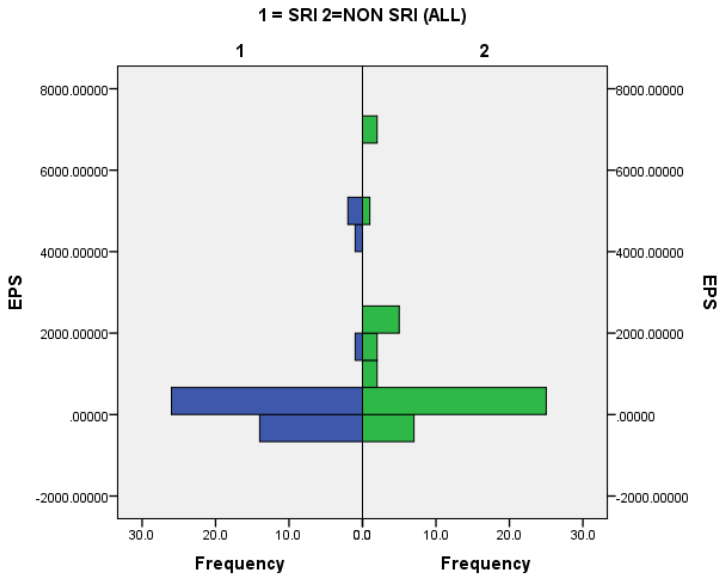
Appendix 18 Period 3 histogram for SRI and control sample Revenue



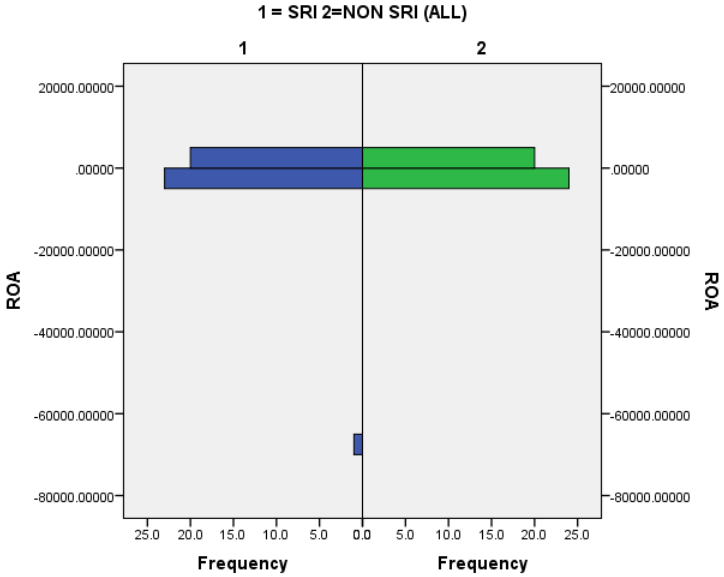
Appendix 19 Period 3 histogram for SRI and control sample Profit Before Tax



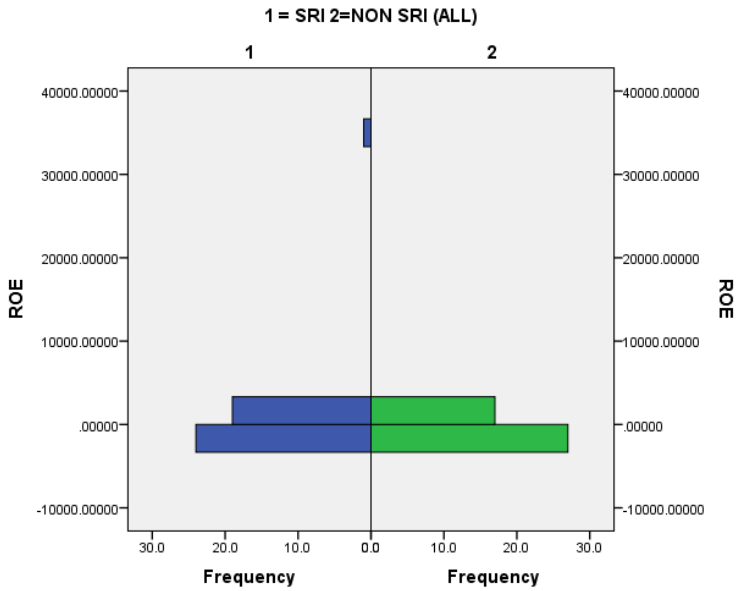
Appendix 20 Period 3 histogram for SRI and control sample Earnings Per Share



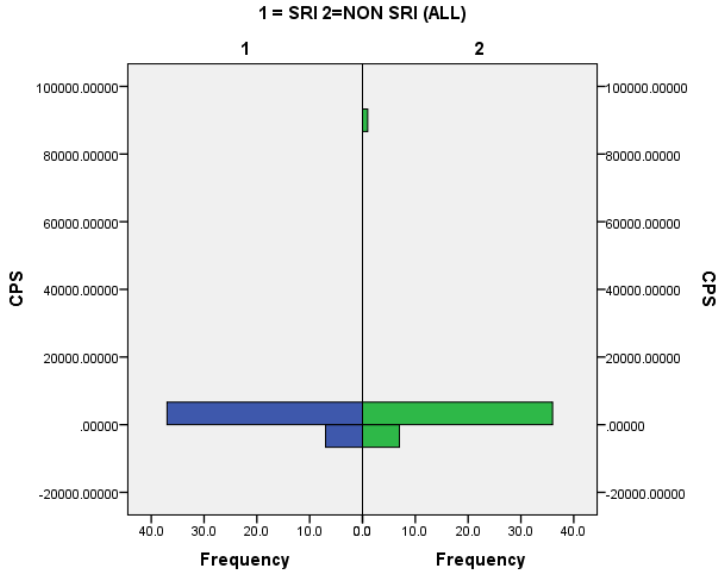
Appendix 21 Period 3 histogram for SRI and control sample Return on Assets



Appendix 22 Period 3 histogram for SRI and control sample Return on Equity



Appendix 23 Period 3 histogram for SRI and control sample Cash Flow Per Share



8.9 Appendices Validation check

Appendix 24 Validation check sample size (Period 1)

Case Processing Summary

	1 = SRI 2=NON SRI (REV)	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
REV	1	37	100.0%	0	0.0%	37	100.0%
	2	26	100.0%	0	0.0%	26	100.0%

Appendix 25 Validation check Shapiro-Wilk test of Normality (Period 1)

Tests of Normality

	1 = SRI 2=NON SRI (REV)	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
REV	1	.315	37	.000	.559	37	.000
	2	.326	26	.000	.662	26	.000

a. Lilliefors Significance Correction

Tests of Normality

	1 = SRI 2=NON SRI (ALL)	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PBT	1	.316	39	.000	.701	39	.000
	2	.312	26	.000	.653	26	.000
EPS	1	.307	39	.000	.663	39	.000
	2	.351	26	.000	.566	26	.000
ROA	1	.503	39	.000	.170	39	.000
	2	.172	26	.047	.863	26	.003
ROE	1	.497	39	.000	.171	39	.000
	2	.201	26	.008	.926	26	.062
CPS	1	.284	39	.000	.715	39	.000
	2	.429	26	.000	.267	26	.000

a. Lilliefors Significance Correction

Appendix 26 Validation check hypotheses results dependent variables (Period 1)

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REV is the same across categories of 1 = SRI 2=NON SRI (REV).	Independent-Samples Mann-Whitney U Test	.418	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PBT is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.228	Retain the null hypothesis.
2	The distribution of EPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.862	Retain the null hypothesis.
3	The distribution of ROA is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.399	Retain the null hypothesis.
4	The distribution of ROE is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.284	Retain the null hypothesis.
5	The distribution of CPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.989	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Appendix 27 Validation check sample size (Period 2)

Case Processing Summary

	1 = SRI 2=NON SRI (REV)	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
REV	1	61	100.0%	0	0.0%	61	100.0%
	2	35	97.2%	1	2.8%	36	100.0%

Case Processing Summary

	1 = SRI 2=NON SRI (ALL)	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
PBT	1	67	100.0%	0	0.0%	67	100.0%
	2	36	100.0%	0	0.0%	36	100.0%
EPS	1	67	100.0%	0	0.0%	67	100.0%
	2	36	100.0%	0	0.0%	36	100.0%
ROA	1	67	100.0%	0	0.0%	67	100.0%
	2	36	100.0%	0	0.0%	36	100.0%
ROE	1	67	100.0%	0	0.0%	67	100.0%
	2	36	100.0%	0	0.0%	36	100.0%
CPS	1	67	100.0%	0	0.0%	67	100.0%
	2	36	100.0%	0	0.0%	36	100.0%

Appendix 28 Validation check Shapiro-Wilk test of Normality (Period 2)

Tests of Normality

	1 = SRI 2=NON SRI (REV)	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
REV	1	.138	61	.006	.913	61	.000
	2	.289	35	.000	.542	35	.000

a. Lilliefors Significance Correction

Tests of Normality

	1 = SRI 2=NON SRI (ALL)	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PBT	1	.236	67	.000	.615	67	.000
	2	.210	36	.000	.869	36	.001
EPS	1	.453	67	.000	.137	67	.000
	2	.368	36	.000	.404	36	.000
ROA	1	.336	67	.000	.383	67	.000
	2	.459	36	.000	.253	36	.000
ROE	1	.271	67	.000	.510	67	.000
	2	.306	36	.000	.631	36	.000
CPS	1	.160	67	.000	.902	67	.000
	2	.302	36	.000	.480	36	.000

a. Lilliefors Significance Correction

Appendix 29 Validation check hypotheses results dependent variables (Period 2)

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REV is the same across categories of 1 = SRI 2=NON SRI (REV).	Independent-Samples Mann-Whitney U Test	.262	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PBT is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.002	Reject the null hypothesis.
2	The distribution of EPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.053	Retain the null hypothesis.
3	The distribution of ROA is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.014	Reject the null hypothesis.
4	The distribution of ROE is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.069	Retain the null hypothesis.
5	The distribution of CPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.410	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Appendix 30 Validation check sample size (Period 3)

Case Processing Summary

	1 = SRI 2=NON SRI (REV)	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
REV	1	40	100.0%	0	0.0%	40	100.0%
	2	26	96.3%	1	3.7%	27	100.0%

Case Processing Summary

	1 = SRI 2=NON SRI (ALL)	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
PBT	1.0	44	100.0%	0	0.0%	44	100.0%
	2.0	27	100.0%	0	0.0%	27	100.0%
EPS	1.0	44	100.0%	0	0.0%	44	100.0%
	2.0	27	100.0%	0	0.0%	27	100.0%
ROA	1.0	44	100.0%	0	0.0%	44	100.0%
	2.0	27	100.0%	0	0.0%	27	100.0%
ROE	1.0	44	100.0%	0	0.0%	44	100.0%
	2.0	27	100.0%	0	0.0%	27	100.0%
CPS	1.0	44	100.0%	0	0.0%	44	100.0%
	2.0	27	100.0%	0	0.0%	27	100.0%

Appendix 31 Validation check Shapiro-Wilk test of Normality (Period 3)

Tests of Normality

	1 = SRI 2=NON SRI (REV)	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
REV	1	.341	40	.000	.513	40	.000
	2	.247	26	.000	.657	26	.000

a. Lilliefors Significance Correction

Tests of Normality

	1 = SRI 2=NON SRI (ALL)	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PBT	1.0	.348	44	.000	.559	44	.000
	2.0	.360	27	.000	.537	27	.000
EPS	1.0	.366	44	.000	.464	44	.000
	2.0	.318	27	.000	.610	27	.000
ROA	1.0	.502	44	.000	.153	44	.000
	2.0	.447	27	.000	.325	27	.000
ROE	1.0	.468	44	.000	.173	44	.000
	2.0	.311	27	.000	.635	27	.000
CPS	1.0	.273	44	.000	.611	44	.000
	2.0	.477	27	.000	.251	27	.000

a. Lilliefors Significance Correction

Appendix 32 Validation check hypothesis results dependent variables (Period 3)

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of REV is the same across categories of 1 = SRI 2=NON SRI (REV).	Independent-Samples Mann-Whitney U Test	.086	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

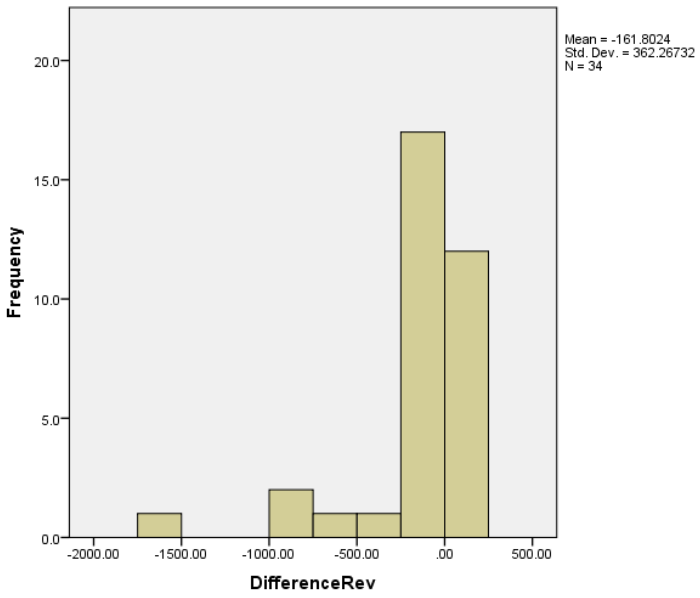
Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PBT is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.045	Reject the null hypothesis.
2	The distribution of EPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.093	Retain the null hypothesis.
3	The distribution of ROA is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.758	Retain the null hypothesis.
4	The distribution of ROE is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.906	Retain the null hypothesis.
5	The distribution of CPS is the same across categories of 1 = SRI 2=NON SRI (ALL).	Independent-Samples Mann-Whitney U Test	.887	Retain the null hypothesis.

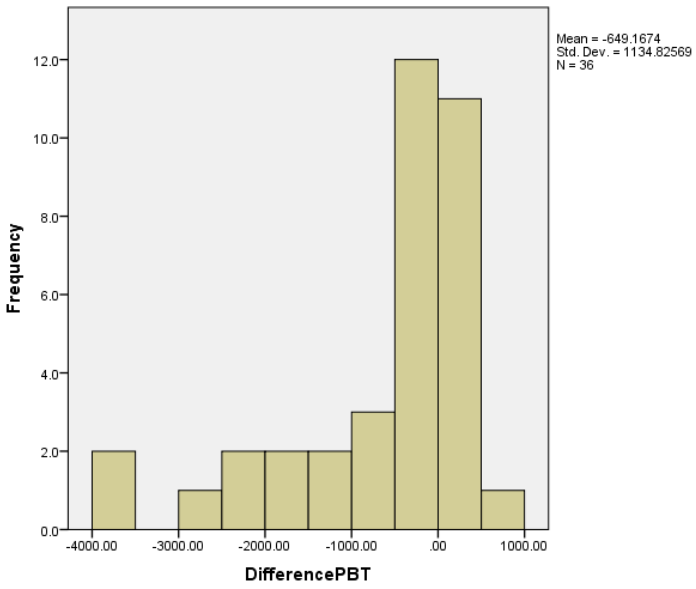
Asymptotic significances are displayed. The significance level is .05.

8.10 Appendices SRI pre-2010 and post 2010 tests

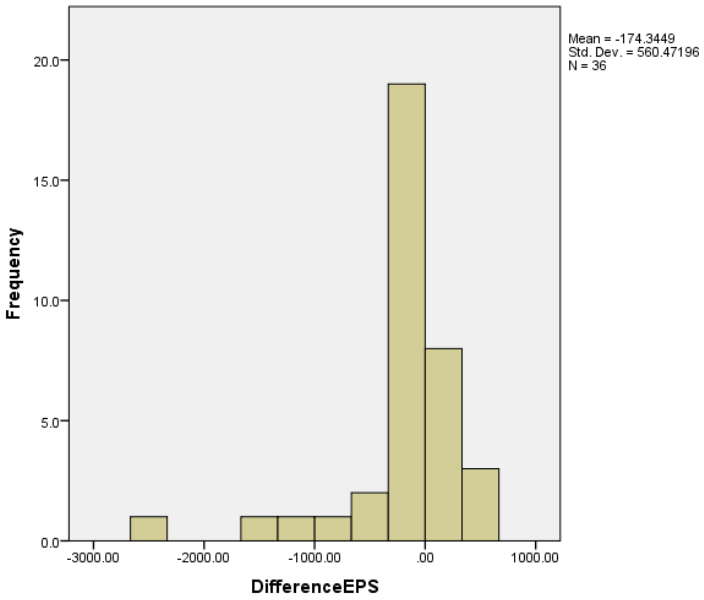
Appendix 33 SRI pre-2010 and post-2010 difference score histogram (Revenue)



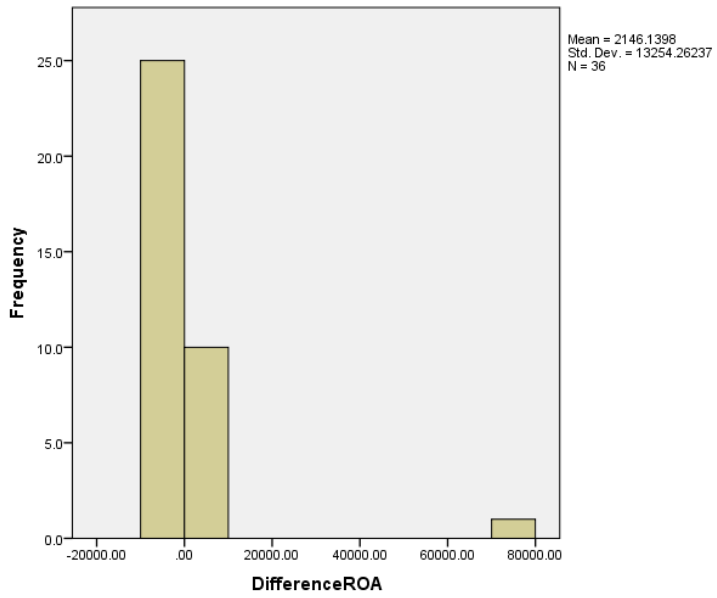
Appendix 34 SRI pre-2010 and post-2010 difference score histogram (Profit Before Tax)



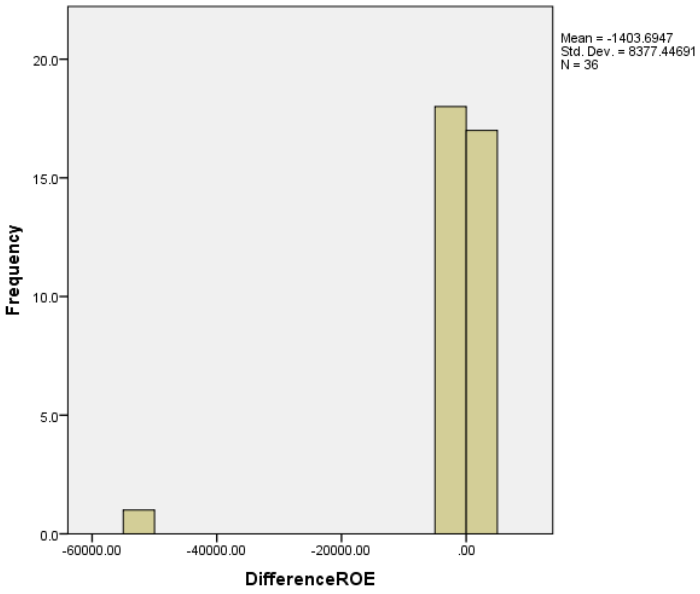
Appendix 35 SRI pre-2010 and post-2010 difference score histogram (Earnings Per Share)



Appendix 36 SRI pre-2010 and post-2010 difference score histogram (Return on Assets)



Appendix 37 SRI pre-2010 and post-2010 difference score histogram (Return on Equity)



Appendix 38 SRI pre-2010 and post-2010 difference score histogram (Cash Flow Per Share)