UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Gordon Institute
of Business Science
University of Pretoria

Improving competitive advantage through corporate social responsibility in South Africa:

The role of social and environmental impact levels

Marieke Smits

13403649

A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

10 November 2014

Abstract

The question as to whether companies can "do well while doing good" has been investigated by academics for over four decades. Conclusive evidence of a positive link between Corporate Social Responsibility (CSR) and Corporate Financial Performance (CFP) so far has however remained elusive.

In building on previous research findings, this study aimed to provide a deeper understanding into the mediating and moderating factors that impact a firm's ability to generate returns from social investment. In particular, the moderating effect of social and environmental (SEI) impact levels on CSR returns were further investigated. Following the risk-reduction and value-creating hypotheses, it was asserted that sustainable firms with high SEI would yield superior CFP as compared to their peers with lower levels of social and environmental impact.

The findings revealed that sustainable firms with high levels of social and environmental impact indeed had higher CFP than their peers with medium and low social and environmental impacts levels. However, the same results were yielded for non-sustainable companies.

Although the main hypothesis did not yield the expected outcomes, the study provided important insights into the role of moderating factors on the ability for firms to generate returns from CSR. Moreover, the study uncovered previously unexplored areas of CSR and thereby opened up new avenues for future research.

Keywords

Corporate social responsibility

Corporate financial performance

Social and environmental impact

Intangible resources

CSR - CFP link

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.

Marieke Smits.   **10 November 2014**

Acknowledgements

I would like to extend a big "thank you" to the following people:

- To my supervisor, Morris Mthombeni, for his guidance, support and suggestions.

- To Riaan Terblanche and Johan van Jaarsveld, for seeing potential in me and convincing me to do this MBA. I owe this journey to you both.

- To my parents, for instilling a curiosity in me to always explore and take the unbeaten path. I would never have ended up in South Africa if it wasn't for my wanderlust.

- To Andile, for always believing in me and teaching me to persevere during difficult times. It's because of you that I am where I am today.

- To my classmate Salsa, for his willingness to share his financial modelling expertise with me. I would have been nowhere without your help!

- To the JSE Indices team, for their quick and very professional assistance.

- To the ladies of the GIBS Information Centre. A special thanks to Monica Sonqishe for always being willing to help me out – night or day.

- To my classmates, study mates and now friends. The past two years would not have been the same without you. I will miss spending our weekends together!

- To all those other people that kept me motivated and managed to put a smile on my face when things were tough. You know who you are. I could not have done this without your support –Ryyyar!

List of figures

List of tables

List of abbreviations

ALSI   All Share Index

BBBEE   Broad-Based Black Economic Empowerment

CFP   Corporate Financial Performance

CR   Corporate Responsibility

CSP   Corporate Social Performance

CSR   Corporate Social Responsibility

ICB   Industry Classification Benchmark

JSE   Johannesburg Stock Exchange

RBT   Resource-Based Theory

RBV   Resource-Based View

ROI   Return on Investment

SCA   Sustained Competitive Advantage

SEI   Social and Environmental Impact

SIC   Stakeholder Influence Capacity

SRI   Socially Responsible Investment index

Table of Contents

"Goodness is the only investment that never fails"

Henry David Thoreau

1. INTRODUCTION TO RESEARCH PROBLEM

1.1 Introduction

Firms all over the world are increasingly expected to be 'good corporate citizens'. Being a good corporate citizen means fulfilling not only firms' legal obligations towards society but also pro-actively contributing towards development and improvement of the broader environment they operate in (Carroll, 1998). Especially in emerging economies, such as South Africa, there seems to be a growing awareness in the private sector of the need to develop sustainable business practices to ensure that societal and community needs are factored into day-to-day operations.

The concept of Corporate Social Responsibility (CSR) has been debated by scholars and practitioners for more than four decades (Carroll & Shabana, 2010; Margolis, Elfenbein, & Walsh, 2009; Perrini, Russo, Tencati, & Vurro, 2011; Schreck, 2011). More specifically, the question as to *why* the private sector should engage in CSR has become the focal point of many studies. Can companies, through 'doing good', gain an edge on its competition and thereby improve its corporate performance? And if so, what are the determining factors that link CSR to improved competitive advantage? This study addresses these two, inter-related questions (Hamilton, Jo, & Statman, 1993; Margolis et al., 2009).

1.2 Background to the problem

The presumed link between Corporate Social Responsibility and Corporate Financial Performance (CFP) is the subject of a growing body of literature. Underpinning interest in the subject in the commercial world is the possibility that CSR investments positively affect firms' profits, above and beyond purely ethical or normative considerations. This was the thrust of much of the analysis prior to the 1990's, the idea that there was a "universal business case" for CSR. More recently, the literature has been more ambiguous about the likely outcomes of CSR investments. Two factors have been put forward to explain this shift in thinking. Firstly, the lack of consistency in the operationalization of both the CSR and CFP construct. As will be discussed in more detail below, no single measure against which both corporate responsibility and corporate performance can be assessed has been devised. This has led highly inconclusive study outcomes. Secondly, the earlier works on CSR did not adequately interrogate the

1

potential mediating role of intangible resources – human capital, reputation, positive stakeholder relationships and innovative capacity – that might improve competitive advantage.

As suggested by the literature (Halme & Laurila, 2009; Rowley & Berman, 2000; Surroca, Tribó, & Waddock, 2010), industry-specific dynamics such as social and environmental impact (SEI) levels could be determining factors influencing the ability of firms to turn CSR into CFP. In other words, differences in social and environmental impacts might lead to differences in returns on social investment. It is the influence of these industry specific dynamics that is the primary focus of this study.

1.3   Relevance to South African Business

The "private provision of public goods", as CSR has been dubbed by some authors (McWilliams & Siegel, 2011), is particularly relevant to emerging economies like South Africa, where governments are unable to provide all the basic services their people require. The recent unrest in the Marikana[1] mining community and scores of strikes across other industry sectors suggest that firms operating in emerging economies are under increased pressure from their stakeholders to contribute towards the development of the environments they operate in.

In considering how they can best manage these pressures, South African businesses naturally hope, at the least, to invest in societal development while maintaining a healthy balance sheet. More preferably, they wish to enhance their competitiveness through CSR. To do so, they require more insights into the variables that affect returns on social investment. The numerous CSR – CFP study outcomes reveal that firm specifics and industry dynamics have a significant bearing.

It is hoped that this study's findings will better equip managers to make decisions regarding CSR spend, thereby improving their ability to generate optimal returns from the typically scarce resources allocated to social investment. For South African firms, operating in a far

---

[1] The 2012 Marikana miners' strike or Lonmin strike, also dubbed the "Marikana massacre" by the press, was a wildcat strike in Rustenburg (South Africa). The event attracted international attention after violence between the South African Police Service, Lonmin security forces, the mining union (NUM) and strikers resulted in the death of 44 people. After Marikana, many more protests followed in the South African Platinum sector, pointing out the dire circumstances under which most of the miners lived and worked.

more challenging and risky environment than their peers in highly developed countries, a thorough understanding of how to leverage social investment seems even more critical.

1.4   Academic motivation for the research

As stated by Perrini et al. (2011) it is time for the traditional CSR – CFP debate to move beyond the "black box approach"(p. 60). CSR is no longer believed to be a monolith that – under any circumstance and in any environment – leads to universal returns on investment.

To the contrary, many scholars have recently taken the stance that the link between CSR and CFP is more complex than was previously assumed. The potential to generate returns from social investment seems to be dependent on a number of complex and intertwined factors, such as specific firm characteristics and industry dynamics. The national context a firm operates in - in this case the South African business environment – poses an additional variable that might influence the way in which firms can generate competitive advantage through CSR.

As evidenced by the literature (Beurden & Gössling, 2008; Margolis et al., 2009; Surroca, Tribó, & Waddock, 2010 among others), there is an urgent need for a more granular understanding of the effect that these mediating factors have on the ability of firms to generate returns on CSR. Only by gaining a deeper understanding of the role these variables play can the academic debate can be advanced beyond the "universal business case" debate that dominated it for so long.

It is the aim of this study to provide insight into one of the specific variables that scholars suggested might affect the CSR – CFP link, being company social and environmental impact level. In addition, the research will be set in the context of an emerging economy – South Africa. By zooming in on these two specifics, this study addresses the need for inclusion of more variables (Halme & Laurila, 2009) as well for research done in developing economies (Hart & Dowell, 2011; McWilliams & Siegel, 2011).

1.5   Research objectives

Most companies invest in CSR without having a clear understanding of the variables affecting the potential return on their investment. In South African society, which comprises both highly advanced economic sectors and prosperity alongside extremely disadvantaged groups and

3

informal economies, there are tremendous pressures on firms to contribute to wider development. It is therefore essential for business decision makers to understand if and how they can leverage CSR investment to generate benefits for both their businesses as well as society.

The purpose of this study is to assess the influence of one specific variable on a firm's ability to generate competitive advantage through CSR: 'social and environmental impact (SEI)' level. Social and environmental impact is linked to firm visibility, which is believed to influence the way in which companies can generate certain intangible resources (such as reputation) that can help improve financial performance. The mechanism through which this is achieved is depicted in the figure below. Focus areas for the study are circled.

Figure 1: SEI as a moderating factor influencing the CSR - CFP link
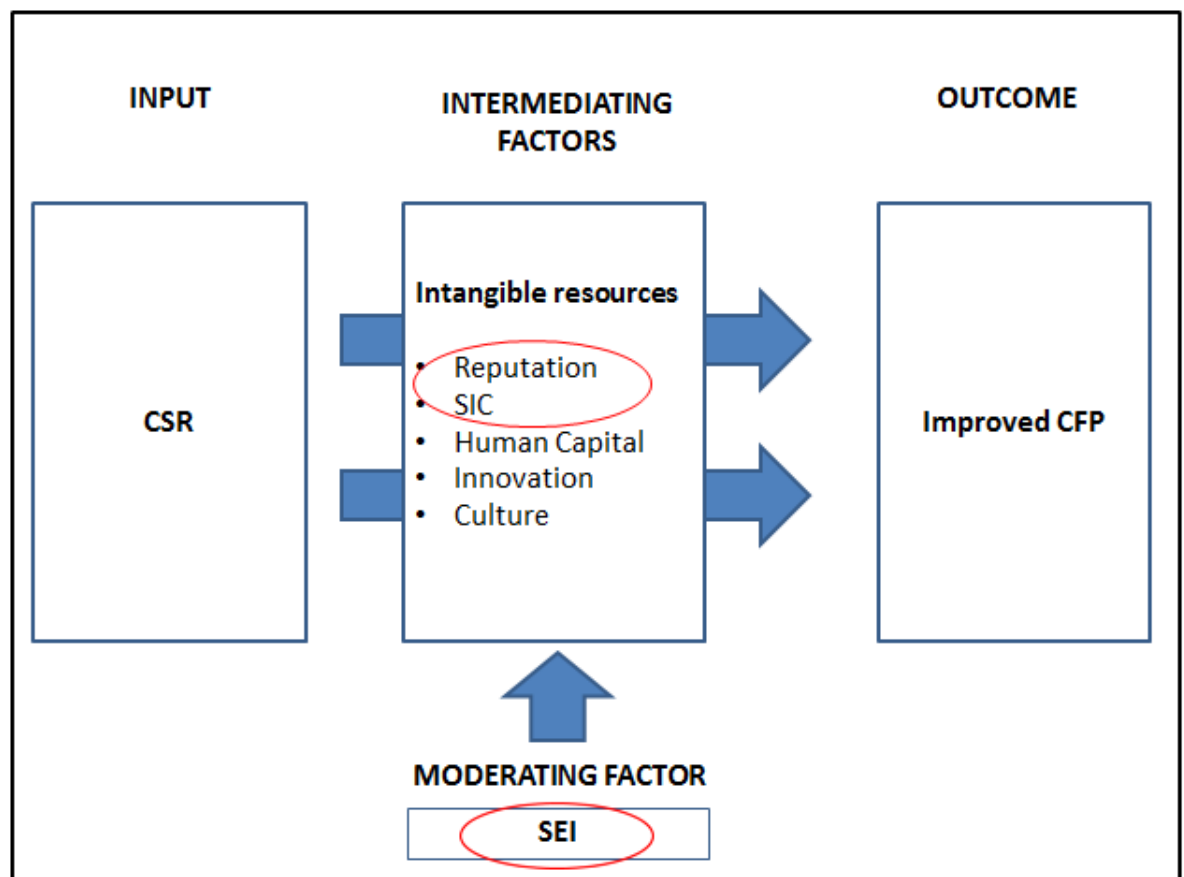
By isolating one individual variable, this study attempts to further unpack the "black box" of CSR, thereby contributing towards the understanding of the complex relationship between social investment and competitive advantage. Furthermore, by setting the research in the context of an emerging economy, insights into the role of the specific national context will be

gained. The outcomes of this study will help firms and investors making better informed decisions when deciding if and when to invest in social responsibility.

5

2. THEORY AND LITERATURE REVIEW

2.1 Introduction

The purpose of this section is to review and synthesise previous scholarly work on CSR and the ways in which it might (or might not) lead to improved competitive performance, zeroing in on SEI specifically. It first traces the origins of CSR and the initial debates over whether "doing good" was a private sector responsibility or not. Secondly, it examines the change in focus towards the profits rationale behind social and environmental performance, commonly referred to as "the business case for CSR". In other words: can companies increase their long-term competitive advantage through engaging in CSR?

Of particular interest in this regard is the more recent debate around the role of mediating factors or mechanisms responsible for turning CSR into improved corporate financial performance. The "universalistic perspective" that assumes a generic link between CSR and CFP has recently been challenged by many scholars (Perrini et al., 2011; Rowley & Berman, 2000; Udayasankar, 2008). Further understanding of the specific drivers behind competitiveness through CSR is therefore essential.

Lastly, this section will interrogate how variances in SEI influences variability in CSR returns, a question that has been largely excluded in previous research (Griffin & Mahon, 1997; Halme & Laurila, 2009; Rowley & Berman, 2000; Schreck, 2011; Surroca, Tribó, & Waddock, 2010). This is particularly relevant to South Africa, where highly visible firms such as mining companies are currently grappling with various pressures and risks, not least from their own workers. In thinking about their CSR policies, there is a strong case for following the advice of McWilliams and Siegel (2001): "Managers should treat decisions regarding CSR precisely as they treat all investment decisions" (p. 125).

2.2 Corporate Social Responsibility

Can companies do well while also doing good for society? And if they can, under which circumstances is this possible? These are the fundamental questions underlying current debates on CSR and broader sustainability. Another important question, as a point of departure, is what the concept of CSR entails. The concept has been variously described as "murky" (Barnett, 2007), "tortured" (Godfrey & Hatch, 2007) and "contested" (Visser, 2014).

1

More than fifty years after CSR was first conceptualised, there is no commonly accepted definition or any consensus on how CSR relates to sustainability. (Dahlsrud, 2008; Hahn, 2013; Jamali, 2008; Jo & Harjoto, 2011; McWilliams, Siegel, & Wright, 2006; Visser, 2014 amongst others). Nevertheless, despite definitional uncertainty around CSR its importance has grown exponentially over the past few decades, in both the academic and business world (Carroll & Shabana, 2010; Jamali, 2008). This growing interest, particularly around the purported business rationale for CSR, is reflected in the ever-more frequent studies dedicated to CSR, especially the link between CSR and Corporate Financial Performance (CFP). Whereas a simple google scholar search on the keyword "CSR" gave only 11.000 results over the period 1990-1995, this number has increased exponentially to over 100.000 results generated for the period 2005 to 2010. When looking for the terms "CSR and CFP", the search engine shows close to 800 hits for the period 2005 – 2010, more than four times found for the period 1990 – 1995. In the media and the public domain, interest in CSR and its sister concepts Corporate Responsibility (CR) and sustainability have clearly grown during the past decade.

But how and when did the term Corporate Social Responsibility come about? One of the first mentions of the term CSR can be traced back to Howard R. Bowen, who in 1953 questioned "what responsibilities to society businessmen may reasonably be expected to assume" (Carroll, 1999; Carroll & Shabana, 2010). Social responsibility, he argued "refers to 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" (Carroll, 1999). As Bowen's seminal work demonstrates, most of the core ideas about CSR in the 1950's evolved around businesses' responsibilities towards society or the communities they operate in, with a special focus on corporate philanthropy (Carroll & Shabana, 2010; Wood, 2010).

Friedman, Levitt and Freeman built on Bowen's work through their classic debate on firms' responsibility to engage in social issues or not. Friedman argued that the sole responsibility of a firm should be to create wealth for shareholders. Social responsibilities, he argued, should be left to the individual's discretion and should not be a responsibility of business (Barnett, 2007; Beurden & Gössling, 2008; Cai, Jo, & Pan, 2012; Carroll & Shabana, 2010; Husted & De Jesus Salazar, 2006; Margolis et al., 2009). Levitt went as far as to suggest that CSR would negatively impact firms' profits (Carroll & Shabana, 2010).

Freeman (1984) on the other hand, contested this traditional view of the role of business by pointing out that firms, in order to do well, should take into account and manage the many stakeholder expectations firms confront (Carroll & Shabana, 2010; Falkenberg & Brunsæl,

2

2011; Perrini et al., 2011). Social investment, according to Freeman, would lead to improved stakeholder relationships, which in turn would lead to improved financial performance (Barnett & Salomon, 2012). By stating that company performance was dependent on the mediating effects that stakeholders could assert, Freeman established himself as an early advocate of the business case for CSR.[2]

In 1979, Carroll created his seminal "Three-Dimensional Conceptual Model of Corporate Social Performance", which introduced the four different components of CSR: 1) economic; 2) legal; 3) ethical; and 4) discretionary (Carroll, 1999; Jamali, 2008). The components were visually represented in a pyramid, whereby the base consisted of the economic component on which the others were built. Carroll sought to demonstrate that despite the economic function forming the base, ideally all four components should be engaged concurrently. As he put it: "The CSR firm should strive to make a profit, obey the law, be ethical and be a good corporate citizen" (Carroll, 1999, p.43). Carroll's definition became the benchmark on which most of the later definitions of CSR were based.

Figure 2: Carroll's hierarchy of Corporate Social Responsibility

DISCRETIONARY RESPONSIBILITY
ETHICAL RESPONSIBILITY: Companies should obey society's ethical guidelines.
LEGAL RESPONSIBILITY: Companies should obey the law.
ECONOMIC RESPONSIBILITY: Companies should fulfill the institutional role of resource conversion.
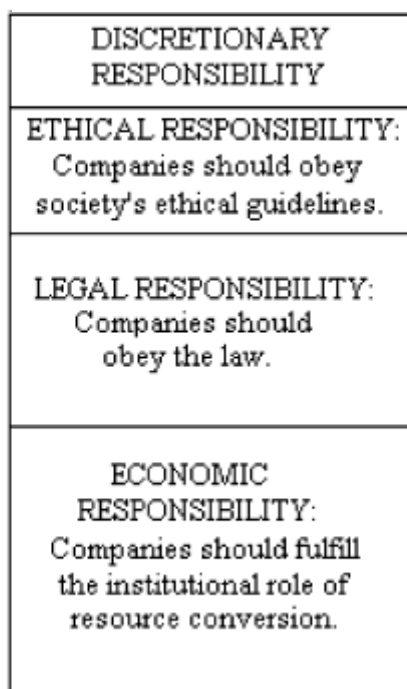
Source: Carroll (1979)

---

[2] The well-known Friedman versus Freeman debate has been extensively covered in CSR literature since Friedman's 1970 New York Times article "The social responsibility of business is to increase its profits". For an in-depth discussion about this debate refer to Husted and de Jesus Salazar (2006).

3

2.2.1 Sustainable development and sustainability

The principle of sustainable development has recently entered the CSR debate, adding to the confusion around the concept. Often believed to interlink and overlap with CSR, sustainable development is the overarching or "macro approach" which focuses on the economic, social and environmental development needs for society as a whole; CSR, on the other hand, tightly focuses on sustainability at the firm level (Kleine & Hauff, 2009; Visser, 2014). In other words, CSR is essentially the firm-level version of sustainable development.

Figure 3: How CSR fits into the sustainability debate
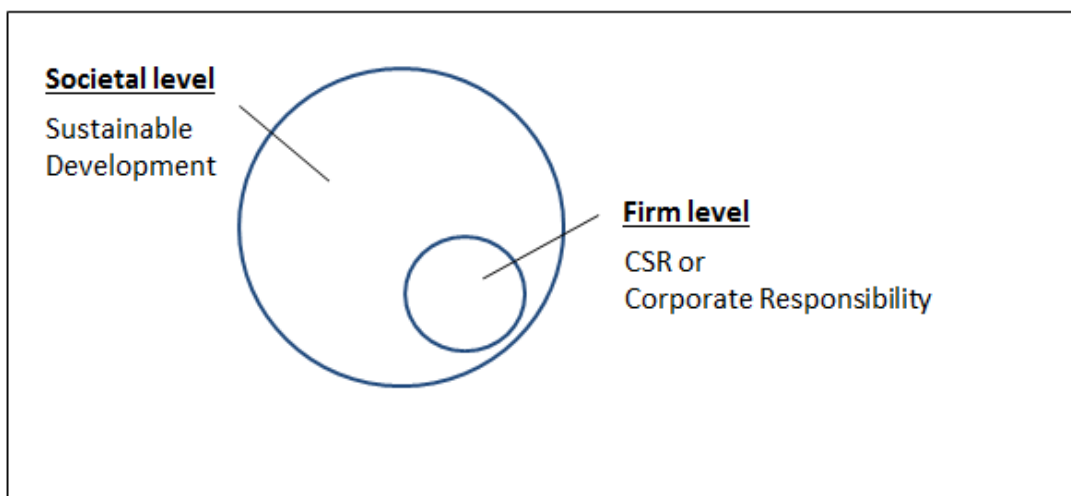
Schwartz and Carroll (in Carroll & Shabana, 2010) furthermore stated that not only CSR, but also the related concepts of CSP, stakeholder management and sustainability are interconnected in that they are "integrated by key underlying themes such as value, balance and accountability" (p. 86). Hahn (2013), finally, introduced the concept of CSSR or Corporate Sustainability and Social Responsibility, which seems to integrate both corporate sustainability and social responsibility into a single definition.

To further illustrate the convergence of the terms CSR and (corporate) sustainability, two definitions coined respectively by the European Commission and the World Business Council for Sustainable Development bear mention.

According to the World Business Council, Corporate Social Responsibility is the "continuing commitment by business to behave ethically and contribute to economic development, while improving the quality of life of the workforce and their families as of the local community at large" (Gupta, 2014, p. 195).

4

The European Commission, on the other hand, refers to Corporate Sustainability as a concept in which "companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis". Mindful of the earlier definitions of CSR, including Carroll's (1979), it becomes clear that although CSR and sustainability are two different concepts, they seem to have merged into one definitional construct over time. It is therefore necessary to see the concept in the broader context rather than a narrow definition.

For the purposes of this study and building on definitions set out in previous scholarly work (Barnett, 2007; Cai, Jo, & Pan, 2012; Lankoski, 2008), CSR is understood to be:

"Any discretionary corporate activity contributing to furthering the social and natural environment of its stakeholders in society".

2.3   CSP – Towards a focus on actions, not responsibilities

From the 1970's onwards, the CSR debate adopted a new stance. From being primarily focused on the moral dilemma as to *whether* firms should adopt socially benevolent behaviour, the debate became more outcome-focused and therefore more practical to business (Beurden & Gössling, 2008).

The concept of Corporate Social Performance (CSP) found its way in to the CSR debate, which indicated a move away from the idea that firms should merely adopt a social (or ethical) stance towards CSR. Instead, it was asserted that firms should *respond through action* to real societal challenges. How companies were supposed to do this became the new topic of scholarly debate (Wood, 2010).

By operationalising the CSR construct and making it dependent on "performance" as opposed to "responsibility", Carroll (1979) introduced the first conceptual model of CSP. This, he argued, allowed for firms' CSR activities to be measured (Wood, 2010).

For the purposes of this study, it is important to differentiate between CSR and CSP. Whereas CSR can be described as the activities that firm can undertake in order to positively contribute towards their social and natural environment, CSP is the operative aspect – which makes the construct of CSR measurable. As stated by Wood (2010), CSP is the "production, monitoring, evaluation, compensation and rectification" (or not) of outcomes of CSR, being "descriptive

5

categorizations of business activity, focusing on the impacts and outcomes for society, stakeholders and the firm itself". Barnett (2007) sees CSP as the output of a series of socially responsible investments, only in the aggregate leading towards a measure of CFP.[3]

2.4   The business case for CSR – Doing well while doing good?

As pointed out by Barnett (2007) and as evidenced by the Friedman versus Freeman debate, CSR can be distinguished from other corporate investments in that they always occur in the grey area between ethical or normative considerations and the business rationale. In other words, should companies engage in CSR because they are expected to do so by society? Or is there a financial return that justifies the allocation of scarce resources to social development initiatives?

The significance of this question, which has vexed scholars for years,[4] lies in the fact that proof of a universal return to CSR investment would enable business leaders to argue that moral and ethical considerations needn't be at the expense of profits (Lee, 2008; Rowley & Berman, 2000). A proven "business case" for CSR would allow them to justify social development expenses just as they would justify any other investment. As stated by several authors (Beurden & Gössling, 2008; Lee, 2008) the search for a business rationale shifted the CSR debate from explicitly normative and ethics-oriented to a more practical and performance-oriented approach.

Meta-analyses of CSR studies conducted over the past 40 years number anywhere between 55 (Orlitzky, Schmidt, & Rynes, 2003) to 251 (Margolis et al., 2009). According to the latter, at least 214 articles, books, dissertations, and working papers, investigating the link between CSP and CFP, have been published since 1972, with a real spike in instrumental research from the 1980's onwards (Lee, 2008). Despite the large number of studies dedicated to finding a linear relationship between social investment and improved financial performance, the search for a

---

[3] It is important to note that throughout this study the term CSR will be used to describe both a firm's social activities and the aggregated outcome of these activities. Chapter 4 will further elaborate on this, explaining how CSR will be operationalised through measures of the JSE Socially Responsible Investment (SRI) Index.

[4] As stated by (Avi-Yonah, 2005) and (Gössling, 2003), the questions of whether it pays to be good, in either a personal capacity or as a business , dates back to over 2000 years. It has however gained specific relevance over the past decades (Lee, 2008). For more background refer to Margolis and Walsh (2009) and Wood (2010), amongst others.

universal link has so far remained inconclusive (Perrini et al., 2011; Rowley & Berman, 2000; Schreck, 2011; Udayasankar, 2008).

Previous studies investigating the business case can be divided into four different groups: The first and largest group of studies[5] show a positive – though often weak – relationship between sustainable business practices and positive financial returns (Cai et al., 2012; Griffin & Mahon, 1997; Jo & Harjoto, 2011; Margolis et al., 2009; Orlitzky, Schmidt, & Rynes, 2003; Peloza, 2009 amongst others). In other words, the majority of the studies conducted indicate, albeit not very convincingly, that CSR in most cases leads to improved financial performance. This follows the argument put forward by Freeman that social investment indeed drives value for companies engaging in it.

The second group of studies found little or no significant relationship (see, for example Lenssen et al., 2005; Seifert, Morris, & Bartkus, 2003) between CSR and CFP. The findings of a third group of studies suggest that companies might even lose out when engaging in CSR. This negative correlation between social investment and company performance follows Friedman's argument that allocating a firm's scarce resources towards "non-essential" social activities would hurt the bottom line through raising a firm's cost without a return – creating a financial disadvantage in a competitive market. Brammer, Brooks & Pavelin (2006), for instance, argued that CSR-engaged firms generated lower stock returns relative to their non-sustainable peers.

Finally, a fourth group of studies indicate the existence of a U-shape to CSR returns. Brammer and Millington (2008) measured for a relationship between a specific aspect of CSR (charitable giving) and found that firms that either displayed exceptionally high or low levels of charity recorded the highest CFP, with firms playing in the middle field reporting the lowest CFP. This curvilinear relationship was likewise reported by Barnett & Salomon (2012), who compared financial performance of holdings within sustainable funds relative to holdings within conventional funds. The authors found that if fund managers performed a high number of 'social screens' (being an indication of the sustainability of the fund), they generated higher returns than firms that performed an average number of screens. The same argument held for fund managers that did not do any screens at all – they outperformed the fund managers that did an average number of screens. In other words, financial returns steeply declined when CSR investment grew from almost zero to average, but then rebounded as it reached a maximum.

---

[5] According to Peloza (2009), 65% of studies show a positive relationship between CSP and financial performance; 15% of studies report a negative relationship, and 22% report a neutral or mixed relationship."

7

Table 1: Variability in CSR - CFP outcomes: exemplary articles

Relationship	Author (year)
Positive	
	He et al. (2007)
	Luo and Bhattacharya (2006)
	Barnett and Salomon (2006)
	Peinado-Vara (2006)
	Schnietz and Epstein (2005)
	Goll and Rasheed (2004)
	Graves and Waddock (1999)
	Russo and Fouts (1997)
Negative	
	Waddock and Graves (1997)
	Boyle et al. (1997)
Non-significant	
	Brammer et al. (2006)
	Van de Velde et al. (2005)
Curvilinear/ U-shaped	
	Seifert et al. (2004)
	McWilliams and Siegel (2000)
	Hamilton et al. (1993)
	Barnett and Salomon (2012)
	Brammer&Millington (2008
	Barnett and Salomon (2006)

Source: Adapted from Beurden & Gossling (2008)

The broad variance in outcomes of the search for a universal CSR – CFP research suggests that the search for a "universal link" has not added much to thinking on the subject other than the conclusion that CSR *might* positively affect CFP, thus justifying investment in social causes (Rowley & Berman, 2000). Moreover, the debate does not seem to have provided business decision makers with a clearer understanding of *how* they can make CSR work for them. In other words, the practicality of the debate so far has been absent.

The next section will first discuss why the attempt to find evidence of a "universal" business case for CSR is no longer relevant, then explains how and why the CSR and CFP concepts should be unpacked in order to better examine possible links between the two. Thereafter, a framework through which the CSR – CFP link can be better understood, taking into account the power of intangible resources that are key to building sustained competitive advantage, will be put forward.

2.5 Criticism on the universal business case: Operationalising CSP

As argued by many scholars, particularly over the past decade or so, the CSR – CFP debate has been clouded. Rather than a monolith, CSP is a multidimensional construct (Perrini et al., 2011; Rowley & Berman, 2000; Simpson & Kohers, 2002). Whereas certain components will be applicable universally, such as environmental performance or governance, the make-up of CSP often varies from one context/country to the other.

One such example is the sustainability score South African firms can obtain for the way in which they manage Broad–Based Black Economic Empowerment (BB-BEE).[6] Due to the specific history of this country where non-white individuals previously were deprived of basic rights and opportunities, firms are now expected to adopt policies to resolve the inequalities created by Apartheid. Another context-specific measure is the way in which companies respond to the HIV/AIDS challenge. In South Africa, as well as other Sub-Saharan countries where the pandemic is prevalent, this is an essential part of being a responsible corporate citizen. In a different contextual environment, such as Europe or the US, HIV management rankings are typically not relevant to measurements of a company's CSR performance.[7]

For the purposes of this study, the Johannesburg Stock Exchange Socially Responsible Investment index (JSE SRI) serves as a proxy for CSP. As such, it may differ slightly from other measures of sustainability that are deployed in different geographical contexts. Examples are the Kinder Lydenberg Domini (KLD) Socrates database, which measures corporate responsibility and sustainability in the US and currently is the most widely used and comprehensive information source for CSP research (Chen & Delmas, 2011; Gao & Bansal, 2013). In the European context, indices such as the STOXX Europe Sustainability Index are used as a proxy for CSP.

While most analysts of CSP have portrayed it as a multidimensional concept, some have identified a single isolated dimension as a proxy for CSP, such as charitable donations (Brammer & Millington, 2008; Schreck, 2011) or environmental performance (Margolis et al., 2009). Others have attempted to measure social performance by quantifying (counting)

---

[6] Broad-Based Black Economic Empowerment (BBEEE) refers to policies adopted by the South African post- Apartheid government aimed at fostering inclusivity of previously disadvantaged individuals in the South African economy and society. It includes measures such as employment preference, skills development, ownership, management, socioeconomic development, and preferential procurement.

[7] HIV/AIDS in South Africa is a primary health concern also posing significant challenges to business. With an 18% adult prevalence, South Africa is amongst the countries hit hardest by this pandemic, only coming second after Swaziland which globally records the highest rate with 25% of the adult population being infected with the virus.

9

qualitative information (the number of lines devoted to social investment) in corporate annual reports. Considering the myriad ways CSP has been operationalised, it is not surprising that evidence of "universal returns" (Margolis et al., 2009; Schreck, 2011; Surroca et al., 2010) has proved elusive.

Notwithstanding the lack of definitional clarity CSP, this study contends that above all it should represent a comprehensive assessment of a firm's social performance relative to most social issues and stakeholders; single measures reflect much less of the total CSP picture (Chiu & Sharfman, 2009; Graves & Waddock, 1994). The proxy used in this study, SRI, provides such a comprehensive construct by measuring a broad array of social, environmental and governance issues. In its entirety, it provides a clear and reliable picture of a firm's sustainability practices.[8]

The different ways the CSP construct has been operationalised posed one of the challenges towards finding a universal business case for CSR. Another was the way so-called 'intangible resources' were previously neglected in thinking about how to transform CSR investment into competitive advantage (Baron, 2011; Beurden & Gössling, 2008; Cai et al., 2012; Griffin & Mahon, 1997; Margolis et al., 2009; Orlitzky et al., 2003), which is the subject of the next section.

2.6   Criticism of the universal business case: The role of intangible resources

What processes or mechanisms might be responsible for transforming CSR into CFP? What circumstances make social investment profitable for one firm, but not another? And is there a common denominator that predicts positive returns for one type of firm or industry but not for another? (Beurden & Gössling, 2008; Margolis et al., 2009; Perrini et al., 2011; Rowley & Berman, 2000; Surroca et al., 2010 amongst others)

In order to adequately address such questions, it is necessary to begin with the basic principle that for CSR to have an effect on a firm's bottom line, it has to either decrease a firm's costs or increase its revenues (Barnett, 2007). This can happen through numerous theoretical mechanisms (Griffin & Mahon, 1997; Peloza, 2009; Ullmann, 1985) In order to save costs, firms engaging in CSR would, for example, be able to pre-empt restrictive governmental regulations (Baron, 2011; John W. Maxwell, Lyon, & Hackett, 2000). Likewise, so-called 'greener' business

---

[8] The different dimensions that make up the JSE SRI index, as well as a further elaboration for choosing the index as a proxy for CSP, can be found in the methodology section of this study.

practices could cut costs through a reduction in energy consumption (Peloza, 2009). CSR has, moreover, generally been seen as something which improves a company's reputation, thereby decreasing costs to attract and retain quality talent (Greening & Turban, 2000; Peterson, 2004; Porter & Kramer, 2011; Rowley & Berman, 2000; Surroca et al., 2010). Greening & Turban explain this through the theory of social identity theory, which suggests that the reputation and image of an employer influences an employees' self-image. Companies with a reputation for doing good for society, therefore positively influence a worker's self-image, making it easier to retain and motivate the person (Greening & Turban, 2000, p. 258).

CSR as a source of competitive advantage has also been claimed to deliver revenue increases through boosting factor productivity (Peterson, 2004; Surroca et al., 2010; Turban & Greening, 1997) and through the innovative capabilities that come with attracting highly skilled, responsible and motivated people (Brekke & Nyborg, 2008; Fombrun, Gardberg, & Barnett, 2000).In addition to the benefits that CSR could generate in the talent space, scholars have argued that a "sustainable" corporate image enables firms to attract 'ethical' investors (Baron & Diermeier, 2007) and generate positive externalities associated with innovative activity that can be generated through CSR engagement (Amaeshi, Nnodim, & Onyeka, 2013). Lastly, CSR is believed to increase the demand for products and services through positively reinforcing advertising efforts. The latter, however, could also work against companies in that an unfavourable perception of a firm's CSR performance could reduce customer purchase intentions (Hillman & Keim, 2001; Sen & Bhattacharya, 2001).

Table 2: CSR as a mediating factor for CFP: Exemplary articles

MEDIATING FACTOR	CORE IDEA OF ARTICLE
CSR as a differentiation strategy	
Bagnoli&Watts (2003)	Strategic CSR ocurs when firm links provision of public good to sale of its products/services (e.g. The Body Shop).
Siegel&Vitaliano (2007)	CSR reflects on perception of products/services: Firms selling credence goods/services (in which quality is uncertain and hence reputation of major importance) benefit more from CSR than companies offering "search" products and services. Research confirms this with empirical analysis.
CSR as HR strategy	
Nyborg & Brekke (2004)	CSR allows companies to develop HR capabilities - This will make it easier to attract highly motivated and productive employees.
Greening & Turban (2000)	Idem. CSR helps in attracting quality human capital.
Fombrun, Gardberg & Barnett (2000)	CSR leads to improved performance through "reputational capital". The authors argue that no simple correlation can be established between CSR and CFP. CSR activities indirectly affect the bottom line through "reputational capital" (its intangible assets) that allow the firm to attract resources, enhance its performance and build competitive advantage.
Porter and Kramer (2002)	Philantrophy can positively influence factor conditions - boost productivity amongst the workforce. Authors give the example of Dreamworks SKG, that invested in training programmes for low-skilled workers and thereby gained access to a pool of qualified resources.
Turban & Greening (2000)	CSP provides source of competitive advantage to firms through enhancing its abitlity to attract high-quality talent .
Peterson (2004)	CSR can positively influence employee morale, especially when employees believe their firm to be dedicated to its CSR activities. Female employees seem specifically amenable to this.
CSR as a means to attract ethical investment	
Baron & Diermeier (2007)	Activist action might decrease investor appetite. CSR is a form of self-regulation.
Kapstein (2001)	Sociall responsible investors and mainstream shareholders demand firms to be more sustainable. CSR needed to attract investment.
CSR as a means to preempt government regulatory intervention	
Baron (2001); Maxwell, Lyon, & Hackett (2000)	CSR canbe used to head off stringent regulatory changes. In a sense, firms can pre-empt these changes through CSR.
CSR as a means to improve Corporate reputation	
Fombrun, Gardberg & Barnett (2000)	Coins the idea of "Reputational Capital" as a strategic tool to improve company performance. Argues that no simple correlation can be established between CSR and CFP. CSR activities indirectly affect the bottom line through "reputational capital" (its intangible assets) that allow the firm to attract resources, enhance its performance and build competitive advantage.
Branco & Rodriquez (2006)	**Reputation** is a valuable intangible asset that can lead to sustained competitive advantage.
Melo & Garrido-Morgado (2012)	Centres around **reputation** as a source of SCA. Indicates that CSR has a significant impact on corporate reputation and this impact is moderated by the industry of the firm. Proposes that corporate social responsibility (CSR) is a key driver of corporate reputation given its potential to foster hard-to-duplicate competitive advantage.
CSR as a means to increase demand for products and services	
Sen and Bhattacharya (2001)	Positive CSR information might positively reinforce advertising activities in that in can increase demand for products and services. Conversely, CSR can actually reduce purchase inten tions for consumers with unfavorable opinions of a firm's social posture. [12]

2.6.1 Intangible resources as mediating factors

The common feature that pertains to all of the above studies is the assumption of a mediating mechanism that allows firms to build competitive advantage (and hence outperform the competition) through CSR. Such mechanisms or mediating factors, referred to as 'intangible resources' in this study – can be human capital, reputation, positive stakeholder relationships and innovative capacity. As explained by Hillman and Keim (2001), and in line with the stakeholder theory, "good relationships with primary stakeholders like employees, customers, suppliers, and communities could lead to increased shareholder wealth by helping firms develop intangible, valuable assets which can be sources of competitive advantage". Other intangible resources are technology, firm risk, operational efficiency and general management competencies (Peloza, 2009; Schreck, 2011; Surroca et al., 2010). Human capital and reputation are deemed to have the greatest strategic importance in terms of building competitive advantage (Boyd, Bergh, & Ketchen, 2010; Gomez-Meija, Balkin, & Cardy, 2013; Schreck, 2011).

Barnett (2007) provides a slightly different but similar view on the role of intangibles. His theory about Stakeholder Influence Capacity (SIC) contends that in order for firms to gain a competitive advantage they should acquire SIC which would allow them to fully capitalise on their CSR investments. High stocks of SIC (implying positive stakeholder perception and trust) would allow for social investment to reflect positively on a firm's reputation, whereas low SIC could be a barrier to CSR returns since stakeholders could perceive the social efforts as hypocritical or self-serving – thereby losing its potential to turn it into an enabler for competitive advantage and financial gains. In a way, SIC could thus be seen as an intangible resource that mediates the relationship between CSR and CFP.

Figure 4: How SIC moderates CFP returns to CSR
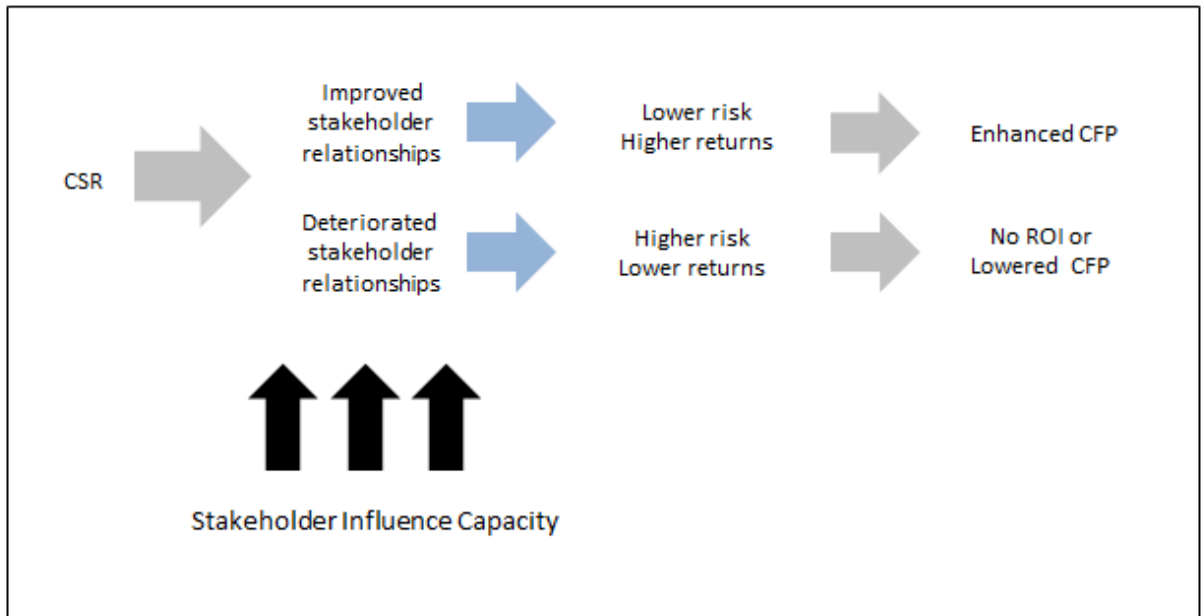
In the same vein as Barnett, Fombrun et al., (2000) and Ponzi, Fombrun, & Gardberg (2011) argue that the mediating factor between social engagement and an improved bottom line is its corporate reputation, also called "reputational capital" (Fombrun et al., 2000). Ponzi et al., (2011), borrowing the definition from (Boyd et al., 2010), describe reputation as: "intangible assets that provide firms with competitive advantage in the marketplace" (p. 15). If capitalised upon, good reputation allows a firm to attract the best resources, generate more investment and open up new business opportunities. 'Doing good' can also mitigate reputational losses a firm could incur from "alienating" key stakeholders (p. 86). Poor reputations, on the other hand, can lead to company losses through increased risk from all stakeholders involved. Figure six below indicates the type of opportunities and risks that can typically be expected from different stakeholder groups.

Table 3: Stakeholder opportunities and risks

Stakeholder	Opportunity	Risk
Community	Promise of legitimacy	Threat of legitimacy
Regulators	Promise of legal action	Threat of legal action
Customers	Promise of loyalty	Threat of misunderstanding
Partners	Promise of collaboration	Threat of defection
Employees	Promise of commitment	Threat of rogue behaviour
Investors	Promise of value	Threat of value
Activists	Promise of advocacy	Threat of boycot
Media	Promise of favourable coverage	Threat of exposure

Source: Adapted from Fombrun et al. (2000)

Despite the nuances in the operationalization of the construct, all of the above explanations view intangible resources as a mediating mechanism that influences the CSR – CFP link. Social investment may improve a firm's reputation, HR endowment, organisational ability and/or general management competencies – all of which are key sources of competitive advantage.

This idea of internal resources leading to competitive advantage is not new and can be explained through the theory of the Resource-Based View (RBV). Before further delving into the nuances of the CSR – CFP link, a background of the RBV is deemed important.

2.6.2   The Resource-Based View

The core idea of intangible assets as the basis of firms' competitiveness stems from the theory of the Resource-Based View (RBV), originally introduced by Penrose in 1953 (Barney, 1995; Falkenberg & Brunsæl, 2011; Wernerfelt, 1984; Penrose (1953). It suggested that firms' competitive clout is dependent on its *unique* internal capabilities or resources (Falkenberg & Brunsæl, 2011). The idea of internal resources being a determining factor to firm growth opposes Porter's well-known five forces model, which proposes the influence of external powers in shaping the competitive environment (Porter, 1979).

Barney (1991) later built on the concept originally introduced by Penrose, by introducing the VRIO framework. In order for resources to generate sustained competitive advantage, he originally stated that they did not only have to be unique, but also: 1) valuable; 2) rare; 3) imperfectly imitable; and 4) not easily substitutable. He later grouped the principle of substitutability under imitability and added the dimension of "Organization" – asking the question whether a firm is organized to exploit its resources and capabilities (Barney, 1995).

The difference between competitive advantage and sustained competitive advantage (SCA) lies in the fact that the latter implies the implementation of a value-creating strategy that competitors won't be able to duplicate easily due to its inherent uniqueness (Barney, 1991). A "normal" competitive advantage is a value-creating strategy that at a certain moment in time is only being implemented by a sole player. Other players, however, might copy the strategy and thereby cancel out the competitive advantage.

Resources can be any tangible or intangible assets that are tied semi-permanently to a firm and can be thought of as a strength or weakness (Barney, 1991; Wernerfelt, 1984). They can include, but are not limited to, a firm's technological resources, geographical location, reputation, experience, knowledge, good relationships with suppliers and/or customers. Barney categorises the resources into three different categories: physical capital resources; human capital resources; and organizational capital resources (Barney, 1991), basically differentiating between tangible and intangible resources.

With every VRIO box ticked, and assuming that they are heterogeneously distributed amongst firms and imperfectly mobile, these resources should enable the firm "to conceive of and implement strategies that improve a firm's efficiency and effectiveness" (Daft, 1983 in Barney, 1991), hence leading to sustainable competitive advantage.

When looking at the above definition of RBV, one will see how Barnett's and Fombrun's mediating mechanisms "SIC" and "reputational capital" fall into the definition of an intangible resource that can lead to competitive advantage. A spotless corporate reputation or good relationships with stakeholders can be monetised by companies resulting in improved CFP. What is more, most of the before mentioned mediating factors such as reputation and HR capabilities are such complex, multi-faceted elements of a firm's make-up that is it almost impossible to copy (Boyd et al., 2010; Roberts & Dowling, 2002). Branco and Rodrigues (2006) confirm that CSR can help companies generate unique intangible resources and capabilities that lead to SCA. Moreover, they state that intangibles are more likely to be sources of

16

competitive advantage since they are "difficult and costly to recreate because they tend to be historically contextualised, path dependent, socially complex and causally ambiguous" (p. 117). Tangible resources are deemed to be easier to replicate and are therefore are less likely to be sources of competitive advantage.

Figure 5: Reputation as mediating mechanism leading to sustained competitive advantage
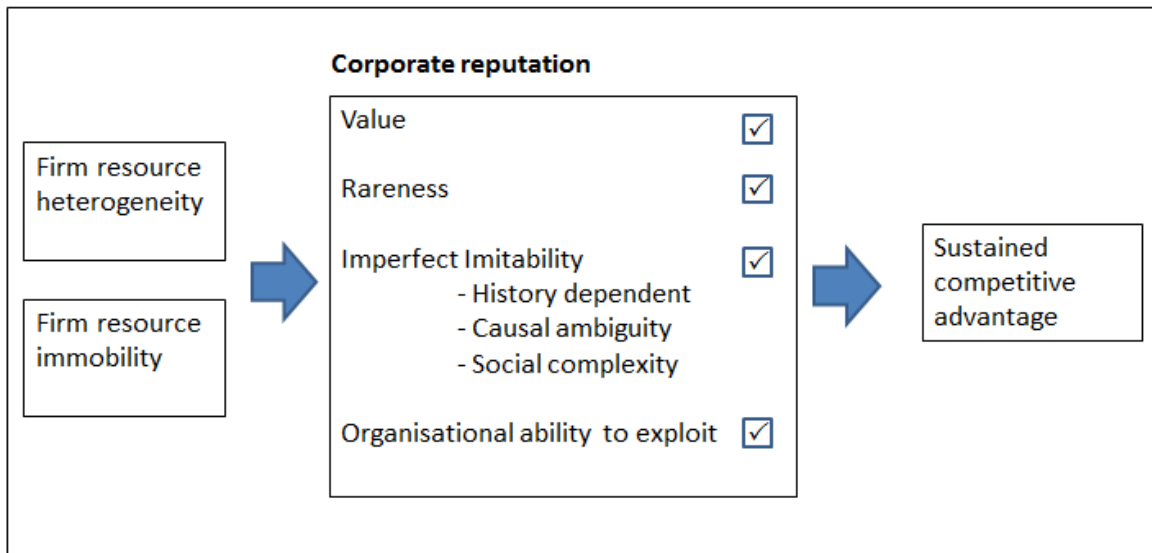
Source: Adapted from Barney (1991)

The RBV provides a useful framework against which to plot the concept of mediating mechanisms and thus provides a useful explanation as to how CSR can lead to CFP, and in particular, what type of intangible resources can lead to sustained competitive advantage.

However, it still does not provide a clear answer as to why certain firms derive financial gains from social investment while others won't. The RBV provides a deeper insight into the linkages between CSR and competitive advantage, but does not explain why certain firms will build these essential intangible resources through CSR whereas others won't.

Building on the RBV, the next section will elaborate on the factors influencing the link between intangible resources and return on social investment – being the moderating factors or resources.

17

2.7 Social and environmental impact as moderator for CFP

As was explored above, the RBV offers a useful insight into the possible variables that link social investment to firm competitive advantage. However, it still did not provide any answers to the factors influencing the broad variance in CSR returns.

Goll and Rasheed (2004) and Halme & Laurila (2009) suggest that the variability in firm performance outcomes through social responsibility can be explained through the significant differences in industry dynamics and differences between individual firms. Other variables that might affect CSR returns are industry growth (Surroca, 2011), firm visibility (Udayasankar, 2008), firm levels of internationalisation (Schreck, 2011) or specifics of the industry a firm operates in (Cai et al. & Ja & An).

Schreck (2011) suggested that a firm's exposure to stakeholder pressure is an example of a moderator that can influence whether or not a firm can build the intangibles essential for building competitive advantage. His study showed that firms with high environmental impact levels generated more CFP through environmental management practices than their peers with lower environmental impact levels. The explanatory factor for this difference was the different way in which the firm interacted with their environments. Firms with high environmental impacts are highly visible and therefore have a higher number of points of contact with their stakeholders (such as the communities, regulators, media and activists). This increased "stakeholder airtime" provides a highly visible firm with increased opportunities to build value through stakeholder interaction - or to reduce risk through positive engagements. CSR is one of the ways in which firms can positively interact with their stakeholders.

Jo & Na (2012) found that CSR decreased or negatively affected firm risk in controversial industry sectors, thereby leading to improved corporate performance. Being socially responsible, the authors claimed, could be especially critical in those industries that face higher reputational risks. In line with Schreck's study, they stated that the reason for this was the increased contact with stakeholders that presented an opportunity for firms to capitalise on CSR. Finally, Cai et al., (2012) suggested that social responsibility in controversial industries, in addition to decreasing risk, can positively affect firm value through capitalising on the increased airtime with stakeholders.

18

Extending the above theories, this study focuses on the role of social and environmental impact as a moderating factor in the CSR – CFP link. It is hypothesised that, especially in developing economies, stakeholder relationships are essential in building competitive advantage. The below figure explains how SEI influences a firm's ability to form intangible resources.

Figure 6: Social and environmental impact as moderating factor for CFP
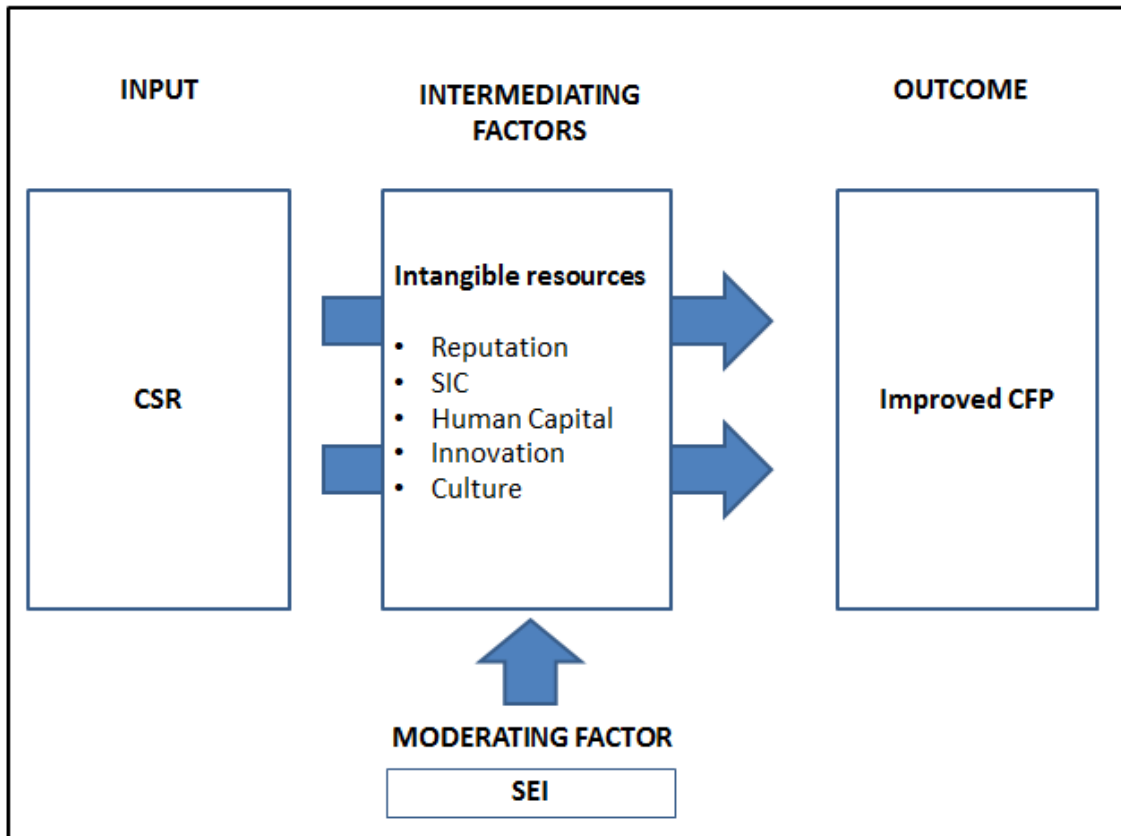
Source: Composite model of Barnett (2007), Peloza (2009), Perrini et al. (2011), Schreck (2011) Surroca et al. (2010).

2.8   Conclusion

The literature shows that sustainable business practices or CSP might positively affect company performance (Aragón-Correa & Sharma, 2003; Barnett & Salomon, 2012, Halme & Laurila, 2009; Margolis et al., 2009; McWilliams & Siegel, 2011). Studies generally illustrate a positive relationship between CSR and financial performance (Beurden & Gössling, 2008), though more work is required to confirm the positive correlation.

The scholarly debate has now moved away from trying to establish a universal business case for CSR, as argued above. Of specific interest to this study is the way debates have shifted to considering how industries' relative social and environmental impact affects the way CSR is used and affects competitive advantage.

20

3. RESEARCH HYPOTHESES

3.1 Research problem

According to the literature (Goll & Rasheed, 2004; Halme & Laurila, 2009), one of the reasons for this inconsistency in CSR –CFP findings is the variability in industry specific dynamics. The level of social and environmental impact in particular might be one of the determining factors leading to the variability in CSR – CFP outcomes.

According to the risk-reduction and value-increasing hypotheses (Cai et al., 2012; Jo & Na, 2012), companies that are more prone to public scrutiny and therefore reputational risk could benefit more from CSR than their peers operating in less visible industry sectors. Also, firms operating in more visible industry sectors would have to lose more from *not* engaging in CSR.

This study attempts to establish whether the level of socio-environmental impact a firm exerts over its environment - which impacts on their visibility and reputational risks - influences the returns it can generate through CSR. In particular, it questions whether firms with high SEI generate higher CFP through adhering to sustainable business practices than their peers that affect their operating environments less. It also aims to find out whether high SEI companies that are *not* adhering to sustainable business practices have an inferior Corporate Financial Performance than their peers in medium and low impact industries. The reason for this would be that they have less "airtime" from their stakeholders and hence less opportunities to build stakeholder value.

3.2 Research hypotheses

For the purposes of this study;

CFP = Corporate Financial Performance, as measured by Tobin's q., ROE and ROA.

HSRI = High impact SRI-listed companies

MSRI = Medium impact SRI-listed companies

LSRI = Low impact SRI-listed companies

HALSI = High impact ALSI, but non-SRI listed companies (ALSI excluding SRI)

MALSI = Medium impact ALSI, but non-SRI listed companies (ALSI excluding SRI)

LALSI = Low impact ALSI, but non-SRI listed companies (ALSI excluding SRI)

The following research hypotheses will be analysed:

3.2.1 Hypothesis 1

Following RBV theory and the influential role of intangible resources on competitive advantage, this study predicts a significant difference in Corporate Financial Performance of sustainable companies according to their social and environmental impact levels.

The null hypothesis associated with this test will be: There is no significant difference in Corporate Financial Performance between SRI-listed firms with a high, medium or low social and environmental impact.

The alternative hypothesis will be: There is a significant difference in Corporate Financial Performance between SRI-listed firms with a high, medium or low social and environmental impact.

Stated statistically:

Ho: CFP HSRI = CFP MSRI = CFP LSRI

H1: CFP HSRI ≠ CFP MSRI ≠ CFP LSRI

3.2.2 Hypothesis 2

Under the risk-reduction and value-increasing hypothesis, this study predicts that SRI-listed companies operating in high impact industries will outperform their peers, also listed on the SRI, but operating in medium or low impact industries. In other words, in addition to a

difference in CFP, a positive correlation between improved Corporate Financial Performance and high social and environmental impact level is predicted.

Hypothesis 2: SRI-listed firms in high impact industries outperform SRI-listed companies in medium and low impact industries.

The null hypothesis associated with this test will be: There is no significant difference in Corporate Financial Performance between SRI-listed firms operating in high impact industries relative to SRI-listed firms operating in medium and low impact industries.

The alternative hypothesis will be: SRI-listed companies operating in high impact industries show a higher CFP relative to SRI-listed companies operating in medium and low impact industries.

Stated statistically:

Ho: CFP HSRI > CFP MSRI = CFP LSRI

H1: CFP HSRI > CFP MSRI = CFP LSRI

3.2.3   Hypothesis 3

The literature suggests that CSR returns might be influenced by variance in SEI levels (Cai et al., 2012; Jo & Na, 2012). Non-SRI listed companies (that are deemed not to adhere to sustainable business practices) therefore should show consistent returns across all SEI levels, being high, medium and low. In other words, firms operating in high-impact industries should not show superior returns relative to their peers in medium and low impact industries since they would not benefit from the increased returns generated through CSR.

Hypothesis 3: High-impact ALSI, non-SRI listed companies show similar returns to medium and low impact ALSI, non-SRI listed companies.

The null hypothesis associated with this test will be: There is a significant difference in Corporate Financial Performance between high-impact ALSI, non-SRI listed companies relative to medium and low impact ALSI, non-SRI listed companies.

The alternative hypothesis will be: There is no significant difference in Corporate Financial Performance between high-impact ALSI, non-SRI listed companies relative to medium and low impact ALSI, non-SRI listed companies.

Stated statistically:

Ho: CFP HALSI ≠ CFP MALSI = CFP LALSI

H1: CFP HALSI = CFP MALSI = CFP LALSI

A consistency matrix is presented in the next section.

3.3 Consistency Matrix

Title: Improving competitive advantage through corporate social responsibility in South Africa: The role of social and environmental impact

Hypotheses	Lit. Review	Data collection tool	Analysis
1: Sustainable (SRI- listed) companies exerting different levels of SEI over their environments, yield significantly different financial results.	Barnett, 2007 Cai et al., 2012 Jo and Na, 2012 Udayasankar, 2012	Secondary publicly available JSE data and financial data from the McFAS database.	**Step 1**: Bivariate (Spearman's Rho) non-parametric correlation. **Step 2**: ANOVA and post-hoc Tukey HSD, Bonferroni and Sidak.
2: Sustainable (SRI-listed) firms with high SEI outperform SRI-listed companies with medium or low SEI.	Cai et al., 2012 Jo and Na, 2012 Surroca et al., 2010 Schreck, 2011	Secondary publicly available JSE data and financial data from the McFAS database.	**Step 1**: Post-hoc Tukey HSD, Bonferroni and Sidak. **Step 2**: Comparison between absolute Tobin's q. values
3: Non-sustainable companies (non-SRI listed firms) show consistent CFP regardless of SEI level.	Cai et al., 2012 Jo and Na, 2012	Secondary publicly available JSE data and financial data from the McFAS database.	**Step 1**: Bivariate (Spearman's rho) non-parametric correlation. **Step 2**: ANOVA, post-hoc test Tukey HSD, Bonferroni and Sidak.

4. RESEARCH METHODOLOGY

4.1 Introduction

The aim of this study was to determine whether social and environmental impact levels as defined per the JSE Socially Responsible Investment (SRI) Index influence the extent to which firms can generate competitive advantage – resulting in improved CFP.

One school of thought puts forward arguments in favour of a "universal business case", arguing that any company can derive competitive advantage – and therefore improved CFP - from investing in socially responsible business practices, regardless of specific industry or company dynamics.

More recently however, the scholarly debate shifted towards the search for a deeper understanding of the CSR – CFP link, and in particular of the role that mediating and moderating factors play in this regard. The SEI level of a firm is one such moderating factor that might explain the linkage between CSR and CFP. Higher SEI levels, it was hypothesised, lead to higher visibility and therefore an increased opportunity for firms to create positive SIC through social investment. However, higher visibility also implies increased pressures from stakeholders (in particular from the communities these firms operate in), leading to higher reputational risk. Companies that invest in CSR, were deemed to be able to better leverage the opportunities and better manage these risks than their rivals not investing in social development.

Through quantitative analysis, this study attempted to establish whether indeed there is evidence of superior financial performance on the part of JSE SRI-listed (sustainable) companies exerting a high social and environmental impact as compared to their peers with lower SEI levels. Corporate Financial Performance was measured through both market and accounting based performance measures to ensure both future and past performance are taken into account.

4.2 Research design

This study tested for a statistically significant relationship between SEI level and competitive advantage of socially responsible businesses listed on the JSE SRI. Furthermore was tested

26

whether non-sustainable companies (ALSI excluding SRI) generated similar returns across the three different levels of SEI.

The purpose of the study was to better understand the nature of the relationship between SEI levels and corporate performance of sustainable companies, but it did not attempt to find the reason behind the nature of this relationship. Therefore, a descriptive research design was followed. It thereby aimed to determine the answers to questions regarding the "who, what, when, where and how" of such a relationship. No attempt was made to establish causality between social and environmental impact level and CFP, since the relationship linking CSR to CFP is believed to be very complex and dependent on many other factors beyond SEI level which are beyond the scope of this study. In order to understand the "why" behind any proposed relationship (Saunders & Lewis, 2012; Zikmund, 1999), further causal research will have to be conducted. The study furthermore followed a deductive approach, which involves the testing of a theoretical proposition against hypotheses that have been developed from general theory (Saunders & Lewis, 2012).

To allow for measurement, the relevant concept of Corporate Financial Performance was operationalised through Tobin's q., ROA and ROE. SEI levels were operationalised by means of categorical variables, being: High (H), Medium (M) or Low (L). For the purposes of statistical analysis, the three different SEI levels were number 3 (high), 2 (medium) and 1 (low).

Secondary data was sourced from the JSE and McFAS financial database and combined in order to obtain the required inputs. After this, the data was analysed in order to test the hypotheses. This was done according to a clearly defined methodology which will allow for easy replication of the study in a different time or context.

4.3 Population

The population or universe can be described as a complete group of entities sharing a common set of characteristics (Saunders & Lewis, 2012; Zikmund, 1999) or rather "all groups or items being surveyed"(Oakshott, 2009, p. 15).

The base universe for this study are all companies listed on the Johannesburg Stock Exchange Limited (JSE) All Share Index (ALSI). The JSE Socially Responsible Investment (SRI) Index is constructed against the ALSI and therefore can be regarded as a subpopulation of the ALSI index.

A list of all firms that were listed on the FTSE/All Share Index (ALSI) and JSE Social Responsibility Index (SRI) as of June 2013 can be found in Appendix I and Appendix II to this research report.

4.4 Sampling method and size

The sampling frame – a list of all companies listed on the JSE ALSI Index (which includes the SRI subpopulation) was requested from the JSE indices team and consisted of 168 companies. Out of these companies, 79 were listed on the SRI index. Instances of the unit of analysis, or the sampling units, consisted of each individual company listed on the ALSI and/or SRI Index.

In order to qualify for inclusion into the study, access to the selected firm's financial data via the McFAS financial database was a prerequisite. A financial model was built to source the requested data from the McFAS database. Financial information required to build the ratios that were used for statistical analysis (being ROA, ROE an Tobin's q.) included Total Equity (TE), Long-term Debt (LTD), Current Liabilities (CL), Total Assets (TA), Net Profit after Tax (NPAT), Research and Development spend (R&D) and Turnover. Companies of which financial data proved insufficient or inaccessible via the McFAS database were disqualified from the study.

Table 4: Financial data sourced from the McFAS database

Short Name	Long Name	Components
TE	Total Equity	Ordinary Share Capital Share Premium Non-Distributable Reserves Distributable Reserves Outside Shareholders Interest
LTD	Long-Term Debt	Convertible Debentures Director's & Shareholders Loans Long Term Non Interest Bearing Long Term Interest Bearing
CL	Current liabilities	Trade Creditors Dividends Payable Tax Payable Short-Term Interest Bearing
TA	Total Assets	Current Assets Fixed Assets Intangible Assets Investment and Loans Non-Current Assets
NPAT	Net Profit After Tax	Earnings Before Tax - Tax
R&D	Research & Development spend	Idem
Turnover	Turnover	Idem

28

After cleaning up the data, a sample of 64 ALSI-only listed firms and 61 SRI-listed firms was obtained. It is important to note that for the purposes of this study, SRI-listed firms were separated from the ALSI-listed firms to allow for analysis between the two groups.

After cleaning the data, two sample groups were created, consisting of:

Group 1: 64 ALSI (non–SRI) listed firms

Group 2: 61 ALSI and SRI listed firms

Following the method of census sampling (Zikmund, 1999) and to ensure a sufficiently large sample, all elements that made up the population (all companies listed on the ALSI) were included in the sample.

After this, the population was stratified according to the firm's social and environmental impact levels as further defined by the JSE SRI (for more detail about the different SEI levels refer to the section 4.3 "Variables" under Chapter 4 "Research Methodology"). As a result, the following strata or subpopulations were identified:

1) Companies with a High SEI level (within Group 1 and Group 2)

2) Companies with a Medium SEI level (within Group 1 and Group 2)

3) Companies with a Low SEI level (within Group 1 and Group 2)

Visually depicted, the sample looked as per the below:

Figure 7: Final stratified sample
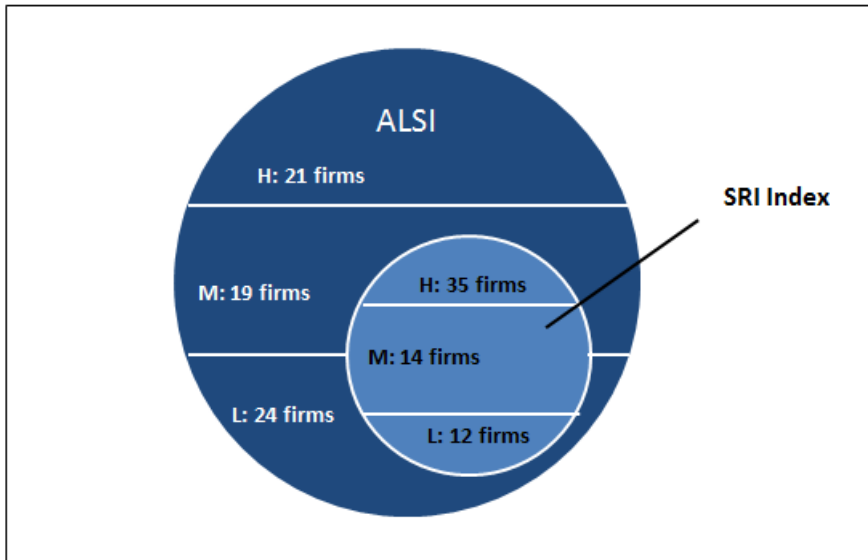
For the purposes of the statistical analysis, the above groups were indicated as follows:

HSRI = High SEI SRI-listed companies

MSRI = Medium SEI SRI-listed companies

LSRI = Low SEI SRI-listed companies

HALSI = High SEI ALSI, but non-SRI listed companies (ALSI excluding SRI)

MALSI = Medium SEI ALSI, but non-SRI listed companies (ALSI excluding SRI)

LALSI = Low SEI ALSI, but non-SRI listed companies (ALSI excluding SRI)

Group 2 (SRI) consists of 57% companies with high SEI levels, whereas the ratio between high, medium and low SEI levels in Group 1 is more equally distributed. Reason for this is the

unavailability of the required financial information through the McFAS database of a large number of financial services companies, which would have fallen into the low category.

4.5   Variables

4.5.1   Dependent variables – Company Financial Performance (CFP)

This study tested for relationships between SEI levels of sustainable companies and competitive advantage as measured by Corporate Financial Performance (CFP). ACFP therefore is the dependent variable (Saunders & Lewis, 2012).[9]

As suggested in the literature review (to be found in section 2.6 of this study), CFP has been measured in many different ways, thereby distorting the generalizability of research outcomes. More specifically, certain studies measure accounting-based performance (measured through e.g. ROA and ROE), whereas others solely focus on market-based performance (e.g. stock market performance). In a meta-analysis of 51 studies, Griffin and Mahon (1997) found that eighty different measures of CFP were used, ranging from profitability (11 measures), asset utilisation (7 measures), growth (13 measures), liquidity (6 measures), risk/market measures (12 measures) and other (20 measures). Out of the 80 financial measures, 57 measures were used by only one researcher at the time (Griffin & Mahon, 1997, p. 11).

Although no "best" single variable to measure CFP has been established, recent literature (Barnett & Salomon, 2012; Gao & Bansal, 2013; Nakao, Amano, Matsumura, Genba, & Nakano, 2007; Schreck, 2011; Surroca et al., 2010) suggests that both accounting and market-based measures should be used to account for both past (accounting) and future (market-based) performance.

Following Gao and Bansal (2013), Schreck (2011) and Cai et al. (2012) Tobin's q., a widely accepted measure of firm value, was used as a measure of market-based performance. As per Gao and Bansal (2013) Tobin's q. was calculated as per the below:

Tobin's q. = Total Equity + Long-Term Debt + Current Liabilities / Total Assets

---

[9] It should be noted that this is a descriptive study that does not aim to establish causality. Therefore normally no dependent and independent variables should be used. However, in order to indicate that the study presumes SEI to have an impact on CFP – as hypothesised in this study - we will refer to the variables as dependent and independent.

In addition to Tobin's q., accounting based measures of *return on assets* (ROA) and *return on equity* (ROE) were used to allow for measurement of past financial performance. Also, since different variables might uncover different aspects of performance (Barnett & Salomon, 2012) adding these two variables added to the robustness of the analysis.

ROA and ROE were measured as follows:

ROA = Net Profit after Tax (NPAT) / Total Assets (TA)

ROE = Net Profit after Tax (NPAT) / Total Equity (TE)

Data to build measures of Tobin's q., ROA and ROE was sourced from a financial model built in the McFAS database.

The below table indicates how the various measures of CFP were built and what data that was obtained to allow for the building of such measures:

Table 5: Financial data obtained from McFAs database

Short Name	Long Name	Components
TE	Total Equity	Ordinary Share Capital Share Premium Non-Distributable Reserves Distributable Reserves Outside Shareholders Interest
LTD	Long-Term Debt	Convertible Debentures Director's & Shareholders Loans Long Term Non Interest Bearing Long Term Interest Bearing
CL	Current liabilities	Trade Creditors Dividends Payable Tax Payable Short-Term Interest Bearing
TA	Total Assets	Current Assets Fixed Assets Intangible Assets Investment and Loans Non-Current Assets
NPAT	Net Profit After Tax	Earnings Before Tax - Tax
R&D	Research & Development spend	idem

Turnover	Turnover	idem

Ratios

Short Name	Long Name	Components
Tobin's q.	idem	TE + LTD + CL / TA
ROA	Return on Assets	NPAT / TA
ROE	Return on Equity	NPAT / TE

4.5.2 Independent variables – Levels of SEI

This study tested for a relationship between the social and environmental impact level of sustainable firms and their Corporate Financial Performance. Since it was hypothesised that SEI levels serve as a moderating factor for CFP, the independent or exploratory variable (Saunders & Lewis, 2012) therefore is the SEI level of the companies in the sample.[10]

The JSE SRI Index classifies industries as high, medium or low impact as per the environmental impact they have. In order to classify the different sectors, direct impacts relating to the five key issues of climate change, air pollution, water pollution, waste and water consumption were reviewed. Sectors with a high impact in at least one key issue or a medium impact in more than four key issues are classified 'high'. Sectors with a medium impact in at least two issues are classified 'medium' overall. The remaining sectors are classified as 'low' impact (JSE, 2014).

A list with Industry Classification Benchmark (ICB) codes was obtained from the JSE indices team. ICB codes were matched against SEI levels as per the JSE SRI Index Background and Criteria rules. As a result, the following categorisation was obtained:

A: Industries with high SEI levels

Table 6: Industry sectors classified as high impact as per the JSE SRI Index

Index Name	ICB Sector Code	SEI level
Beverages	3530	H
Chemicals	1350	H
Construction & Materials	2350	H

---

[10] Once again, it should be noted that this is a descriptive study that does not aim to establish causality. Therefore normally no dependent and independent variables should be used. However, in order to indicate that the study presumes SEI to have an impact on CFP – as hypothesised in this study - we will refer to the variables as dependent and independent.

Index Name	ICB Sector Code	SEI level
Electricity	7530	H
Food & Drug Retailers	5330	H
Food Producers	3570	H
Forestry & Paper	1730	H
Gas, Water & Multi-utilities	7570	H
Industrial Metals & Mining	1750	H
Industrial Transportation	2770	H
Mining	1770	H
Oil & Gas Producers	530	H
Pharmaceuticals & Biotechnology	4570	H
Tobacco	3780	H

B: Industries with Medium SEI levels

Table 7: Industry sectors classified as medium impact as per JSE SRI Index

Index Name	ICB Sector Code	SEI level
Aerospace & Defence	2710	M
Alternative Energy	580	M
Automobiles & Parts	3350	M
Banks	8350	M
Electronic & Electrical Equipment	2730	M
General Industrials	2720	M
General Retailers	5370	M
Health Care Equipment & Services	4530	M
Household Goods & Home Construction	3720	M
Industrial Engineering	2750	M
Oil Equipment & Services	570	M
Personal Goods	3760	M
Technology Hardware & Equipment	9570	M

C: Industries with low SEI levels

Table 8: Industry sectors classified as low impact as per the JSE SRI Index

Index Name	ICB Sector Code	SEI level
Equity Investment Instruments	8980	L
Fixed Line Telecommunications	6530	L
General Financial	8770	L
Leisure Goods	3740	L
Life Insurance	8570	L

Media	5550	L
Mobile Telecommunications	6570	L
Non-equity Investment Instruments	8990	L
Non-life Insurance	8530	L
Real Estate Investment & Services	8630	L
Real Estate Investment Trusts	8670	L
Software & Computer Services	9530	L
Support Services	2790	L
Travel & Leisure	5750	L

Since environmental impact typically coincides with social impact levels, the SRI classification is used as a proxy for social and environmental impact levels.

A further description of the data collection can be found in section 4.6 (data collection tool and method) of this study.

4.5.3   Control variables

In order to ensure validity of the study outcomes, different control variables were included in this study. Wood (2010) argued that previous CSR studies failed to control for R&D and thereby provided unreliable outcomes. Therefore, R&D was included as one of the control variables.

Other well-known predictors of Corporate Financial Performance are firm size and leverage (Orlitzky, 2001; Wu, 2006). Following previous studies, both variables were included to enhance robustness of the study.

4.6   Assumptions

Some assumptions made in this research study related to the assumed homogeneity of companies categorised according to the different SEI levels. The research assumed that a similar level of SEI across companies implied a similar ability to generate returns from CSR. However, it did not take into account the nuances within the SEI levels – which might have distorted the results.

35

In the same vein was assumed that companies could be defined as either sustainable or non-sustainable according to their listing on the JSE SRI index. Although the SRI Index deploys rigid measures to define the level of sustainability of a firm, it cannot assume the homogeneity of sustainability across these different firms. Again, the variability of sustainability levels within these firms might have decreased the reliability of this study.

Finally, it was assumed that environmental impact could serve as a proxy for social impact. The primary reason for this was the unavailability of social impact data. Although in many cases this assumption might be valid, future studies could take a more thorough approach in this regard.

4.7 Time horizon

The objective of this study was to observe differences between multiple groups (the different impact levels and sustainable versus non-sustainable companies) within one moment in time. Furthermore, relationships between the different variables were explored.

The research was descriptive in nature and hence no causal relationships were investigated. Changes in or developments of any of the variables (i.e. CFP or SEI level) over time was not part of the research objectives and thus was out of scope. A final and practical consideration for the choice of time research method were the time constraints under which the research report had to be delivered.

Given the above considerations, a cross-sectional study seemed most appropriate to address the research objectives.

4.8 Data collection tool and method

The research was conducted as follows:

1.   A list of all companies listed on the JSE FTSE/ALSI was obtained from the JSE indices team.

2.   A list of all companies listed on the JSE SRI was obtained from the JSE indices team.

3. Since the financial benefits a company might derive from engaging in sustainable behaviour might be lagged with a year (Barnett, 2007), only firms that had been on the JSE SRI since 2012 were included. Firms that listed for the first time in 2013 were excluded from the sample.

4. A list with ICB sector codes, industry names and SEI levels was obtained from the JSE indices team.

5. ICB sector codes of companies listed on the ALSI (ALSI – SRI: Group 1) and SRI (Group 2) were matched against the obtained SEI levels.

6. A financial model was built, allowing for pulling of data for the selected companies via the McFAS financial database.

7. The required financial information was sourced from the McFAS database, including measures of Total Equity (TE), Long-Term Debt (LTD), Current Liabilities (CL), Total Assets (TA), Total Equity (TE) and Turnover.

8. Companies of which the above financial data was inaccessible or unavailable were excluded from the sample.

9. Tobin's q., ROA and ROE were calculated through the financial model built on the McFAS database.

10. Group 1 (ALSI excluding SRI) and Group 2 (SRI) were allocated categorical variables (the numbers 1 and 2 respectively), allowing for comparison between groups. In similar fashion, the three different social and environmental impact levels were divided into categorical subdivisions, being 1 (low impact), 2 (medium impact) and 3 (high impact) respectively.

11. Statistical analyses were conducted to uncover potential significant differences between Corporate Financial Performance of sustainable companies operating in high impact sectors as relative to sustainable companies operating in medium or low impact sectors. Tests used were ANOVA supplemented with post-hoc tests Tukey HSD, Bonferroni and Sidak. Spearman's Rho was ran to uncover the variance between CFP of the three different groups, adding another level of analysis to ANOVA.

12. Statistical analysis was conducted to determine differences between Corporate Financial Performance of non-sustainable companies operating in high impact sectors

as relative to non-sustainable companies operating in medium or low impact sectors. Similar tests were run as for hypothesis 1.

Raw financial data accessed via the financial model built against the McFAS database can be found in Appendix III of this research report.

4.9 Data analysis

According to Zikmund (1999), descriptive data analysis consists of the "summarizing, rearranging, ordering, or manipulating of data" (p. 435). The aim of this process is to uncover any consistent patterns in the data that might reveal statistically significant relationships. Firstly, Spearman's Rho (testing non-parametric correlation) was run against both groups to measure how variables or rank orders are related.

Because categorical data (sample firms' SEI levels) were tested against numerical data (CFP as measured by Tobin's q., ROA and ROE) ANOVA was used to determine any significant differences between and within groups (Saunders & Lewis, 2012). ANOVA was supplemented with post-hoc tests Bonferroni, Sidak and Tukey to enhance the robustness of the analysis.

Descriptive statistics were run for both global and subpopulation (ALSI and SRI).

4.10 Limitations

The study presented the following limitations:

- Not more than 79 companies are listed on the JSR SRI, which –after cleaning up of the data - allowed for a sample of no more than 61 companies. Out of these 61 companies, 57% (35 firms) were classified as exerting a high SEI. A larger sample size would have improved the robustness of the statistical analysis.

- There are many variables that might affect Corporate Financial Performance. Although this study controlled for the three most important variables (R&D spend, firms size and leverage), the inclusion of additional control variables (such as industry risk) might have yielded different outcomes.

- The study classified companies as either "sustainable" or "non-sustainable" according to their listing on the JSE SRI. However, no differentiation was made as per the level or type of CSR practiced by the sustainable companies. As suggested by Jo and Na (2012) this might pose challenges regarding reliability of the outcomes of the study since CSR is not a homogenous construct, but can be broken down into different dimensions which could all impact differently on Corporate Financial Performance.

  On the other hand, recent literature argues that CSR can best be measured through a complex, multi-dimensional construct, increasing its relevance to a larger number of social issues and stakeholders (Chiu & Sharfman, 2009; Rowley & Berman, 2000; Simpson & Kohers, 2002). As suggested by Graves and Waddock (1994), a multidimensional database (in their work the KLD) offers more objectivity and comprehensiveness than single measures. The SRI presents such a comprehensive measure and therefore was deemed to be a better measure of CSR than any single measures of sustainability.

- Good Corporate Financial Performance might be inherent to specific industry sectors. As the financial data and ratios showed (Appendix IV), Tobin's q. seems to be inherently higher in the mining industry as compared to other industries. The high ratios for the mining sector indicate that the sector's stock is more expensive than the replacement cost of its assets, implying that the stock is overvalued. To control for this, measures of accounting performance were used, which exclude market expectations of company performance. However, these accounting based measures did not yield any significant results. To control for this in future studies, industry-adjusted Tobin's q. (Schreck, 2011) could be used to control for these industry-specific effects.

- It should be noted that this study did not attempt to establish any causality between the different variables, but merely tested for correlations. Although the study theorised that SEI levels might affect a firm's ability to generate competitive advantage through CSR, no inferences can be made about the direction of a possible CSR - CFP relationship.

4.11 Research ethics

As stipulated by the Gordon Institute of Business Science (GIBS) research guidelines, the appropriate research ethics clearance procedure was followed before obtaining the necessary data.

5. RESULTS

5.1 Overview

The previous chapter addressed the choice of methodology used and described the data collection procedure. This chapter provides descriptive statistics of the sample used for the study as well as the outcomes from the statistical analyses performed. The results are presented in the same order as they were introduced in chapter 3.

5.2 Sample description

Following the method of census sampling (Zikmund, 1999), all elements that made up the population were included in the sample. In this case, the original sample consisted of all 167 companies listed on the ALSI index (including the SRI subpopulation).

SRI-listed companies that only listed in 2013 were excluded from the sample (i.e. 6 companies). Furthermore, companies of which financial information was inaccessible via the McFAS database were deleted. This applied to companies in both Group 1 (ALSI excluding SRI) and Group 2 (SRI). The final sample was reduced to a total of 125 companies: 64 in Group 1 (ALSI excluding SRI) and 61 in Group 2 (SRI).

Both groups were stratified according to their ICB Codes that were linked to their environmental impact levels as defined by the JSE SRI Index Background and Criteria (JSE, 2014). For both Group 1 (SRI) and Group 2 (ALSI excluding SRI) combined this resulted in a total number of 60 companies being classified as having a high impact (H), 43 with a medium impact (M) and 64 with a low impact (L). In the final cleaned sample, this was reduced to 56, 33 and 36 companies respectively

41

The tables and graphs below present the number of and stratification of sampling units in Group 1 (SRI) and Group 2 (ALSI excluding SRI) respectively.

Table 9: Actual sample descriptions – Group 1 (ALSI excluding SRI)

Sample descriptives	Original sample	Excluded (not listed in 2012)	Excluded (incompleteness of financial data)	Final sample
Group 1: ALSI - SRI				
High industry impact level	23	0	1	21
Medium industry impact level	22	0	3	19
Low industry impact level	48	0	20	24
Total	93	5	24	64

Sample descriptives Group 1 (ALSI - SRI)
- High industry impact level
- Medium industry impact level
- Low industry impact level

33% / 30% / 37%
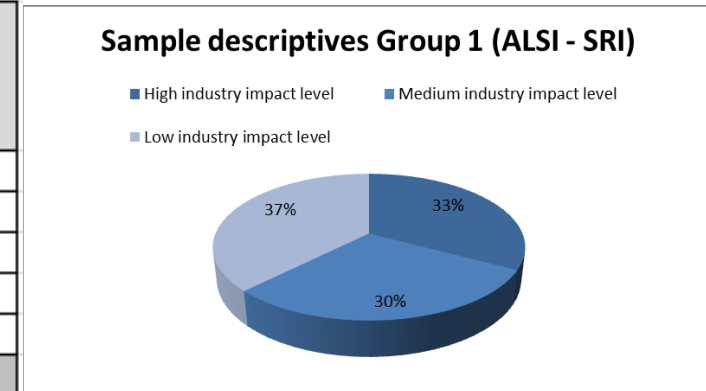
Table 10: Actual sample descriptions - Group 2 (SRI)

Sample descriptives	Original sample	Excluded (not listed in 2012)	Excluded (incompleteness of financial data)	Final sample
Group 2: SRI				
High industry impact level	37	0	2	35
Medium industry impact level	21	4	3	14
Low industry impact level	16	2	2	12
Total	74	6	7	61

Sample Descriptives: Group 2 (SRI)
- High industry impact level
- Medium industry impact level
- Low industry impact level

57% / 23% / 20%
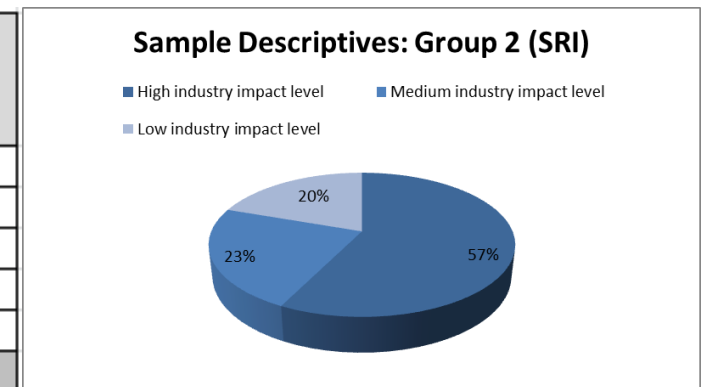
5.3   Data Collection Process

The McFAS database contains financial information from South African listed companies. It standardized firms' financial statements to allow for comparison between companies. Through the use of a standardized code for each line item, information can easily be pulled from different company financial statements.

Financial information can be sourced from the database for one company at the time. In order to speed up the process, a financial model was built that allowed for easy collection of the data. By inserting the Company Alpha into the correct field, selected line item information automatically got populated. This got copied and pasted into a master sheet including all companies. This process was repeated for each of the individual 125 companies.

After all required line item data was transferred to the single master sheet, the relevant ratios (Tobin's q., ROA and ROE) were calculated. The final workbook with a complete list of company financial data and ratios can be found on the data disk supplied with this study.

The following selected data was extracted from the McFAS database:

Table 11: Data extracted from McFAS database including line items and codes

Short Name	Long Name	Line Items	Line Item Code
TE	Total Equity	Ordinary Share Capital	B002
		Share Premium	B003
		Non-Distributable Reserves	B004
		Distributable Reserves	B005
		Outside Shareholders Interest	B012
LTD	Long-Term Debt	Convertible Debentures	B017
		Director's & Shareholders Loans	B018
		Long Term Non Interest Bearing	B019
		Long Term Interest Bearing	B020
CL	Current liabilities	Current Liabilities	B041
TA	Total Assets	Total Assets	B051
NPAT	Net Profit After Tax	Earnings Before Tax	I099
		Tax	I067
R&D	Research & Development spend	R&D	I303
Turnover	Turnover	Turnover	I060

5.4 Data integrity

All company information was sourced from published reports and company financial statements (through the McFas database). In order to ensure that the McFas database pulled the correct data, a manual spot check was performed for 12 companies (10% of the sample). The spot check confirmed correctness of the data.

Also, the complete data set was subjected to an overall manual check for any anomalies. As a result, one company showing abnormal results was excluded from the sample.

The above indicates that both integrity and reliability of the data used in this study can be considered to be very high.

5.5 Tests performed

Data was tabulated and sorted in Microsoft Excel 2010, and exported for descriptive and analytical statistics (Armitage, Healy et al. 2000; Harris, 1975; Koch, 1991; Krenzer, 1998) in SPSS V20.0 (IBM, 2011). The following procedures were performed in SPSS:

- Descriptive statistics were calculated for population and subpopulation (ALSI and SRI) of the main dataset. Univariate summary statistics comprising sample size (n), mean, minimum, maximum, standard deviation, variance, range, sum, standard error of the mean, and kurtosis and skewness with their standard errors were calculated. The data was assessed for normality, and if it failed a test of parametric applicability, non-parametric statistical equivalent tests were applied.

- On-way Analysis of Variance (non-parametric ANOVA). This procedure produces a one-way analysis of variance for a quantitative dependent variable by a single factor (independent) variable (Koch, 1991). Analysis of variance is used to test the hypothesis that several means are equal.

- If determined that differences exist among the means, post hoc range tests and pairwise multiple comparisons can determine which means differ. Range tests identify homogeneous subsets of means that are not different from each other. Pairwise multiple comparisons were used to test the difference between each pair of means (Krenzer, 1998). Post-hoc tests that were applied to the data were Bonferroni, Sidak and Tukey.

44

- For hypotheses 2 and 3, ANOVA was supplemented with a bivariate (Spearman) non-parametric correlation test. Spearman determines which of the different groups correlate with one another, adding another level of analysis to ANOVA.

- Finally, for both hypotheses 2 and 3, a relative comparison was made between absolute Tobin's q. values assuming the standard calculation threshold for Tobin's q.

In all of the above tests statistical significance was accepted at the $p < 0.05$ level.

5.6   Descriptive statistics

This study hypothesised that companies with high social and environmental impact levels will generate superior competitive advantage through CSR by virtue of their improved ability to generate invaluable intangible resources such as corporate reputation. In line with this thinking, no differences in CFP per SEI level in non-sustainable companies are presumed to be observed.

The below table shows the results of the univariate summary statistics performed.[11]

Table 12: Descriptive statistics for ALSI (excluding SRI) and SRI Index

Index_cd		N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
1.00	ROE	63	1.6988	-.9729	.7260	.1559	.0281	.2230	.050
	ROA	63	1.3494	-.9988	.3506	.0694	.0222	.1761	.031
	TOBIN	63	2.9582	.0365	2.9948	1.0359	.0515	.4086	.167
	Valid N (listwise)	63							
2.00	ROE	61	1.4548	-.7081	.7468	.1113	.0315	.2460	.061
	ROA	61	.9025	-.4467	.4558	.0507	.0171	.1338	.018
	TOBIN	61	5.3927	.2105	5.6032	1.1331	.0988	.7713	.595
	Valid N (listwise)	61							

The mean values of Group 1 (ALSI excluding SRI) for ROA, ROE and Tobin's q. were 0.1559, 0.694 and 1.0359 respectively. For Group 2 (SRI), these values read 0.1113, 0.0507 and 1.1331 respectively. Maximum Tobin's q. values read 2.9948 for ALSI and 5.6032 for SRI.

---

[11] It should be noted that for purposes of statistical analysis, the ALSI (Group 1) has been allocated number one (1) in this table whereas Group 2 (SRI) is indicated by number two (2).

Following qualitative observation, the ALSI seems to outperform the SRI on ROA and ROE, while the SRI seems to outperform ALSI on Tobin's q. However, as the data sets have not been tested for statistical significance no inferences can be made about the statistical relevance of these observations. Also, it should be noted that the above table shows the results for both ALSI and SRI as a total sample, without differentiating the data per SEI level.

To yield statistically significant results, ANOVA and Spearman's Rho tests were conducted. ANOVA was furthermore supplemented with post-hoc analysis tests Bonferroni, Tukey and Sidak.

5.7 Hypothesis 1

Hypothesis 1 (*H*1) presumed a difference in Corporate Financial Performance between the three different stratified groups within the SRI sub-population (Group 1), being companies with either a high (H), medium (M), or low (L) social and environmental impact. ANOVA was used to uncover differences between the three different impact levels.

5.7.1 Control variables

Previously, it was proposed that R&D, leverage and firm size were to be included as control variables. Most causal studies propose the use of these variables (Barnett, 2007; Gao & Bansal, 2013; Schreck, 2011; Surroca et al., 2010). However, since this study follows a descriptive rather than an explanatory approach, control variables are not included. Instead, bivariate (Spearman) non-parametric correlation test were performed to determine whether any of the control variables correlate with measures of CFP.

The below table shows the results of Spearman's Rho:

46

Table 13: Spearman's rho bivariate non-parametric correlation for Group 1 (ALSI minus SRI)

			ROE	ROA	TOBIN	Turnover	RaDI	Leverage
Spearman's rho	ROE	Correlation Coefficient	1.000	.784**	.029	.162	.010	-.023
		Sig. (2-tailed)		.000	.822	.205	.937	.860
		N	63	63	63	63	63	63
	ROA	Correlation Coefficient	.784**	1.000	.179	.098	.111	-.361**
		Sig. (2-tailed)	.000		.161	.445	.385	.004
		N	63	63	63	63	63	63
	TOBIN	Correlation Coefficient	.029	.179	1.000	-.082	-.189	-.113
		Sig. (2-tailed)	.822	.161		.524	.138	.377
		N	63	63	63	63	63	63
	Turnover	Correlation Coefficient	.162	.098	-.082	1.000	.222	.318*
		Sig. (2-tailed)	.205	.445	.524		.080	.011
		N	63	63	63	63	63	63
	RaDI	Correlation Coefficient	.010	.111	-.189	.222	1.000	-.163
		Sig. (2-tailed)	.937	.385	.138	.080		.203
		N	63	63	63	63	63	63
	Leverage	Correlation Coefficient	-.023	-.361**	-.113	.318*	-.163	1.000
		Sig. (2-tailed)	.860	.004	.377	.011	.203	
		N	63	63	63	63	63	63
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

The above table shows that for ALSI, none of the three control variables (turnover, R&D and leverage) are correlated with CFP as measured by ROE, ROA or Tobin's q. Therefore, it can be assumed that these variables did not significantly influence Corporate Financial Performance measures.

For Group 2 (SRI), the correlation of control variables looked as follows:

Table 14: Spearman's rho bivariate bivariate non-parametric correlation for Group 2 (SRI)

			ROE	ROA	TOBIN	Turnover	RaDI	Leverage
Spearman's rho	ROE	Correlation Coefficient	1.000	.711**	-.328**	.287*	-.090	.123
		Sig. (2-tailed)		.000	.010	.025	.489	.346
		N	61	61	61	61	61	61
	ROA	Correlation Coefficient	.711**	1.000	.073	-.062	-.106	-.368**
		Sig. (2-tailed)	.000		.575	.636	.416	.004
		N	61	61	61	61	61	61
	TOBIN	Correlation Coefficient	-.328**	.073	1.000	-.245	-.113	-.428**
		Sig. (2-tailed)	.010	.575		.057	.387	.001
		N	61	61	61	61	61	61
	Turnover	Correlation Coefficient	.287*	-.062	-.245	1.000	.048	.106
		Sig. (2-tailed)	.025	.636	.057		.714	.415
		N	61	61	61	61	61	61
	RaDI	Correlation Coefficient	-.090	-.106	-.113	.048	1.000	-.108
		Sig. (2-tailed)	.489	.416	.387	.714		.407
		N	61	61	61	61	61	61
	Leverage	Correlation Coefficient	.123	-.368**	-.428**	.106	-.108	1.000
		Sig. (2-tailed)	.346	.004	.001	.415	.407	
		N	61	61	61	61	61	61
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

From the above table can be observed that leverage correlates with ROA and Tobin's q. For ROA, a significance level of 4% can be observed, whereas Tobin's q. is statistically significant at 0.001. From this follows that – when observing CFP – the influence of leverage should be factored in. In other words, for Group 2 (SRI), leverage might positively influence CFP outcomes.

5.7.2 ANOVA

On-way Analysis of Variance (non-parametric ANOVA) was used to test the hypothesis that means of SRI-listed companies differ per social and environmental impact level. The following results were found:

48

Table 15: ANOVA test performed for Group 2 (SRI)

		Sum of Squares	df	Mean Square	F	Sig.
ROE	Between Groups	.147	2	.074	1.225	.301
	Within Groups	3.483	58	.060		
	Total	3.631	60			
ROA	Between Groups	.045	2	.023	1.278	.286
	Within Groups	1.029	58	.018		
	Total	1.075	60			
TOBIN	Between Groups	4.178	2	2.089	3.845	.027
	Within Groups	31.515	58	.543		
	Total	35.693	60			
Turnover	Between Groups	10819720618664600.0	2.0	5409860309332320.0	3.611	.033
	Within Groups	86901189921699100.0	58.0	1498296377960330.0		
	Total	97720910540363700.0	60.0			
RaDI	Between Groups	.019	2	.010	.380	.685
	Within Groups	1.454	58	.025		
	Total	1.473	60			
Leverage	Between Groups	102.769	2	51.384	6.686	.002
	Within Groups	445.785	58	7.686		
	Total	548.553	60			

Results show that significant differences are observed for the measure of Tobin's q. between groups. At a 0.027 significance level, it can be concluded that differences are large enough not to be occurring by chance. ROE and ROA are not statistically different between groups. The F-statistic, which indicates the variance of the group means is 3.845. Again, leverage is significantly different between groups at a 0.002 level.

5.7.3   Results

Results show that there are no significant differences between the different impact levels when it comes to accounting performance. Both ROA and ROE seem consistent across the three impact levels.

As suggested by the literature, however (Cai et al., 2012; Gao & Bansal, 2013; Schreck, 2011 among others), accounting-based performance measures should be supplemented with a measure of market-based performance so that results show both past performance as well as future performance (measured through market expectations). Tobin's q. is a commonly used

49

measure of how the market assesses a company's value (Schreck, 2011, p.175) and was used in this study.

As can be observed from the table 13, Tobin's q. is the only measure in this test that yielded significant outcomes. At 0.27, Tobin's q. was significantly different between the three different groups.

The null hypothesis, stating that there is no significant difference in CFP between companies with differing levels of SEI, can therefore be rejected. The conclusion is drawn that there are significant differences in market-based performance (as measured by Tobin's q.) between the three groups of sustainable companies listed on the SRI Index.

5.8   Hypothesis 2

Hypothesis 2 (*H*1) assessed whether sustainable companies with high social and environmental impact scores outperformed their peers with lower levels of SEI. In other words, in addition to a difference in CFP – which was established through ANOVA in hypothesis 1 - a positive correlation between improved Corporate Financial Performance and high social and environmental impact level was predicted.

5.8.1   Post-hoc Bonferroni, Tukey and Sadik

The statistical analysis conducted involved post-hoc Bonferroni, Tukey and Sadik tests, followed by a comparison of absolute values of Tobin's q. Since the results of hypothesis 1 showed no significant relationships between ROE and ROA and CFP, only Tobin's q. has was included in the results.

The post-hoc outcomes are depicted in the table below:

50

Table 16: Post-hoc Bonferroni, Tukey and Sidak for Group 2 (SRI)

	Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
TOBIN	Tukey HSD	1.00	2.00	-.2189	.2900	.7318	-.9164	.4786
			3.00	-.6271240831145*	.2466	.0359	-1.2202	-.0340
		2.00	1.00	.2189	.2900	.7318	-.4786	.9164
			3.00	-.4082	.2331	.1953	-.9689	.1525
		3.00	1.00	.6271240831145*	.2466	.0359	.0340	1.2202
			2.00	.4082	.2331	.1953	-.1525	.9689
	Bonferroni	1.00	2.00	-.2189	.2900	1.0000	-.9339	.4960
			3.00	-.6271240831145*	.2466	.0410	-1.2351	-.0192
		2.00	1.00	.2189	.2900	1.0000	-.4960	.9339
			3.00	-.4082	.2331	.2556	-.9829	.1665
		3.00	1.00	.6271240831145*	.2466	.0410	.0192	1.2351
			2.00	.4082	.2331	.2556	-.1665	.9829
	Sidak	1.00	2.00	-.2189	.2900	.8366	-.9319	.4940
			3.00	-.6271240831145*	.2466	.0405	-1.2334	-.0209
		2.00	1.00	.2189	.2900	.8366	-.4940	.9319
			3.00	-.4082	.2331	.2345	-.9813	.1649
		3.00	1.00	.6271240831145*	.2466	.0405	.0209	1.2334
			2.00	.4082	.2331	.2345	-.1649	.9813

*. The mean difference is significant at the 0.05 level.

ANOVA post-hoc test allow for identification of groups differing from the others. As the above table shows, Tukey HSD yields p=0.0359 when comparing high and low impact companies, meaning that there is a less than 3.6% chance of the differences occurring by chance. Bonferroni and Sidak yield .041 and .0405 respectively, also indicating a statistically significant difference. As a result it can be concluded that sustainable companies exerting a high social and environmental impact on their environment have significantly different CFP relative to companies with low impact levels.

5.8.2 Qualitative observation of Tobin's q.

Although the ANOVA post-hoc test identified inter-group differences, it did not allow for measuring superior performance of one group over another, which was stated by the alternative hypothesis. However, knowing that the difference between High (1) and Low (1) impact groups is significant, a qualitative observation of absolute Tobin's q. absolute values will reveal which of the two groups displays superior performance.

The absolute Tobin q. values per SEI level are presented in the below table:

51

Table 17: Absolute Tobin's q. values per SEI level (SRI)

ILL_CD		N	Range	Minimum	Maximum
		Statistic	Statistic	Statistic	Statistic
1.00	ROE	12	1.254	-0.631	0.623
	ROA	12	0.514	-0.276	0.238
	TOBIN	12	0.770	0.210	0.980
	Valid N (listwise)	12			
2.00	ROE	14	0.699	-0.178	0.521
	ROA	14	0.403	-0.072	0.331
	TOBIN	14	0.152	0.848	1.000
	Valid N (listwise)	14			
3.00	ROE	35	1.455	-0.708	0.747
	ROA	35	0.902	-0.447	0.456
	TOBIN	35	4.821	0.782	5.603
	Valid N (listwise)	35			

As the above table shows, Tobin's q. absolute value for firms with high SEI levels (indicated by "3" in the above table) is 5.603. Low impact firms yield a Tobin's q. of 0.980. In absolute terms, and taking into account that the post-hoc ANOVA tests (see table 14) yielded a significant difference between the two groups, we could conclude that SRI-listed high impact firms outperform low impact firms on measures of market-based performance.

Therefore, H_0 can be rejected in favour of the alternative hypothesis (H_1). In other words, sustainable companies exerting a high social and environmental impact might outperform their peers with lower impact levels.

5.9 Hypothesis 3

The alternative hypothesis (H_1) of hypothesis 3 stated that high-impact non-sustainable (ALSI-only listed) companies show similar CFP relative to their peers with medium and low SEI levels.

The literature (Cai et al., 2012; Jo & Na, 2012) suggested that CSR returns might be influenced by social and environmental impact levels – which is closely related to company visibility and reputation. A high social and environmental impact level would increase a company's visibility and therefore its ability to build SIC. This in turn would allow the firm to build intangible resources leading to competitive advantage.

52

Following this trail of thought, *only* sustainable companies should be able to benefit from higher impact levels – and hence higher visibility. Non-sustainable companies would incur higher risk from higher visibility since it would bring to light their non-response to societal demands and expectations – thereby negatively affecting their reputation which is believed to be a main source of competitive advantage.

In order to establish whether Corporate Performance of non-sustainable companies (in this study described as Group 1: ALSI excluding SRI) indeed is consistent across social and environmental impact levels, an ANOVA test was run. In addition, post-hoc tests were used to determine between which groups, if between any, significantly different results in CFP were observed.

The below table shows the results of ANOVA of Group 1 (ALSI excluding SRI).

Table 18: ANOVA test performed for Group 1 (ALSI excluding SRI)

		Sum of Squares	df	Mean Square	F	Sig.
ROE	Between Groups	.257	2	.128	2.724	.074
	Within Groups	2.827	60	.047		
	Total	3.084	62			
ROA	Between Groups	.090	2	.045	1.481	.236
	Within Groups	1.833	60	.031		
	Total	1.923	62			
TOBIN	Between Groups	1.363	2	.682	4.550	.014
	Within Groups	8.990	60	.150		
	Total	10.354	62			

The data shows a significant difference in Tobin's q. values between groups. At a 0.014 significance level, it can be concluded that differences are large enough not to be occurring by chance. The F-statistic, which indicates the variance of the group means is 4.550. As was concluded previously, no strong correlation was found between SEI level and ROE or ROA for ALSI-listed firms.

The results of the ANOVA post-hoc tests for Group 1 (ALSI excluding SRI) are presented below.

53

Table 19: ANOVA post-hoc test performed on Group 1 (ALSI excluding SRI)

Dependent Variable				Mean Difference (I-J)	Std. Error	Sig.
TOBIN	Tukey HSD	1.00	2.00	-.0581	.1200	.8789
			3.00	.3343241903116	.1168	.0158
		2.00	1.00	.0581	.1200	.8789
			3.00	-.2762	.1226	.0705
		3.00	1.00	.3343241903116	.1168	.0158
			2.00	.2762	.1226	.0705
	Bonferroni	1.00	2.00	-.0581	.1200	1.0000
			3.00	.3343241903116	.1168	.0174
		2.00	1.00	.0581	.1200	1.0000
			3.00	-.2762	.1226	.0837
		3.00	1.00	.3343241903116	.1168	.0174
			2.00	.2762	.1226	.0837
	Sidak	1.00	2.00	-.0581	.1200	.9492
			3.00	.3343241903116	.1168	.0173
		2.00	1.00	.0581	.1200	.9492
			3.00	-.2762	.1226	.0814
		3.00	1.00	.3343241903116	.1168	.0173
			2.00	.2762	.1226	.0814
*. The mean difference is significant at the 0.05 level.						

The results show significant differences in CFP between ALSI-listed high and low impact companies. Tukey HSD finds a .0158 significance between level 1 (low impact) and level 3 (high impact). Bonferroni and Sidak both support these results, indicating that the difference in CFP between high and low impact firms cannot be attributed to chance. In other words, the post-hoc test results show that non-sustainable companies – just like sustainable ones – show a variance in CFP accross impact groups. The null hypothesis ($H0$) associated with this test can therefore not be rejected.

5.10 Summary

In summary, the statistical analyses yielded the following outcomes:

Hypothesis 1

H0: CFP HSRI = CFP MSRI = CFP LSRI

$H$1: CFP HSRI ≠ CFP MSRI ≠ CFP LSRI

The null hypothesis was rejected, meaning that significant differences between the three groups were observed.

Hypothesis 2

H0: CFP HSRI > CFP MSRI = CFP LSRI

$H$1: CFP HSRI > CFP MSRI = CFP LSRI

H0 was rejected in favour of the alternative hypothesis ($H$1). It was concluded that SRI-listed companies exerting a high social and environmental impact might outperform their peers with lower impact levels.

Hypothesis 3

H0: CFP HALSI ≠ CFP MALSI = CFP LALSI

$H$1: CFP HALSI = CFP MALSI = CFP LALSI

The results of this test failed to reject the null hypothesis (H0). ANOVA post-hoc results showed that both sustainable *and* non-sustainable companies show higher CFP in high impact groups. Firm SEI levels therefore do not seem to be the factor enabling sustainable firms to achieve superior CFP. The null hypothesis (H0) associated with this test can therefore not be rejected.

The next chapter will elaborate on the implications of the findings, particularly in light of the proposed theoretical framework set out in section 2.

6. DISCUSSION OF RESULTS

6.1 Introduction

In this section, the research findings of the study will be interpreted and discussed. Also, the findings will be tied back and contrasted to previously introduced studies and theories. The hypotheses are presented in the same order as in which they were introduced in previous chapters.

6.2 Previous research on the role of moderating factors

When contrasting the results of this study with other academic work, it should be noted that most studies analysing the link between CSR and CFP tried to establish a universal business case, without delving into the deeper underlying factors that mediate the relationship between CSR and CFP. Although a high number of studies found positive, negative or u-shaped relationships between the two variables – which could be referred back to in this section, these studies were not designed to measure the effect of possible mediating factors such as SEI. Instead, they tested for direct relationships between the two variables.

This study chose to explore how additional variables (in this specific case a firm's social and environmental impact levels) impact the way in which CSR and CFP are linked, aiming to further "unpack" the black box of CSR and thereby contributing to the academic body of knowledge around sustainability and in particular its relationship to firm competitive advantage. Choosing this rather novel approach to CSR research, however, resulted in not many other studies being available that allowed for direct comparison of study outcomes.

6.3 Hypothesis 1

6.3.1 Findings

Hypothesis 1 (H1) presumed a difference in Corporate Financial Performance between the three different stratified groups within the SRI sub-population, being companies with either high (H), medium (M), or low (L) social and environmental impact levels.

56

The results showed a statistically significant difference between the three impact groups on market-based performance measures of Tobin's q. ROE and ROA did not yield any statistically significant results. The three different measures of CFP were however used solely for robustness and therefore the non-significant results for both of the accounting-based measures did not affect the results of the analysis. Because Tobin's q. yielded significant results, the null hypothesis - stating that there is no significant difference in CFP between companies with differing levels of SEI - was rejected.

6.3.2 Discussion of results

Overall, the findings supported the theory that industry or firm specific dynamics can be responsible for the variability in firms' abilities to capitalise on CSR investment. Several studies support this theory, although they did not focus on SEI levels, but on other moderating factors.

Udayasankar (2008), for example, hypothesised that industry size would influence a firm's motivation to engage in CSR. Although the study did not attempt to find a link between CSR and CFP, but rather between firm motivation and CSR, it did provide some relevant insights. Bigger – and therefore more visible firms – would be more motivated to engage in CSR because of their increased reputational risks. As Udayasankar (2008) states: " Firms that are more visible are likely to gain more as a result of enhanced legitimacy and reputation effects or may also suffer damages to their reputation, for inadequate participation in CSR" (p. 169). The results show a difference in CFP across firms with different social and environmental impact levels (and therefore different levels of visibility), supporting Udayasankar's theory that firm visibility is a moderating factor for CSR returns.

Barnett and Salomon (2012) found evidence of a curvilinear relationship between CSR and ROA. They explained the occurrence of the U-shaped correlation through the theory of Stakeholder Influence Capacity (SIC). A firm's ability to generate CSR returns - the authors argued - is influenced by the relationships a firm has with its stakeholders. If these relationships are good, firms will be able to capitalise on CSR. If they are bad, on the other hand, a firm will not generate any positive returns from social investment. Although the study did not measure the moderating effect of SEI on CSR returns, it did prove evidence of a moderating factor influencing the ability for firms to generate returns on social investment – thereby explaining

It should be noted that hypothesis 1 merely tested for a difference in CSR returns across firms with different SEI levels. It did not aim to find superior performance of one group over the other. This was tested in hypothesis 2 which will be discussed below.

6.4   Hypothesis 2

6.4.1   Findings

Hypothesis 2 assessed whether sustainable companies with high social and environmental impact scores outperformed their peers with lower levels of SEI. In other words, in addition to a difference in CFP – which was established through ANOVA in hypothesis 1 - a positive correlation between improved Corporate Financial Performance and high social and environmental impact level was predicted.

All three ANOVA post-hoc tests found that Group 1 (low SEI) and Group 3 (High SEI) had significantly different CFP scores from one another. A qualitative observation of Tobin q. scores furthermore confirmed that high SEI firms showed superior CFP relative to firms with a low level of social and environmental impact. The null hypothesis – stating that CFP across all three groups would be similar – could therefore be rejected.

6.4.2   Discussion of results

These findings are consistent with the value-increasing and risk reduction hypotheses put forward by Cai et al. (2012) and Jo & Na (2012) respectively. Both studies found positive relationships between the performance of controversial industry sectors and corporate social performance. It was hypothesised that controversial industries operate more in the public eye and hence have increased points of contact with their stakeholders. Because of this, CSR has a higher potential to reduce reputational risk, or, on the other hand build positive relationships with stakeholders –hence leading to improved CFP.

Just as firms operating in controversial industries, companies with high social and environmental impact levels are deemed to have an increased visibility and hence increased "airtime" with their stakeholders. Therefore, just as Cai et al (2012) noted, they could benefit from building positive stakeholder relationships leading to improved CFP. Also, as suggested by Jo & Na (2012), the increased airtime can be used for reputational risk management, leading to

decreased reputational risks. Both studies therefore support the outcomes of the statistical analysis.

Results are also consistent with the findings by Schreck (2011), who found that environmental management activities generated superior returns in industries exerting high environmental impacts on their environments. Likewise, analysis showed that the returns for SRI-listed firms with high social and environmental impact levels are superior to the returns of their medium and low SEI peers.

As mentioned previously, Udayasankar (2008) also suggested that highly visible firms are more likely to derive benefits from engaging in CSR, again supporting the results.

Although in an indirect way, the results do not seem to support the findings of Surroca (2010), who found that firms operating in high-growth industries are more likely to reap the benefits of CSR. Quickly growing firms, the study stated, need to build a reputation in order to be competitive. This they can easily do through CSR engagement. Established firms, on the contrary, would not benefit so much from social investment since they would already have "pre-existing, established reputations" (p.472) that would not much improve just through social investment initiatives. Also, the study argued that mature firms would benefit less from innovative capabilities derived through CSR than their peers in high-growth sectors would. The reason behind this being the fact that inertia in mature industries inhibits the fostering of innovation through CSR (Surroca, p. 471).

The results of this study are inconsistent with these findings. When examining the industry sectors that the SRI Index has been composed of, it becomes clear that most firms with high SEI levels are operating in mature, low-growth industries, such as mining, manufacturing, chemicals and construction. Firms with low social and environmental impact levels are found to be mostly operating in higher-growth industries such as software and computer services and mobile telecommunications. A sample indicating the typical companies per industry SEI level is presented below.

Table 20: SRI high SEI firms

Index	Alpha	ICB Sector Name	Industry impact leve
SRI	ACL	Industrial Metals & Mining	H
SRI	AEG	Construction & Materials	H
SRI	AFE	Chemicals	H
SRI	AFX	Chemicals	H
SRI	AGL	Mining	H
SRI	AMS	Mining	H
SRI	ANG	Mining	H
SRI	APN	Pharmaceuticals & Biotechnology	H
SRI	ARI	Mining	H
SRI	BIL	Mining	H
SRI	CLS	Food & Drug Retailers	H
SRI	DRD	Mining	H
SRI	EXX	Mining	H
SRI	GFI	Mining	H

Table 21: SRI low SEI firms

Index	Alpha	ICB Sector Name	Industry impact leve
SRI	ABL	Financial Services	L
SRI	BCX	Software & Computer Services	L
SRI	MDC	Health Care Equipment & Services	M
SRI	MTN	Mobile Telecommunications	L
SRI	NTC	Health Care Equipment & Services	M
SRI	VOD	Mobile Telecommunications	L

The above shows that most SRI firms that operate in mature, low growth industries fall within the high social and environmental impact category – which is the group that recorded the highest levels of Tobin q. The firms operating in the higher-growth sectors, such as software, mobile telecommunications and financial services, were all classified as having a low SEI and hence showed inferior financial performance relative to their high – impact peers. In other words, where Surroca (2012) found a stronger mediating evidence amongst low SEI firms, this study found stronger mediating evidence in firms with high social and environmental impact. The studies therefore seem to contradict each other.

60

Reasons for this could be as follows:

- First and foremost, the studies operationalised CSR through different measures. Whereas the current study used the Johannesburg Stock Exchange SRI Index as a measure of social responsibility, Surroca used a database mostly used in Europe, North America and Australia – the Sustainalytics Platform database. As established by (Margolis et al., 2009), variability in operationalising the CSR construct might lead to inconsistency in study results.

- The fact that the two studies are based in different geographical areas and developmental contexts (South Africa versus Europe and North America) might be another cause for the inconsistency in study outcomes. In developing economies like South Africa, stakeholder pressures from the direct environment are much higher than they would be in, for example, Europe. This in turn might have influences the way in which intangible resources are formed and hence CFP is build.

- Thirdly, market risk was included as a control variable, which was not the case in the current study. Again, this difference in which the different variables have been operationalised might have influenced the outcomes of the study.

- Lastly, Surroca (2010) used a longitudinal research design as compared to the cross-sectional nature of this study. Not surprisingly, this difference in research design could have influenced the variability in outcomes.

In addition to Surroca's (2010) study, the results also seem to overthrow the argument for a universal business case as has been proposed by so many previous studies trying to establish a generic return to CSR (Griffin & Mahon, 1997) – regardless of industry or firm dynamics. The results indicate that moderating factors do cause variability in CSR returns, thereby showing that the universal argument no longer holds.

61

6.5 Hypothesis 3

6.5.1 Findings

The alternative hypothesis (*H*1) of hypothesis 3 stated that high-impact non-sustainable (ALSI-only listed) companies show similar CFP relative to their peers with medium and low SEI levels. In other words, non-sustainable companies were not expected to show variance in CSR returns as was found amongst sustainable (SRI-listed) firms.

Results showed a significant difference in Tobin q. values between the different ALSI-listed social and environmental impact groups. ANOVA post-hoc tests furthermore found significant differences in CFP between ALSI-listed high and low impact companies. Results matched the findings for the SRI sub population, where was also found that firms with high social and environmental impact levels outperforms the firms with low SEI.

The results for the non-sustainable ALSI-listed companies therefore can be said to differ between the different SEI level. The null hypothesis (H0) associated with this test could therefore not be rejected.

6.5.2 Discussion of the results

The overall objective of this study was to explore factors that influence CSR returns, with a specific focus on the role of social and environmental impact levels. In order to come to conclusive results, the CFP values of two sample groups (the ALSI and its subpopulation the SRI Index) were observed in a cross-sectional fashion. Therefore, two similar units of analysis (companies listed on either the ALSI or SRI Index) were used across different groups, namely:

Hypotheses 1 and 2: The units of analysis were the three different SEI impact levels groups of firms listed in the SRI, being high, medium and low as indicated by the categorical variables 3, 2 and 1.

Hypothesis 3: The units of analysis were the three different SEI impact levels groups of firm listed on the ALSI (excluding SRI subpopulation), being high, medium and low as indicated by the categorical variables 3, 2 and 1.

As was stated above, hypothesis 1 aimed to establish an occurrence of variance within CFP levels across the three different groups of sustainable companies listed on the SRI Index.

Hypothesis 2 aimed to establish which of the three groups showed superior CFP as compared to the other two groups. Although these first two hypotheses resulted in an understanding of the variance of CFP within the SRI Index subpopulation, it did not allow for the drawing of any conclusions as to how the ALSI (non –sustainable) firms compared. This was the objective of hypothesis 3, which basically allowed for comparisons between variance within the three different social and environmental impact levels of the ALSI excluding SRI (Group 1) and SRI Index (Group 2).

The outcomes yielded from hypothesis 3, can be depicted as per the below:

Figure 8: Final outcome of study
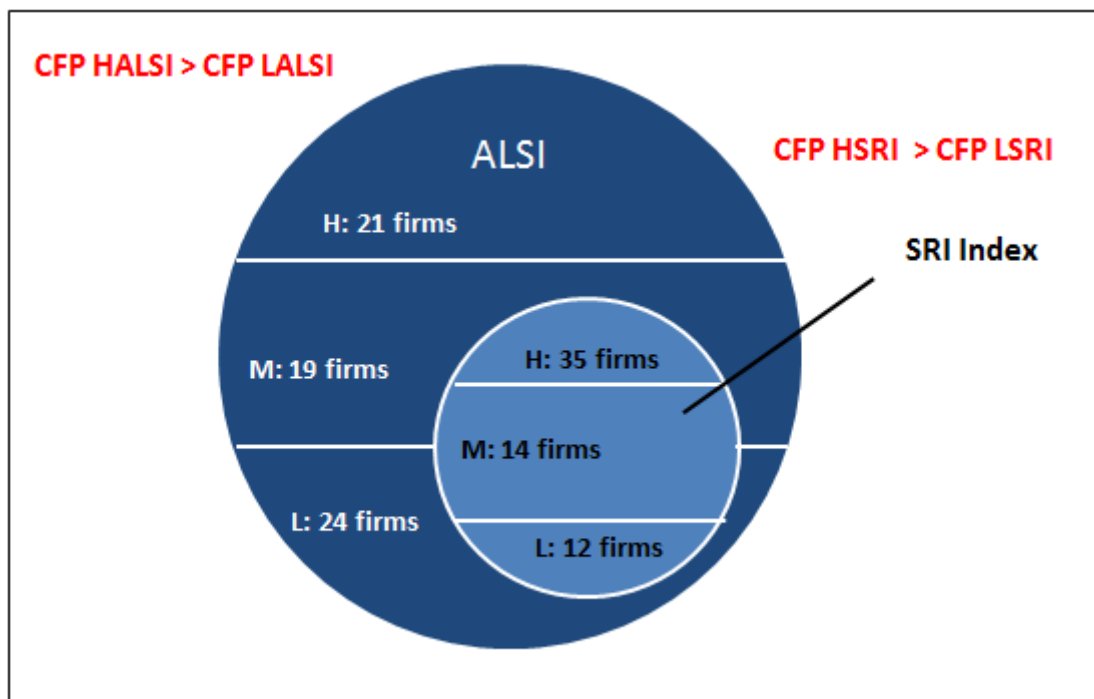
It was found that within both Group 1 (ALSI excluding SRI) and Group 2 (SRI), firms with a high social and environmental impact outperformed their peers with low social and environmental impact levels. Noted statistically, findings were that:

(CFP HALSI > CFP LALSI) = (CFP HSRI > CFP LSRI)

These findings are inconsistent with those of Schreck (2011), who found that certain measures of CSR (in this case environmental management) resulted in superior CFP for firms with high environmental impact levels. This superior CFP could be explained through the idea that firms with high environmental impact levels have more to win or more to lose from (not) engaging in

CSR. Following this theory, only SRI-listed firms should have shown superior returns since they, as sustainable companies, would have benefited from being able to capitalise on their high SEI levels. Non-sustainable firms on the ALSI, as a control group, should have showed consistent returns across all three different impact levels since they, as non-sustainable firms, could not leverage their high SEI levels.

In the same vein, the results contrasts findings by both Cai et al. (2012) and Jo & Na (2012) who both found that firms in controversial industries (with higher levels of visibility) could yield superior CFP from CSR engagement. Cai et al. (2012) explained the variance in CFP through the value-enhancement hypothesis, stating that highly visible firms have "more points of intersection with society" (p. 468) and hence more opportunities for value-creating activities through CSR. Jo & Na (2012) explained superior CFP returns by means of the risk-reduction hypothesis, which implied that highly controversial firms face higher reputational risks and therefore have more to gain from engaging in CSR as a risk-reduction strategy than firms in less visible industries sectors do. Following these theories, the outcomes of this study should have pointed towards superior CFP for high SEI firms listed on the SRI Index *only*. Reason for this is the fact that highly visible firms can generate improved CFP through CSR, Since the ALSI-listed (non-sustainable) firms are deemed not to invest in CSR, they should not benefit from improved returns.

The possible explanations for the inconsistency in findings can be explained as follows:

- Schreck's study (2012) focused on a single measure of CSR, being environmental management. This study, on the other hand, operationalised CSR through the multidimensional JSE SRI measure. Although both studies had similar objectives, the differences in operationalization of variables could have led to inconsistent findings.

- Cai et al. (2012) and Jo & Na (2012) both carried out their studies in the developed context (being North America). Their sample group was derived from the KLD database, which measures sustainability levels of firms in the US according to a multidimensional measure of CSR. Although both the KLD and the JSE SRI Index are multidimensional measures of CSR, the components of which they have been made up might differ. The SRI Index, for example, includes measures of Black Economic Empowerment (BBEEE) and HIV/AIDS, which are less relevant to or perhaps even excluded from the way in which KLD measures CSR engagement. If CSP measures could be aligned, different results might have been yielded.

64

6.6 Have the research objectives been met?

The objective of this study was to explore the role of moderating factors in the CSR – CFP relationship. Of particular interest in this regard was the role of social and environmental impact (SEI) levels on CSR returns.

According to the theory developed in this study, sustainable firms with higher impact levels (and therefore higher visibility) should achieve superior performance through CSR as compared to their less visible peers with lower social and environmental impact levels. Building on the risk-reduction and value-increasing hypotheses, highly visible firms were hypothesised to have more to lose or gain from (not) participating in CSR and therefore show superior returns if they did engage in social investment.

As set out above, the results of the study did not support this theory. Although hypothesis 1 and 2 show superior returns across high SEI levels of sustainable firms, hypothesis 3 found similar results among high SEI levels of non-sustainable firms (that were listed on the ALSI only). This seems to imply that firms with high social and environmental impact levels in general generate superior CFP, regardless of whether they invest in CSR or not.

Visually depicted the findings can be summarised as per the below.

Figure 9: SEI as a moderating factor influencing CFP – results.
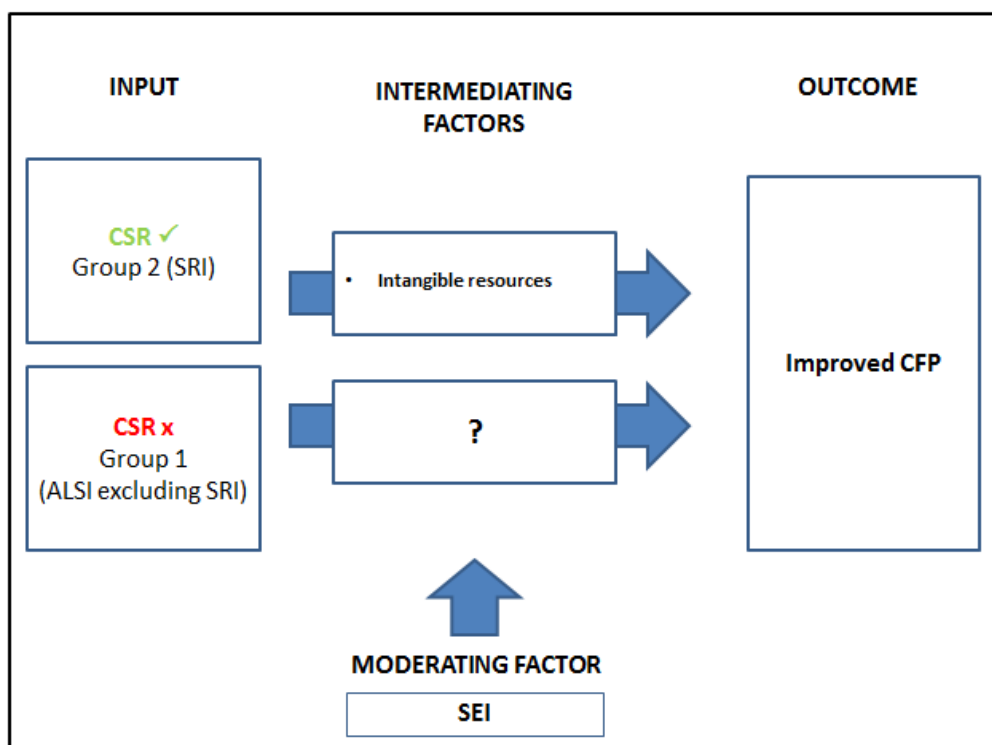
Although the main hypothesis of this study was not supported by the results, the study did explore ways in which moderating factors could influence the CSR – CFP link which was one of its objectives. In doing this, it provided new insights into the complex relationship governing the link between CSR and CFP. Also, the study generated new questions to be addressed in future studies as set out above.

Therefore, the overall research objectives of this study can said to be met.

7. CONCLUSION

7.1 Introduction

Although the concept of CSR has been around for decades, companies still do not fully grasp how they can make their CSR investment work – for themselves and for the communities they operate in. For companies operating in emerging economies, where the state is often believed to have left gaps in the provision of basic services, understanding how to leverage CSR if of major importance. A lack of basic services can lead to unstable operating environments and social unrest, all impacting on the private sector's ability to run profitable and sustainable businesses. Social investment could be a way to mitigate these social challenges.

For a long time, CSR research focused on establishing a "universal business case" for CSR – implying that CSR investment, regardless of firm or industry dynamics, would generate positive returns. More recently, however, scholars became to realise a more nuanced approach was needed that would unpack the "black box" of CSR and its relationship to improved competitive advantage.

7.2 Research background and objectives

This study investigated the connection between CSR and CFP and explored the role of moderating factors in the CSR – CFP relationship. Of particular interest in this regard was the role of social and environmental impact (SEI) levels on CSR returns.

Based on recent literature it was hypothesised that companies that exert a high social and environmental impact on the communities they operate in are more visible. On the one hand, this visibility provides companies with increased opportunities to build positive Stakeholder Influence Capacity (SIC) amongst their stakeholders – in particular the people that would directly be affected by the company's operations (i.e. the direct community). These improved relationships, being intangible resources, would lead to improved competitive advantage and hence superior CFP. Higher visibility however can also lead to increased risk when stakeholder relationships aren't managed well – which would be the case with companies that refrain from adhering to socially responsible business practices.

67

Thus, it was hypothesised that companies with high impact levels that also invest in social development should outperform companies with high impact levels that do not invest in CSR.

7.3 Main findings

The study tested for relationships between three different SEI levels (high, medium and low) and Corporate Financial Performance as measured by ROA, ROE and Tobin's q. In particular, it aimed to find out whether sustainable companies that exert a high social and environmental impact yielded superior financial returns compared to their non-sustainable peers – also with a high impact. In other words, is social and environmental impact level a determining factor for CSR returns?

The study found that sustainable companies with high impact levels indeed outperformed their peers with lower impact levels. However, the same proved to be the case for non-sustainable companies. Both the ALSI (non- sustainable) and SRI Index (sustainable) showed superior Tobin's q. values for firms with high impact levels. From this can be concluded that improved CFP might be inherent to the specific industries making up the high-impact samples and cannot be attributed to returns from CSR. The theories proposed in this research therefore were not supported by the study outcomes.

7.4 Limitations and recommendations

This study added value by exploring the role of moderating factors in the relationship between CSR and CFP. It found that in the specific context of the JSE SRI Index, theories set out by authors previously investigating this link (Cai et al, 2012; Jo & Na, 201; Schreck, 2011) did not hold. It thereby provided important insights into the complexities governing Corporate Social Performance and perceived company returns.

However, one should be mindful of certain methodological limitations.

Firstly, it should be noted that this study was descriptive and did not aim to establish any causality between the different variables, but merely tested for correlations. Since most studies investigating the CSR – CFP link however followed a causal and therefore explanatory approach, differences in the yielded results should be appreciated in this light. The academic

debate could benefit from future explanatory studies being conducted to gain a further understanding of the variables influencing the CSR – CFP relationship.

Furthermore, the study did not control for confounding events, such as the for example the recent mining strikes in South Africa. Although the results do not seem to have been impacted by this (mining companies even showed superior CFP as compared to other companies), leaving out any such events could have skewed the results. To increase the robustness of the research, it is proposed that future studies control for these confounding events.

Thirdly, as mentioned in the discussion section, it should be noted that CSR studies vary greatly in the way they have been operationalised. As elaborated upon in the literature review, this broad variety in measures and research designs make it difficult to compare and contrast study outcomes. Both measures of CSR and CFP have been operationalised in many different ways. Whereas this study chose to operationalise CSR through the JSE SRI Index categorisation, other studies (Schreck, 2011) measured the impact of only a single measure of CSR (in this case environmental performance management) on CFP. It does not need mention that the broad variability in the way the CSR construct has been operationalised makes it challenging compare and to contrast the many different studies. Future research that operationalises CSR and CFP in a similar way as has been done in this specific study, could yield valuable insights.

It should also be noted that this study embarked on a path that had not yet been fully explored. Whereas the general link between CSR and CFP has been thoroughly researched in previous studies, research on the role of moderating factors influencing the CSR – CFP link is still relatively new. Therefore, much of theory on which this study's hypotheses were built are still relatively new and underexplored. This made interpretation of the results quite challenging. Expanding the body of research on the role of moderating factors would make it easier to compare and contrast outcomes.

Lastly, since the entire population was sampled, reliability of the data is deemed to be very high and study outcomes can said to be representative for the South African context. However, the high reliability of this study does not imply that its results can be generalised to other countries and or contexts. In order to fully understand the influence of context-specific dynamics, it is proposed that future studies are done in different countries – including developing economies other than South Africa.

7.5   Concluding remarks

Although the theories proposed in this study were not supported by the outcome of the results, they do bear relevance in terms of advancing the academic debate. Further and deeper insights are needed to understand the complex relationship governing CSR and competitive advantage. The more studies will be done in this regard, the more clarity will be obtained as to how and when CSR indeed can generate returns.

If can be established how both society and business can benefit from social investment, the age-old Friedman – Freeman debate can be laid to rest. It will allow business decision makers to allocate resources to CSR as they would to any other investment – without having to justify their decision from a purely ethical or normative perspective. If the business world will come to understand the long-term returns of social investment, society and business alike will benefit.

REFERENCE LIST

Amaeshi, K., Nnodim, P., & Onyeka, O. (2013). *Corporate social responsibility,*

    entrepreneurship, and innovation. New York: Routledge.

Armitage, P., Healy, M. J .R., Cox, D. R., Nelder, J., Dawid, A. P., Kingman, J. F. C., Bartholomew,

    D. J., O'Hagan, A., Hand, D. J., Barnard, G., Efron, B., Sprott, D. A., Evett, I. W., and

    Lindley, D. (2000). The philosophy of statistics - Comments. *Journal of the Royal*

    Statistical Society Series, (49), 319-337.

Avi-Yonah, R. S. (2005). Cyclical transformations of the corporate form: A historical perspective

    on corporate social responsibility. *Delaware Journal of Corporate Law*, *30*(3), 767-818.

Barnett, M. L. (2007). Stakeholder influence capacity and the variability of financial returns to

    corporate social responsibility. *The Academy of Management Review*, *32*(3), 794–816.

    doi:10.2307/20159336

Barnett, M. L., & Salomon, R. M. (2012). Does it pay to be really good? Addressing the shape of

    the relationship between social and financial performance. *Strategic Management*

    Journal, *33*(11), 1304–1320. doi:10.1002/smj.1980

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of*

    Management, *17*(1), 99–120. doi:10.1177/014920639101700108

Baron, D. P. (2011). Private politics, corporate social responsibility, and integrated strategy.

    Journal of Economics & Management Strategy, *10*(1), 7-45. doi:10.1111/j.1430-

    9134.2001.00007.x

Baron, D. P., & Diermeier, D. (2007). Strategic activism and nonmarket strategy. *Journal of*

    Economics & Management Strategy, *16*(3), 599–634. doi:10.1111/j.1530-

    9134.2007.00152.x

Beurden, P. van, & Gössling, T. (2008). The worth of values – A literature review on the relation

between corporate social and financial performance. *Journal of Business Ethics*, *82*(2),

407–424. doi:10.1007/s10551-008-9894-x

Boyd, B. K., Bergh, D. D., & Ketchen, D. J. (2010). Reconsidering the reputation - performance

relationship: A resource-based view. *Journal of Management*, *36*(3), 588–609.

doi:10.1177/0149206308328507

Brammer, S., & Millington, A. (2008). Does it pay to be different? An analysis of the

relationship between corporate social and financial performance. *Strategic*

Management Journal, *29*(12), 1325–1343. doi:10.1002/smj.714

Branco, M. C., & Rodrigues, L. L. (2006). Corporate social responsibility and resource-based

perspectives. *Journal of business ethics. 69*(2)*, 111-132.*

Brekke, K. A., & Nyborg, K. (2008). Attracting responsible employees: Green production as

labor market screening. *Resource and Energy Economics*, *30*(4), 509–526.

doi:10.1016/j.reseneeco.2008.05.001

Cai, Y., Jo, H., & Pan, C. (2012). Doing well while doing bad? CSR in controversial industry

sectors. *Journal of Business Ethics*, *108*(4), 467–480. doi:10.1007/s10551-011-1103-7

Carroll, A. B. (1998). The four faces of corporate citizenship. *Business and Society Review*, *100-*

101(1), 1–7. doi:10.1111/0045-3609.00008

Carroll, A. B., & Shabana, K. M. (2010). The business case for corporate social responsibility: A

review of concepts, research and practice. *International Journal of Management*

Reviews, *12*(1), 85–105. doi:10.1111/j.1468-2370.2009.00275.x

Chen, C.-M., & Delmas, M. (2011). Measuring corporate social performance: An efficiency

perspective. *Production & Operations Management*, *20*(6), 789–804.

doi:10.1111/j.1937-5956.2010.01202.x

Chiu, S., & Sharfman, M. (2009). Legitimacy, visibility, and the antecedents of corporate social performance: An investigation of the instrumental perspective. *Journal of Management*. doi:10.1177/0149206309347958

Dahlsrud, A. (2008). How corporate social responsibility is defined: An analysis of 37 definitions. *Corporate Social Responsibility and Environmental Management*, *15*(1), 1–13. doi:10.1002/csr.132

Falkenberg, J., & Brunsæl, P. (2011). Corporate social responsibility: A strategic advantage or a strategic necessity? *Journal of Business Ethics*, *99*(S1), 9–16. doi:10.1007/s10551-011-1161-x

Fombrun, C. J., Gardberg, N. A., & Barnett, M. L. (2000). Opportunity platforms and safety nets: Corporate citizenship and reputational risk. *Business and Society Review*, *105*(1), 85–106. doi:10.1111/0045-3609.00066

Gao, J., & Bansal, P. (2013). Instrumental and integrative logics in business sustainability. *Journal of Business Ethics*, *112*(2), 241–255. doi:10.1007/s10551-012-1245-2

Goll, I., & Rasheed, A. A. (2004). The moderating effect of environmental munificence and dynamism on the relationship between discretionary social responsibility and firm performance. *Journal of Business Ethics*, *49*(1), 41–54. doi:10.1023/B:BUSI.0000013862.14941.4e

Gomez-Meija, L. R., Balkin, D., & Cardy, R. (2013). *Management* (7th ed.). New Jersey: Prentice Hall.

Gössling, T. (2003). The price of morality. An analysis of personality, moral behaviour, and social rules in economic terms. *Journal of Business Ethics*, *45*(1-2), 121–131. doi:10.1023/A:1024180732125

Graves, S. B., & Waddock, S. A. (1994). Institutional owners and corporate social performance. *The Academy of Management Journal*, *37*(4), 1034–1046. doi:10.2307/256611

Greening, D. W., & Turban, D. B. (2000). Corporate social performance as a competitive

advantage in attracting a quality workforce. *Business & Society*, *39*(3), 254–280.

doi:10.1177/000765030003900302

Griffin, J. J., & Mahon, J. F. (1997). The corporate social performance and corporate financial

performance debate: Twenty-five years of incomparable research. *Business and*

Society, *36*(1), 5–31.

Gupta, A. D. (2014). Social impact management. In *Business ethics* (pp. 189–195). Springer

India. Retrieved from http://0-

link.springer.com.innopac.up.ac.za/chapter/10.1007/978-81-322-1518-9_9

Hahn, R. (2013). ISO 26000 and the standardization of strategic management processes for

sustainability and corporate social responsibility. *Business Strategy and the*

Environment, *22*(7), 442–455. doi:10.1002/bse.1751

Halme, M., & Laurila, J. (2009). Philanthropy, integration or innovation? Exploring the financial

and societal outcomes of different types of corporate responsibility. *Journal of*

Business Ethics, *84*(3), 325–339. doi:10.1007/s10551-008-9712-5

Hillman, A. J., & Keim, G. D. (2001). Shareholder value, stakeholder management, and social

issues: what's the bottom line? *Strategic Management Journal*, *22*(2), 125–139.

Harris, R. J. (1975). *A primer of multivariate statistics*. New York: Academic Press.

Husted, B. W., & De Jesus Salazar, J. (2006). Taking Friedman seriously: Maximizing profits and

social performance*. *Journal of Management Studies*, *43*(1), 75–91.

doi:10.1111/j.1467-6486.2006.00583.x

IBM (2011). IBM SPSS Statistics version 20.0.0.

Jamali, D. (2008). A stakeholder approach to corporate social responsibility: A fresh

perspective into theory and practice. *Journal of Business Ethics*, *82*(1), 213–231.

doi:10.1007/s10551-007-9572-4

Jo, H., & Harjoto, M. A. (2011). Corporate governance and firm value: The impact of corporate social responsibility. *Journal of Business Ethics*, *103*(3), 351–383. doi:10.1007/s10551-011-0869-y

Jo, H., & Na, H. (2012). Does CSR reduce firm risk? Evidence from controversial industry sectors. *Journal of Business Ethics*, *110*(4), 441–456. doi:10.1007/s10551-012-1492-2

John W. Maxwell, B., Lyon, T. P., & Hackett, S. C. (2000). Self-regulation and social welfare: The political economy of corporate environmentalism. *Journal of Law and Economics*, *43*(2), 583–618. doi:10.1086/jle.2000.43.issue-2

JSE. (2014). SRI Index: Background and criteria. Retrieved from https://www.jse.co.za/content/JSERulesPoliciesandRegulationItems/Background%20and%20Criteria%202014.pdf

Kapstein, E. B. (2001). The corporate ethics crusade. *Foreign Affairs*, *80*(5), 105–119. doi:10.2307/20050254

Kleine, A., & Hauff, M. (2009). Sustainability-driven implementation of corporate social responsibility: Application of the integrative sustainability triangle. *Journal of Business Ethics*, *85*(S3), 517–533. doi:10.1007/s10551-009-0212-z

Koch, A. (1991). Multivariate-statistics and probability - Rao,Cr, Rao,Mm. *Homo*, *41*(3), 290-306.

Krenzer, U. (1998). Applied statistics - Application of statistical methods. *Homo, 49*(2), 195-210.

Lee, M.-D. P. (2008). A review of the theories of corporate social responsibility: Its evolutionary path and the road ahead. *International Journal of Management Reviews*, *10*(1), 53–73. doi:10.1111/j.1468-2370.2007.00226.x

Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2009). *Does it pay to be good...And does it matter? A meta-analysis of the relationship between corporate social and financial performance* (Working paper No. ID 1866371). Rochester, NY: Harvard University. Retrieved from http://0-papers.ssrn.com.innopac.up.ac.za/abstract=1866371

McWilliams, A., & Siegel, D. S. (2011). Creating and capturing value strategic corporate social responsibility, resource-based theory, and sustainable competitive Advantage. *Journal of Management*, *37*(5), 1480–1495. doi:10.1177/0149206310385696

McWilliams, A., Siegel, D. S., & Wright, P. M. (2006). Corporate social responsibility: Strategic implications*. *Journal of Management Studies*, *43*(1), 1–18.

Nakao, Y., Amano, A., Matsumura, K., Genba, K., & Nakano, M. (2007). Relationship between environmental performance and financial performance: An empirical analysis of Japanese corporations. *Business Strategy and the Environment*, *16*(2), 106–118. doi:10.1002/bse.476

Oakshott, L. (2009). *Essential quantitative methods: For business, management and finance*. Basingstoke: Palgrave Macmillan.

Orlitzky, M. (2001). Does firm size confound the relationship between corporate social performance and firm financial performance? *Journal of Business Ethics*, *33*(2), 167–180. doi:10.1023/A:1017516826427

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, *24*(3), 403–441. doi:10.1177/0170840603024003910

Peloza, J. (2009). The challenge of measuring financial impacts from investments in corporate social performance. *Journal of Management*. doi:10.1177/0149206309335188

Perrini, F., Russo, A., Tencati, A., & Vurro, C. (2011). Deconstructing the relationship between corporate social and financial performance. *Journal of Business Ethics*, *102*(1), 59–76. doi:10.1007/s10551-011-1194-1

Peterson, D. K. (2004). The relationship between perceptions of corporate citizenship and organizational commitment. *Business & Society*, *43*(3), 296–319. doi:10.1177/0007650304268065

Ponzi, L. J., Fombrun, C. J., & Gardberg, N. A. (2011). RepTrak[TM] Pulse: Conceptualizing and validating a short-form measure of corporate reputation. *Corporate Reputation Review*, *14*(1), 15–35. doi:10.1057/crr.2011.5

Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review*, *89*(1/2), 62–77.

Roberts, P. W., & Dowling, G. R. (2002). Corporate reputation and sustained superior financial performance. *Strategic Management Journal*, *23*(12), 1077–1093. doi:10.1002/smj.274

Roman, R. M., & Hayibor, B. R. (1999). The relationship between social and financial performance repainting a portrait. *Business & Society*, *38*(1), 109–125.

Rowley, T., & Berman, S. (2000). A brand new brand of corporate social performance. *Business & Society*, *39*(4), 397–418. doi:10.1177/000765030003900404

Saunders, M. N. K., & Lewis, P. (2012). *Doing research in business & management: An essential guide to planning your project*. Harlow: Trans-Atlantic Publications, Inc.

Schreck, P. (2011). Reviewing the business case for corporate social responsibility: New evidence and analysis. *Journal of Business Ethics*, *103*(2), 167–188. doi:10.1007/s10551-011-0867-0

Sen, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. *Journal of Marketing Research*, *38*(2), 225–243.

Simpson, W. G., & Kohers, T. (2002). The link between corporate social and financial performance: Evidence from the banking industry. *Journal of Business Ethics*, *35*(2), 97–109. doi:10.1023/A:1013082525900

Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal*, *31*(5), 463–490. doi:10.1002/smj.820

Swanson, D. L. (1999). Toward an integrative theory of business and society: A research strategy for corporate social performance. *Academy of Management Review*, *24*(3), 506–521. doi:10.5465/AMR.1999.2202134

Turban, D. B., & Greening, D. W. (1997). Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal*, *40*(3), 658–672. doi:10.2307/257057

Udayasankar, K. (2008). Corporate social responsibility and firm size. *Journal of Business Ethics*, *83*(2), 167–175. doi:10.1007/s10551-007-9609-8

Ullmann, A. A. (1985). Data in search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of U.S. firms. *Academy of Management Review*, *10*(3), 540–557. doi:10.5465/AMR.1985.4278989

Visser, W. (2014). *CSR 2.0 - Transforming corporates sustainability and responsibility*. Retrieved from http://www.springer.com/new+%26+forthcoming+titles+%28default%29/book/978-3-642-40873-1

Wood, D. J. (1991). Corporate social performance revisited. *Academy of Management Review*, *16*(4), 691–718. doi:10.5465/AMR.1991.4279616

Wood, D. J. (2010). Measuring corporate social performance: A review. *International Journal of Management Reviews*, *12*(1), 50–84. doi:10.1111/j.1468-2370.2009.00274.x

Wu, M. (2006). Corporate social performance, corporate financial performance, and firm size: A meta-analysis. *Journal of American Academy of Business*, *8*(1), 163–171.

Zikmund, W. G. (1999). *Business research methods* (6th rev. ed.). Mason, OH: Harcourt.

APPENDICES

Appendix I: Population - The JSE All Share Index on 2013/06/28

Number	Company Name	Number	Company Name
1	African Bank Invest	84	JD Group
2	ArcelorMittal South Africa Ltd	85	JSE
3	Acucap Properties Limited	86	KAP Industrial Holdings Ltd
4	Advtech	87	Kagiso Media Ltd
5	Adcorp Holdings	88	Kumba Iron Ore
6	Aveng	89	Liberty Hldgs.
7	AECI	90	Lewis Group
8	Alexander Forbes Equity Holdings	91	Life Healthcare Group Holdings
9	Afgri Ltd	92	Litha Healthcare Group Ltd
10	African Oxygen	93	Lonmin PLC
11	Anglo American	94	Mediclinic International
12	Adcock Ingram Holdings	95	Metrofile Holdings
13	Allied Technologies	96	MMI Holdings
14	Anglo American Platinum	97	Mondi Ltd
15	Anglogold Ashanti	98	Mondi Plc
16	Aspen Pharmacare Holdings	99	Mr Price Group
17	Aquarius Platinum	100	Mpact Ltd
18	African Rainbow Minerals Ltd	101	Merafe Resources
19	Astral Foods Ltd	102	Massmart Holdings
20	Absa Group	103	Metair Investments Ord
21	Assore Ltd	104	MTN Group
22	Allied Electronics Corp	105	Murray & Roberts
23	Allied Electronics Corp Part Prf	106	Nedbank Group
24	AVI	107	New Europe Property Investment Plc
25	Arrowhead Properties (A)	108	Northam Platinum
26	Arrowhead Properties (B)	109	Nampak
27	Brait SE	110	Naspers
28	Barloworld	111	Netcare
29	Business Connexion Group	112	Oceana Group
30	Bell Equipment	113	Octodec Investments
31	BHP Billiton	114	Old Mutual
32	Blue Label Telecoms Ltd.	115	Omnia Holdings Ltd
33	Brimstone Investment Corp N	116	Palabora Mining
34	British American Tobacco PLC	117	Pan African Resource
35	Bidvest Group	118	Petmin Ltd.
36	Capital & Counties Properties PLC	119	Pioneer Food Group
37	Compagnie Financiere Richemont AG	120	Pallinghurst Resources
38	Consolidated Infrastructure Group	121	Peregrine Holdings
39	City Lodge Hotels	122	Pick N Pay Stores
40	Clover Industries Ltd	123	Premium Properties
41	Clicks Group Ltd	124	Pinnacle Technology Holdings
42	Combined Motor Hldgs Ltd	125	PPC Ltd
43	Coronation Fund Managers	126	Royal Bafokeng Platinum
44	Cipla Medpro	127	Rainbow Chicken
45	Capitec Bank Hldgs Ltd	128	Raubex Group
46	Capital Property Fund	129	Redefine Properties
47	Cashbuild Ltd	130	Rebosis Property Fund

79

48	Capevin Holdings Ltd	131	Reinet Investments
49	Coal of Africa	132	Remgro
50	Delta Property Fund	133	Resilient Prop Inc Fd
51	DRD Gold	134	Redefine Properties International
52	Discovery Ltd	135	Reunert
53	Datatec	136	RMB Holdings
54	Ellies Holdings Ltd	137	Rand Merchant Insurance Holdings Ltd
55	Emira Property Fund	138	SABMiller
56	EOH Holdings Ltd.	139	SA Corporate Real Estate Fund
57	Eqstra Holdings	140	Sappi
58	Exxaro Resources	141	Standard Bank Group
59	Famous Brands	142	Sibanye Gold
60	Fortress Income Fund Ltd. (A)	143	Steinhoff International Holdings
61	Fountainhead Property Trust	144	Shoprite
62	Firstrand Limited	145	Sanlam
63	Gold Fields	146	Santam
64	Grindrod	147	Sasol
65	Grand Parade Investments Ltd	148	Super Group
66	Group Five/South Africa	149	The Spar Group
67	Growthpoint Prop Ltd	150	Stefanutti & Bressan Holding
68	Harmony	151	Sun International Ltd
69	Hosken Cons Invest	152	Spur Corp
70	Hudaco Industries	153	Sycom Property Fund
71	Hospitality Property A	154	Tiger Brands
72	Hospitality Property B	155	Transaction Capital
73	Holdsport	156	The Foschini Group Ltd
74	Howden Africa Holdings	157	Telkom SA SOC
75	Hyprop Investments Ltd	158	Times Media Group Ltd
76	Illovo Sugar	159	Tongaat Hulett
77	Impala Platinum Hlds	160	Trencor Ltd
78	Investec Ltd	161	Truworths International
79	Investec PLC	162	Vukile Property Fund
80	Investec Property Fund ltd	163	Vodacom Group
81	Imperial Holdings	164	Wilson Bayly Holmes-Ovcon
82	Intu Properties Plc	165	Woolworths Holdings
83	Invicta Holdings	166	York Timber Holdings
		167	Zeder Investments

Appendix II: Subpopulation –The JSE SRI Index on 2013/06/28

Number	Company Name	Number	Company Name
1	African Bank Invest	40	Lewis Group
2	ArcelorMittal South Africa Ltd	41	Lonmin PLC
3	Advtech	42	Mediclinic International
4	Aveng	43	MMI Holdings
5	AECI	44	Mondi Ltd
6	African Oxygen	45	Mondi Plc
7	Anglo American	46	Merafe Resources
8	Allied Technologies	47	Massmart Holdings
9	Anglo American Platinum	48	MTN Group
10	Anglogold Ashanti	49	Murray & Roberts
11	Aspen Pharmacare Holdings	50	Nedbank Group
12	African Rainbow Minerals Ltd	51	Northam Platinum
13	Absa Group	52	Nampak
14	Allied Electronics Corp	53	Netcare
15	Allied Electronics Corp Part Prf	54	Oceana Group
16	Barloworld	55	Old Mutual
17	Business Connexion Group	56	Palabora Mining
18	BHP Billiton	57	Pick N Pay Stores
19	British American Tobacco PLC	58	PPC Ltd
20	Bidvest Group	59	Royal Bafokeng Platinum
21	Clicks Group Ltd	60	Rainbow Chicken
22	DRD Gold	61	Redefine Properties
23	Discovery Ltd	62	Remgro
24	Exxaro Resources	63	RMB Holdings
25	Firstrand Limited	64	SABMiller
26	Gold Fields	65	Sappi
27	Grindrod	66	Standard Bank Group
28	Group Five/South Africa	67	Steinhoff International Holdings
29	Growthpoint Prop Ltd	68	Sanlam
30	Harmony	69	Santam
31	Illovo Sugar	70	Sasol
32	Impala Platinum Hlds	71	Sun International Ltd
33	Investec Ltd	72	Tiger Brands
34	Investec PLC	73	The Foschini Group Ltd
35	Imperial Holdings	74	Telkom SA SOC
36	Intu Properties Plc	75	Tongaat Hulett
37	JSE	76	Truworths International
38	Kumba Iron Ore	77	Vodacom Group
39	Liberty Hldgs.	78	Wilson Bayly Holmes-Ovcon
		79	Woolworths Holdings

Appendix III: Raw financial data for companies listed on the ALSI (including SRI subpopulation)

Company information   **Line Items**

Period	IndexName	Alpha	ICB Sector	SEI level	TE	LTD	CL	TA	NPAT	R&D	Turnover
2013/06/28	SRI	ABL	8770	L	8674000	31026000	26437000	67466000	-4199000	0	4034000
2013/06/28	SRI	ACL	1750	H	20694000	757000	7922000	32715000	-2147000	78000	32421000
2013/06/28	SRI	ADH	5370	M	853000	0	779700	1632700	155700	0	1766300
2013/06/28	SRI	AEG	2350	H	13305000	1312000	14372000	30413000	459000	0	51704000
2013/06/28	SRI	AFE	1350	H	6871000	1099000	5302000	14393000	954000	62000	15942000
2013/06/28	SRI	AFX	1350	H	3239000	1000000	1198000	6007000	324000	0	5825000
2013/06/28	SRI	AGL	1770	H	37364000	15740000	8351000	56169000	426000	103000	29342000
2013/06/28	SRI	ALT	6570	L	0	0	0	0	0	0	0
2013/06/28	SRI	AMS	1770	H	50100000	8104000	15179000	47477000	-6720000	286000	43148000
2013/06/28	SRI	ANG	1770	H	3107000	3633000	1179000	4925000	-2200000	0	5646000
2013/06/28	SRI	APN	4570	H	22798900	8923500	12865300	45421700	3514100	11000	19308000
2013/06/28	SRI	ARI	1770	H	25463000	3293000	4455000	29158000	1782000	0	19844000
2013/06/28	SRI	ASA	8350	M	0	0	0	0	0	0	0
2013/06/28	SRI	ATN	2730	M	5220000	609000	6960000	12967000	-929000	95000	25049000
2013/06/28	SRI	ATNP	2730	M	0	0	0	0	0	0	0
2013/06/28	SRI	BAW	2720	M	15838000	9010000	15080000	40733000	1800000	0	65102000
2013/06/28	SRI	BCX	9530	L	2400844	178073	1232380	3939290	232995	13053	6173339
2013/06/28	SRI	BIL	1770	H	72035000	29862000	20372000	112487000	11075000	64000	65968000
2013/06/28	SRI	BVT	2720	M	27550719	7469635	30190381	66678419	5052416	1348	153404532
2013/06/28	SRI	CLS	5330	H	1376838	0	3820265	5449408	751568	0	17543301
2013/06/28	SRI	DRD	1770	H	1647769	143332	245803	919455	100100	0	2076496
2013/06/28	SRI	DSY	8570	L	12929000	428000	27679000	54933000	2131000	0	17893000
2013/06/28	SRI	EXX	1770	H	36272000	3664000	3852000	35038000	5155000	5000	13568000
2013/06/28	SRI	FSR	8350	M	75109000	119634000	659868000	869669000	15678000	0	0

2013/06/28	SRI	GFI	1770	H	41827500	19993400	6446400	19720300	-6156600	0	30628400
2013/06/28	SRI	GND	2770	H	12132665	3056376	10762609	28542007	1262050	0	15523861
2013/06/28	SRI	GRF	2350	H	2226399	684982	5744941	8804039	346654	0	11199093
2013/06/28	SRI	GRT	8630	L	2693000	55342000	4764000	64154000	-709000	0	5782000
2013/06/28	SRI	HAR	1770	H	32311000	2252000	2399000	15254000	-2683000	0	15902000
2013/06/28	SRI	ILV	3570	H	6974700	1166400	3186100	12573800	1115100	26200	11128900
2013/06/28	SRI	IMP	1770	H	54616000	7259000	6447000	49156000	1075000	0	30032000
2013/06/28	SRI	INL	8770	L	3626990	5144744	34588020	50999518	320808	0	0
2013/06/28	SRI	INP	8770	L	3626990	5144744	34588020	50999518	320808	0	0
2013/06/28	SRI	IPL	2770	H	17713000	5573000	19576000	51636000	3686000	0	92382000
2013/06/28	SRI	JSE	8770	L	#N/A	30407	19066034	21375341	506628	0	1577552
2013/06/28	SRI	KIO	1750	H	27184000	2234000	5423000	44538000	20300000	2000	54461000
2013/06/28	SRI	LBH	8570	L	18511000	2134000	42571000	292757000	4198000	43000	30720000
2013/06/28	SRI	LEW	5370	M	#N/A	1250000	939300	7249600	907400	0	5187600
2013/06/28	SRI	LON	1770	H	3610000	0	318000	1822000	198000	0	1520000
2013/06/28	SRI	MDC	4530	M	18175000	25359000	6062000	56774000	-743000	0	24562000
2013/06/28	SRI	MMI	8570	L	23864000	8400000	156136000	343143000	2651000	0	26436000
2013/06/28	SRI	MND	1730	H	2846000	1571000	1296000	6240000	414000	14000	6476000
2013/06/28	SRI	MNP	1730	H	2876000	1640000	1443000	6614000	279000	12000	5807000
2013/06/28	SRI	MRF	1770	H	2925837	576311	763907	1903622	210616	0	3496983
2013/06/28	SRI	MSM	5370	M	5369600	2017600	18571900	26147900	1342100	0	72263400
2013/06/28	SRI	MTN	6570	L	119771000	34664000	57984000	226821000	30400000	0	136495000
2013/06/28	SRI	MUR	2350	H	8698400	533900	13209600	24531700	1211500	600	35574900
2013/06/28	SRI	NED	8350	M	64336000	33268000	636426000	749594000	8957000	192000	0
2013/06/28	SRI	NHM	1770	H	10815635	1297564	1544203	2437425	528001	0	4420977
2013/06/28	SRI	NPK	2720	M	6991800	3537700	6209000	19744000	1355000	42600	19361800
2013/06/28	SRI	NTC	4530	M	9788000	5293000	6660000	23919000	5104000	0	27801000
2013/06/28	SRI	OCE	3570	H	1789375	0	922343	2895406	524390	0	4997354
2013/06/28	SRI	OML	8570	L	9798000	7165000	40460000	143497000	923000	0	3725000
2013/06/28	SRI	PAM	1750	H	#N/A	0	1683000	4657000	-97000	0	8716000
2013/06/28	SRI	PIK	5330	H	2416000	772500	8908000	13021100	550600	0	59271300

2013/06/28	SRI	PPC	2350	H	2142000	3462000	1834000	8876000	931000	0	8316000
2013/06/28	SRI	RBW	3570	H	#VALUE!	#VALUE!	0	0	0	0	0
2013/06/28	SRI	REM	2720	M	61065000	5774000	3993000	72759000	4427000	1000	16446000
2013/06/28	SRI	RMH	8350	M	29318000	54000	54000	30619000	5063000	0	0
2013/06/28	SRI	SAB	3530	H	27460000	16079000	8526000	56294000	3511000	4000	23213000
2013/06/28	SRI	SAP	1730	H	1144000	2499000	1206000	5727000	-161000	23000	5925000
2013/06/28	SRI	SBK	8350	M	147145000	143439000	938617000	1690929000	21028000	0	0
2013/06/28	SRI	SHF	3720	M	63122000	45041000	39698000	164639000	7940000	0	115486000
2013/06/28	SRI	SLM	8570	L	39889000	4198000	49276000	443564000	6434000	0	157174000
2013/06/28	SRI	SNT	8530	L	6532000	997000	12237000	22616000	1173000	143000	20631000
2013/06/28	SRI	SOL	5370	M	153275000	14202000	36125000	230562000	27182000	0	181269000
2013/06/28	SRI	TBS	3570	H	13906500	1452700	8330300	25219500	2389600	17100	28091300
2013/06/28	SRI	TFG	5370	M	7749300	2693000	4586700	15386600	1926600	0	12896400
2013/06/28	SRI	TKG	6530	L	18229000	3911000	13130000	41627000	-11499000	0	32501000
2013/06/28	SRI	TON	3570	H	9752000	4203000	4741000	21301000	1170000	0	14373000
2013/06/28	SRI	TRU	5370	M	6219000	0	955000	7271000	2408000	0	9765000
2013/06/28	SRI	VOD	6570	L	21216000	7881000	24755000	55591000	13224000	0	69917000
2013/06/28	SRI	WBO	2350	H	4575365	141765	7589381	12337231	674905	0	23773481
2013/06/28	SRI	WHL	5370	M	5904000	705000	4376000	12188000	2638000	0	35227000
2013/06/28	All Share	ACP	8630	L	#N/A	4650953	825209	10348663	732699	0	650790
2013/06/28	All Share	ADR	2790	L	1895661	12626	2062660	4127896	179361	0	8616842
2013/06/28	All Share	AFP	8770	L	#VALUE!	#VALUE!	0	0	0	0	0
2013/06/28	All Share	AFR	3570	H	2420000	2058000	2679000	7396000	27000	0	10220000
2013/06/28	All Share	AIP	4570	H	3780867	5172	2878614	6818827	601230	104941	5445639
2013/06/28	All Share	AQP	1770	H	295942	275909	78037	604126	-287913	0	364187
2013/06/28	All Share	ARL	3570	H	1727680	145255	1570864	3954334	247299	0	8523976
2013/06/28	All Share	ASR	1770	H	14151421	0	2343022	10031179	3428368	0	13500864
2013/06/28	All Share	AVI	3570	H	3677600	0	2286900	6568800	1044200	56000	9251900
2013/06/28	All Share	AWA	8630	L	#N/A	#N/A	0	0	0	0	0
2013/06/28	All Share	AWB	8630	L	#VALUE!	#VALUE!	0	0	0	0	0
2013/06/28	All Share	BAT	8770	L	13458000	141000	51000	15141000	3012000	0	0

2013/06/28	All Share	BEL	2750	M	2488661	113271	2019982	4756333	205753	28016	6319104
2013/06/28	All Share	BLU	6570	L	3242853	0	2465752	5720547	408105	0	18984210
2013/06/28	All Share	BRN	8980	L	#N/A	#N/A	0	0	0	0	0
2013/06/28	All Share	BTI	3780	H	6935000	9716000	8436000	26881000	4199000	91000	15260000
2013/06/28	All Share	CCO	8630	L	#N/A	357700	85200	2282500	333700	0	119800
2013/06/28	All Share	CFR	3760	M	10215000	512000	3456000	14497000	2005000	55000	10150000
2013/06/28	All Share	CIL	2730	M	1579991	456326	701640	2778289	171626	0	2037402
2013/06/28	All Share	CLH	5750	L	#N/A	69121	149428	1373903	253147	0	975893
2013/06/28	All Share	CLR	3570	H	2115425	666640	1444401	4434267	239859	20685	7996461
2013/06/28	All Share	CMH	5370	M	565726	90244	1915984	2574110	169432	0	10753474
2013/06/28	All Share	CML	8770	L	2007000	0	657000	72933000	1457000	0	3635000
2013/06/28	All Share	CMP	4570	H	1966158	263873	744726	3012926	168364	0	2270442
2013/06/28	All Share	CPI	8350	M	#N/A	14392719	21593482	46190966	2037554	0	0
2013/06/28	All Share	CPL	8670	L	#N/A	3693171	2309601	22591972	3826501	0	2303472
2013/06/28	All Share	CSB	5370	M	1116436	2488	856465	2069000	248551	0	6376945
2013/06/28	All Share	CVH	3530	H	#N/A	#N/A	5148	2098171	314609	0	0
2013/06/28	All Share	CZA	1770	H	342468	0	50028	148321	-148137	0	146396
2013/06/28	All Share	DLT	8630	L	#N/A	1022126	108537	2241546	-17325	0	139949
2013/06/28	All Share	DTC	9530	L	917011	13469	1688729	2690064	85084	0	5246667
2013/06/28	All Share	ELI	2730	M	958467	259411	473396	1692129	224846	0	1996053
2013/06/28	All Share	EMI	8670	L	6590162	1425459	2083895	10114739	1435938	0	1342244
2013/06/28	All Share	EOH	9530	L	1620727	353209	1429618	3456952	331359	0	5071492
2013/06/28	All Share	EQS	2720	M	3275000	5541000	3724000	13301000	408000	0	9154000
2013/06/28	All Share	FBR	5750	L	1000088	77313	379923	1510467	331052	0	2499496
2013/06/28	All Share	FFA	8630	L	#N/A	4458773	871631	8802597	1271763	0	0
2013/06/28	All Share	FPT	8670	L	#N/A	2131319	1218214	11598640	767530	0	1089259
2013/06/28	All Share	GPL	8770	L	1653540	83680	118228	2000747	129576	0	489353
2013/06/28	All Share	HCI	8980	L	15021468	911236	3462320	20152757	1640712	10247	8214115
2013/06/28	All Share	HDC	2750	M	1834871	29955	959649	2824475	305000	0	3942216
2013/06/28	All Share	HPA	8630	L	#N/A	3687068	374039	4772925	235797	0	356042
2013/06/28	All Share	HPB	8630	L	#VALUE!	#VALUE!	0	0	0	0	0

2013/06/28	All Share	HSP	5370	M	#N/A	0	0	0	0	0	0
2013/06/28	All Share	HWN	2750	M	560075	0	636057	1306377	311997	0	1682832
2013/06/28	All Share	HYP	8630	L	10814409	10258983	1825556	22981942	3740109	0	1099489
2013/06/28	All Share	IPF	8630	L	#N/A	4390004	240873	4639343	171	0	375188
2013/06/28	All Share	ITU	8670	L	3477400	4087700	407600	8209600	364000	0	533200
2013/06/28	All Share	IVT	2750	M	2345212	5487888	3429771	12204811	743532	0	7557899
2013/06/28	All Share	JDG	5370	M	9141000	5877000	7554000	23134000	632000	0	27401000
2013/06/28	All Share	KAP	2720	M	6301000	3919000	3988000	15138000	717000	0	15386000
2013/06/28	All Share	KGM	5550	L	1290128	2754	341123	1755630	212827	0	956944
2013/06/28	All Share	LHC	4530	M	5607000	1657000	2213000	9970000	2054000	0	11843000
2013/06/28	All Share	LHG	4570	H	1107596	293957	283468	1785000	204393	3598	1458956
2013/06/28	All Share	MFL	2790	L	461012	104812	116911	695250	108067	0	590163
2013/06/28	All Share	MPC	5370	M	3316000	179000	1375000	4897000	1537000	0	13266000
2013/06/28	All Share	MPT	2720	M	2883600	1120800	1876400	6206500	397600	0	7697800
2013/06/28	All Share	MTA	3350	M	3788752	1021976	2005566	7449326	373899	0	5227426
2013/06/28	All Share	NEP	8630	L	712236	177523	96711	1041207	56586	0	42196
2013/06/28	All Share	NPN	5550	L	55853000	26603000	18491000	103536000	6748000	0	50249000
2013/06/28	All Share	OCT	8630	L	1796757	1575968	635182	4022844	383459	0	506670
2013/06/28	All Share	OMN	1350	H	4952000	113000	3696000	9054000	880000	4000	13453000
2013/06/28	All Share	PAN	1770	H	172208	11133	24066	174377	42574	0	129277
2013/06/28	All Share	PET	1770	H	1273521	403632	217381	775509	-112032	0	833490
2013/06/28	All Share	PFG	3570	H	6589539	1484063	2454998	11870725	698542	26923	16992253
2013/06/28	All Share	PGL	8980	L	#N/A	#N/A	178	416225	14689	0	0
2013/06/28	All Share	PGR	8770	L	2229742	19014	11675108	18657094	-461512	0	1523772
2013/06/28	All Share	PMM	8630	L	#N/A	1245571	1163844	4729063	204477	0	585918
2013/06/28	All Share	PNC	9570	M	1088059	482075	1504797	3096450	325680	0	6596232
2013/06/28	All Share	RBP	1770	H	15986300	#N/A	499600	9173000	447800	0	3251100
2013/06/28	All Share	RBX	2350	H	2958590	349303	1278313	4857981	318568	0	5635519
2013/06/28	All Share	RDF	8630	L	24073923	17958786	4149445	48881597	2921754	0	3770982
2013/06/28	All Share	REB	8630	L	#N/A	3016246	1068897	5474837	275936	0	565209
2013/06/28	All Share	REI	8980	L	4036000	437000	72000	4579000	380000	0	0

2013/06/28	All Share	RES	8630	L	#N/A	5176838	1661614	18087522	2037501	0	625637
2013/06/28	All Share	RIN	8630	L	-12344	495213	544799	1034401	-105633	0	78178000
2013/06/28	All Share	RLO	2730	M	4937300	24900	2341100	7443000	972800	72200	10925400
2013/06/28	All Share	RMI	8980	L	13810000	287000	4362000	22347000	2546000	0	0
2013/06/28	All Share	SAC	8670	L	#N/A	1625913	536512	9442667	1159394	0	1186412
2013/06/28	All Share	SGL	1770	H	9423400	1491400	3591500	4843900	1698300	0	19331200
2013/06/28	All Share	SHP	5370	M	15252270	3820921	13385112	33489271	3615434	0	92747314
2013/06/28	All Share	SPG	2770	H	4284313	1591953	3870268	10556902	816117	0	11717972
2013/06/28	All Share	SPP	5370	M	#N/A	0	6383400	9785700	1190500	0	47387300
2013/06/28	All Share	SSK	2350	H	1996308	578199	3538936	6199303	-162061	0	9329660
2013/06/28	All Share	SUI	5750	L	3913000	3512000	4699000	13065000	1210000	0	10267000
2013/06/28	All Share	SUR	5750	L	470858	423	127395	688489	131820	0	653027
2013/06/28	All Share	SYC	8670	L	#N/A	1933545	346461	8987349	1180277	0	651352
2013/06/28	All Share	TCP	8770	L	3895000	7385000	2675000	14331000	521000	0	0
2013/06/28	All Share	TMG	5550	L	1208000	690000	972000	3616000	-73000	0	6013000
2013/06/28	All Share	TRE	2770	H	14559000	26936000	2653000	44628000	2403000	0	6590000
2013/06/28	All Share	VKE	8670	L	2626187	5689744	1063618	9445172	573637	0	1166940
2013/06/28	All Share	YRK	1730	H	2277345	559398	210334	3658458	106864	87	1131994
2013/06/28	All Share	ZED	8770	L	3392590	445351	247969	4185471	509563	0	328113

Appendix IV: Corporate Financial Performance indicators for ALSI (including SRI subpopulation)

Company information and classification					Measures of CFP				Control variables		
Index	Alpha	ICB Sector Name	SEI level		ROE	ROA	Tobins' q.		Turnover (proxy for size)	R&D Intensity (R&D/Turnover)*100	Leverage
SRI	ABL	Financial Services	L		-0.48409	-0.06224	0.9803012		4034000	0	6.624741
SRI	ACL	Industrial Metals & Mining	H		-0.10375	-0.06563	0.897845		32421000	0.240584806	0.419397
SRI	ADH	General Retailers	M		0.182532	0.095364	1		1766300	0	0.914068
SRI	AEG	Construction & Materials	H		0.034498	0.015092	0.9531779		51704000	0	1.178805
SRI	AFE	Chemicals	H		0.138844	0.066282	0.9221149		15942000	0.388909798	0.931597
SRI	AFX	Chemicals	H		0.100031	0.053937	0.9051107		5825000	0	0.678605
SRI	AGL	Mining	H		0.011401	0.007584	1.0941089		29342000	0.351032649	0.644765
SRI	AMS	Mining	H		-0.13413	-0.14154	1.5456537		43148000	0.662834894	0.464731
SRI	ANG	Mining	H		-0.70808	-0.4467	1.6079188		5646000	0	1.548761
SRI	APN	Pharmaceuticals & Biotechnology	H		0.154135	0.077366	0.9816387		19308000	0.056971204	0.955695
SRI	ARI	Mining	H		0.069984	0.061115	1.1390013		19844000	0	0.304285
SRI	ATN	Electronic & Electrical Equipment	M		-0.17797	-0.07164	0.9862728		25049000	0.379256657	1.45
SRI	BAW	General Industrials	M		0.113651	0.04419	0.9802372		65102000	0	1.521025
SRI	BCX	Software & Computer Services	L		0.097047	0.059146	0.9675086		6173339	0.211441491	0.587482
SRI	BIL	Mining	H		0.153745	0.098456	1.0869612		65968000	0.097016735	0.697355
SRI	BVT	General Industrials	M		0.183386	0.075773	0.9779886		153404532	0.000878722	1.366934
SRI	CLS	Food & Drug Retailers	H		0.545865	0.137917	0.9537005		17543301	0	2.774666
SRI	DRD	Mining	H		0.060749	0.108869	2.2153384		2076496	0	0.236159
SRI	DSY	Life Insurance	L		0.164823	0.038793	0.7470191		17893000	0	2.17395
SRI	EXX	Mining	H		0.142121	0.147126	1.2497289		13568000	0.036851415	0.207212
SRI	GFI	Mining	H		-0.14719	-0.3122	3.461778		30628400	0	0.632115
SRI	GND	Industrial Transportation	H		0.104021	0.044217	0.909244		15523861	0	1.13899
SRI	GRF	Construction & Materials	H		0.155702	0.039374	0.9832217		11199093	0	2.888037
SRI	GRT	Real Estate Investment & Services	L		-0.26328	-0.01105	0.9788789		5782000	0	22.31935

SRI	HAR	Mining	H		-0.08304	-0.17589	2.4231021		15902000	0	0.143945
SRI	ILV	Food Producers	H		0.159878	0.088684	0.9008573		11128900	0.235423088	0.624041
SRI	IMP	Mining	H		0.019683	0.021869	1.3899015		30032000	0	0.250952
SRI	IPL	Industrial Transportation	H		0.208096	0.071384	0.8300798		92382000	0	1.419805
SRI	KIO	Industrial Metals & Mining	H		0.746763	0.455791	0.7822758		54461000	0.003672353	0.281673
SRI	LBH	Life Insurance	L		0.226784	0.01434	0.2159334		30720000	0.139973958	2.415051
SRI	LON	Mining	H		0.054848	0.108672	2.1558727		1520000	0	0.088089
SRI	MDC	Health Care Equipment & Services	M		-0.04088	-0.01309	0.8735689		24562000	0	1.728803
SRI	MMI	Life Insurance	L		0.111088	0.007726	0.5490422		26436000	0	6.894737
SRI	MND	Forestry & Paper	H		0.145467	0.066346	0.9155449		6476000	0.216182829	1.007379
SRI	MNP	Forestry & Paper	H		0.09701	0.042183	0.9009676		5807000	0.20664715	1.071975
SRI	MRF	Mining	H		0.071985	0.11064	2.24102		3496983	0	0.458063
SRI	MSM	General Retailers	M		0.249944	0.051327	0.9927795		72263400	0	3.834457
SRI	MTN	Mobile Telecommunications	L		0.253818	0.134026	0.936505		136495000	0	0.773543
SRI	MUR	Construction & Materials	H		0.139278	0.049385	0.9148123		35574900	0.001686582	1.580003
SRI	NHM	Mining	H		0.048818	0.216622	5.6032091		4420977	0	0.262746
SRI	NPK	General Industrials	M		0.193798	0.068628	0.8477765		19361800	0.220020866	1.394019
SRI	NTC	Health Care Equipment & Services	M		0.521455	0.213387	0.9089427		27801000	0	1.221189
SRI	OCE	Food Producers	H		0.293058	0.181111	0.9365588		4997354	0	0.515455
SRI	OML	Life Insurance	L		0.094203	0.006432	0.4001686		3725000	0	4.860686
SRI	PIK	Food & Drug Retailers	H		0.227897	0.042285	0.9289922		59271300	0	4.006829
SRI	PPC	Construction & Materials	H		0.434641	0.10489	0.8379901		8316000	0	2.472456
SRI	REM	General Industrials	M		0.072497	0.060845	0.9735153		16446000	0.006080506	0.159944
SRI	SAB	Beverages	H		0.127859	0.062369	0.9248765		23213000	0.017231724	0.896031
SRI	SAP	Forestry & Paper	H		-0.14073	-0.02811	0.8466911		5925000	0.388185654	3.238636
SRI	SHF	Household Goods & Home Construction	M		0.125788	0.048227	0.8980922		115486000	0	1.342464
SRI	SLM	Life Insurance	L		0.161298	0.014505	0.2104837		157174000	0	1.34057
SRI	SNT	Nonlife Insurance	L		0.179577	0.051866	0.873983		20631000	0.693131695	2.026026
SRI	SOL	Oil & Gas Producers	M		0.177341	0.117895	0.8830683		181269000	0	0.328344
SRI	TBS	Food Producers	H		0.171833	0.094752	0.9393327		28091300	0.060872939	0.703484
SRI	TFG	General Retailers	M		0.248616	0.125213	0.976759		12896400	0	0.939401

					-0.63081	-0.27624	0.8472866				
SRI	TKG	Fixed Line Telecommunications	L		-0.63081	-0.27624	0.8472866	32501000	0		0.934829
SRI	TON	Food Producers	H		0.119975	0.054927	0.8777053	14373000	0		0.917145
SRI	TRU	General Retailers	M		0.387201	0.331179	0.9866593	9765000	0		0.153562
SRI	VOD	Mobile Telecommunications	L		0.623303	0.23788	0.968718	69917000	0		1.538273
SRI	WBO	Construction & Materials	H		0.147508	0.054705	0.99751	23773481	0		1.689733
SRI	WHL	General Retailers	M		0.446816	0.216442	0.9012964	35227000	0		0.860603
All Share	ADR	Support Services	L		0.094617	0.043451	0.9619785	8616842	0		1.094756
All Share	AFR	Food Prod	H		0.011157	0.003651	0.9676852	10220000	0		1.957438
All Share	AIP	Pham & Biotech	H		0.159019	0.088172	0.97739	5445639	1.927064941		0.762731
All Share	AQP	Mining	H		-0.97287	-0.47658	1.0757491	364187	0		1.195998
All Share	ARL	Food Prod	H		0.143139	0.062539	0.8708923	8523976	0		0.993308
All Share	ASR	Mining	H		0.242263	0.341771	1.6443175	13500864	0		0.165568
All Share	AVI	Food Prod	H		0.283935	0.158964	0.9080045	9251900	0.605281077		0.621846
All Share	BEL	Industr. Eng	M		0.082676	0.043259	0.9717389	6319104	0.443353994		0.857189
All Share	BLU	Mobile Telecomm.	L		0.125848	0.07134	0.9979124	18984210	0		0.760365
All Share	BTI	Tobacco	H		0.605479	0.156207	0.9332614	15260000	0.596330275		2.617448
All Share	CFR	Pers goods	M		0.19628	0.138304	0.9783403	10150000	0.541871921		0.388448
All Share	CIL	Electro & electr Equip	M		0.108625	0.061774	0.9854832	2037402	0		0.732894
All Share	CLR	Food Prod	H		0.113386	0.054092	0.9531375	7996461	0.258676932		0.997928
All Share	CMH	Gen Retail	M		0.299495	0.065822	0.9991624	10753474	0		3.546289
All Share	CML	Fin Services	L		0.725959	0.019977	0.0365267	3635000	0		0.327354
All Share	CMP	Pham & Biotech	H		0.085631	0.055881	0.9873316	2270442	0		0.51298
All Share	CSB	Gen Retail	M		0.222629	0.120131	0.9547554	6376945	0		0.769371
All Share	CZA	Mining	H		-0.43256	-0.99876	2.6462605	146396	0		0.146081
All Share	DTC	Softw & Comp Serv	L		0.092784	0.031629	0.9736605	5246667	0		1.856246
All Share	ELI	Electro & electr Equip	M		0.234589	0.132878	0.9994947	1996053	0		0.764562
All Share	EMI	Real Estate Investment Trusts	L		0.217891	0.141965	0.998495	1342244	0		0.532514
All Share	EOH	Softw & Comp Serv	L		0.204451	0.095853	0.9845534	5071492	0		1.100017
All Share	EQS	Gen Indust	M		0.12458	0.030674	0.9427863	9154000	0		2.829008
All Share	FBR	Trav & leis	L		0.331023	0.219172	0.9648168	2499496	0		0.457196
All Share	GPL	Fin Services	L		0.078363	0.064764	0.9273776	489353	0		0.122107

All Share	HCI	Equity inv Instr.	L		0.109224	0.081414	0.9624005	8214115	0.12474868	0.291154
All Share	HDC	Industr. Eng	M		0.166224	0.107985	1	3942216	0	0.539332
All Share	HWN	Industr. Eng	M		0.557063	0.238826	0.9156101	1682832	0	1.135664
All Share	HYP	Real Estate Investment & Serv	L		0.345845	0.162741	0.9963887	1099489	0	1.117448
All Share	ITU	Real Estate Investment Trusts	L		0.104676	0.044338	0.9711435	533200	0	1.292719
All Share	IVT	Industr. Eng	M		0.317043	0.060921	0.9228222	7557899	0	3.802496
All Share	JDG	Gen Retail	M		0.069139	0.027319	0.9757068	27401000	0	1.469314
All Share	KAP	Gen Indust	M		0.113791	0.047364	0.9385652	15386000	0	1.25488
All Share	KGM	Media	L		0.164966	0.121225	0.9307229	956944	0	0.266545
All Share	LHC	Health Care equipment & services	M		0.366328	0.206018	0.9505517	11843000	0	0.690209
All Share	LHG	Pham & Biotech	H		0.184538	0.114506	0.9439894	1458956	0.246614703	0.521332
All Share	MFL	Supp serv	L		0.234413	0.155436	0.9819993	590163	0	0.480948
All Share	MPC	Gen Retail	M		0.46351	0.313866	0.9944864	13266000	0	0.468637
All Share	MPT	Gen Indust	M		0.137883	0.064062	0.9475228	7697800	0	1.039395
All Share	MTA	Aut & Parts	M		0.098687	0.050192	0.9150216	5227426	0	0.799087
All Share	NEP	Real Estate Investment & Serv	L		0.079448	0.054347	0.9474293	42196	0	0.385032
All Share	NPN	Media	L		0.120817	0.065175	0.9749942	50249000	0	0.807369
All Share	OCT	Real Estate Investment & Serv	L		0.213417	0.09532	0.996287	506670	0	1.230634
All Share	OMN	Chemicals	H		0.177706	0.097195	0.9676386	13453000	0.029733145	0.769184
All Share	PAN	Mining	H		0.247224	0.244149	1.1894172	129277	0	0.204398
All Share	PET	Mining	H		-0.08797	-0.14446	2.4429555	833490	0	0.487635
All Share	PFG	Food Prod	H		0.106008	0.058846	0.8869382	16992253	0.158442792	0.597775
All Share	PGR	Fin Services	L		-0.20698	-0.02474	0.746304	1523772	0	5.244608
All Share	PNC	Tech hardw & eq	M		0.299322	0.105179	0.9930504	6596232	0	1.82607
All Share	RBX	Constr & Mat	H		0.107676	0.065576	0.944056	5635519	0	0.550132
All Share	RDF	Real Estate Investment & Serv	L		0.121366	0.059772	0.9447759	3770982	0	0.918348
All Share	RIN	Real Estate Investment & Serv	L		8.557437	-0.10212	0.9934909	78178000	0	-84.2524
All Share	RLO	Electro & electr Equip	M		0.197031	0.1307	0.9812307	10925400	0.66084537	0.479209
All Share	SGL	Mining	H		0.180222	0.350606	2.9947563	19331200	0	0.539391
All Share	SHP	Gen Retail	M		0.237042	0.107958	0.969215	92747314	0	1.128097
All Share	SPG	Ind Transp	H		0.19049	0.077306	0.9232381	11717972	0	1.274935

All Share	SSK	Constr & Mat	H		-0.08118	-0.02614	0.9861501	9329660	0	2.062375
All Share	SUI	Trav & leis	L		0.309226	0.092614	0.9279755	10267000	0	2.09839
All Share	SUR	Trav & leis	L		0.279957	0.191463	0.8695506	653027	0	0.271458
All Share	TMG	Media	L		-0.06043	-0.02019	0.7936947	6013000	0	1.375828
All Share	TRE	Ind Transp	H		0.165053	0.053845	0.9892444	6590000	0	2.032351
All Share	VKE	Real Estate Investment Trusts	L		0.21843	0.060733	0.9930522	1166940	0	2.571547
All Share	YRK	Forest & paper	H		0.046925	0.02921	0.8328856	1131994	0.007685553	0.337995
All Share	ZED	Fin Services	L		0.150199	0.121746	0.9762127	328113	0	0.204363