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The Relationship between Corporate Social Responsibility and Financial Performance of Companies in South Africa

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The Relationship between Corporate Social Responsibility and Financial Performance of Companies in South Africa

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

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ABSTRACT

In recent times, there has been a significant increase in the level of interest in corporate social responsibility (CSR) amongst regulators, legislators, shareholders and broader stakeholder groups. The major driving force behind this heightened interest seems to be mounting concerns regarding global warming, the widespread adoption of the Kyoto protocol, numerous large scale corporate collapses and corruption cases. In South Africa, CSR has an additional impetus given the complex nature of the country's history, the need to adhere to the Broad-Based Black Economic Empowerment's (B-BBEE) Codes of Good Practice and the ethical values of responsibility as espoused by the King Code.

This research sought to define the relationship between firms' corporate social responsibility and their financial performance. Although most literature reviewed suggest that investment in CSR is associated with superior financial performance, many other studies found contrasting results or no relationship at all. Findings are therefore both mixed and inconclusive. By addressing the methodological shortcomings identified in previous studies, this research sought to provide an improved perspective into the nature of this relationship.

Companies that met the JSE's (Socially Responsible Investment) SRI Index for assessment were used to conduct this research. These companies were identified and separated into leading and lagging Corporate Social Performance (CSP) firms based on their environmental responsibility profile and their performance data for five years drawn and analysed. The sample was also sorted and analysis conducted in different industrial sectors so as to eliminate industry biases.

No significant difference in the financial performance was found between leading and lagging CSP firms over the five-year period. The findings were consistent regardless of the measure of performance employed, period of analysis or the sector to which the firms operate. The findings indicate that there is neither a detrimental impact nor financial rewards for engaging or not engaging in CSR activities. Managers and investors can therefore afford to be socially responsible.

DECLARATION

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

Peter Kihuyu Kimingi

Signed at ……

On the …….. day of …… 2010

DEDICATION

To my parents Francis and Mary Njeri Kimingi, for inculcating the ethos of determination and hard work in me.

To my wife Carol Kimingi, for being a pillar of strength, a bottomless source of inspiration and for her enduring love.

To my children Al and Njeeri Kimingi, for their constant, albeit, unwelcome but understandable distraction.

To the big cheering squad in the name of family, friends and relatives, for being there for me one way or another.

To God, for giving me the above and everything else that I have.

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I wish to express my sincere thanks to the following people:

- My supervisor, Max Mackenzie for his guidance, assistance and support. His constant encouragement, availability for consultation and value-addition made this study a bearable experience.

- Staff at JSE Ltd and at I-Net Bridge for their support in providing me with the relevant data for this study.

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CHAPTER 1: INTRODUCTION

1.1 Purpose of the study

The purpose of this research was to define the relationship between corporate social responsibility (CSR) and corporate financial performance (CFP).

1.2 Context of the study

In recent times, there has been a significant increase in the level of interest in corporate social responsibility amongst regulators, legislators, shareholders and broader stakeholder groups (Lee, Faff and Langfield-Smith 2009). Lee et al (2009) go on to state that the major driving force behind this heightened interest seems to be mounting concerns regarding global warming, the widespread adoption of the Kyoto protocol, numerous large scale corporate collapses and corruption cases.

In South Africa, corporate social responsibility has an additional impetus given the complex nature of the country's history (JSE 2010), the need to adhere to the Broad-Based Black Economic Empowerment's (B-BBEE) Codes of Good Practice (Republic of South Africa 2007) and the ethical values of responsibility as espoused by the King Code (King Committee 2009).

Given these imperatives, it would be worthwhile to establish whether companies' CSR initiatives have any bearing on their financial performance. Furthermore, it is important to determine whether the nature of the relationship is affected by the measure of financial performance used to determine the nature of that relationship.

1.3 Problem statement

1.3.1 *Main problem*

The purpose of this research was to define the relationship between a firm's corporate social responsibility and its financial performance as measured by both accounting and market-based measures.

1.3.2 *Sub-problems*

- The first sub-problem was to define the relationship between a firm's corporate social responsibility and its financial performance as determined by accounting-based performance measures.
- The second sub-problem was to define the relationship between a firm's corporate social responsibility and its financial performance as determined by market-based performance measures.

1.4 Significance of the study

Although studies to establish the link between corporate social performance (CSP) and CFP have been conducted for over 35 years (Chand 2006; Demacarty 2009, Garcia-Castro, Arino and Canela 2010), there is limited research based on South African companies. This study sought to define this relationship within the South African context.

Time, effort and resources are usually committed in order to invest in CSR. This study attempted to establish whether CSR pays off through improved financial performance. The study therefore sought to shed light to business managers and investors who would be interested to know whether there exists a link between the corporate social responsibility activities of their companies and financial performance. Managers would therefore be able to engage in corporate social responsibility activities from a more informed perspective since they would be able to determine whether a relationship between corporate social responsibility and corporate financial performance exists or not.

The study will also provided additional information to socially responsible potential and existing investors of the JSE-listed companies in their investment decisions given that they will have more insights while interpreting financial statements as well as disclosures on corporate social responsibility on the companies' annual reports.

1.5 Delimitations of the study

In this study, the Environmental Responsibility was used as the only proxy for Corporate Social Responsibility. Other CSR proxies such as social and corporate governance issues are not considered.

Under the Environmental Responsibility proxy, the JSE's Socially Responsible Investment (SRI) Index was used as the measure of companies' CSR.

This study did not test the causes of the nature of the relationship between the Environmental Responsibility and CFP.

The study did seek to establish whether CSP causes CFP, CFP causes CSP or whether there exists a feedback relationship.

Literature suggests that industry, risk and size are important control variables. However, this study used industry only as a control in this study.

1.6 Definition of terms

- Corporate Social Responsibility (CSR): Although there is no one definition (Kristoffersen, Gerrans and Clark-Murphy 2008), CSR is generally understood to encompass the responsibilities that a firm assumes towards its various stakeholders (Ruf, Muralidhar, Brown, Janney and Paul 2001) which may extend beyond the economic and legal requirements to also include ethical, social and discretionary responsibilities (Carroll 2000, Siegel and Vitaliano 2007).

- Corporate Social Performance (CSP): CSP refers to a business organisation's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs and observable outcomes as they relate to the firm's societal

relationships (Wood 1991: 693). For the purposes of this study, CSP generally means tracking measures adopted by practitioners and scholars in meeting companies' CSRs (Kristoffersen et al 2008), i.e. a performance measure for CSR (Peters and Mullen 2009).

- Sustainability: A business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic environmental and social developments (DJSI 2010).

- Leading CSP Firms: Companies listed as "high impact", "medium impact" or "low impact" in terms of their contribution to environmental responsibility by the JSE SRI Index

- Lagging CSP Firms: Companies that were considered by JSE SRI Index for their environmental impact but did not qualify as leading CSP firms as defined above

- JSE – JSE Securities Exchange

In South Africa, Corporate Social Responsibility is usually referred to as Corporate Social Investment or CSI (Skinner and Mersham 2008). These authors argue that businesses in South Africa react more positively to the concept of "investment" than to "responsibility" which would tend to imply an admission of guilt for the evils of Apartheid or responsibility for the social-economic welfare of the country.

To be consistent with the existing literature, this study used the terms corporate social responsibility (CSR) and corporate social performance (CSP).

1.7 Assumptions

- It is assumed that the JSE SRI Index will be a sufficient measure of companies' CSP under the Environmental Impact Classification. Any weakness of the Index to measure this CSP could negatively affect the credibility of this study.

- All the companies that qualify for JSE SRI assessment were taken to be the sample. It is assumed that this sample was representative of all companies listed on the JSE.

- Companies reported as Best Performers by JSE SRI Index (i.e. high impact, medium impact and low impact companies) under Environmental Impact Classification were regarded as leading CSP firms while companies that qualify for assessment but did not make it to Best Performers are regarded as lagging CSP firms. This study, therefore, assumed that there exists a clear-cut categorisation between leading and lagging CSP in the JSE-listed companies.

- It was assumed that companies' CFP measures were objective and consistent across different years and across different companies. If there were inconsistencies and biases in CFP measures, then reliability of the findings would be negatively affected.

- It was assumed that the CSR impact on CFP is felt in the same reporting period.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This section explored the various themes of relevance to this study. These include CSR/CSP and CFP as well as the context of these themes in South Africa. Further, the section summarised the key arguments of the CSP and CFP debate. Finally, the section discusses the hypothesis.

2.2 Background Discussion

Studies to establish the link between CSP and CFP have been conducted for over 35 years (Chand 2006; Demacarty 2009, Garcia-Castro et al 2010).

In reviewing the existing literature, Lee et al (2009) argue that it is useful to consider the different ways that CSP has been conceptualised and measured and to distinguish between studies that have focussed on relating CSP to accounting performance and those that have related CSP to market performance. Indeed, there is an ongoing debate as to whether the use of accounting or market performance measures when assessing the CSP-CFP relationship affects the findings (Davidson and Worrell 1990; Lee et al 2009). Further, it has been established that different measures can yield different results even when based on the same data set (Davidson et all 1990).

Literature on measurement of CSP and CFP in studying CSP-CFP relationship suggests inconsistencies which hinder comparisons and theory development (Waddock et al 1997).

Firstly, there are different ways of defining CSP (Donaldson and Preston 1995) and financial performance (Waddock et al 1997). Secondly, results may be dependent on whether market or accounting measures of CFP have been used (Aupperle et al 1985 and Lee et al 2009). Finally, results may be dependent on what is used to measure CSP (Aupperle et al 1985 and O'Bannon et al 1997).

These imperatives are discussed at length in the literature review.

2.3 Corporate Social Responsibility

CSR can be described as a business approach where a business is not only obliged to the wealth maximisation of the stockholders, but also to take care of the interests of the employees and consumers, the underprivileged minority and to protect the environment (Shen and Chang 2009). Robin and Reidenbach (1987) aver that CSR is a set of generally accepted relationships, obligations and duties that relate to the corporate impact on the welfare of society.

CSR can be explained from a stakeholder theory perspective. This theory suggests that companies are responsible to (and value is created when such companies satisfy) customers, suppliers, employees, communities and shareholders (McVea and Freeman 2005). As a result, companies have to consider, not only the explicit claims of the shareholders, but also the implicit claims of wider range of stakeholders (Lee et al 2009). Consequently, if a company fails to adequately manage its implicit claims, those affected could seek redress to have these implicit claims (such as do not pollute) converted into explicit claims (i.e. damages) which can be very costly to a firm (Preston and O'Bannon 1997; Ruf et al 2001; Lee et al 2009).

Firms choose to adopt CSR profile to proactively manage their reputation and brand with regard to corporate governance, environment and social performance (Lee et al 2009). Indeed, Siegel et al (2007) observe that CSR is a form of product differentiation and a form of advertising to establish or sustain brand loyalty. It can therefore be deduced that companies pursue CSR strategies to enhance their corporate image and to appeal to their existing and potential stakeholders. The success of such strategies would ultimately reflect on the companies' performance.

Other companies have adopted CSR initiatives due to pressure from customers, suppliers, employees, communities, investors, activist organisations and other stakeholders (Mittal, Sinha and Singh 2008).

Wood (1991) argues that there are three driving principles of corporate social responsibility. These are that:

- Businesses are social institutions and are thus obliged to use power responsibly

- Businesses are responsible for the outcomes relating to their areas of involvement with society

- Individual managers are moral agents who are obliged to exercise discretion in their decision making.

2.3.1 *CSR in South African Context*

In South Africa, Corporate Social Responsibility is usually referred to as Corporate Social Investment or CSI (Irwin 2002, Skinner et al 2008). Skinner et al (2008) argue that business in South Africa react more positively to the concept of "investment" than to "responsibility" which would tend to imply an admission of guilt for the evils of Apartheid or responsibility for the social-economic welfare of the country. To be consistent with the existing literature, this study uses the terms corporate social responsibility (CSR) and corporate social performance (CSP).

The Legacy of Apartheid and CSR

Under the Apartheid regime, South African corporate business was concentrated in the hands of a few white minority (Chabane, Goldstein and Roberts 2006). The authors go on to state that this concentration was both reinforced and created by the exclusions linked to Apartheid. Corporate support of Apartheid and the resultant exploitation of black people led to one of the most important debates regarding the social role of corporate activity in South Africa during Apartheid (Skinner et al 2008). It can be concluded that the domination of business by the white minority to the exclusion of the black majority, coupled with the exploitation of the black population, at least in part, led to the huge income and wealth disparities witnessed in contemporary South Africa today.

Given the country's Apartheid legacy, CSR has a unique role in the interaction of business and society in South Africa. The public is increasingly looking up to business to redress the myriad economic and social inequities bequeathed by Apartheid (Irwin 2002). The author goes on to contend that businesses that hope to flourish in South Africa have learnt that it is in their own interests to stand for CSR values and beliefs with regard to society's transformation. It can therefore be concluded that businesses in South Africa engage in CSR in order to raise their public profile so as to be seen as good corporate citizens.

Legislation and CSR

In South Africa, CSR has an added impetus imposed through legislation. To address the social and economic inequalities of the past, the Government has enacted the Broad-Based Black Economic Empowerment Act (B-BBEE Act 2004). The Act has mandated the Department of Trade and Industry to issue explanatory Codes of Good Practice on Black Economic Empowerment (BEE) in order to give guidance to companies regarding the implementation of the B-BBEE Act and in drafting of their own industry sector transformation Charters (B-BBEE Act 2004). These Codes and Charters provide detailed guidance regarding the implementation of BEE and transformation in general.

The Codes of Good Practice on BEE covers seven key transformation elements, i.e.

- Ownership
- Management and Control
- Employment
- Skills Development
- Preferential Procurement
- Enterprise Development
- Social-Economic Development (CSI)

These Codes have targets for BEE compliance and a Scorecard is used to measure progress which has specified targets for each element. By setting these targets, the Scorecard gives companies clear direction as to where they should focus their transformational efforts (Skinner et al 2008).

The Social-Economic Development (SED) element involves CSI initiatives. A company qualifies under SED where 75% or more of the value of its CSI contribution benefits black people. The SED Scorecard allocates a relative weighting of 5% to the overall BEE Scorecard and prescribes that companies spend 1% of their net profit after tax on these CSI initiatives (Republic of South Africa 2007) in order to achieve the target. Skinner et al

(2008) avers that the Government's more prescriptive stance on transformation has thrust CSI onto the very corporate agenda in South Africa. They further argue that, with set targets and expenditure requirements, CSI has become a performance-driven pursuit among businesses seeking to improve their overall BEE Scores. It can be deduced that CSR will become more and more widespread as companies seek to improve their BEE Scores.

Indeed, corporate contribution to society has been on a steady increase over the last few years and had reached R5 billion by end of 2008 (CSI Handbook 2009).

The King Code and CSR

Finally, the King Code of Governance (The King Code) encourages companies to embrace the principles of good citizenship by integrating sustainability issues in South Africa. The King Code emphasises the need to integrate environmental, social and governance issues in running their businesses and urges Boards of Directors to consider these issues in their strategic decisions (King Committee 2009).

Although the King Code does not have legal authority, it develops Governance Principles that are respected by the business community in South Africa. It can therefore be argued that its stand on CSR will impact on companies in South Africa.

2.3.2 *Dimensions of CSR*

According to the literature reviewed by the author, the following dimensions generally constitute CSR (Feldman, Soyka and Ameer 1997; Schleifer & Vishny 1997; Stanwick and Stanwick 1998; Simpson and Kohers 2002; Velde, Vermeir and Corten 2005; Kristoffersen et al 2008):

- Corporate Governance
- Community and Society
- Environment

In this study Environmental Performance was used as the only CSP proxy.

2.3.3 *Relationship between CSP and CFP*

Much of the existing research in search of the evidence of CSP-CFP relationship is predominantly based on studies outside South Africa. Based on the literature reviewed by this author, comparable South African research in this field is limited.

There seems to have been no consensus regarding the relationship between CSP and CFP. Inconsistent findings have been attributed to differences in methodology and in the choice of CSR and CFP measures (Ullman 1985; Griffin and Mahon 1997). Methodological limitations include reliance on negative screening processes to establish the sample (i.e. excluding firms from the sectors that have "difficult" CSR track records such as chemical, energy and tobacco industries), omission of important relevant control factors, inclusion of limited number of accounting and marketing variables, small sample sizes and short analysis periods (Kolstad 2007; Lee et al 2009).

Endogeneity has also been cited as a significant additional factor that could contribute to inconsistent findings (Garcia-Castro et al 2010). Endogeneity refers to internal factors that are well known by the managers that may affect CSR decisions but are not easily observable by external researchers, e.g. a firm's culture, internal capabilities and managers' personal values (Garcia-Castro et al 2010).

The existing literature suggests various theories on how and why CSP may affect CFP. Kristoffersen et al (2008) argues that CSP may affect shareholder wealth by affecting revenue, explicit costs and implicit costs such as risk. Consequently, CSP may increase or reduce a firm's revenues and costs and therefore affect its financial performance (Kristoffersen et al 2008).

While opponents of CSR argue that it takes away precious time of the firm's top executives, proponents claim that CSR leads to improved financial performance, enhanced brand image and reputation, increased sales and customer loyalty, as well as improved quality and productivity (Mittal et al 2008).

Negative Relationship between CSP and CFP

Some researchers as well as financial and economic commentators have argued that investment in CSR will reduce a company's financial performance.

CSP may increase costs by increasing agency costs because managers may pursue CSP as a means to further their own social, political or career agendas, and in so doing, may compromise shareholders' wealth (Friedman 1970). Furthermore, CSP activities may result in a net cost position especially for small, risky companies with tight budgets and high capital costs (Preston et al 1997).

Friedman (1970) argues that the only social responsibility of a business is to increase profits due to its shareholders. He argues that any investment in CSR is done at the expense of other profitable ventures that the business would have to forego. This view is supported by Brammer, Brooks and Pavelin (2006). Further, Aupperle, Carroll and Hatfield (1985) and Knoll (2002) posit that profitable business strategies that are abandoned because of CSR concerns (e.g. pollution) will result to a lower financial performance arising from forfeited investments in such ventures.

Managers may use CSP as a tool to achieve certain desired ends. Preston et al (1997) observe that during times of good financial performance, managers will tend to decrease their investment in CSP so as to increase their compensation whereas during bad financial performance, managers will tend to increase their investment in CSP in an attempt to divert attention away from the companies' bad financial performance.

Meznar, Nigh and Kwok (1994) found that companies that announced their withdrawal from South Africa at the height of Apartheid (withdrawal of business dealings with South Africa was then considered to be a CSR gesture) were associated with a significant drop in the value of their stocks.

Neutral Relationship between CSP and CFP

There is a body of researchers that have maintained that there is a neutral relationship between CSP and CFP. Statman (2000) found that socially responsible mutual funds did as well as conventional funds. He argues that this may be as a result of the inability of the financial markets to value and price CSR. Teoh, Welch and Wazzan (1999) found that the boycott of stocks of companies doing business in South Africa during the Apartheid era and the subsequent divestitures did not have a significant effect on the returns of the affected stocks, thus suggesting a neutral relationship.

Ullman (1985) states that it is difficult to assume a direct relationship between CSP and CFP because of a number of reasons:

- Studies seem to be lacking in theory,
- There has been an inappropriate definition of key terms, e.g. CSP and CFP
- Deficiency in the empirical databases currently available.

Additionally, the current market models may not be effective in measuring the impact of CSP on CFP (Derwall, Guenster, Bauer and Koedijk 2005).

Finally, the complex nature of the situation between businesses and society may also mean that a direct relationship between CSP and CFP does not exist (Waddock and Graves 1997).

Other studies that found a neutral relationship between CSP-CFP link include McWilliam and Siegel (2000) and Demacarty (2009).

Positive Relationship between CSP and CFP

Most studies have found a positive relationship between CSP and CFP (Demacarty 2009). Berman, Wicks, Kotha and Jones (1999), Dowell, Hart and Yeung (2000), Griffin et al (1997), Waddock et al (1997), Orlitzky, Schmidt and Ryes (2003), Verschoor (2005) and Derwall et al (2005) all found a positive relationship between CSP and CFP. In supporting this argument, Hillman and Keim (2001) state that CSR can lead to increased shareholder value by helping firms develop invaluable tangible assets which can lead to competitive advantage. Greening and Turban (2000) found that CSP can be used as a competitive advantage to attract and retain quality employees thus suggesting a positive relationship between CSP and CFP.

Stakeholder Theory (as discussed under Section 2.3) has been used to argue that a positive relationship exists between CSP and CFP (Ullman 1985; Waddock and Graves 1997; Demacarty 2009) because good CSP will lower the risks associated with implicit and explicit contracts between a firm and its stakeholders (Kristoffersen et al 2008). Indeed, Waddock et al (1997) and Orlitzky, Schmidt and Rynes (2003) observe that CSP may represent a better quality management and that investors and lenders may regard poor

CSP as a symptom of poor management and associate this phenomenon with higher risk. They further argue that pursuing a CSP may in some cases serve as a risk management strategy (the "good management theory").

To support a positive CSP-CFP link, Demacarty (2009) argues that socially irresponsible firms suffer from various serious risks and other costs, e.g. their stakeholders may try to withdraw from doing business with them or attack them using lawsuits and criminal prosecution. This is consistent with the Stakeholder Theory.

Other studies that have found a positive relationship include Waddock et al (1997); Orlitzky et al (2003) and Stanwick and Stanwick (1998).

2.3.4 *Short-term versus long-term performances*

Available literature suggests that the length of the period covered by the sample has an impact on the findings (Peters et al 2009). Waddock et al (1997) argue that much remains to be learned about whether or not CSP-CFP relationships hold consistently over time and posit that it would be useful to examine time lags other than one year.

Garcia-Castro et al (2009) posit that introducing short- and long-term dimensions can contribute to explaining the inconsistency of the previous findings.

2.3.5 *Direction of Causality*

An important aspect of CSP-CFP relationship studies is the question of direction of causality, i.e. does CSR influence CFP or does CFP influence CSR. These two aspects have been explained through the "slack resources (or available funds) theory" and the "good management theory" (Preston et al 1997; Waddock et al 1997; Kristoffersen et al 2008).

"Slack resources theory" proposes that large firms are more likely to achieve high CSP because they have more resources and will allocate more funds towards activities that have a positive effect on CSP (Waddock et al 1997; Kristoffersen et al 2008). Therefore better CFP would be a predictor of a better CSP (Waddock et al 1997).

On the other hand, “good management theory” observes that there is a high correlation between good management practices and CSP (Waddock et al 1997). The author further argues that improving relationships with all key stakeholder groups through CSP may result in better overall performance. In this scenario, CSP would be a predictor of a better CFP.

Kristoffersen et al (2000), argues that causality in CSP-CFP relationships is problematic as it is difficult to perform reliable tests for causality. This study does not attempt to establish causality in the relationship between CSP and financial variables.

2.4 Measures of CSP

CSP is very difficult to measure consistently (Aupperle et al 1985; Wood 1991; Graves and Waddock 1994; Demacarty 2009).

According to Griffin et al (1997), there are four main sources of measures of CSP, i.e.:

- Perception measures which involve reputation surveys (e.g. *Fortune* Reputation Survey)
- Hybrid measures, i.e. perceptual and multiple dimension measures such as Kinder, Lyndberg, Domini (KLD) Index, Dow Jones Sustainability Index (DJSI), FTSE4Good Indices, and Domini Social Index (DSI)
- Numerical self-supported measures, e.g. the Toxics Release Inventory (TRI)
- Corporate Philanthropy

The first two measures involve perceptions from different external audiences. These measures can be biased since the audiences can make decisions based on erroneous information or based on their own impressions of what the firm has done (Griffin et al 1997) as opposed to reality. The latter two measures are based on quantitative and measurable actions based on hard data and therefore more objective (Griffin et al 1997).

2.4.1 *Single versus Multidimensional Measures of CSP*

The pioneer studies of the CSP-CFP link were often interested in a single dimension of CSP, i.e. for environmental pollution only (Simpson et al 2002). Feldman et al (1997) found that those firms that manage their environmental risks create additional values for their investors by being less risky and therefore obtaining a lower cost of capital. Derwall et al (2005) found that mutual funds that were more eco-friendly had higher returns compared to ordinary funds.

More recent studies have advocated for multiple sources of information to produce a comprehensive metric for CSP (Griffin et al 1997; Wood 1991; Carroll 2000). It can be argued that findings based on multi-dimensional measures of CSP can be generalised more widely than those based on a single measure of CSP.

However, there are daunting challenges associated with measuring a comprehensive metrics of CSP and as a result, there is no ideal empirical measure of a comprehensive construct of CSP (Simpson et al 2002). According to Simpson et al (2002), a major drawback with comprehensive CSP metrics is that they may not cover enough firms to provide a large sample in one industry. Further, some authors have argued that a universal measure may not be accurate (Rowley and Berman 2000) while others have stated that a comprehensive metric may tend to assume standardisation in terms of time, culture, industry and the business context of a company (Griffin 2000). Griffin (2000) and Demacarty (2009) further argue that a universal measure of CSP may potentially oversimplify the complex construct of CSP.

Another challenge of assuming a single-multidimensional metric of a CSP is lack of reliability. Combining social, environmental and governance performance will adversely affect reliability since these measures may differ in how they relate to CFP (Rowley et al 2000; Kristoffersen 2008).

To overcome the challenges of using a single-multidimensional metric of a CSP, environmental responsibility was used as the single measure of CSP.

2.5 Sustainability Indices

As mentioned above, the most commonly used sustainability Indices in CSP-CFP studies are Kinder, Lyndberg, Domini (KLD) Index, Dow Jones Sustainability Index (DJSI) and FTSE4Good Indices.

2.5.1 *KLD Index*

KLD independently rates companies on multiple dimensions of stakeholder relationship and social performance in their role as investment advisors for socially responsible mutual funds to assist clients integrate environmental, social and governance (ESG) criteria into their investment decisions (KLD Research & Analytics 2009). KLD builds its database from both quantitative data (annual reports, proxy statements) as well as qualitative content (e.g. reports in business press company announcements and media publicity) (Peters et al 2009).

This index has been used in studies by Graves et al (1994), Waddock et al (1997), Berman et al (1999), McWilliams et al (2000), Hillman et al (2001) and Garcia-Castro et al (2010).

The main advantage of using KLD rating is that it is publicly available therefore allows comparisons amongst different studies using the same measurement instrument (Garcia-Castro et al 2010).

2.5.2 *Dow Jones Sustainability Index (DJSI)*

The DJSI is one of the world's first and most renowned socially responsible indices and the first index seeking to track the performance of leading sustainability firms on a global basis (Lee et al 2009). DJSI provides asset managers with benchmarks to manage sustainability portfolios.

The criteria and weightings used by DJSI are shown on the following Table (Table 1).

Table 1: DJSI Corporate Sustainability Criteria

Dimension	Criteria	Weighting (%)
Economic	Codes of Conduct / Compliance / Corruption & Bribery	6.0
	Corporate Governance	6.0
	Risk & Crisis Management	6.0
	Industry Specific Criteria	Depends on Industry
Environment	Environmental Reporting*	3.0
	Industry Specific Criteria	Depends on Industry
Social	Corporate Citizenship/ Philanthropy	3.0
	Labour Practice Indicators	5.0
	Human Capital Development	5.5
	Social Reporting*	3.0
	Talent Attraction & Retention	5.5
	Industry Specific Criteria	Depends on Industry

*Criteria assessed based on publicly available information only

Source: DJSI (2010)

The DJSI has identified five areas of assessment which include:

- Strategies that seek to assess a firm's ability to formally integrate sustainability issues into their business plans while maintaining global competitiveness
- Financial ability of a firm to lead its industry in meeting shareholder demands for sound financial returns, open communication, transparent financial accounting and long term growth
- Ability to foster loyalty by investing in customer service and product and service innovation

- Highest standards of corporate governance and stakeholder engagement including corporate codes of conduct and public reporting
- Managing human resources to maintain workforce capabilities and employee satisfaction (Lee et al 2009).

DJSI Index consists of approximately 200 to 300 companies per year which approximates to 10% of the leading sustainability companies sourced from the largest 2,500 companies that comprise Dow Jones Global Indexes (DJGI). A best of sector (BOS) sustainability approach is used to rank all firms across 51 industry groups spanning 34 countries. Sustainable opportunities and risks for each company, within their respective industries, are assessed across three equally weighted economic, environmental and social dimensions (Lee et al 2009).

DJSI criteria and assessments are based on extensive body of input from industry specialists and consultants (DJSI 2010). There are four sources of information used by DJSI in the corporate sustainability assessment process, which include: primary sources (feedback from questionnaires), specific request for information from companies, direct dialogue between analysts and the companies and media and internet search.

2.5.3 *FTSE4Good Indices*

The FTSE4Good indices were designed to measure the performance of companies that meet globally recognised responsibility standards and to facilitate investment in those companies (www.ftse.com). FTSE4Good indices are used in the following four main areas:

- In responsible investment decisions
- As a research tool to identify environmentally and socially responsible companies
- As a reference tool in global corporate responsibility standards
- As a benchmark index to track the performance of responsible investment portfolios.

Formed in 2001, FTSE4Good Indices are developed using an extensive market consultation process and are shaped by a broad range of stakeholders such as Non-

Governmental Organisations (NGOs), governmental bodies, consultants, academicians, the investment community and the corporate sector.

The CSP measure used in this study was sourced from JSE's SRI Index.

2.5.4 *JSE's Socially Responsible Investment Index*

Introduction

The SRI Index is a South African benchmark for corporate citizenship for JSE listed companies with high standards of environment, economic and social performances as well as governance (www.world-exchanges.org/news-views).

The JSE launched the Socially Responsible Investment (SRI) Index in May 2004. The launch followed the growing debate around sustainability globally as well as in South Africa (JSE Ltd 2010). Eligible companies are benchmarked against set criteria to measure their triple bottom line performance (Environmental, Social and Governance). Environmental, Social and Corporate Governance (ESG) issues have been identified by the UN as the key pillars of the Principles of Responsible Investment (www.unpri.org/principles).

Although the SRI Index is not the first one of its kind internationally, it was the first of its kind to be sponsored by a Stock Exchange and the first in emerging markets (Skinner et al 2008). The authors further argue that the Index provides a framework for non-financial risk management for companies as well as investors.

According to JSE (2010), the Index was established in order to:

- Identify those companies listed on the JSE that integrate the principles of the triple bottom line and good governance into their business activities
- Provide a tool for a broad holistic assessment of company policies and practices against globally aligned and locally relevant corporate responsibility standards
- Serve as a facilitation vehicle for responsible investment for investors looking for non-financial risk variables to include in investment decisions as such risks do carry the potential to have significant financial impacts

- Contribute to the development of responsible business practice in South Africa and beyond.

Reviews take place during the second half of every year and the results announced at the end of November of the same year.

Eligibility

All companies on the FTSE/JSE All Share Index are eligible for the SRI Index assessment. At each annual review, participating companies have to meet the requisite threshold as specified in the criteria to be included in the SRI Index (JSE 2010).

All companies in the FTSE/JSE Top 40 Index, those in the FTSE/JSE Mid Cap Index as well as those in the existing JSE SRI Index automatically qualify for assessment against the criteria. All other companies in the FTSE/JSE All Share Index not included as above have the option to apply for a voluntary assessment. Appendix A indicates a list of all companies that qualified for assessment (constituents) from 2005 to 2009.

Over the years, the number of constituents has risen. The following table (Table 2) indicates a breakdown of constituents in the Index from 2005 to 2009.

Table 2: Constituents of Companies Participating on SRI Index

Year	2005	2006	2007	2008	2009
Number of Constituents	48	44	57	61	67

Source: JSE (2010)

Publication of Results

JSE does not release company specific results publicly. Neither does it publish the names of the companies that did not participate nor those that did not qualify. Furthermore, it does not currently publish rankings or indicate how companies fare relative to each other.

The JSE publishes the names of outstanding performers by environmental impact classification only. This is the CSP proxy used by this study. Within the Environmental

criteria, companies were classified as high, medium or low impact based on their activities (JSE 2010).

SRI Index Research Methodology

Ethical Investment Research Services (EIRIS), a leading global provider of independent research into the environmental, social, governance (ESG) and ethical performance of companies, is responsible for data collection, in-depth research and analysis of the participating companies against the set criteria on behalf of the JSE.

The research is done in two phases, i.e.

- The most recent publicly available company information is gathered, usually from annual reports and from company websites
- Feedback to support the preliminary information gathered as above is sought from these companies, usually by use of surveys.

Companies must meet the required number of indicators as set out in their respective area of measurement. The indicators are split into minimum (core indicators) and aspirational/advanced (i.e. desirable indicators). These indicators guide the companies to identify all relevant issues that need to be addressed.

Criteria Development

The criteria are determined by the JSE in consultation with an independent panel of experts who include investment managers, listed companies, sustainability experts, academics and the civil society (JSE 2010). These experts constitute the Advisory Committee. The criteria consist of issues that companies address in order to adhere to triple bottom line reporting practices. The indicators are aligned to the categories of Environmental, Social and Governance as well as related sustainability concerns.

Figure 1 shows the criteria themes under each of the ESG classifications.

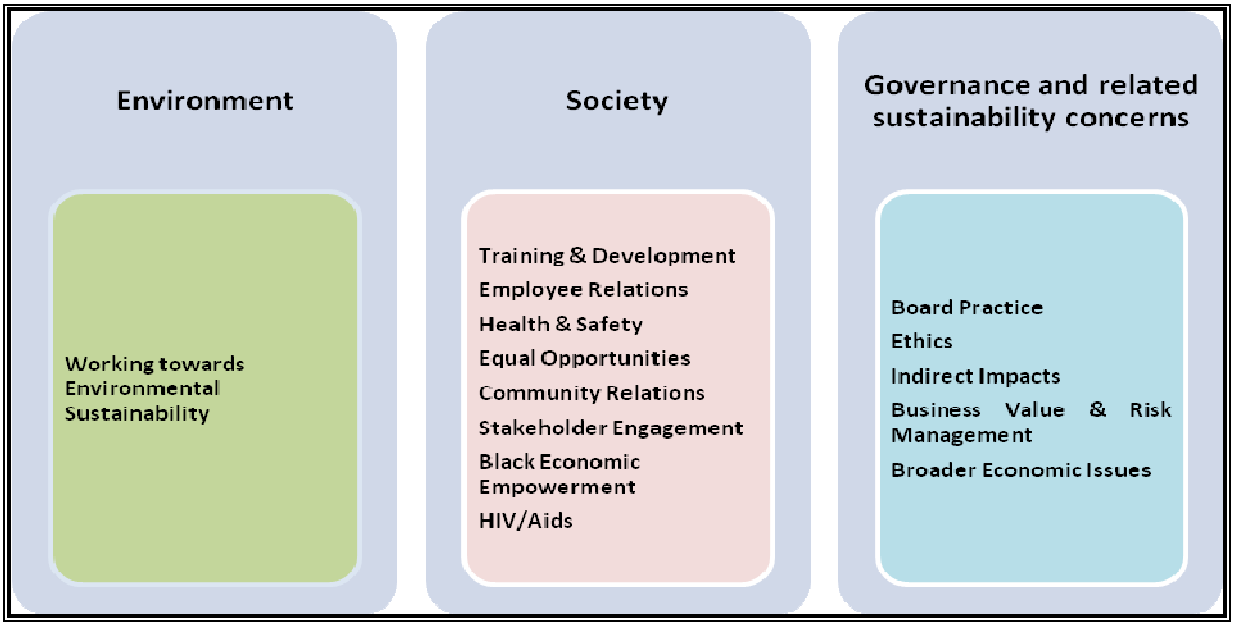


Figure 1: Criteria Themes under ESG Classifications

Source: (JSE 2010)

As stated earlier, this study was restricted to CSR relating to Environmental Classification only. According to JSE (2010), a company should continually seek to improve its environmental performance by:

- Working to reduce and control its direct negative environmental impacts
- Promoting awareness of its significant direct and indirect impacts
- Working to use natural resources in a sustainable manner
- Committing to risk reduction, reporting and auditing.

Index Development under Environmental Criteria

SRI Index classifies companies as high, medium or low impact depending on their contribution (to damage or to improvement) on the environment. Companies with similar activities are classified together under environmental impact into certain sectors developed and used by EIRIS (see Table 3). A sector's overall environmental impact is assessed in

relation to the economic contribution within that sector using a basic indicator as a ratio of environmental damage to economic significance.

Direct impacts relating to key issues of climate change, air pollution and waste and water consumption are reviewed for each sector. Indirect impacts such as in the supply chain and product life cycle are also considered.

Each sector is then profiled in terms of its impacts (high, medium or low) for the key issues mentioned above. The overall classification of a sector depends on the number of key issue areas where the sector is found to have a high or medium impact. Sectors that have a high impact in at least one key issue or a medium impact in more than four key issues are classified as "high" and sectors with a medium impact in at least two issues are classified as "medium" overall. The rest are classified as "low" impact.

The following Table (Table 3) shows the impact classification as used by the JSE for SRI Index under Environmental Classification.

Table 3: Environmental Impact Classification used by the JSE for SRI Index

High impact	Medium Impact	Low Impact
Air transport Airports Building materials (Includes quarrying) Chemicals and pharmaceuticals Construction Fast food chains Food, beverages and tobacco Forestry and paper Major systems engineering Mining and metals Oil and gas Pest control Power generation Road distribution and shipping Supermarkets Vehicle manufacture Waste Water	Banks* DIY and building supplies Electronic and electrical equipment Energy and fuel distribution Engineering and machinery Hotels, catering and facilities management Manufacturers not elsewhere classified Ports Printing and newspaper publishing Property developers Public transport Retailers not elsewhere classified Vehicle hire	Consumer / mortgage finance Financials not elsewhere classified* Information technology Leisure not elsewhere classified (gyms and gaming) Media Property investors Research and development Support services Telecoms Wholesale distribution

* The sector 'Financials not elsewhere classified' includes banks, insurance and other financial companies such as asset managers. In terms of the EIRIS classification, this sector's classification is medium where activities involve equity investment and commercial lending. The sector is currently separated to allow companies other than banks a low impact classification as part of the developmental nature of the Index. This may move to a medium impact in future reviews.

Source: JSE (2010)

A company is allocated one or more sectors based on all of its activities which generate 15% or more of its turnover and is then classified as high, medium or low according to the highest impact classification of all the sectors within which it may fall.

The following table (Table 4) shows the areas of measurement under the Environmental Criteria.

Table 4: Environmental Criteria Indicators

<table>
<tr><th></th><th>High Impact Companies</th><th>Medium Impact Companies</th><th>Low Impact Companies</th></tr>
<tr><td rowspan="2">Policy and Strategy</td><td>Policy must be publicly available, cover the whole group and either meet:
o all five core indicators plus at least one desirable indicator; or
o four core plus two desirable indicators.</td><td>Policy must cover the whole group and meet at least four indicators, at least three of which must be core.</td><td>Companies must have published a policy statement including at least one core or desirable indicator, OR meet either the management or reporting requirement.</td></tr>
<tr><td colspan="3">Core Indicators
• Policy refers to all key issues
• Responsibility for policy at board or department level
• Commitment to use of targets
• Commitment to monitoring and audit
• Commitment to public reporting
Desirable indicators
• Globally applicable corporate standards
• Commitment to stakeholder involvement
• Policy addresses product or service impact
• Strategic moves towards sustainability</td></tr>
<tr><td rowspan="2">Management and Performance</td><td>If environmental management system (EMS) is applied to between one- and two-thirds of company activities, six indicators must be met, and targets
must be quantified.
If EMS is applied to more than two-thirds of company activities, the company must meet at least five
indicators, one of which must be documented objectives and targets in all key areas.
ISO certification or EMAS registrations are considered to meet all indicators.</td><td>EMS must cover at least one-third of the company and meet four indicators.
If the EMS covers less than one-third of the company’s operations, the company must meet six indicators, including documented quantitative objectives and targets.
ISO certification or EMAS registrations are considered to meet all indicators.</td><td>Companies must have completed an initial / baseline review to identify significant impacts, OR meet either the policy or reporting requirement</td></tr>
<tr><td colspan="3">Indicators
• Presence of environmental policy
• Identification of significant impacts
• Documented objectives and targets in key areas
• Outline of processes and responsibilities, manuals, action plans, procedures
• Internal audits against the requirements of the system (not limited to legal compliance)
• Internal reporting and management review
• Internal communication of policy
• Training for relevant employees</td></tr>
<tr><td rowspan="2">Reporting</td><td>The report must cover the whole group, and meet at least two core indicators and one desirable indicator.
Reports which do not cover the whole group must meet three core indicators, or two core indicators together with two desirable indicators.</td><td>The report must cover the whole group, and include text of environmental policy plus one other reporting indicator.</td><td>The report must cover the whole group, and include description of main impacts
OR meet either the policy or management requirement</td></tr>
<tr><td colspan="2">Core Indicators
• Text of environmental policy
• Description of main impacts
• Quantitative data
• Performance measured against targets</td><td>Desirable Indicators
• Outline of an EMS
• Non-compliance, prosecution, fines, accidents
• Financial dimensions
• Independent assurance / verification
• Stakeholder dialogue• Coverage of sustainability issues</td></tr>
</table>

Source: JSE (2000).

As the table indicates, the following business areas are assessed to determine which impact category a company will belong to:

Policy and Strategy: Commitment in this area can be demonstrated through public statements, policies and/or strategies which, ideally, should be publicly available.

Management and Performance: This includes the use of systems, targets, objectives and other initiatives to manage monitor and measure business activities, progress and performance against targets.

Reporting: The criteria indicators define the minimum content that should be covered by reporting for purposes of the index.

As a measure of CSP, SRI Index appears robust compared to measures used in other studies because of the following reasons:

- It covers a sufficiently large number of companies; approximately 10% of the JSE listed companies
- The ratings have been going on for a reasonable period of time, i.e. for the last six years
- The rigorous selection and rating criteria minimises bias in the measurement and determination of the index

2.6 Financial Performance

Measures of financial performance fall into two broad categories: accounting returns (accounting-based measures) and investor returns (market-based measures) (Cochran and Wood 1984).

Each of these two measures has limitations. Whereas accounting measures have the limitation of ignoring risk, being short-term in outlook and being historical, market-based measures may not reflect the true intrinsic value of the company because the market does not have all the private information available to managers (Merchant and Sandino 2009). Consequently, studies that seek to use accounting data are not concerned with market

efficiency assumptions, market players that may affect the market price and risk as occurs with market-based studies (Lee et al 2009). These authors argue that accounting measures are concerned with high levels of asset utilisation, productivity and efficiency and typically measure the concurrent and historical metrics such as return on equity and return on assets.

Given these differences, the relationship between CSP and each of these financial measures is discussed separately and two separate hypotheses developed thereafter.

2.6.1 *Accounting Performance Measures*

Accounting measures provide information about how earnings respond to differing managerial policies (Cochran et al 1984). They also signal the success of CSP in terms of productivity increases, asset utilisation and returns to debt and equity holders (Lee et al 2009). Return on investment ratios are mostly used by companies as a financial performance measure to relate income to invested capital thereby linking income statement to balance sheet (Brewer 1999; Ratnatunga and Montali 2008). The main return on investment ratios are Return on Assets (ROA) and Return on Equity (ROE) (Ratnatunga et al 2008).

Return on assets and return on equity ratios are reflective of the past financial performance (Lee et al 2009) and can provide information about how earnings respond to different managerial policies (Cochran et al 1984). Cochran et al (1984) further argues that accounting measures may signal success of CSP in terms of productivity increases, asset utilisation and the returns provided to both debt and equity holders.

Despite their shortcomings (such as being influenced by firms' accounting practices lack of accurate comparisons), accounting measures may still be the best proxy for financial performance (Cochran et al 1984). Simpson et al (2002) further argue that accounting measures of performance are more appropriate in determining the CSP-CFP link. They continue to state that market-based measures may not be appropriate as they may be picking up more than the financial performance.

The most commonly used accounting measures used in CSP research are Return on Assets (ROA) and Return on Equity (ROE) (Griffin et al 1997; Lee et al 2009). In addition,

price earning (P/E) ratio has also been extensively used in CSP-FP research (Bowman and Haire 1975; Lee 2006).

Return on Assets (ROA)

ROA is the ratio of operating income to identifiable assets (Villalonga 2003). It indicates management's ability to efficiently utilise a firm's assets to generate profits (Lee et al 2009). It was calculated as operating income over total assets.

ROA has been used by Waddock et al (1997), Preston et al (1997), Berman et al (1999), Simpson et al (2002), Lee et al (2009), Shen et al (2009) and Garcia-Castro et al (2010).

Return on Equity (ROE)

ROE refers to the amount of earnings after debt service costs as a percentage of the equity invested by the shareholders (Damodaran 2007). It is used to assess a company's overall profitability whilst providing a measure of returns to ordinary shareholders (Lee et al 2009). It was calculated as net income over total equity.

ROE has been used by Bowman et al (1975), Waddock et al (1997), Balabanis, Phillips and Lyall (1998), Verschoor (1998), Preston et al (1997), Lee et al (2009), Shen et al (2009) and Garcia-Castro et al (2010).

Price earning (P/E) ratio

P/E ratio is the ratio between a firm's current share price and its future earnings per share (EPS) for the next 12 months (Firer 1993). P/E ratios are usually calculated using the most recent historical earnings.

Roberts and Spedding (2006) argue that leading CSP firms have higher P/E ratios compared to lagging CSP firms. Other researchers who have employed P/E ratio in CSP-FP studies include Bowman et al (1975), Lee (2006) and Lee et al (2009).

Most CSP-FP link studies use more than one accounting measure. Different measures would therefore be used to validate each other. This study employed the three accounting measures.

2.6.2 *Relationship between CSR and a Firm's Accounting Performance*

Some CSR advocates have argued that CSP has a positive impact on a firm's accounting performance (Waddock et al 1997; Demacarty 2009; Lee et al 2009). They argue that firms that engage in CSP business strategies are able to overcome short-termism, better manage their reputation and brand, attract and retain the best managers and employees and improve the nexus of contracts through better communication and trust (Waddock et al 1997; Demacarty 2009; Lee et al 2009). These factors will assist the firm achieve better accounting performance compared to firms that invest less or nothing in CSR (Waddock et al 1997; Griffin et al 1997; Orlitzky et al 2003; Derwall et al 2005; Lee et al 2009).

Significant benefits therefore arise from being a leading CSP firm. Thus, leading CSP firms are expected to have higher accounting returns (Orlitzky et al 2003).

Studies that have found a positive relationship between CSP and CFP based on accounting measures include Waddock et al (1997), Verschoor (1998), Berman et al (1999), Orlitzky et al (2003), Shen et al (2009).

Other studies have revealed a negative relationship between CSP and CFP. They argue that the additional costs of CSP neither contribute nor enhance shareholder value (Friedman 1970; Aupperle et al 1985; Knoll 2002).

The last group of studies argue that CSP has a neutral impact on accounting performance (Statman 2000). There are many intervening variables between social activities and financial outcomes that there is no reason to assume that a firm's level of CSP will affect its financial performance (Ullman 1985; Lee et al 2009).

2.6.3 *Hypothesis 1*

Literature seems to suggest that leading CSP firms have significantly higher performance as determined by accounting measures compared to lagging CSP firms. This leads to the first hypothesis.

The null hypothesis states that the accounting performance of leading CSP firms is expected to be no different from that of lagging firms. This is consistent with Ullman (1985) who argues that, in light of the many intervening variables between CSP and CFP, there is

no reason to assume that a firm's level of CSP will noticeably affect its CFP. The alternative hypothesis states that the accounting performance of leading CSP firms is significantly higher than that of lagging CSP firms. This hypothesis is consistent with much of the literature reviewed in this Chapter which seems to suggest that significant economic benefits arise from being a leading CSP firm.

$$H0: AccPerf_{LEADING\ CSPs} = AccPerf_{LAGGING\ CSPs}$$

$$H1: AccPerf_{LEADING\ CSPs} > AccPerf_{LAGGING\ CSPs}$$

2.6.4 *Hypothesis 2*

Some studies have found a negative link between CSP and CFP as determined by accounting measures of financial performance. These include (Friedman 1970), Aupperle et al (1985) and Knoll (2002). These authors argue that investment in CSP will lower a company's financial performance. This argument forms the basis of the second hypothesis.

The null hypothesis states that the accounting performance of leading CSP firms is expected to be no different from those of lagging firms. This is consistent with Ullman (1985) and Lee et al (2009) who argue that, in light of the many intervening variables between CSP and CFP, there is no reason to assume that a firm's level of CSP will noticeably affect its CFP. The alternative hypothesis states that the financial performance of lagging CSP firms, as measured by accounting measures, is expected to be higher than that of leading CSP firms. This is consistent with Friedman (1970), Aupperle et al (1985) and Knoll (2002) who argue that the additional costs of CSP neither contribute nor enhance shareholder value

$$H0: AccPerf_{LEADING\ CSPs} = AccPerf_{LAGGING\ CSPs}$$

$$H1: AccPerf_{LEADING\ CSPs} < AccPerf_{LAGGING\ CSPs}$$

2.6.5 *Market-based Performance Measures*

It has been argued that accounting-based measures of financial performance can be manipulated to serve the interests of management (Lee et al 2009). Indeed, dishonest accounting has been blamed for the recent corporate scandals where companies appear to be performing better financially than reality (Demacarty 2009).

Furthermore, given their historical focus, accounting measures can be problematic if they are casually interpreted as capturing the impact of CSP on the future operations, sustainability or performance of a company (Lee et al 2009).

Merchant and Sandino (2009) argue that accounting measures have the following limitations:

- They measure past performance and ignore future revenues and most future expenses
- They are transactions-oriented and most values are historical rather than a reflection of true value
- They are highly dependent on the measurement method adopted and there are a number of methods available
- Accounting measures are highly conservative by being slow to recognise gains and quick to recognise expenses and losses
- They ignore some economic values and value changes, e.g. intangible assets
- They ignore the cost of equity which may be more significant than the value of capital
- They ignore risk and changes in risk

To overcome these shortcomings, market-based measures can be used to measure a firm's performance (Davidson et al 1990; Derwall et al 2005; Lee et al 2009). These measures provide a proxy as to what the market believes is the value of the firm when assessing the expected impact of the firm's future earnings and risk (Lee et al 2009).

Literature suggest that market-based performance measures are more realistic measures of CFP as they factor risk and are not open to manipulation by managers (Ullman 1985; Merchant and Sandino 2009). Ullman (1985) argues that market-based measures are more appropriate measures in CSP-CFP studies as they capture investors' evaluation of a firm.

Market-based measures of financial performance adopted by most CSP-CFP link researchers as reviewed by the author include market value-added (MVA), economic value added (EVA) and abnormal returns.

Market value-added (MVA)

MVA is described as Market value of a firm less its Capital, i.e.

$$MVA = MV - Capital$$

where MV is the firm's market value or market capitalisation and capital is the book value of equity and debt invested in the firm (Garcia-Castro et al 2010). To reduce the impact of the size of the firm, MVA was expressed as a percentage of the market capitalisation, i.e.

$$MVA\ \% = \frac{(MV - Capital)}{MV}\ x\ 100\%$$

MVA captures the relative success of a firm in maximising shareholder value through efficient allocation and management of scarce resources (Hillman et al 2001). It also indicates how much wealth companies have created for their shareholders and also how efficiently they are utilizing the capital raised from different shareholders (Mittal et al 2008). The author continues to state that if a company is creating a positive MVA, then it should be working in synchronisation with CSR.

CSP-CFP link studies that have used MVA as a measure of financial performance include Hillman et al (2001), Mittal et al (2008) and Garcia-Castro et al (2010).

Price to Book (P/B) Ratio

P/B ratio gauges whether the market valuation of a company is relative to its worth or not (Prassana 2008). It has extensively been associated with predicting pre and post firm

practices (Lee 2006) and has been used as a valuation model (Agrawal, Monem and Ariff 1996). Lee (2006) also argues that P/B ratio can be used to indicate style characteristics of firms, with a high or low P/B ratios signalling either growth or value style firm. P/B ratio was found to be the best predictor of future stock returns by Fama and French (1992).

P/B ratio is calculated as follows:

$$P\ B\ Ratio = \frac{Market\ Capitalisation}{Total\ Assets - Liabilities}$$

Studies that have used P/B ratio as a measure of market returns in CSP/CFP studies include Lee (2006) and Lee et al (2009).

Absolute Returns

These are returns that assets gain over a certain period of time and usually expressed as a percentage. It is a measure that looks at appreciation or depreciation of a stock over a given period of time (Investopedia 2010).

Absolute returns are therefore determined as follows:

$$AR_1 = \frac{SP_1 - SP_0}{SP_0} \times 100$$

Where: AR is the Absolute Returns at the end of Year 1

SP_1 is the Share Price at the end of Year 1

SP_0 is the Share Price at the end of Year 0

Absolute returns as a market performance measure has been used by Lee (2006) and Lee et al (2009).

2.6.6 *Relationship between CSP and a Firm's Market Performance*

Socially responsible investment and investor activism, especially in developed world, provide evidence that shareholders value other factors (such as social and environmental issues) besides financial wealth (Kristoffersen et al 2008).

CSP may have an impact on shareholder wealth by affecting revenue, explicit costs as well as implicit costs such as risk (Kristoffersen et al 2008). Pursuing CSP may increase the perceived risk by increasing public scrutiny on the activities of a firm (Rowley et al 2000). This perceived risk of a firm will be priced by the market and may affect the firm's risk premium and hence it's cost of capital (Kristoffersen et al 2008).

It has been argued that a socially responsible company puts the interests of its shareholders on a par with the social, community and environmental interests of third parties or stakeholders involved in its activities (Velde et al 2005). The question at hand is to determine whether a company's focus on CSR issues has any impact on shareholders' interests. If there is any impact, then this fact may be reflected in the share price in line with Efficient Market Hypothesis (EMH). EMH is a theory that states that stock prices fully reflect all the available market information (Fama 1997).

Some studies have found that the market performance of leading CSP firms are no better that those of conventional firms (Statman 2000; Hamilton, Jo and Statman 1993; Knoll 2002). If capital markets are efficient, there should be no difference between the performances of leading and lagging CSP firms. This is because all the information should already have been reflected in the share price (Lee et al 2009).

Other researchers have argued that the market performance of leading CSP firms will be lower than those of lagging CSP firms (Brammer et al 2006; Lee et al 2009). This argument is based on the assumption that stocks of leading CSP firms will be higher relative to those of lagging CSP firms. The resulting increase in a firm's valuation relative to its internal earnings stream could suggest that a lower cost of capital is available to a leading CSP firm (Lee et al 2009). These authors argue that this phenomenon will not result to a higher expected future return but rather to a lower required rate of return. This will be the case if a firm's CSP proxy such as the JSE SRI Index has already communicated a firm's CSP profile to the market. Therefore, positive returns can only be realised if a firm changes from

being a lagging CSP to a leading CSP (Lee et al 2009). Therefore, if we recognise that being a leading CSP firm has a value, and that the value has already been captured by the share price, then leading CSP firms should have lower ex-post returns (Lee et al 2009).

Yet, another group of researchers argue that leading CSP firms have a better market performance compared to lagging CSP firms. Statman (2000) refers to this phenomenon as "doing well, whilst doing good". This scenario would happen where a sufficient number of investors systematically underestimate the benefits of being a leading CSP firm or systematically overestimate CSP costs associated with being a lagging CSP firm (Lee et al 2009). These authors further argue that in such a scenario, the market returns of leading CSP firms could be expected to be higher than comparative lagging CSP firms.

Other studies that have found a positive relationship between CSP and market measures of profitability include Meznar, Nigh and Kwok (1994), Verschoor (2005), Velde et al (2005) and Derwall et al (2005).

2.6.7 *Hypothesis 3*

Literature seems to suggest that leading CSP firms have significantly higher performance as determined by the market-based measures of performance. This leads to the third hypothesis.

The null hypothesis states that the market returns of leading CSP firms are expected to be equal to those of lagging CSP firms. This is consistent with the findings of Statman (2000), Hamilton et al (1993) and Knoll (2002). The alternative hypothesis states that leading CSP firms have significantly higher financial performance as determined by market-based measures compared to lagging CSP firms. This is consistent with much of the literature as discussed above.

$$H0: MktPerf_{LEADING\ CSPs} = MktPerf_{LAGGING\ CSPs}$$

$$H1: MktPerf_{LEADING\ CSPs} > MktPerf_{LAGGING\ CSPs}$$

2.6.8 *Hypothesis 4*

Some studies have found that the market performance of leading CSP firms will be lower than those of lagging CSP firms (Brammer et al 2006; Lee et al 2009). The authors argue that the leading CSP firms have their CSP profiles already captured in the share price. The higher stock price will not result to a higher expected future return but rather to a lower required rate of return. Leading CSP firms, therefore, should have lower ex-post returns (Lee et al 2009).

This argument leads to the fourth hypothesis. The null hypothesis states that the performance of leading CSP firms as determined by market-based measures is expected to be no different from that of lagging CSP firms. This is consistent with Statman (2000) Hamilton et al (1993) and Knoll (2000) who argue that, if capital markets are efficient, there should be no difference between the performances of leading and lagging CSP firms since all the information (including firms' CSP profiles) should already have been reflected in the share price. The alternative hypothesis states that the performance of leading CSP firms as measured by market-based measures is expected to be lower than that of lagging CSP firms. This is consistent with the arguments of Brammer et al (2006) and Lee et al (2009) as discussed above.

$$H0: MktPerf_{LEADING\ CSPs} = MktPerf_{LAGGING\ CSPs}$$

$$H1: MktPerf_{LEADING\ CSPs} < MktPerf_{LAGGING\ CSPs}$$

2.7 Conclusion of Literature Review

Most studies reviewed by the author suggest a positive relationship between CSP and CFP (Griffin and Mahon 1997; Waddock and Graves 1997; Orlitzky, et al 2003; Derwall et al 2005). Other studies found a neutral relationship (Ullman 1985; Statman 2000) while others found a negative relationship (Friedman 1970; Brammer et al 2006).

The inconsistency of the findings of the CSP-CFP link can be attributed to methodological limitations, negative screening processes, deficiency in theory, inappropriate definition of key terms and deficiency in empirical database (such as CSP and CFP) (Ullman 1985).

Endogeneity could also be a contributing factor to the inconsistency in the findings (Garcia-Castro et al 2010) as well.

Despite these inconsistencies, previous research tends to support a positive CSP-CFP link (Orlitzky et al 2003; Garcia-Castro et al 2010) although such a relationship is far from being well established in the literature. Indeed, Post, Preston and Sachs (2002) have argued that although the safest generalisation of the CSP-CFP link is that the available evidence is somewhat unreliable and the results mixed, there is very little evidence of a negative association between CSP and CFP.

Accounting and market-based measures of financial performance may give alternative but legitimate perspectives which may result in different findings of CSP-CFP relationship (Lee et al 2009). Accounting measures are historic and do not usually account for risk. They primarily measure the levels of asset utilisation, productivity and efficiency of the business. Market-based measures on the other hand provide future expectations of performance and therefore reflect the expected future returns, risks and the impact of supply and demand of the firm's shares as reflected in the firm's share price.

This study aims to address the limitations outlined above by using in the following approaches:

- Use of a single measure of CSR (i.e. Environmental Responsibility) thus clearly isolating one proxy as a measure of CSP so as to enhance the reliability of the findings
- Use of the environmental impact assessment of the JSE's SRI as the measure of CSP to enhance the validity of the findings and also avoid negative screening which may skew the sample towards or against specific industries
- Conducting the study using across five years thus checking consistency of findings
- Controlling for industry which has been identified by the literature as a key control variables.
- To further enhance the validity of the analysis, both accounting and market-based measures of CFP are applied on the same data set. This ensured there was no bias

towards one metric and allowed a direct comparison of accounting and market-based measures of CFP with CSP within a homogenous dataset (Lee et al 2009).

2.7.1 *Hypothesis 1:*

The financial performance of leading CSP firms, as measured by accounting measures, is significantly higher than that of lagging CSP firms.

2.7.2 *Hypothesis 2:*

The financial performance of lagging CSP firms, as measured by accounting measures, is expected to be significantly higher than that of leading CSP firms.

2.7.3 *Hypothesis 3:*

Leading CSP firms have significantly higher financial performance as determined by market-based measures compared to lagging CSP firms.

2.7.4 *Hypothesis 4:*

Lagging CSP firms have significantly higher financial performance as determined by market-based measures compared to leading CSP firms.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

Following the formation of the hypothesis developed in Chapter 2, research design and methodology to test these hypotheses are now discussed. Specifically, this chapter discusses the research paradigm, research design, population, sample, research instrument and data collection procedure. Data analysis and limitations of the study as well as validity and reliability of the proposed method are also discussed in this chapter.

3.2 Research methodology / paradigm

This research uses quantitative research methodology. Quantitative research methodology uses mathematical and statistical models to describe an array of variables' relationships and is designed to assist with management problem-solving and decision-making (Naude, Stray and Wegner 1991). This methodology is suitable in this study because all the variables are quantitative.

According to Johnson and Onwuegbuzie (2004), quantitative research methodology has the following strengths:

- Findings can easily be generalised
- Findings are relatively independent of the researcher
- It provides a precise, quantitative and numerical data.

The main weaknesses associated with this methodology include the likelihood that the findings may be too abstract and general for local situations and contexts as well as the potential for confirmation bias, i.e. selective confirmation of the researcher's hypothesis (Johnson et al 2004).

To determine the relationship between environmental performance (CSP) and CFP, tests of significant differences in the means of different performance measures using independent

two-sample T-tests were conducted. This is consistent with the methodology used by Lee (2006), Orlitzky et al (2003), and Balabanis et al (1998).

3.3 Research Design

The objective was to test whether companies that have been identified as leading CSP firms significantly outperform companies that have been identified as lagging CSP firms and vice versa using both accounting and market-based measures of performance.

Data was collected over a five year period and analysed annually.

3.4 Population and sample

3.4.1 *Population*

The population consist of all companies listed on the JSE.

3.4.2 *Sample and sampling method*

The sample is comprised of all companies that qualified for SRI Index verification (SRI Index Constituents) for each of the years from 2005 to 2009 (see Appendix A). These are companies that were examined by the JSE SRI for assessment under Environmental Impact Criteria in those years and met the set criteria for inclusion in the assessment. Companies rated as “best performers”, “high impact”, “medium impact” and “low impact” were classified as leading CSP firms while the remaining companies (those that qualified but were not rated) were be classified as lagging CSP firms.

This type of sampling method is known as convenience sampling. In convenience sampling, elements are selected from the target population based on their accessibility or convenience to the researcher (Ross 2005). Convenience sampling does not involve random sampling and is therefore non-probabilistic. Convenience sampling may therefore suffer from selection bias. Selection bias is the systematic tendency to exclude or include a certain type of unit from the sample (Zou 2006).

Convenience sampling is usually preferred when it is not feasible, practical or theoretically sensible to conduct random sampling (Trochim 2006). This method is suitable in this study because the sample companies targeted by this study are only availed by JSE.

Data on the sample was collected for each of the five years (2005-2009) from I-Net Bridge. Out of the initial 276 companies that had been identified over the 5-year period, 42 companies were dropped from the analysis since no performance data was available from I-Net Bridge in the respective years. No effort was made to access the missing data on these companies from other sources to avoid inconsistencies that could arise out of different application of accounting formulae on performance ratios. After excluding these 42 companies, the analysis was conducted on a total sample of 234 companies over the 5-year period.

The sample break down by leading versus lagging CSP firms for all industries from 2005 through to 2009 is illustrated in Figure 2.

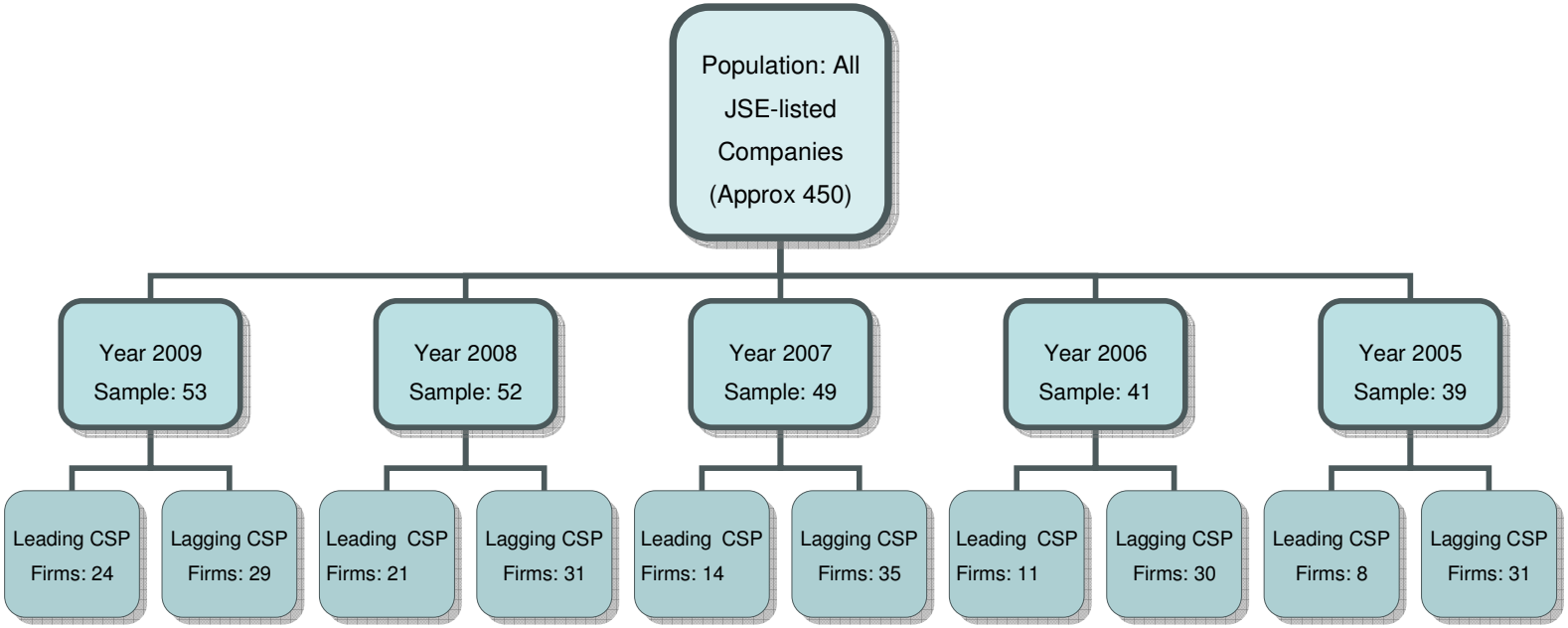


Figure 2: Breakdown of the Sample per year and per CSP Profile for all industries

The sample was then used to construct three portfolios with differing CSP profiles so as to control for industry biases. This portfolio formation process is consistent with the methodologies of Cochran et al (1984), Derwall et al (2005) and Lee et al (2009). The sample was therefore split into three broad categorisations, i.e. industrial, financial and mining sectors.

The following table (Table 5) shows the breakdown of the sample by industry (sector) and by CSP profile for each of the five years (from 2005 through to 2009).

Table 5: Sample breakdown by industry and CSP profile for five years (2005 to 2009)

JSE Listed Companies (450)	CSP Profile	Sector	YEAR					Total
			2009	2008	2007	2006	2005	
	Leading CSP	Financial	4	4	3	2	2	15
		Industrial	17	11	7	6	3	44
		Mining	3	6	4	3	3	19
	Total		**24**	**21**	**14**	**11**	**8**	**78**
	Lagging CSP	Financial	7	8	9	7	10	41
		Industrial	15	18	19	19	18	89
		Mining	7	5	7	4	3	26
	Total		**29**	**31**	**35**	**30**	**31**	**156**
	Grand Total		**53**	**52**	**49**	**41**	**39**	**234**

Finally, the sample was broken down into two extreme CSP profiles and analysis conducted as an additional control on the reliability of the findings. High impact companies were isolated from the leading CSP firms and an analysis conducted vis-a-vis the lagging CSP firms. The resulting sample breakdown is shown in the following table (Table 6).

Table 6: Sample breakdown based extreme CSP profile-high impact versus lagging CSP profile (2005 to 2009)

JSE Listed (450) Companies	CSP Profile	YEAR					Total
		2009	2008	2007	2006	2005	
	High Impact	13	9	9	2	4	**37**
	Lagging CSP firms	29	31	35	30	31	**156**
		42	**40**	**44**	**32**	**35**	**193**

3.4.3 *Control Variables*

Industry, size and risk have been suggested in the literature as the control variables that affect CSP and financial performance studies (Ullman 1985; Waddock et al 1997; Derwall 2005; Lee et al 2009).

Industry type has been found to be an important control variable in CSP-CFP studies (Chand 2006). The author argues that controlling for industry eliminates all the environmental differences that organisations in different industries face that tend to cloud the relationship. To control for industry type, the sample was grouped as per the JSE's broad industry classifications (i.e. industrial, financial and mining/resources). This ensured that companies' performance within the same industry were analysed and compared and therefore eliminated industry biases.

Size is a relevant variable because there is evidence that smaller firms do not exhibit as much socially responsible behaviour as do larger firms (Waddock et al 1997). Furthermore, size is known to impact heavily on a firm's market performance and risk while at the same time playing a significant role in driving the relative ratios of firms (Lee et al 2009).

Market risk (i.e. beta) and total risk (i.e. standard deviation) have been identified as common control variables in CSP-CFP literature (Lee et al 2009). Market risk or beta is a measure of a firm's systematic risk. It is the risk associated with an entire class of assets or liabilities arising from economic changes or other events that have an impact on large portions of the market. It is defined as the covariance between returns on a risky asset and market portfolio divided by the variance of the market portfolio Balabanis et al (1998). Firms with low beta have more stable pattern of stock market returns and vice versa. Total risk refers to the sum of systematic and unsystematic risk. Unsystematic risk is risk that is specific to an individual security and can therefore not be avoided through diversification.

Given the small nature of the sample size being considered on this study, it was not statistically feasible to split the sample into distinct firm sizes and risk profiles. Only industry was used as a control variable. The sample was split into three broad categorisations, i.e. industrial, financial and mining.

The use of both accounting and market-based performance measures acted as a control thus enabling comparison of the outcomes.

3.5 Procedure for data collection

Data was collected from secondary sources. Data on CSP proxy was sourced from the JSE SRI Index while financial performance proxy was sourced from I-Net Bridge.

3.5.1 *Data collection for CSP*

The JSE SRI Index provides lists of companies that qualify for assessment for inclusion into the Index annually. It also provides a list of companies that have had high, medium and low impact on the environmental impact classification. Companies listed as having high, medium and low impact on environmental impact classification were grouped together as leading CSP firms while companies that qualified for assessment but did not make it to the leading CSP firms were grouped together as lagging CSP firms.

This information was requested from JSE (see Appendix B for email requests and feedback) as well as from the JSE website.

3.5.2 *Data collection for financial performance*

CFP data were sourced from I-Net Bridge. I-Net Bridge is a respected South African provider of economic and financial market data to investors and researchers.

Data provided by I-Net Bridge is sorted per industry. There is a strong indication that important metrics such as ratios take into account industry-specific factors.

3.6 Data analysis

Independent two-tail T-tests were conducted to determine whether the means of performance for both leading and lagging CSP firms were significantly different. These tests were conducted on both accounting and market-based measures of performance.

3.7 Limitations of the study

This study had the following limitations:

- JSE SRI Index is still in developmental stage. It may therefore lack the rigour of fully developed indexes in the world such as Dow Jones Sustainability Index (DJSI). It may therefore be lacking in rigour in measuring CSR accurately. Furthermore, the Index is not verified by an independent auditor. This may have compromise and limited the validity of this study somewhat.

- The study focused on the companies that participate in the JSE SRI Index. The study may therefore not be representative of unlisted companies or companies listed in other stock exchanges.

- Convenience sampling used may lead to selection bias. This may be particularly so if the JSE SRI Constituents participation systematically excluded some companies from the overall JSE population.

- The relatively small sample size also limited the profiling of the sample per firm size and risk profile; yet, these are important control variables as discussed on Chapter 2.

3.8 Validity and reliability

Validity and reliability together determine the accuracy of a measurement used to capture raw data into a comprehensible state (Leedy 1989).

In quantitative research, validity determines whether the means of measurement are accurate and whether they are actually measuring that which it was intended to measure (Golafshani 2003). This is important because testing any hypothesis will be accurate only if data being tested is a true measure of what is being tested. Reliability refers to the consistency and stability of a measurement over time (Golafshani 2003). Reliability is mainly concerned with whether the results are replicable. This is important as it ensures replication of findings.

To strengthen reliability and internal validity, appropriate statistical tools were used and any major limitations experienced in the data analysis disclosed.

3.8.1 *External validity*

External validity refers to the extent to which the conclusions reached can be generalised to other populations, contexts or cases (Leedy 1989). External validity can be compromised by coverage error and/or non-response error (King and He 2005). Coverage error occurs when some characteristics of the population are completely left out of the sample while non-response error occurs when there is a low response rate leading to smaller sample sizes (King et al 2005).

Whereas non-response error was not relevant in this study, it was be difficult to ascertain whether all coverage errors were excluded. To this extent, the external validity of this study could have been compromised.

3.8.2 *Internal validity*

Internal validity is the freedom from bias in forming conclusions and relates to ensuring that the independent variable produced the observed effect (Leedy 1989).

Size, risk and industry have been suggested in the literature as the control variables that affect CSP and financial performance (Ullman 1985; Waddock et al 1997; Derwall 2005; Lee et al 2009).

Size and risk as control variables were not considered in this study.

To enhance the validity of the analysis, both accounting and market-based measures of CFP were applied on the same data set. This ensured that there was no bias towards one metric and allowed a direct comparison of accounting and market-based measures of CFP with CSP within a homogenous dataset (Lee et al 2009).

3.8.3 *Reliability*

Reliability is mainly concerned with whether the results are replicable. It relates to the accuracy of the measuring instrument (Leedy 1989).

Compared to other similar studies, this study enhanced reliability by using a single proxy as a measure of CSP and related it to CFP. Kristoffersen et al (2008) argue that social,

environmental and governance performance are likely to differ in the way they relate to a firm's financial performance and should therefore not be combined to a single composite measure as this may affect reliability. In this study only one proxy (i.e. environmental responsibility) was used as a measure of CSP.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results as obtained using the methodology described in Chapter 3. Results based on accounting measures of performance (Hypotheses 1 and 2) are presented first followed by the results based on market-based measures of performance (Hypothesis 3 and 4).

For each of the two measures of performance, results from all industries (i.e. unsorted by industry) are presented first, followed by the results from the sorted sample by industry (i.e. per industrial, financial and mining sectors). Finally, the results based on extreme sample (i.e. high impact versus lagging CSP firms) are presented.

Summary results for each of the four hypotheses are thereafter presented sequentially at the end of each sub-section.

4.2 Sample profile

The study targeted the results of all the companies that the JSE assessed for inclusion into the SRI Index verification under Environmental Classification from 2005 to 2009 (see Appendix A). Initially, these were all the companies representing 276 observations covering this 5-year time period. Companies whose data could not be availed from I-Net Bridge were dropped from the analysis. It was considered undesirable to access data from more than one source as this could affect its consistency. In total, 234 companies (observations) were analysed as shown on Table 7 below.

Table 7: Number of companies sampled per year (2005-2009)

Year	2005	2006	2007	2008	2009	Total
Total Number of Observations	**39**	**41**	**49**	**52**	**53**	**234**
Leading CSP Firms	8	11	14	21	24	78
Lagging CSP Firms	31	30	35	31	29	156

Further, the sample was broken down per industry and analysis was conducted per industry based on the CSP profile. The breakdown per industry is shown in the following table (Table 8).

Table 8: Sample breakdown per industry and CSP profile (2005-2009)

CSP Profile	Sector	YEAR					Total
		2009	2008	2007	2006	2005	
Leading CSP	Financial	4	4	3	2	2	15
	Industrial	17	11	7	6	3	44
	Mining	3	6	4	3	3	19
Total Leading CSPs		**24**	**21**	**14**	**11**	**8**	**78**
Lagging CSPs	Financial	7	8	9	7	10	41
	Industrial	15	18	19	19	18	89
	Mining	7	5	7	4	3	26
Total Lagging CSPs		**29**	**31**	**35**	**30**	**31**	**156**
Total Observations		**53**	**52**	**49**	**41**	**39**	**234**

Finally, the sample was split into two extremes (i.e. high impact CSP firms and lagging CSP firms) and analysed. The breakdown of the sample per extreme CSP profile is shown in the following table (Table 9).

Table 9: Sample breakdown per extreme CSP profiles (high impact vs. lagging CSP firms) (2005-2009)

CSP Profile	YEAR					Total
	2009	2008	2007	2006	2005	
High Impact	13	9	9	2	4	**37**
Lagging CSP firms	29	31	35	30	31	**156**
Total Observations	**42**	**40**	**44**	**32**	**35**	**193**

4.3 Results based on accounting measures

The means of various accounting performance measures for both leading and lagging CSP firms are presented graphically in this section. The sample was further broken down into various industrial sector and analysis conducted based on the firms' CSP profile. Additionally, high impact and lagging CSP firms are analysed and results presented. The

results of independent t-Tests of significance (two-tail) are also be presented and described. These results are used to discuss Hypothesis 1 and 2.

The two-tail independent t-tests were conducted to establish the following:

- Whether the accounting performance of leading CSP firms is higher than that of lagging CSP firms
- Whether the accounting performance of lagging CSP firms is higher than that of leading CSP firms

4.3.1 *Results based on CSP and accounting measures for all Industries*

CSP and ROA for all industries

Figure 3 shows the graphical representation of the average ROA for leading and lagging CSP firms for 5 years from 2005 through to 2009.

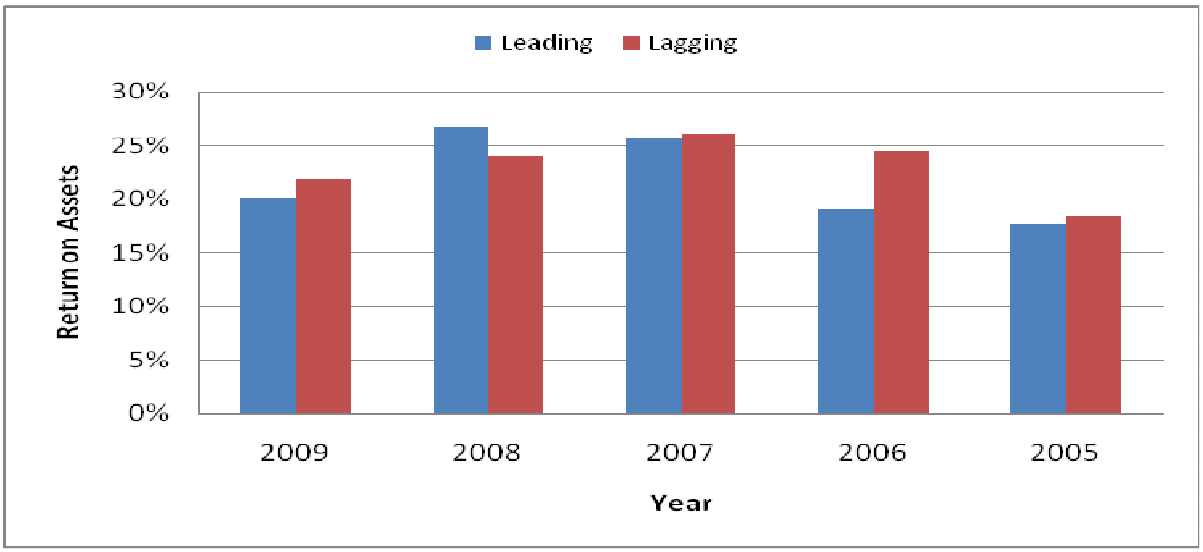


Figure 3: Average Return on Assets for Leading and Lagging CSP Firms 2005-2009

Over the five years covered by this study, the ROA of lagging CSP firms outperformed the ROA of leading CSP firms in the unsorted sample (all industries) in four out of the five years analysed (i.e. 2005, 2006, 2007 and 2009). The results of the T-tests are presented in Table 10.

Table 10: Independent Two sample T-tests Results (Two-tail): ROA

Return on Assets						
	Leading		Lagging			
Period	Mean	Observations	Mean	Observations	t-Stat	*p*-Value
2009	20%	24	22%	29	-0.27	0.79
2008	27%	21	24%	31	-0.56	0.58
2007	26%	14	26%	35	-0.03	0.98
2006	19%	11	25%	30	-0.69	0.50
2005	18%	8	18%	31	-0.09	0.93

The results on Table 10 indicate that, at 5% significance level, the means of ROA for leading and lagging CSP firms for all the five years are not significantly different.

CSP and ROE for all industries

Figure 4 shows the graphical representation of the average ROE for leading and lagging CSP firms for 5 years from 2005 through to 2009.

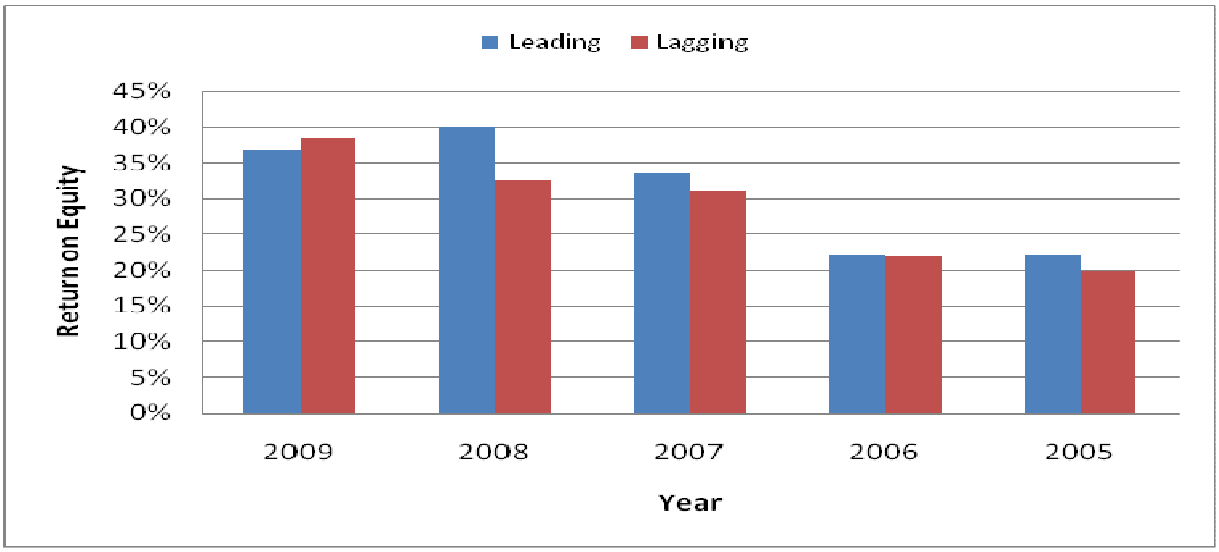


Figure 4: Average Return on Equity for Leading and Lagging CSP Firms 2005-2009

Over the five years covered by this study, there was no consistency regarding means of ROE for leading and lagging CSP firms. Leading CSP firms outperformed lagging CSP firms in three of the five years covered by this study (2005, 2007 and 2008). In 2009, leading CSP firms outperformed lagging CSP firms while in 2006, there was no difference

in average ROE between leading and lagging CSP firms. The results of the t-tests are presented in Table 11.

Table 11: Independent Two sample T-tests Results (Two-tail): ROE

Return on Equity						
	Leading		Lagging			
Period	**Mean**	**Observations**	**Mean**	**Observations**	**t-Stat**	***p*-Value**
2009	37%	24	39%	29	-0.28	0.78
2008	40%	21	33%	31	1.27	0.21
2007	34%	14	31%	35	0.40	0.69
2006	22%	11	22%	30	0.01	0.99
2005	22%	8	20%	31	0.30	0.76

The results on Table 11 indicate that, at 5% significance level, the means of ROE for leading and lagging CSP firms for all the five years is not significantly different.

CSP and P/E Ratio for all industries

Figure 5 shows the graphical representation of the average P/E ratio for leading and lagging CSP firms for 5 years from 2005 through to 2009.

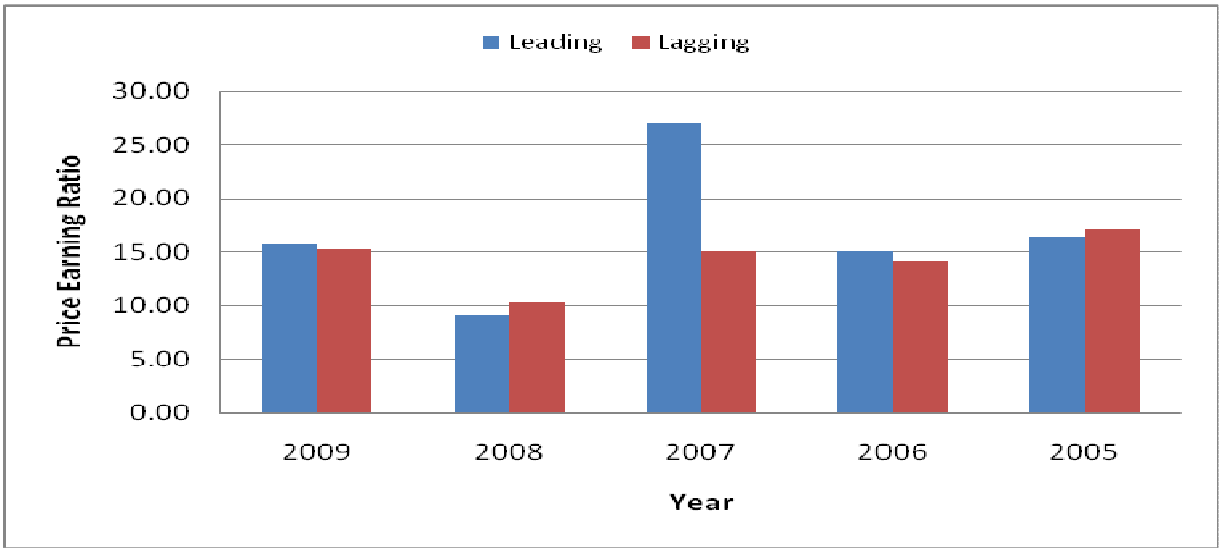


Figure 5: Average P/E Ratio for Leading and Lagging CSP Firms 2005-2009

Over the five years covered by this study, there was no consistency regarding means of average P/E ratios for leading and lagging CSP firms. Leading CSP firms outperformed

leading CSP firms in three of the five years covered by this study (i.e. in 2006, 2007 and 2009). In 2005 and 2008, lagging CSP firms outperformed leading CSP firms. The results of the t-tests are presented in Table 12.

Table 12: Independent Two sample T-tests Results (Two-tail): P/E Ratio

P/E Ratio						
	Leading		Lagging			
Period	Mean	Observations	Mean	Observations	t-Stat	*p*-Value
2009	15.77	24	15.32	29	0.21	0.83
2008	9.17	21	10.34	31	-0.80	0.43
2007	26.97	14	15.08	35	1.72	0.09
2006	15.09	11	14.15	30	0.51	0.61
2005	16.38	8	17.08	31	-0.07	0.94

The results on Table 12 indicate that, at 5% significance level, the means of P/E ratios for leading and lagging CSP firms for five years are not significantly different.

4.3.2 *Results based on CSP and accounting measures in the industrial sector*

In this section, graphical representation of the results based on accounting measures is presented for the industrial sector only. Subsequently, the results of the independent two-sample T-tests of significance is presented.

CSP and ROA for the industrial sector

Figure 6 shows the graphical representation of the average ROA for leading and lagging CSP firms in the industrial sector for 5 years from 2005 through to 2009.

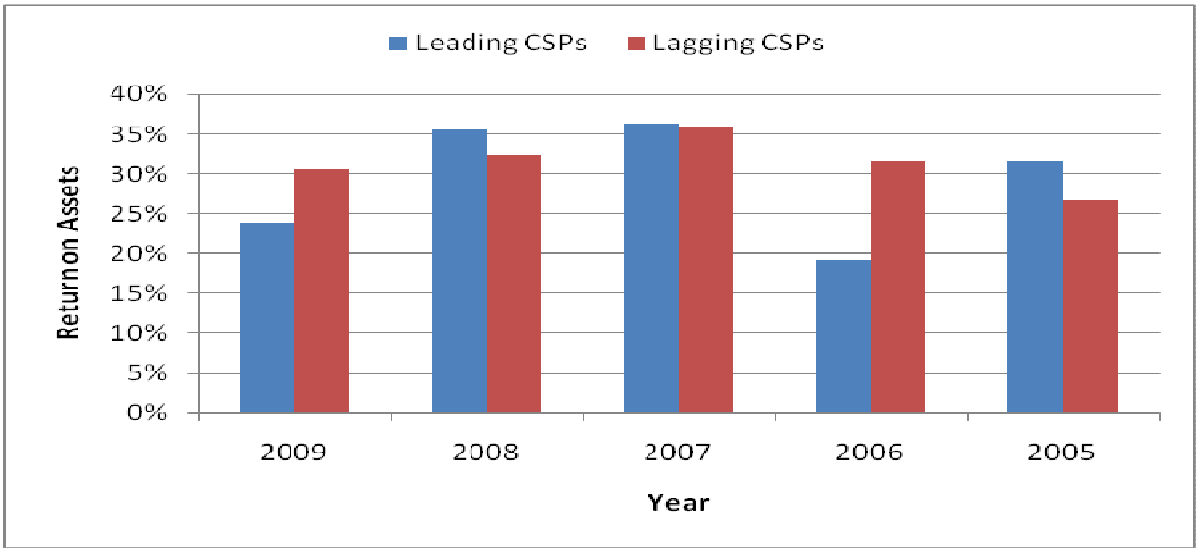


Figure 6: Average Return on Assets for leading and lagging CSP firms in Industrial Sector (2005-2009)

In the industrial sector, leading CSP firms outperformed lagging CSP firms for three (i.e.2005, 2007 and 2008) out of the five years under analysis when the performance is measured by ROA.

CSP and ROE for the industrial sector

Figure 7 shows the graphical representation of the average ROE for leading and lagging CSP firms in the industrial sector for 5 years from 2005 through to 2009.

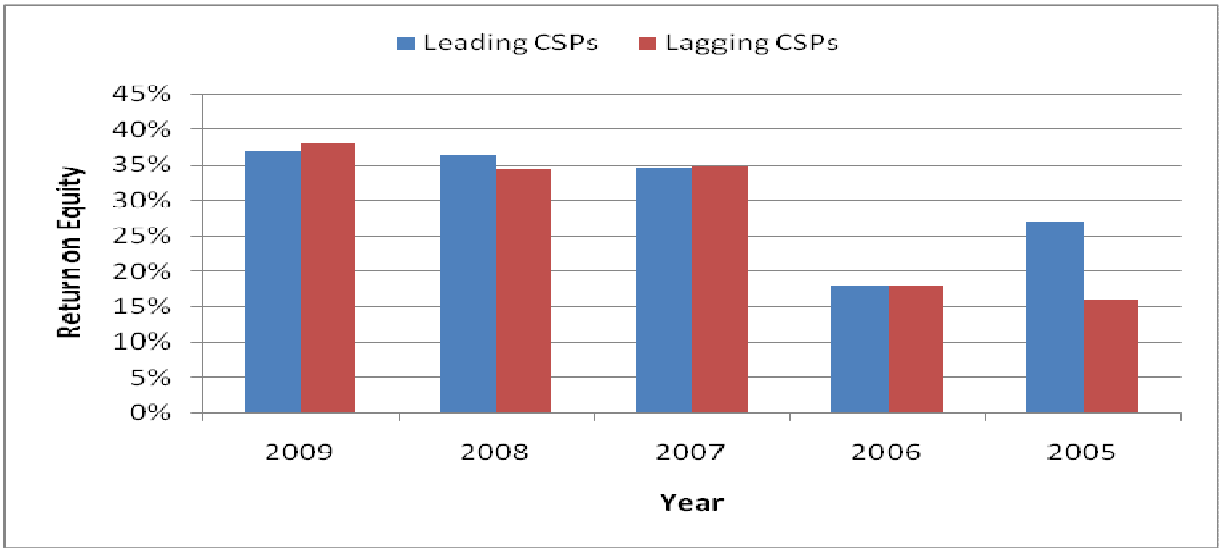


Figure 7: Average Return on Equity for leading and lagging CSP firms in Industrial Sector (2005-2009)

In the industrial sector, average ROE results for leading and lagging CSP firms were mixed. In 2006 and 2007, there was no difference in performance. In 2005 and 2008, leading CSP firms outperformed lagging CSP firms while in 2009 lagging CSP firms outperformed leading CSP firms.

CSP and PE for the industrial sector

Figure 8 shows the graphical representation of the average PE for leading and lagging CSP firms in the industrial sector for 5 years from 2005 through to 2009.

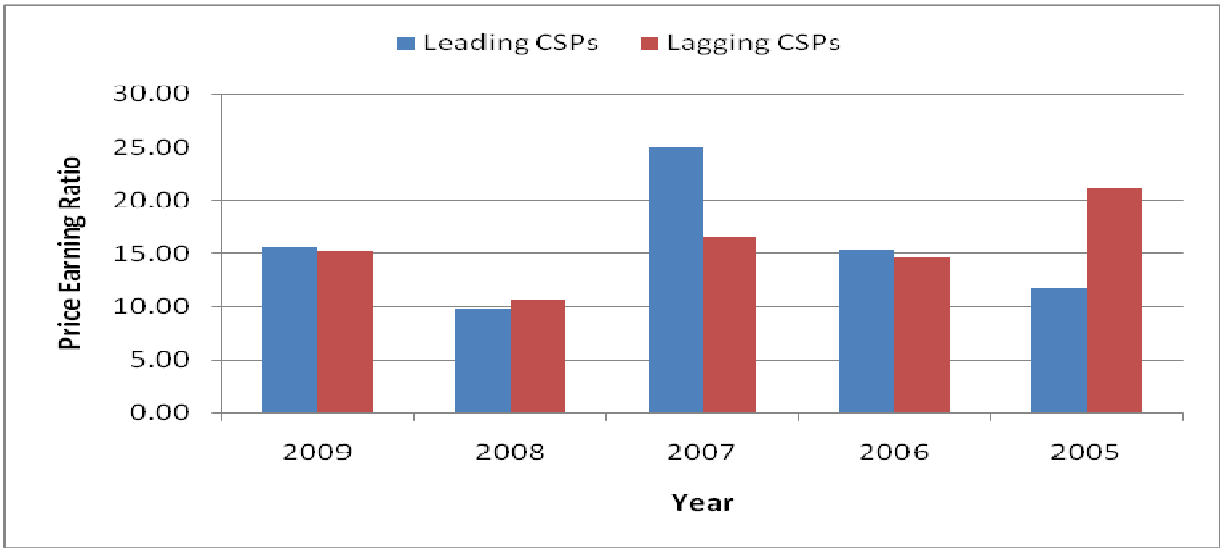


Figure 8: Average PE Ratio for leading and lagging CSP firms in the Industrial Sector (2005-2009)

In the industrial sector, using PE as a performance measure, leading CSP firms outperformed lagging CSP firms in three (i.e. 2006, 2007 and 2009) out of the five years analysed. In the other two years (2005 and 2008), lagging CSP firms outperformed leading CSP firms.

Results of T-tests using accounting measures in the industrial sector

Table 13 shows the results of independent T-tests of significance of means using accounting measures of performance for five years (2005-2009).

Table 13: Independent Two sample T-tests Results (Two-tail) for ROA, ROE and PE ratio in the industrial sector

INDUSTRIAL SECTOR														
Period	Observations		RETURN ON ASSETS				RETURN ON EQUITY				P/E RATIO			
			Mean		Output		Mean		Output		Output		Output	
	Leading CSPs	Lagging CSPs	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value
2009	17	15	24%	31%	-0.74	0.47	37%	38%	-0.17	0.87	15.66	15.25	0.14	0.89
2008	11	18	36%	32%	0.33	0.75	36%	34%	0.27	0.79	9.89	10.62	-0.42	0.68
2007	7	19	36%	36%	0.03	0.98	35%	35%	-0.02	0.98	25.00	16.56	1.47	0.15
2006	6	19	19%	32%	-1.06	0.30	18%	18%	0.01	1.00	15.29	14.62	0.30	0.77
2005	3	18	32%	27%	0.28	0.78	27%	16%	0.82	0.42	11.77	21.15	-0.47	0.64

As the table indicates, at 5% significance level, the differences between the means of ROA, ROE and P/E ratios for leading and lagging CSP firms are not significantly different for all the five years in the industrial sector.

4.3.3 *Results based on CSP and accounting measures in the financial sector*

In this section, graphical representation of the results based on accounting measures is presented for the financial sector. Subsequently, the results of the independent two-sample T-tests of significance is presented.

CSP and ROA for the financial sector

Figure 9 shows the graphical representation of the average ROA for leading and lagging CSP firms in the financial sector for 5 years from 2005 through to 2009.

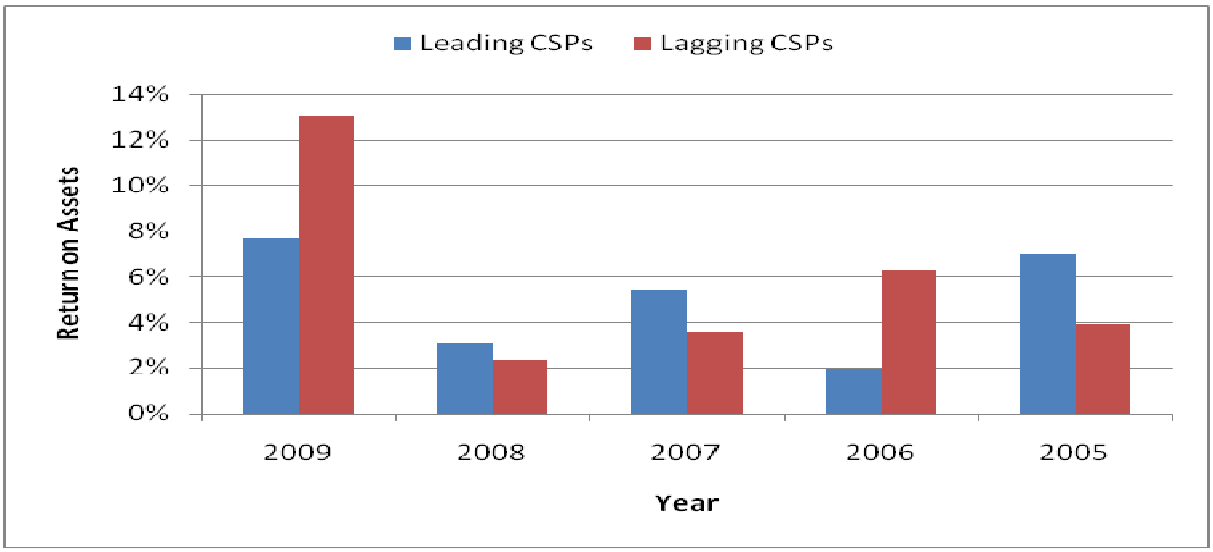


Figure 9: Average Return on Assets for leading and lagging CSP firms in the Financial Sector (2005-2009)

Lagging CSP firms outperformed leading CSP firms in three (i.e. 2005, 2007 and 2008) out of the five years analysed using ROA as a performance measure in the financial sector. In 2006 and 2009 however, lagging CSP firms outperformed leading CSP firms.

CSP and ROE for the financial sector

Figure 10 shows the graphical representation of the average ROE for leading and lagging CSP firms in the financial sector for 5 years from 2005 through to 2009.

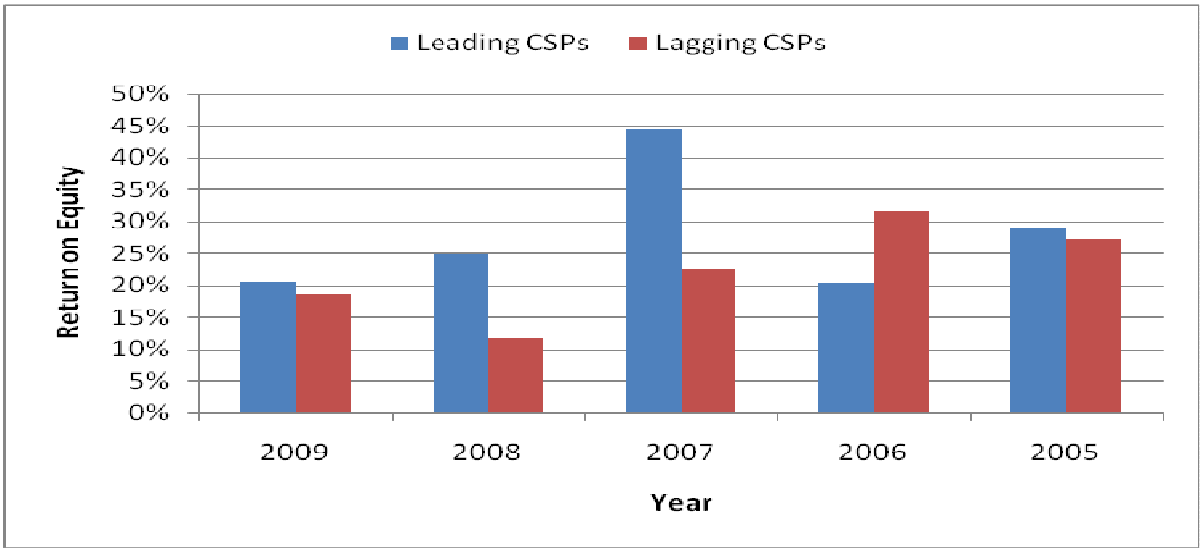


Figure 10: Average Return on Equity for leading and lagging CSP firms in the Financial Sector (2005-2009)

Using ROE as a performance measure, leading CSP firms outperformed lagging CSP firms in four (i.e. 2005, 2007, 2008 and 2009) out of the five years under analysis in the financial sector. It is only in 2006 that lagging CSP firms outperformed leading CSP firms.

CSP and PE ratio for the financial sector

Figure 11 shows the graphical representation of the average PE ratio for leading and lagging CSP firms in the financial sector for 5 years from 2005 through to 2009.

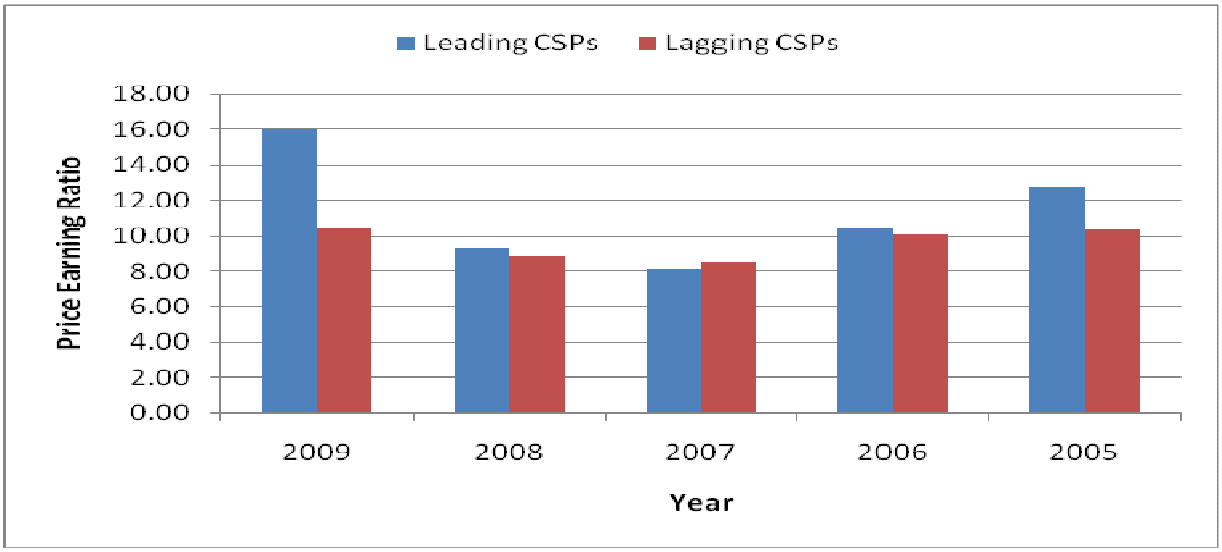


Figure 11: Average PE Ratio for leading and lagging CSP firms in the Financial Sector (2005-2009)

Using PE ratio as a measure of performance, leading CSP firms outperformed lagging CSP firms in four (i.e. 2005, 2006, 2008 and 2009) out of the five years analysed in the financial sector. It is only in 2007 that lagging CSP firms outperformed leading CSP firms.

Results of T-tests using accounting measures in the financial sector

Table 14 shows the results of independent T-tests of significance of means using accounting measures of performance in the financial sector for five years (2005-2009).

Table 14: Independent Two sample T-tests Results (Two-tail) for ROA, ROE and PE ratio in the financial sector

FINANCIAL SECTOR														
Period	Observations		RETURN ON ASSETS				RETURN ON EQUITY				P/E RATIO			
			Mean		Output		Mean		Output		Mean		Output	
	Leading CSPs	Lagging CSPs	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value
2009	4	7	8%	13%	-0.96	0.36	21%	19%	0.41	0.69	15.98	10.46	1.92	0.09
2008	4	8	3%	2%	0.40	0.70	25%	12%	2.16	0.06	9.25	8.83	0.19	0.85
2007	3	9	5%	4%	0.54	0.60	44%	23%	3.34	0.01	8.19	8.49	-0.17	0.86
2006	2	7	2%	6%	-0.84	0.43	20%	32%	-1.53	0.17	10.47	10.07	0.15	0.88
2005	2	10	7%	4%	0.59	0.57	29%	27%	0.24	0.82	12.79	10.32	1.39	0.19

As the table indicates, at 5% significance level, the differences between the means of ROA, ROE and P/E ratios for leading and lagging CSP firms are not significantly different for all the five years in the financial sector. However, there is an exception in ROE in 2007 where it is found that leading CSP firms significantly outperformed lagging CSP firms. However, this outperformance was limited to only one period and is thus not a clear indication of outperformance, given that no other period found a statistically significant difference between leading and lagging CSP firms.

4.3.4 *Results based on CSP and accounting measures in the mining sector*

CSP and ROA for the mining sector

Figure 12 shows the graphical representation of the average ROA for leading and lagging CSP firms in the mining sector for 5 years from 2005 through to 2009.

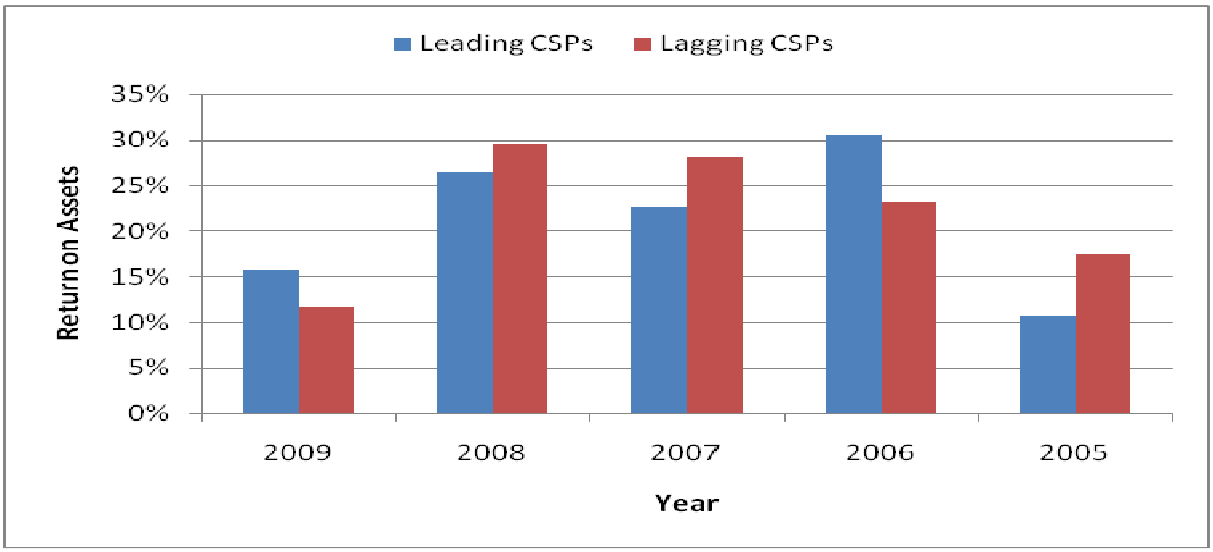


Figure 12: Average Return on Assets for leading and lagging CSP firms in the Mining Sector (2005-2009)

Lagging CSP firms outperformed leading CSP firms in three (i.e. 2005, 2007 and 2008) out of the five years for which the analysis was conducted in the mining sector using ROA as a measure of performance. However, in 2006 and 2009, leading CSP firms outperformed lagging CSP firms.

CSP and ROE for the mining sector

Figure 13 shows the graphical representation of the average ROE for leading and lagging CSP firms in the mining sector for 5 years from 2005 through to 2009.

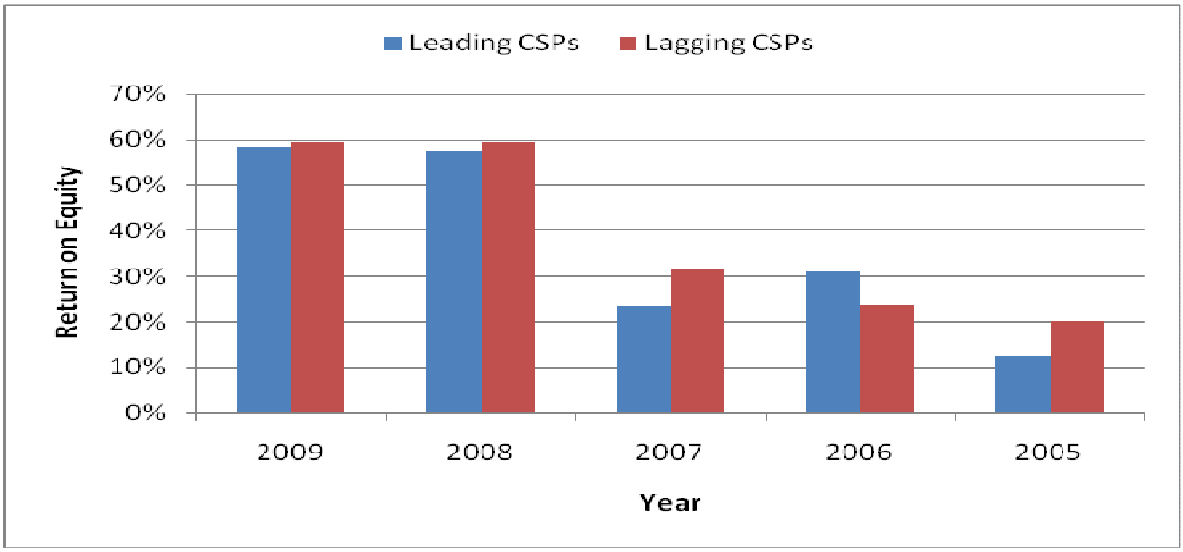


Figure 13: Average Return on Equity for leading and lagging CSP firms in the Mining Sector (2005-2009)

Lagging CSP firms outperformed leading CSP firms in four (i.e. 2005, 2007, 2008 and 2009) out of the five years for which data was analysed using ROE as a measure of performance. It is only in 2006 that leading CSP firms outperformed lagging CSP firms.

CSP and PE ratio for the mining sector

Figure 14 shows the graphical representation of the average PE ratio for leading and lagging CSP firms in the mining sector for 5 years from 2005 through to 2009.

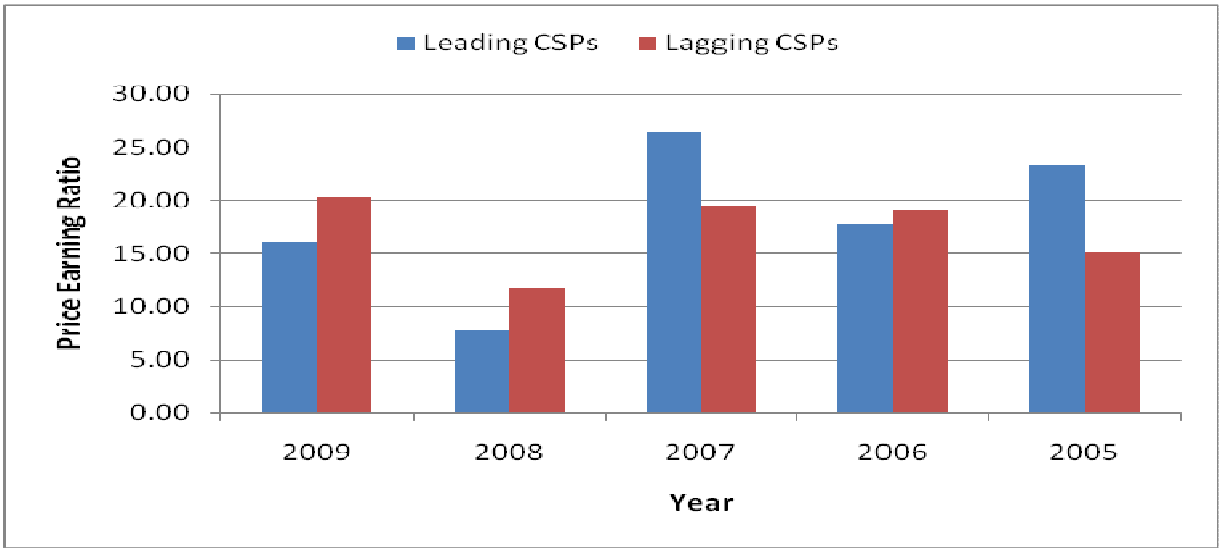


Figure 14: Average PE Ratio for leading and lagging CSP firms in the Mining Sector (2005-2009)

Using PE ratio as a performance measure, lagging CSP firms outperformed leading CSP firms in three (i.e. 2006, 2008 and 2009) out of the five years analysed in the mining sector. In 2005 and 2007, leading CSP firms outperformed lagging CSP firms.

Results of T-tests using accounting measures in the mining sector

Table 15 shows the results of independent T-tests of significance of means using accounting measures of performance in the financial sector for five years (2005-2009).

Table 15: Independent Two sample T-tests Results (Two-tail) for ROA, ROE and PE ratio in the mining sector

MINING SECTOR														
Period	Observations		RETURN ON ASSETS				RETURN ON EQUITY				P/E RATIO			
			Mean		Output		Mean		Output		Mean		Output	
	Leading CSPs	Lagging CSPs	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value
2009	3	7	16%	12%	0.73	0.49	58%	59%	-0.10	0.92	16.11	20.34	-1.09	0.31
2008	6	5	27%	30%	-0.35	0.73	57%	59%	-0.28	0.78	7.81	11.77	-0.79	0.45
2007	4	7	23%	28%	-0.47	0.65	24%	32%	-0.60	0.57	26.40	19.54	1.75	0.11
2006	3	4	30%	23%	0.65	0.54	31%	24%	0.68	0.53	17.79	19.07	2.02	0.80
2005	3	3	11%	17%	0.39	0.39	13%	20%	-0.72	0.51	23.38	15.13	1.91	0.13

As the table indicates, at 5% significance level, the differences between the means of ROA, ROE and P/E ratios for leading and lagging CSP firms are not significantly different for all the five years in the mining sector.

4.3.5 *Results based accounting measures on data sorted by extreme sample (high impact versus lagging CSP firms)*

CSP and ROA for the extreme CSP firms for all industries

Figure 15 shows the graphical representation of the average ROA for high impact and lagging CSP firms for all industries for 5 years from 2005 through to 2009.

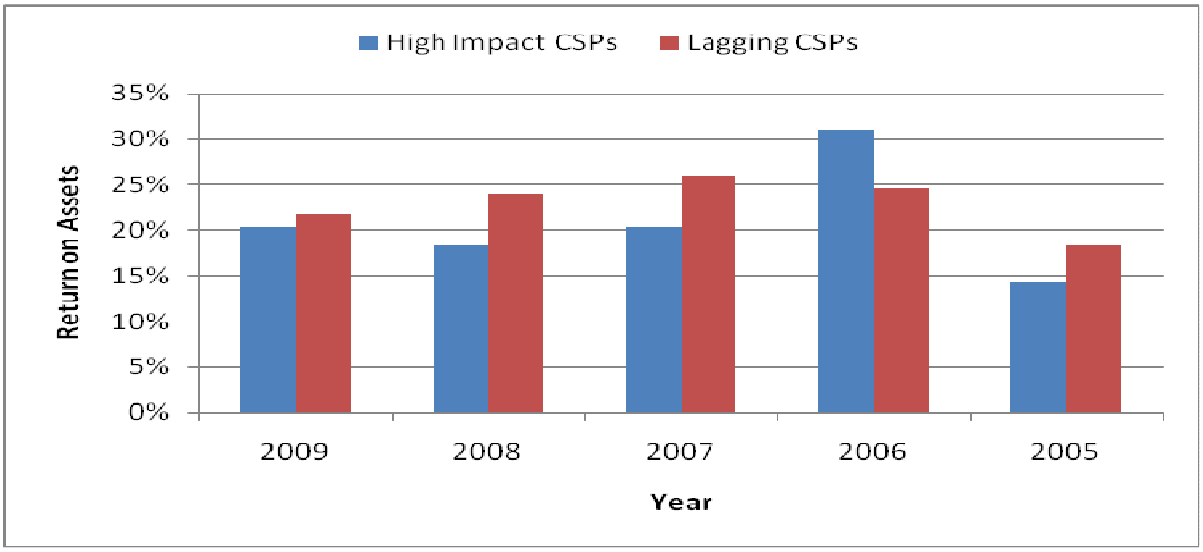


Figure 15: Average Return on Assets for high impact and lagging CSP firms for All Industrials (2005-2009)

Lagging CSP firms outperformed high impact CSP firms in four (i.e. 2005, 2007, 2008 and 2009) out of the five years for which the analysis was conducted using ROA as a measure of performance. It is only in 2006 that leading CSP firms outperformed lagging CSP firms.

CSP and ROE for the extreme CSP firms for all industries

Figure 16 shows the graphical representation of the average ROE for high impact and lagging CSP firms for all industries for 5 years from 2005 through to 2009.

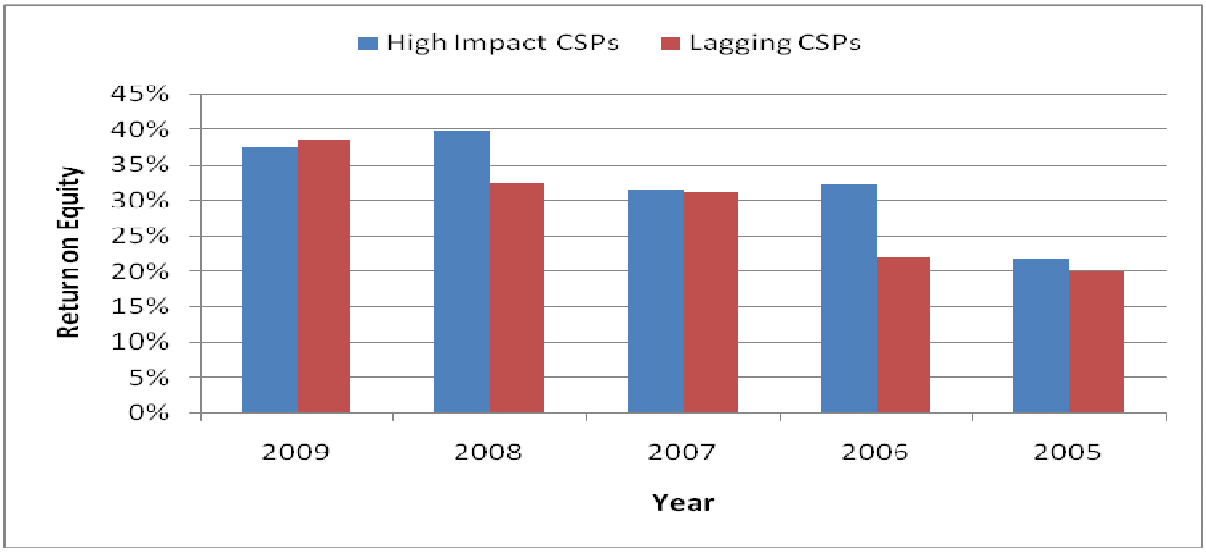


Figure 16: Average Return on Equity for high impact and lagging CSP firms for all Industries (2005-2009)

High impact CSP firms outperformed lagging CSP firms in four (i.e. 2005, 2006, 2007 and 2008) out of the five years for which the analysis was conducted using ROE as a measure of performance. It was only in 2009 that lagging CSP firms outperformed lagging CSP firms.

CSP and PE ratio for the extreme CSP firms for all industries

Figure 17 shows the graphical representation of the average PE ratio for high impact and lagging CSP firms for all industries for 5 years from 2005 through to 2009.

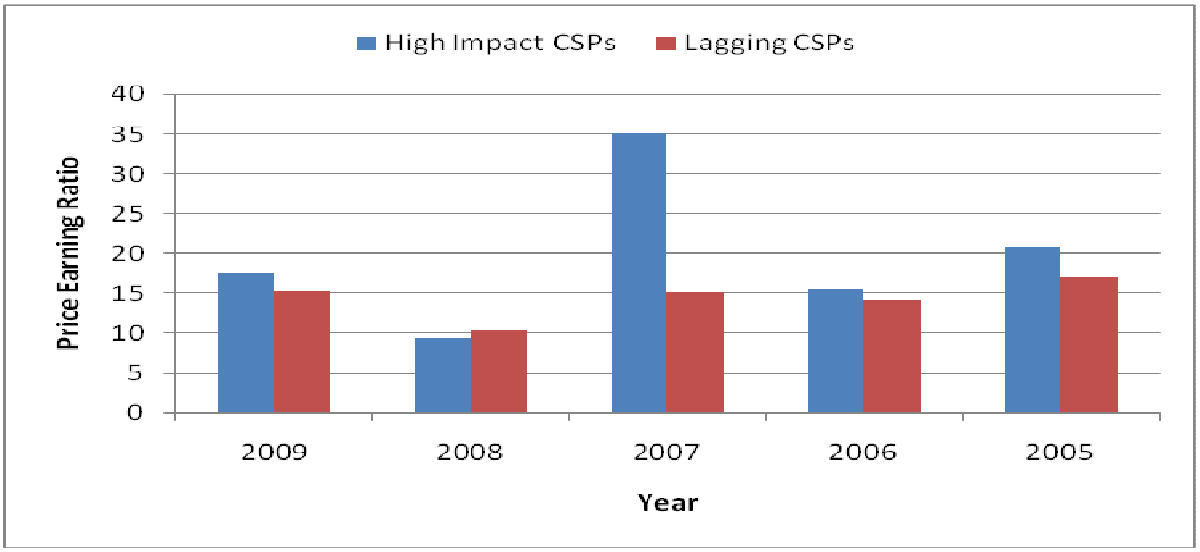


Figure 17: Average PE Ratio for high impact and lagging CSP firms for All Industries (2005-2009)

High impact CSP firms outperformed lagging CSP firms in four (2005, 2006, 2007 and 2009) out of the five years analysed. It was only in 2008 that lagging CSP firms outperformed high impact CSP firms.

Table 16 shows the results of independent T-tests of significance of means using accounting measures of performance in the financial sector for five years (2005-2009).

Table 16: Independent Two sample T-tests Results (Two-tail) for ROA, ROE and PE ratio for all industrials in the extreme sample

ALL INDUSTRIES														
Period	Observations		RETURN ON ASSETS				RETURN ON EQUITY				P/E RATIO			
			Mean		Output		Mean		Output		Mean		Output	
	High Impact CSPs	Lagging CSPs	High Impact CSPs	Lagging CSPs	t-Stat	*p*-Value	High Impact CSPs	Lagging CSPs	t-Stat	*p*-Value	High Impact CSPs	Lagging CSPs	t-Stat	*p*-Value
2009	13	29	20%	22%	-0.17	0.86	37%	39%	-0.15	0.88	17.61	15.32	0.84	0.40
2008	9	31	18%	24%	-0.71	0.48	40%	33%	0.85	0.40	9.33	10.34	-0.47	0.64
2007	9	35	20%	26%	-0.59	0.56	32%	31%	0.06	0.96	35.06	15.08	2.41	0.02
2006	2	30	31%	25%	0.35	0.73	32%	22%	0.76	0.45	15.62	14.15	0.38	0.71
2005	4	31	14%	18%	-0.32	0.75	22%	20%	0.18	0.85	20.79	17.08	0.28	0.78

As the table indicates, at 5% significance level, the differences between the means of ROA, ROE and P/E ratios for leading and lagging CSP firms are not significantly different for all the five years analysed. However, there is an exception in PE ratio in 2007 where it is found that high impact CSP firms significantly outperformed lagging CSP firms. However, this outperformance was limited to only one period and was thus not a clear indication of outperformance, given that no other period found a statistically significant difference between high impact CSP firms and lagging CSP firms in this analysis.

4.3.6 *Results for hypothesis 1*

The null hypothesis states that the accounting performance of leading CSP firms is expected to be no different from those of lagging CSP firms. The alternative hypothesis states that the financial performance of leading CSP firms, as measured by accounting measures, is significantly higher than that of lagging CSP firms.

For all the three measures of financial performances (ROA, ROE and P/E ratio) and for all the five years under consideration (2005 to 2009), there was no evidence to reject the null hypothesis at 5% significant level. There is therefore no evidence to reject the hypothesis that accounting performance of leading CSP firms is no different from lagging CSP firms.

This is illustrated in Tables 10, 11, 12, 13, 14, 15 and 16 where all P-values are above 0.05, thus suggesting that there is no enough evidence to reject the null hypothesis. This was consistent across the five years, for all accounting measures and across all industries. There were only two outcomes involving ROE in 2005 and PE ratio in 2007 where there were significant findings under sample sorted by extreme sample and by industry (financial sector) respectively. These two findings were too few (two significant findings compared to 58 insignificant findings) and limited to two years only and could therefore could not give a clear indication of outperformance.

4.3.7 *Results for hypothesis 2*

The null hypothesis states that the accounting performance of leading CSP firms is no different from those of lagging CSP firms. The alternative hypothesis states that the financial performance of lagging CSP firms, as measured by accounting measures, is expected to be significantly higher than that of leading CSP firms.

As indicated under Hypothesis 1, the high P-values indicate that there is no evidence to reject the null hypothesis for all the five years and for all the three accounting performance measures under consideration regardless of whether the sample is sorted into respective industrial sectors or not.

4.4 Results based market-based measures

The means of various market-based measures of performance for both leading and lagging CSP firms are presented graphically in this section. Additionally, high impact and lagging CSP firms are separately analysed and results presented. The results of independent t-Tests of significance (two-tail) are also be presented and described. These results are used to discuss Hypothesis 3 and 4.

The two-tail independent t-tests were carried to establish the following:

- Whether the market-based performance of leading CSP firms is higher than that of lagging CSP firms
- Whether the market-based performance of lagging CSP firms is higher than that of leading CSP firms

4.4.1 *Results based on CSP and market-based measures for all industries*

CSP and MVA for all industries

Figure 18 shows the graphical representation of the average MVA for leading and lagging CSP firms for 5 years from 2005 through to 2009.

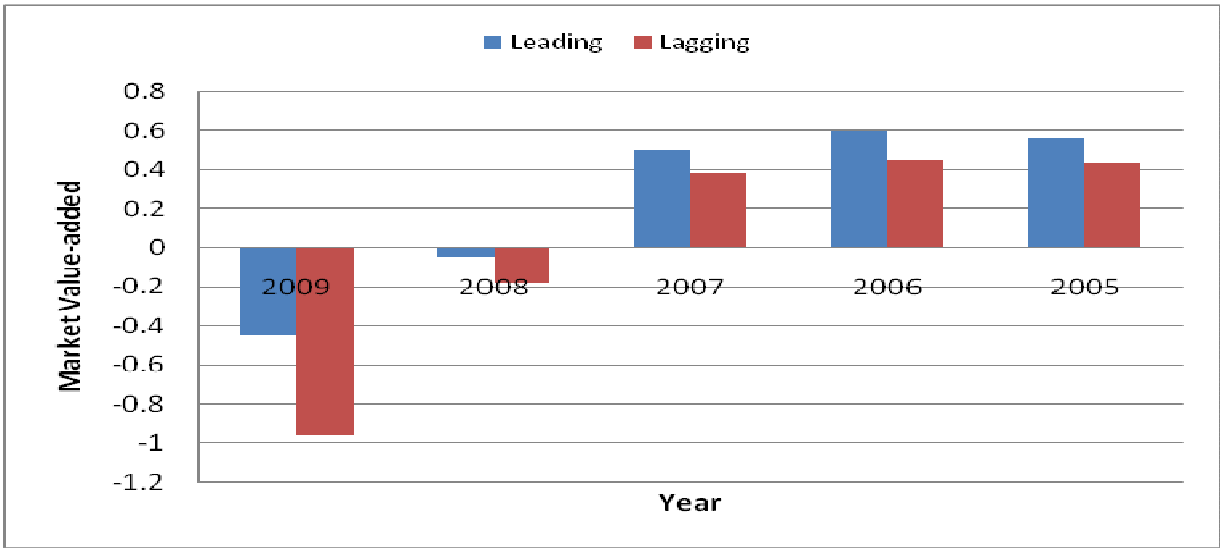


Figure 18: Market Value-Added for Leading and Lagging CSP Firms 2005-2009

Based on average MVA, leading CSP firms consistently outperformed lagging CSP firms over the five year period under consideration. The results of the t-tests are presented in Table 17.

Table 17: Independent Two sample T-tests Results (Two-tail): MVA

Market Value-Added						
	Leading		Lagging			
Period	**Mean**	**Observations**	**Mean**	**Observations**	**t-Stat**	***p*-Value**
2009	-45%	24	-96%	29	0.25	0.80
2008	-5%	21	-18%	31	0.45	0.65
2007	50%	14	38%	35	0.76	0.45
2006	60%	11	45%	30	1.04	0.30
2005	56%	8	44%	31	0.22	0.45

The results on Table 17 indicate that, at 5% significance level, the differences between the means of ROA for leading and lagging CSP firms for all the five years are not significantly different.

CSP and P/B Ratio for all industries

Figure 19 shows the graphical representation of the average P/B Ratio for leading and lagging CSP firms for 5 years from 2005 through to 2009.

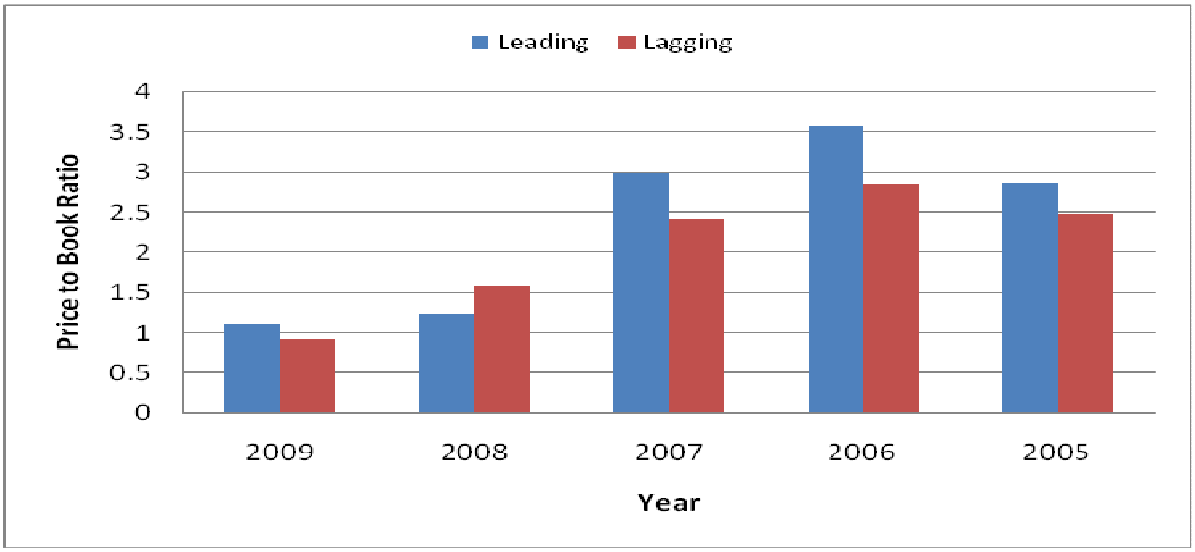


Figure 19: Average P/B Ratio Leading and Lagging CSP Firms 2005-2009

For four years (2005, 2006, 2007 and 2009) out of the five under consideration, the P/B ratio of leading CSP firms outperformed lagging CSP firms. In 2008, lagging CSP firms outperformed leading CSP firms. The results of the t-tests are presented in Table 18.

Table 18: Independent Two sample T-tests Results (Two-tail): P/B Ratio

P/B Ratio						
	Leading		Lagging			
Period	**Mean**	**Observations**	**Mean**	**Observations**	**t-Stat**	***p*-Value**
2009	1.12	24	0.92	29	0.93	0.36
2008	1.24	21	1.59	31	-1.34	0.19
2007	2.99	14	2.42	35	1.08	0.29
2006	3.58	11	2.85	30	1.12	0.27
2005	2.86	8	2.48	31	0.78	0.44

The results on Table 18 indicate that, at 5% significance level, the means of P/B ratios for leading and lagging CSP firms for all the five years are not significantly different.

CSP and Absolute Returns for all industries

Figure 20 shows the graphical representation of the average absolute returns for leading and lagging CSP firms for 5 years from 2005 through to 2009.

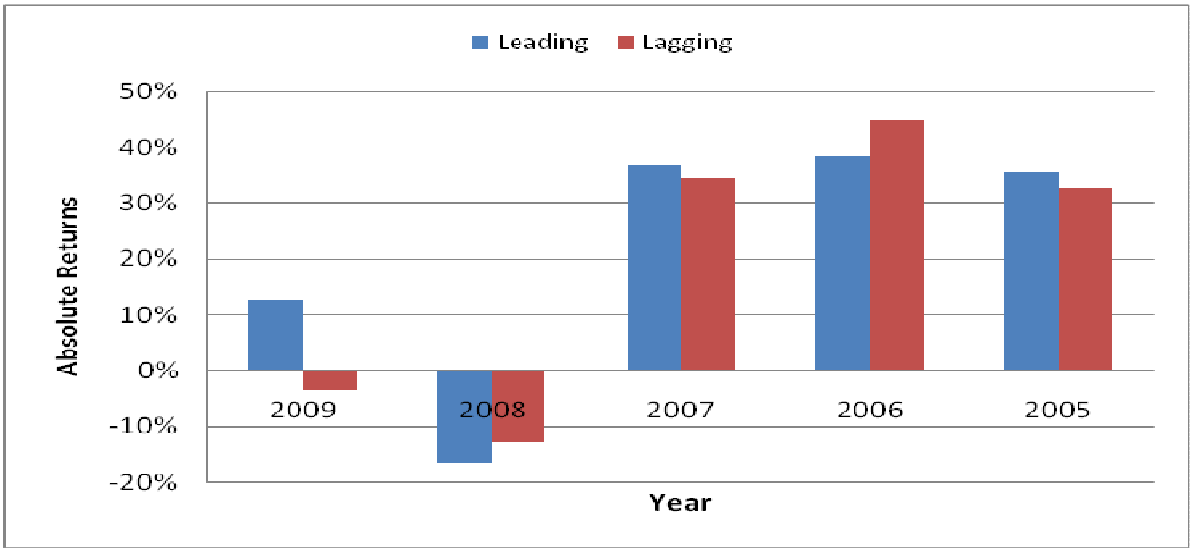


Figure 20: Average Absolute Returns for Leading and Lagging CSP Firms 2005-2009

For three years (2005, 2007 and 2009) out of the five under consideration, leading CSP firms outperformed lagging CSP firms based on absolute returns. For the other two years (2008 and 2006), lagging CSP firms outperformed lagging CSP firms. The results of the t-tests are presented in Table 19.

Table 19: Independent Two sample T-tests Results (Two-tail): Absolute Returns

Absolute Returns						
	Leading		Lagging			
Period	**Mean**	**Observations**	**Mean**	**Observations**	**t-Stat**	***p*-Value**
2009	13%	24	-3%	29	1.90	0.06
2008	-17%	21	-13%	31	-0.35	0.73
2007	37%	14	35%	35	0.16	0.87
2006	38%	11	45%	30	-0.41	0.68
2005	36%	8	32%	31	0.25	0.80

The results on Table 19 indicate that, at 5% significance level, the differences between the means of absolute returns for leading and lagging CSP firms for all the five years are not significantly different.

4.4.2 *Results based market-based measures in the industrial sector*

In this section, graphical representation of the results is presented for market-based measures of performance in the industrial sector. Subsequently, the results of the independent two-sample T-tests for market-based measures in this sector are presented.

CSP and MVA for the industrial sector

Figure 21 shows the graphical representation of the average MVA for leading and lagging CSP firms in the industrial sector for 5 years from 2005 through to 2009.

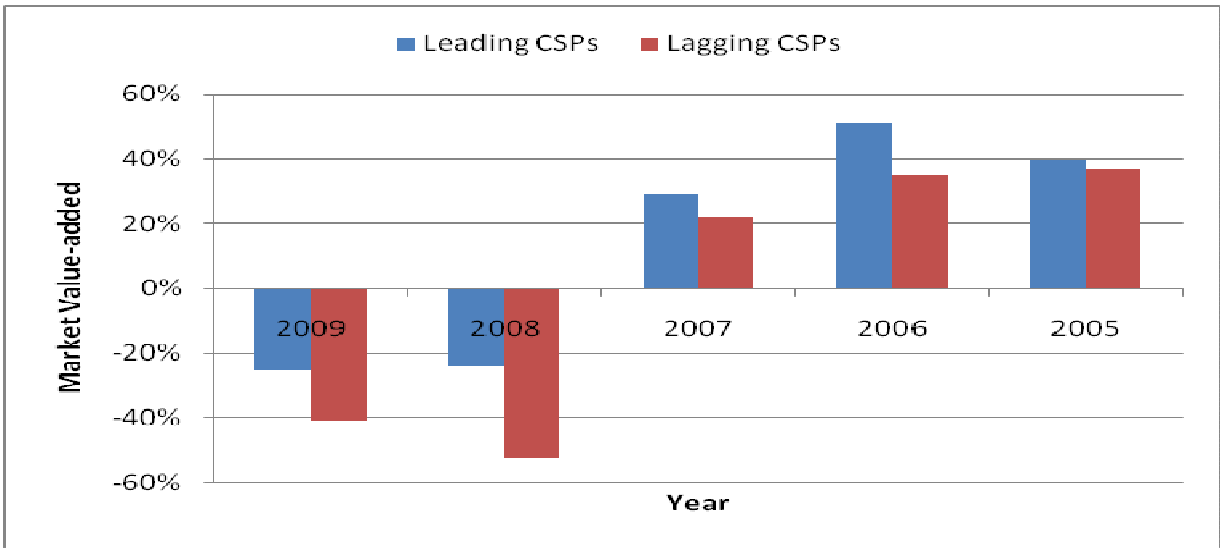


Figure 21: Average MVA for leading and lagging CSP firms in the Industrial Sector (2005-2009)

In all the five years, leading CSP firms consistently outperformed lagging CSP firms in the industrial sector when using MVA as the performance measure. This is consistent with the results from all industries analysis based on MVA as discussed in Section 4.3.2.

CSP and P/B ratio for the industrial sector

Figure 22 shows the graphical representation of the average P/B ratio for leading and lagging CSP firms in the industrial sector for 5 years from 2005 through to 2009.

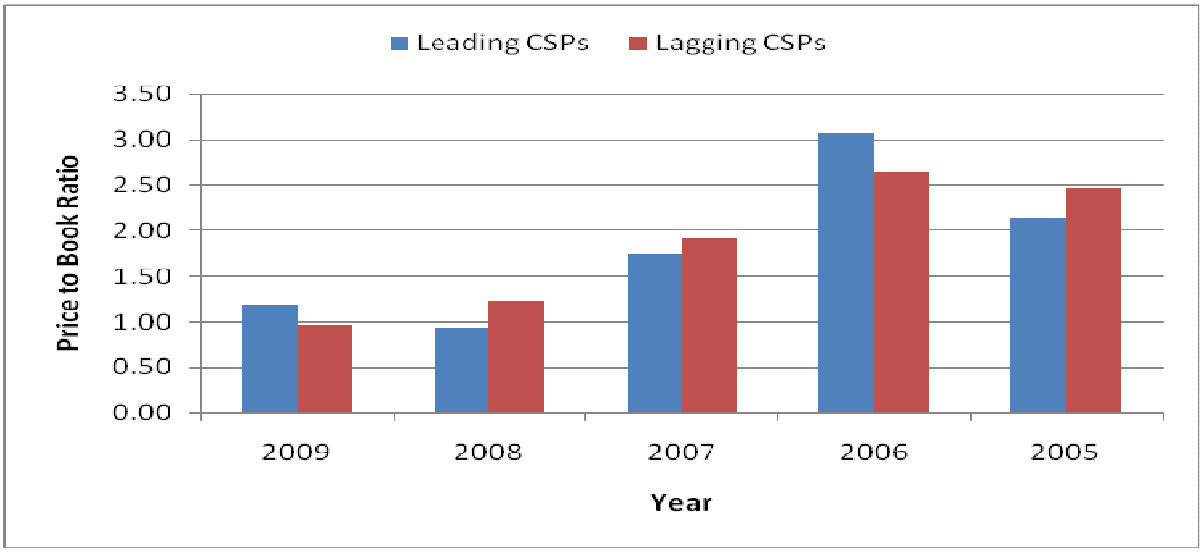


Figure 22: Average P/B Ratio for leading and lagging CSP firms in the Industrial Sector (2005-2009)

Lagging CSP firms outperformed leading CSP firms in three (2005, 2007 and 2008) out of the five years under analysis using P/B ratio as a measure of performance. In 2006 and 2009, lagging CSP firms outperformed leading CSP firms.

CSP and absolute for the industrial sector

Figure 23 shows the graphical representation of the average absolute returns for leading and lagging CSP firms in the industrial sector for 5 years from 2005 through to 2009.

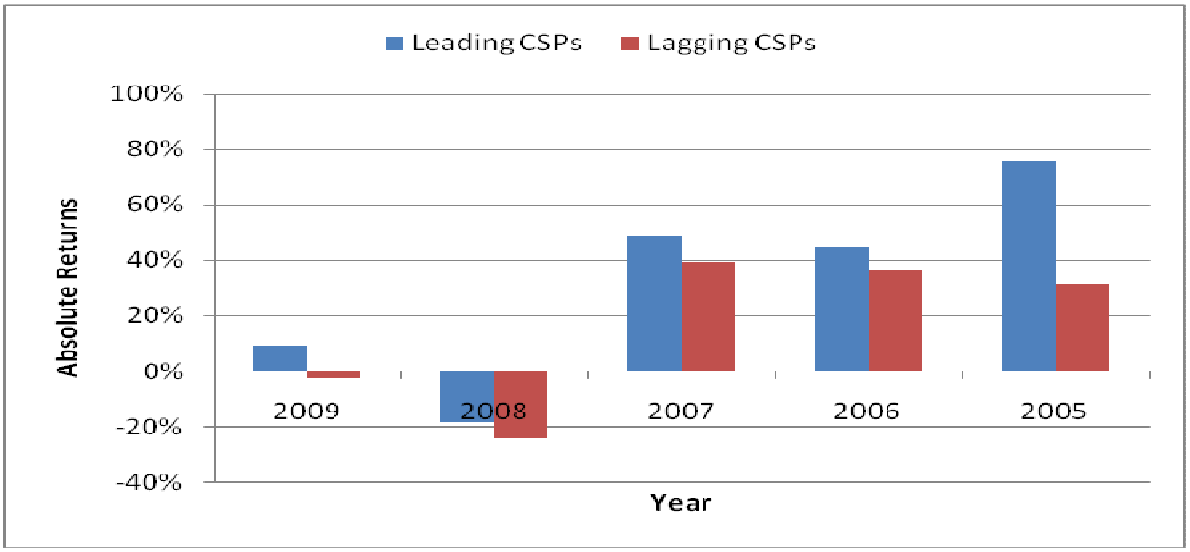


Figure 23: Average Absolute Returns for leading and lagging CSP firms in the Industrial Sector (2005-2009)

Using absolute returns as a performance measure, leading CSP firms consistently outperformed lagging CSP firms for all the five years under consideration in the industrial sector.

Results of T-tests using market-based measures in the industrial sector

Table 20 shows the results of independent T-tests of significance of means using market-based measures of performance in the industrial sector for five years (2005-2009).

Table 20: Independent Two sample T-tests Results (Two-tail) for MVA, P/B ratio and absolute returns in the industrial sector

INDUSTRIAL SECTOR														
Period	Observations		MARKET VALUED-ADDED				P/B RATIO				ABSOLUTE RETURNS			
			Mean		Output		Mean		Output		Mean		Output	
	Leading CSPs	Lagging CSPs	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value
2009	17	15	-25%	-41%	0.53	0.60	1.19	0.96	0.87	0.39	9%	-3%	1.18	0.25
2008	11	18	-24%	-53%	0.61	0.55	0.94	1.23	-1.05	0.31	-19%	-24%	0.52	0.60
2007	7	19	29%	22%	0.28	0.78	1.75	1.91	-0.34	0.74	49%	39%	0.52	0.61
2006	6	19	51%	35%	0.73	0.47	3.07	2.64	0.46	0.65	45%	36%	0.53	0.60
2005	3	18	40%	37%	0.09	0.93	2.14	2.48	-0.40	0.69	76%	31%	2.73	0.01

As the table indicates, at 5% significance level, the differences between the means of MVA, P/B ratio and absolute returns for leading and lagging CSP firms are not significantly different for all the five years in the industrial sector. However, there is an exception in absolute returns in 2005 where it was found that leading CSP firms significantly outperformed lagging CSP firms. However, this outperformance was limited to only one period and is thus not a clear indication of outperformance, given that no other period found a statistically significant difference between leading and lagging CSP firms in the industrial sector.

4.4.3 *Results based market-based measures in the financial sector*

In this section, graphical representation of the results is presented for market-based measures of performance in the financial sector. Subsequently, the results of the independent two-sample T-tests for market-based measures in this sector are presented.

CSP and MVA for the financial sector

Figure 24 shows the graphical representation of the average MVA for leading and lagging CSP firms in the financial sector for 5 years from 2005 through to 2009.

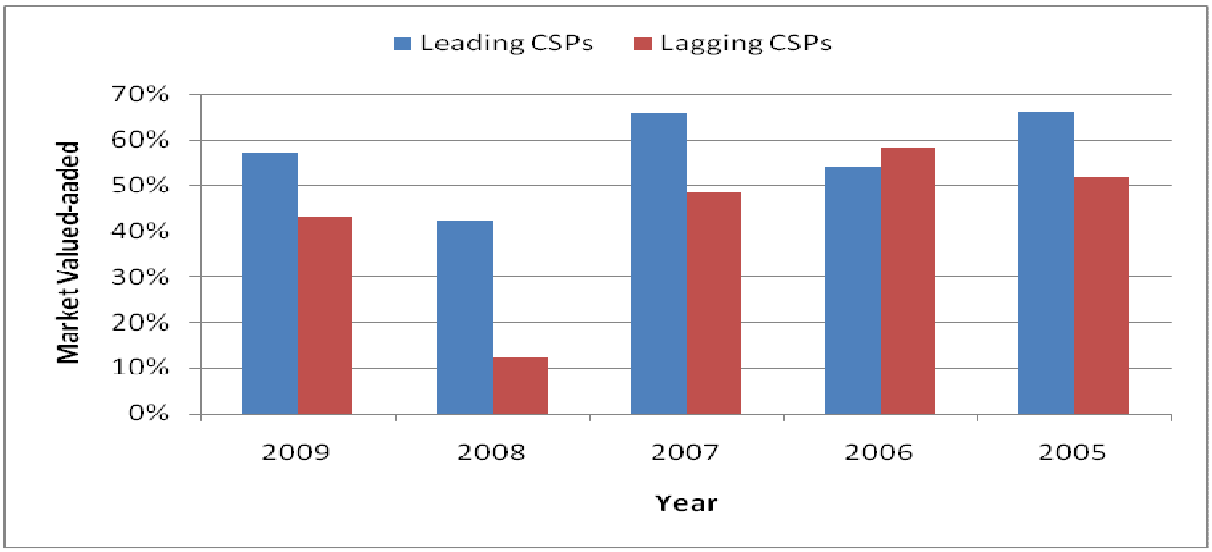


Figure 24: Average MVA for leading and lagging CSP firms in the Financial Sector (2005-2009)

With MVA as a measure of performance in the financial sector, lagging CSP firms outperformed leading CSP firms in four (i.e. 2005, 2007, 2008 and 2009) out of the five years analysed. It was only in 2006 that lagging CSP firms outperformed leading CSP firms.

CSP and P/B ratio for the financial sector

Figure 25 shows the graphical representation of the average P/B ratio for leading and lagging CSP firms in the financial sector for 5 years from 2005 through to 2009.

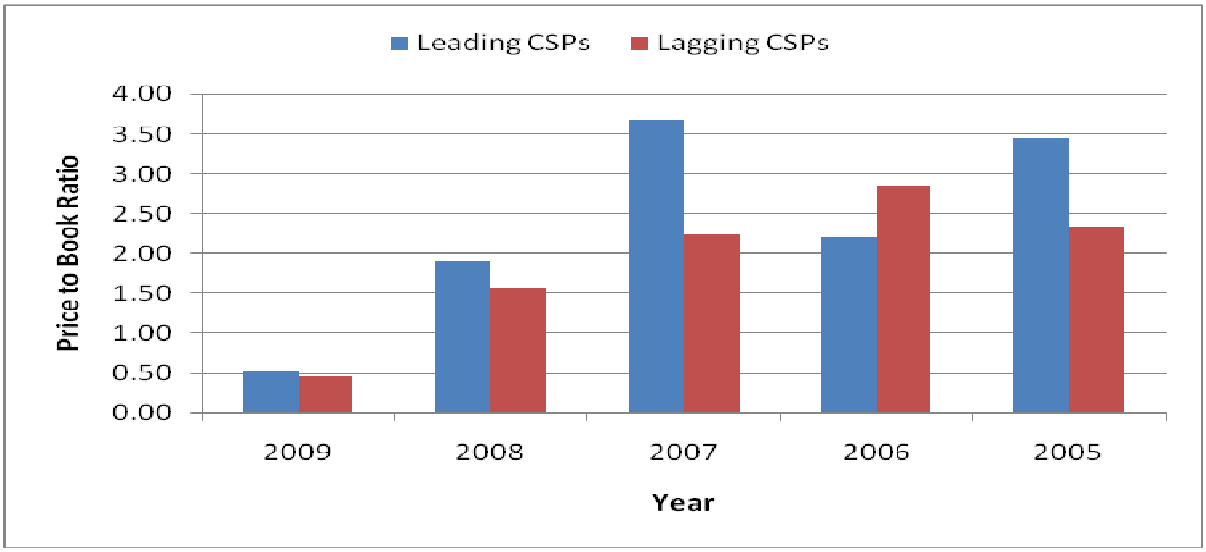


Figure 25: Average P/B Ratio for leading and lagging CSP firms in the Financial Sector (2005-2009)

Using P/B ratio as a measure of performance in the financial sector, leading CSP firms outperformed lagging CSP firms in four (i.e. 2005, 2007, 2008, 2009) out of the five years. It was only in 2006 that lagging CSP firms outperformed leading CSP firms.

CSP and absolute returns for the financial sector

Figure 26 shows the graphical representation of the average absolute returns for leading and lagging CSP firms in the financial sector for 5 years from 2005 through to 2009.

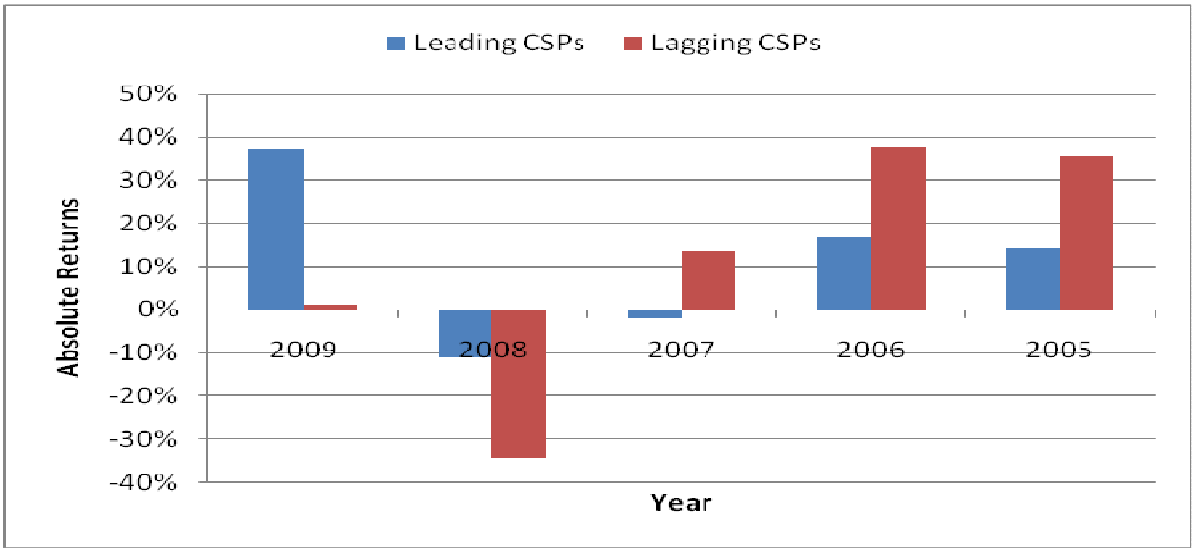


Figure 26: Average Absolute Returns for leading and lagging CSP firms in the Financial Sector (2005-2009)

Using absolute returns as a measure of performance in the financial sector, lagging CSP firms outperformed leading CSP firms in three (i.e. 2005, 2006 and 2007) out of the five years covered by this analysis. In 2008 and 2009, leading CSP firms outperformed lagging CSP firms.

Table 21 shows the results of independent T-tests of significance of means using market-based measures of performance in the financial sector for five years (2005-2009).

Table 21: Independent Two sample T-tests Results (Two-tail) for MVA, P/B ratio and absolute returns in the financial sector

FINANCIAL SECTOR														
Period	Observations		MARKET VALUED-ADDED				P/B RATIO				ABSOLUTE RETURNS			
			Mean		Output		Mean		Output		Mean		Output	
	Leading CSPs	Lagging CSPs	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value
2009	4	7	57%	43%	-0.32	0.75	0.52	0.45	0.16	0.88	37%	1%	2.69	0.01
2008	4	8	42%	12%	0.78	0.45	1.91	1.57	0.71	0.49	-11%	-35%	1.55	0.15
2007	3	9	66%	48%	1.26	0.24	3.67	2.23	1.70	0.12	-2%	14%	-1.35	0.21
2006	2	7	54%	59%	-0.29	0.78	2.21	2.86	-0.70	0.50	17%	37%	-0.64	0.54
2005	2	10	66%	52%	1.08	0.30	3.45	2.35	1.40	0.19	14%	36%	-0.82	0.43

As the table indicates, at 5% significance level, the differences between the means of MVA, P/B ratio and absolute returns for leading and lagging CSP firms are not significantly different for all the five years in the financial sector. However, there is an exception in absolute returns in 2009 where it was found that leading CSP firms significantly outperformed lagging CSP firms. However, this outperformance was limited to only one period and is thus not a clear indication of outperformance, given that no other period found a statistically significant difference between leading and lagging CSP firms in the financial sector.

4.4.4 *Results based market-based measures in the mining sector*

CSP and MVA for the mining sector

Figure 27 shows the graphical representation of the average MVA for leading and lagging CSP firms in the mining sector for 5 years from 2005 through to 2009.

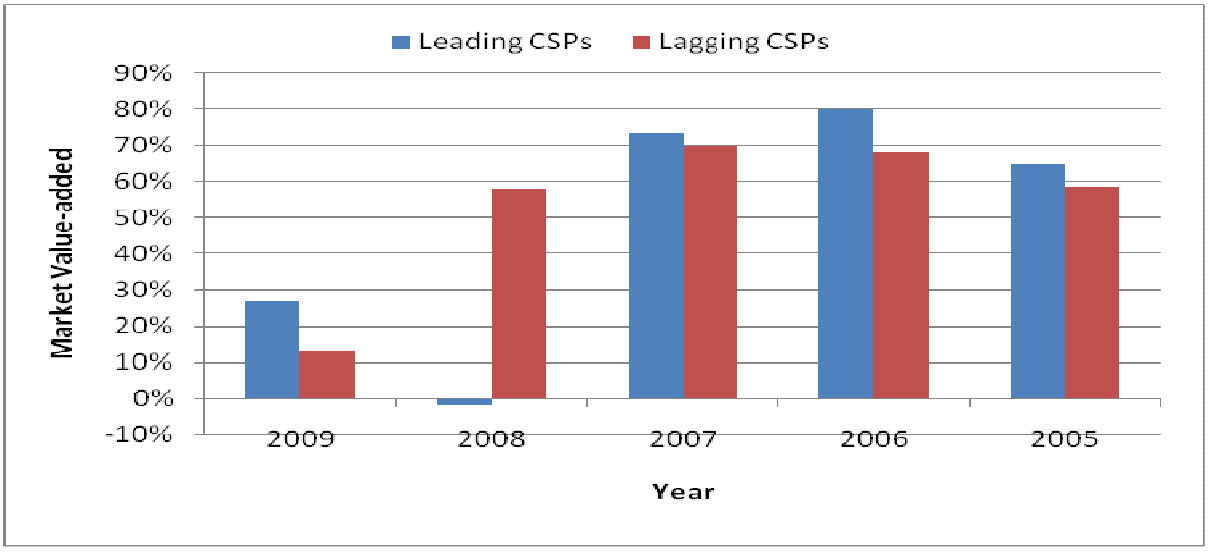


Figure 27: Average MVA for leading and lagging CSP firms in the Mining Sector (2005-2009)

Leading CSP firms outperformed lagging CSP firms in four (i.e. 2005, 2006, 2007 and 2009) out of the five years covered by this analysis using MVA as a performance measure. It is only in 2008 that lagging CSP firms outperformed leading CSP firms.

CSP and P/B ratio for the mining sector

Figure 28 shows the graphical representation of the average P/B ratio for leading and lagging CSP firms in the mining sector for 5 years from 2005 through to 2009.

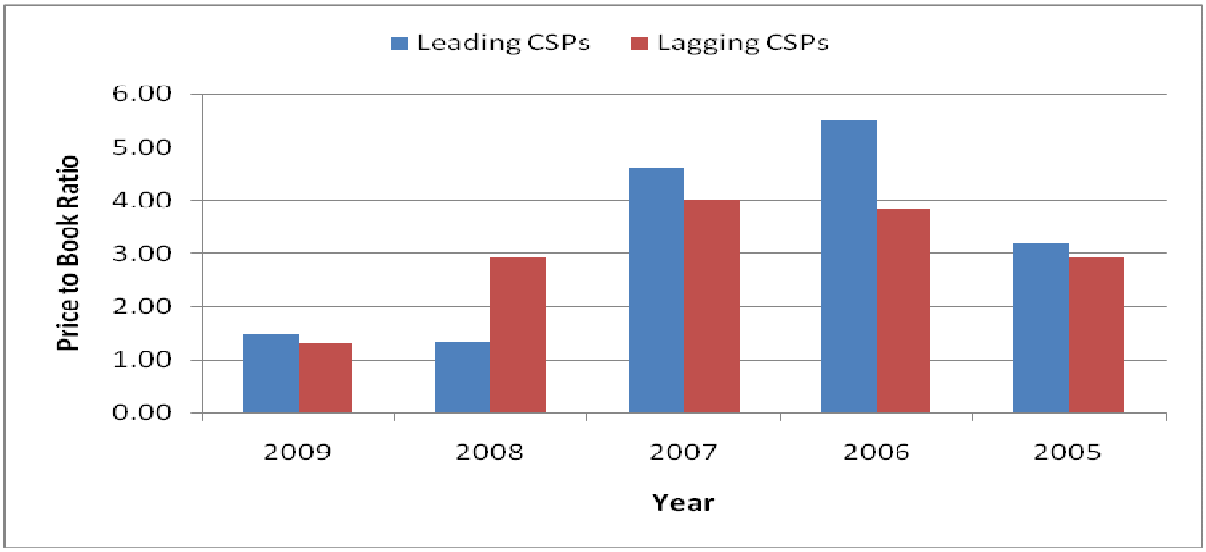


Figure 28: Average P/B Ratio for leading and lagging CSP firms in the Mining Sector (2005-2009)

Using P/B ratio as a measure of performance, leading CSP firms outperformed lagging CSP firms in four (i.e. 2005, 2006, 2007 and 2009) out of the five years analysed in the mining sector. It was only in 2008 that lagging CSP firms outperformed leading CSP firms.

CSP and absolute returns for the mining sector

Figure 29 shows the graphical representation of the average absolute returns for leading and lagging CSP firms in the mining sector for 5 years from 2005 through to 2009.

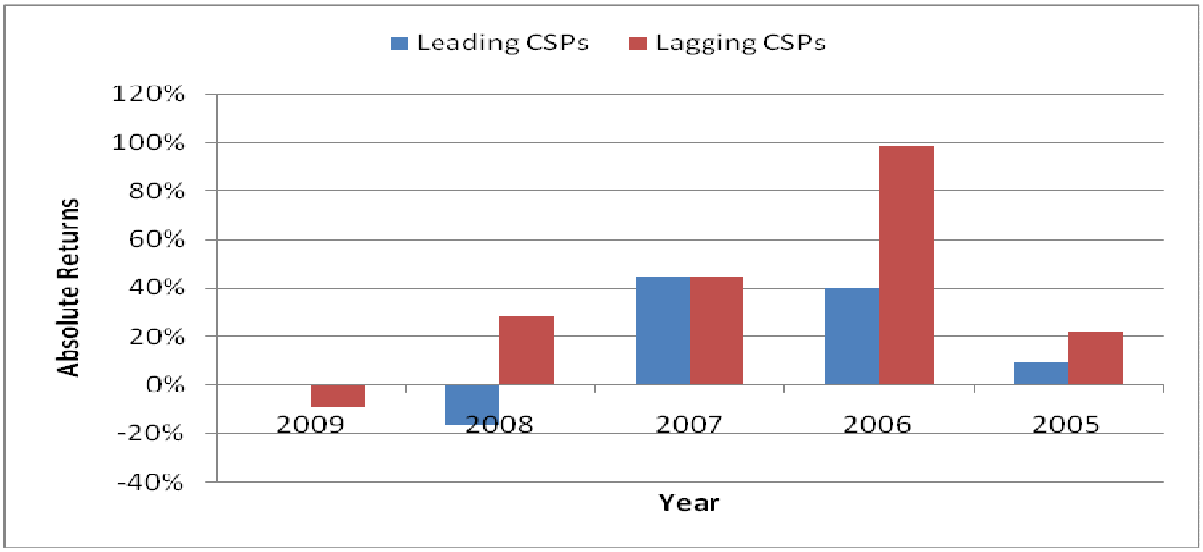


Figure 29: Average Absolute Returns for leading and lagging CSP firms in the Mining Sector (2005-2009)

Lagging CSP firms outperformed leading CSP firms in three (i.e. 2005, 2006 and 2008) out of the five years for which analysis was conducted using absolute returns as a measure of performance. In 2008, lagging CSP firms outperformed leading CSP firms while in 2007, there was no difference in the average absolute returns.

Table 22 shows the results of independent T-tests of significance of means using market-based measures of performance in the mining sector for five years (2005-2009).

Table 22: Independent Two sample T-tests Results (Two-tail) for MVA, P/B ratio and absolute returns in the mining sector

MINING SECTOR														
Period	Observations		MARKET VALUED-ADDED				P/B RATIO				ABSOLUTE RETURNS			
			Mean		Output		Mean		Output		Mean		Output	
	Leading CSPs	Lagging CSPs	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value	Leading CSPs	Lagging CSPs	t-Stat	*p*-Value
2009	3	7	27%	13%	0.71	0.50	1.47	1.31	0.43	0.68	0%	-9%	0.29	0.78
2008	6	5	-2%	58%	-2.21	0.05	1.34	2.92	-2.45	0.04	-16%	28%	-2.09	0.07
2007	4	7	73%	70%	0.40	0.70	4.64	4.02	0.46	0.65	45%	45%	0.01	0.99
2006	3	4	80%	68%	0.93	0.39	5.52	3.82	1.31	0.25	40%	99%	-1.05	0.34
2005	3	3	65%	59%	0.44	0.68	3.19	2.94	0.21	0.84	9%	22%	-0.54	0.62

As the table indicates, at 5% significance level, the differences between the means of MVA, P/B ratio and absolute returns for leading and lagging CSP firms are not significantly different for all the five years in the mining sector. However, there are two exceptions, i.e. MVA and P/B ratio both in 2008 where it was found that lagging CSP firms significantly outperformed leading CSP firms. However, this outperformance was limited to only one period and is thus not a clear indication of outperformance, given that all other periods found statistically insignificant difference between leading and lagging CSP firms in the mining sector.

4.4.5 *Results based market-based measures on data sorted by extreme sample (high impact and lagging CSP firms)*

CSP and MVA for the extreme CSP firms for all industries

Figure 30 shows the graphical representation of the average MVA for high impact and lagging CSP firms for all industries for 5 years from 2005 through to 2009.

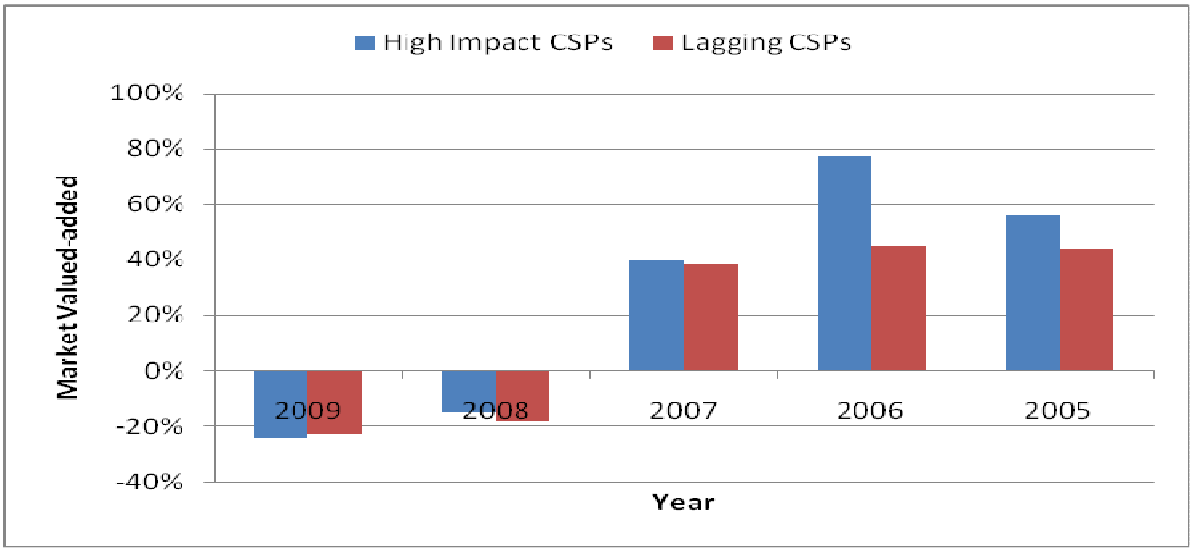


Figure 30: Average MVA for high impact and lagging CSP firms for All Industries (2005-2009)

In four out of the five years covered by this analysis (i.e. 2005, 2006, 2007 and 2008), high impact CSP firms outperformed lagging CSP firms using MVA as a measure of performance. It was only in 2009 where lagging CSP firms outperformed high impact CSP firms.

CSP and P/B ratio for the extreme CSP firms for all industries

Figure 31 shows the graphical representation of the average P/B ratio for high impact and lagging CSP firms for all industries for 5 years from 2005 through to 2009.

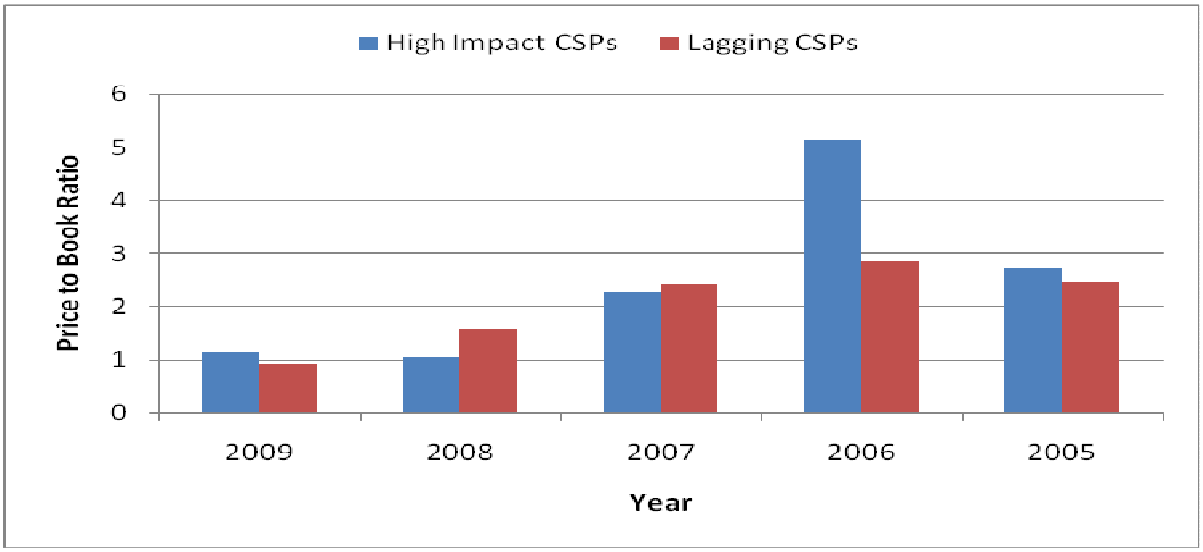


Figure 31: Average P/B Ratio for high impact and lagging CSP firms for All Industries (2005-2009)

High impact CSP firms outperformed lagging CSP firms in three (i.e. 2005, 2006 and 2009) out of the five years under covered by this analysis. In 2007 and 2008 however, lagging CSP firms outperformed high impact CSP firms.

CSP and absolute returns for the extreme CSP firms for all industries

Figure 32 shows the graphical representation of the average absolute returns for high impact and lagging CSP firms for all industries for 5 years from 2005 through to 2009.

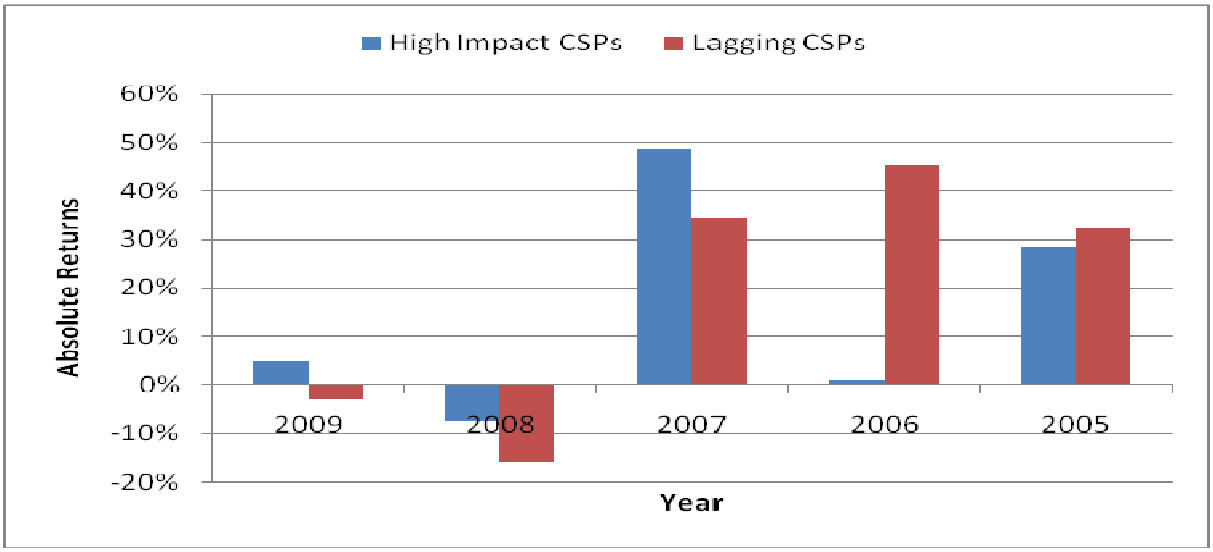


Figure 32: Average Absolute Returns for high impact and lagging CSP firms for All Industries (2005-2009)

High impact CSP firms outperformed lagging CSP firms in three (i.e. 2007, 2008 and 2009) out of the five years for which the analysis was conducted using absolute returns as a measure of performance. In 2005 and 2006 however, lagging CSP firms outperformed high impact CSP firms.

Table 23 shows the results of independent T-tests of significance of means using market-based measures of performance in the extreme sample for five years (2005-2009).

Table 23: Independent Two sample T-tests Results (Two-tail) for MVA, P/B ratio and absolute returns in the extreme sample for all industries

ALL INDUSTRIES														
Period	Observations		MARKET VALUED-ADDED				P/B RATIO				ABSOLUTE RETURNS			
			Mean		Output		Mean		Output		Mean		Output	
	High Impact CSPs	Lagging CSPs	High Impact CSPs	Lagging CSPs	t-Stat	*p*-Value	High Impact CSPs	Lagging CSPs	t-Stat	*p*-Value	High Impact CSPs	Lagging CSPs	t-Stat	*p*-Value
2009	13	29	-24%	-23%	-0.07	0.95	1.15	0.92	1.02	0.31	5%	-3%	0.78	0.22
2008	9	31	-15%	-18%	0.07	0.94	1.03	1.59	-1.51	0.14	-7%	-16%	0.60	0.55
2007	9	35	40%	38%	0.10	0.92	2.27	2.42	-0.28	0.78	49%	35%	0.78	0.44
2006	2	30	78%	45%	1.04	0.31	5.14	2.85	1.66	0.11	1%	45%	-1.34	0.19
2005	4	31	56%	44%	0.56	0.58	2.74	2.48	0.41	0.68	29%	32%	-0.25	0.81

As the table indicates, at 5% significance level, the differences between the means of MVA, P/B ratio and absolute returns for leading and lagging CSP firms are not significantly different for all the five years in the mining sector.

4.4.6 *Results for hypothesis 3*

The null hypothesis states that the market returns of leading CSP firms are expected to be equal to those of lagging CSP firms. The alternative hypothesis states that leading CSP firms have significantly higher financial performance as determined by market-based measures compared to lagging CSP firms.

At 5% significance level, for all market-based measures of performance, for five years under review and across all industrial sectors, T-tests do not provide enough evidence to reject the null hypothesis. These findings were consistent regardless of the market-based measure of performance employed and across all the industrial sectors. There were however four outcomes that indicated significant findings (out of a total of 56 other outcomes that showed insignificant findings). The four incidents involved MVA and P/B ratio in 2008 in the mining sector, absolute returns in 2009 in the financial sector and absolute returns in 2005 in the industrial sector. These findings were, however, too few and limited to three years only and could therefore not give a clear indication of outperformance.

4.4.7 *Results for hypothesis 4*

The null hypothesis states that the market returns of leading CSP firms are expected to be no different from those of lagging firms. The alternative hypothesis states that lagging CSP firms have significantly higher financial performance, as determined by market-based measures, compared to leading CSP firms.

As noted earlier under Hypothesis 4, based on the two-tail T-tests, there was no evidence to reject the null hypothesis. These findings are consistent for all the five years and for all the three market-based performance measures under consideration regardless of whether the sample is sorted into respective industrial sectors or not.

4.5 Summary of the results

The methodology discussed in Chapter 3 was used to analyse the data in this Chapter. From the results presented, there is no evidence to reject the assertion that the performance of leading CSP firms is not significantly different from that of lagging CSP firms. These results were consistent across five years, using six measures of performance and across all sectors.

These results are discussed, interpreted and explained with reference to literature review in Chapter 5.

CHAPTER 5: DISCUSSION OF RESULTS

5.1 Introduction

The results presented in Chapter 4 are now interpreted and discussed. As presented in Chapter 4, there was no enough evidence to reject the null hypotheses. These findings are discussed in the context of the literature review discussed in Chapter 3.

Because the study sought to establish whether leading CSP firms significantly outperform lagging CSP firms or vice versa, a two-tail T-test was conducted. There were no significant findings. Consequently, more focus is on Hypotheses 1 and 3 as there was no enough evidence to reject them. The study interprets and explains these insignificant findings under these hypotheses and integrates them with the literature reviewed. Hypotheses 2 and 4 received less focus as they were explained, in part, by the discussion pertaining to the outcome of Hypotheses 1 and 3 (this being an statistically insignificant finding on a two-tail test).

5.3 Discussion pertaining to Hypothesis 1

The null hypothesis states that the accounting performance of leading CSP firms is expected to be no different from those of lagging firms. The alternative hypothesis states that the financial performance of leading CSP firms, as measured by accounting measures, is significantly higher than that of lagging CSP firms.

At 5% significance level, for all measures of accounting performance, for five years under review and for all sectors, T-tests do not provide enough evidence to reject the null hypothesis. All the P-values (Type I error rate) were more than 0.05. There were, however, two instances out of the 60 outcomes reviewed that indicated statistically significant findings. These two instances were considered too few to generally conclude that there was a clear indication of significant findings.

These results are consistent with the findings of Lee et al (2009) and Ullman (1985) who did not find evidence that leading CSP firms significantly outperform lagging CSP firms based

on accounting performance measures. The results are however inconsistent with the findings of Shen et al (2009), Orlitzky et al (2003), Verschoor (1998) and Waddock et al (1997) who found that leading CSP firms significantly outperform lagging CSP firms based on accounting performance measures.

It is instructive, however, to note that Shen et al (2009) based their findings on a shorter time period (Quarter 2, 2005 to Quarter 1, 2006). As noted earlier, Peters et al (2009) and Waddock et al (1997) posit that the length of the period covered by the sample has an impact on the CSP-CFP findings. Orlitzky et al (2003) based their study on a meta-analysis of 52 studies with a total sample of 33,878 observations over a period of 30 years. The main concern with Orlitzky et al (2003) was the aggregation of different variables of CSP measures (and CSP proxies) and CFP measures. Reliability of these measures over such a large sample over such a long period of time may have been compromised.

Verschoor (1998) was based on largest 500 US companies. Research has however shown that the size of a firm is a relevant variable because, firstly, there is evidence that smaller firms do not exhibit as much socially responsible behaviour as do larger firms (Waddock et al 1997) and secondly, it plays a significant role in driving the relative ratios of firms (Lee et al 2009).

Just like Shen et al (2009), Waddock et al (1997) study covered a very short period of time (1 year).

As observed in Chapter 3, ROA can provide information about how earnings respond to different managerial policies (Cochran et al 1984). The results of this study, however, indicate that a company's performance based on ROA does not significantly respond to a company's CSP profile. This is consistent with the findings of Lee et al (2009) and Lee (2006) who used ROA in their CFP-CSP link studies. The results suggest that leading CSP firms do not manage their assets more effectively than lagging CSP firms.

Again, the results of ROE provide no significant difference between the accounting performance of leading CSP firms and lagging CSP firms. This is consistent with the findings of Lee et al (2009) and Lee (2006) who used ROE in the CFP-CSP link studies.

Finally, the P/E ratio results are consistent with the previous measures of accounting performance. No significant difference in P/E ratio between leading and lagging CSP firms was observed. Although DiBartolemeo and Kurtz (1999), cited in Lee (2006) avers that P/E ratio is a significant factor in explaining the performances of SRI companies, this study found no significant differences in performance between leading and lagging CSP firms based on this measure. This is consistent with the findings of Lee et al (2009) and Lee (2006) who used P/E in CFP-CSP link studies.

5.4 Discussion pertaining to Hypothesis 2

The null hypothesis states that the accounting performance of leading CSP firms is expected to be no different from those of lagging firms. The alternative hypothesis states that the financial performance of lagging CSP firms, as measured by accounting measures, is expected to be significantly higher than that of leading CSP firms.

As noted earlier, based on the two-tail T-tests, there was no evidence to reject the null hypothesis. This finding is consistent with Ullman (1985) and Lee et al (2009) who argue that, in light of the many intervening variables between CSP and CFP, there is no reason to assume that a firm's level of CSP will noticeably affect its CFP.

However, these findings are inconsistent with Friedman (1970) and Aupperle et al (1985). These authors argue that the additional costs of CSP neither contribute nor enhance shareholder value.

The argument advanced by Friedman (1970) that economic returns and social returns are inherently at odds with one another is not necessarily true. Whereas Friedman (1970) was not an academic study, subsequent rigorous academic studies have yielded mixed outcomes. On the other hand, Aupperle et al (1985) used perceptions to measure CSP. As discussed in Chapter 3, these measures can be biased since the audiences can make decisions based on erroneous information or based on their own impressions of what the firm has done (Griffin et al 1997) as opposed to reality.

5.5 Conclusion of Hypothesis 1 and 2

The results of the tests based on accounting performance provide support that no evidence exists to counter the assertion that accounting performance of leading CSP firms is no different from the performance of lagging CSP firms. These results are consistent regardless of the accounting performance measure employed, analysis period considered or the sector to which a firm operates. The results are the same when the high impact firms are analysed against lagging CSP firms. Although industry type to which a firm operates has been identified by literature reviewed as an important variable, this study arrives at no different findings when firms are sorted into respective industry groups.

These findings tend to provide further support to the theory that, given such a large number of variables intervening between CSP and CFP of firms, there is no reason to assume a direct relationship exist (Ullman 1985).

Another explanation could be that CSP-CFP relationships are always driven into equilibrium, where, if leading or lagging CSP firms were to offer higher profits, they would attract more players until there was no difference in performance (Demacarty 2009).

5.6 Discussion pertaining to Hypothesis 3

The null hypothesis states that the market returns of leading CSP firms are expected to be equal to those of lagging CSP firms. The alternative hypothesis states that leading CSP firms have significantly higher financial performance as determined by market-based measures compared to lagging CSP firms.

At 5% significance level, for all market-based measures of performance, for five years under review and for the three market-based measures used, T-tests do not provide enough evidence to reject the null hypothesis. All the P-values (Type I error rate) were more than 0.05. There were, however, four instances out of the 60 outcomes reviewed that indicated significant findings. These four instances were considered too few to generally conclude that there was a clear indication of significant findings.

These findings are consistent with the findings of Statman (2000), Hamilton et al (1993) and Knoll (2002) who argue that, if markets are efficient, there should be no difference between

the market performance of leading and lagging CSP firms. This is because all the market information should already have been reflected in the share price (Lee et al 2009).

These findings are however inconsistent with Meznar et al (1994), Verschoor (2005), Derwall et al (2005) and Lee et al (2009). These studies either found that lagging CSP firms significantly performed better than their leading CSP counterparts or vice versa.

However, it should be noted that Meznar et al (1994) based their study on a single CSR event (i.e. withdraw of multinationals from South Africa during Apartheid). Generalisation of such a study to a wider CSP-CFP relationship would lead to validity concerns. As discussed in Section 5.3 above, Verschoor (2005) targeted 500 largest companies in the US and therefore ignored the impact of size on CSP-CFP relationships. Derwall et al (2005) and Lee et al (2009) clearly control their studies for size, risk and industry. This study ignored size and risk as control variables. Surprisingly, Derwall et al (2005) and Lee et al (2009) have contrasting findings.

5.7 Discussion pertaining to Hypothesis 4

The null hypothesis states that the market returns of leading CSP firms are expected to be no different from those of lagging firms. The alternative hypothesis states that lagging CSP firms have significantly higher financial performance, as determined by market-based measures, compared to leading CSP firms.

As noted earlier, based on the two-tail T-tests, there was no evidence to reject the null hypothesis. This finding is consistent with Statman (2000) Hamilton et al (1993) and Knoll (2000) who argue that, if capital markets are efficient, there should be no difference between the performances of leading and lagging CSP firms since all the information (including firms' CSP profiles) should already have been reflected in the share price.

However, these findings are inconsistent with Friedman (1970), Brammer et al (2006) and Lee et al (2009) who either found that lagging CSP firms significantly perform better (based on market-based measures of performance) than their leading CSP counterparts or vice versa. As discussed in Section 5.4, Friedman (1970) was not academically sound and seems to have been overtaken by subsequent studies with more academic rigour. Brammer et al (2006) yields multiple outcomes depending on the CSP metric employed in the

analysis. It is noteworthy, however, that the study is based on companies in one industry only (mutual funds).

5.8 Conclusion of Hypothesis 3 and 4

The results of the tests based on market performance measures provided support that no evidence exists to counter the assertion that market performance of leading CSP firms is no different from the performance of lagging CSP firms. These results were consistent regardless of the market-based performance measure employed, analysis period considered or the sector to which a firm operates. The results were the same when the high impact firms were analysed against lagging CSP firms. Although industry type to which a firm operates has been identified by literature reviewed as an important variable, this study arrived at no different findings when firms were sorted into respective industry groups.

From these findings, it appears that financial markets are not able to distinguish between leading and lagging CSP firms. Another explanation could be that CSP-CFP relationships are always driven into equilibrium. This would imply that if leading or lagging CSP firms were to offer higher profits, they would attract more players until there was no difference in performance (Demacarty 2009).

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This Chapter discusses the main conclusions drawn from this study, recommendations to various stakeholders mentioned in Chapter 1 and finally conclude with suggestions for further research.

6.2 Conclusions of the study

Results from both accounting and market-based measures of performance indicate that there is not enough evidence to reject the assertion that the leading CSP firms perform significantly better or worse than lagging CSP firms. Although industry type to which a firm operates has been identified by literature reviewed as an important variable, this study arrives at no different findings when firms are sorted into respective industry groups. These findings are consistent with some of the studies discussed in Chapter 3 but also inconsistent with others in the same Chapter.

Both accounting and market-based measures of performance acted as control for each other. Pointedly, both measures provided the same outcome and were therefore supportive of each other. This could be explained by the fact that accounting measures such as ROE are widely used in asset valuation models when calculating market returns.

Since no significant evidence of differences in financial performance between companies with different CSP profiles has been found, this study can draw a number of conclusions.

Accounting performance does not seem to suffer as a result of investment in CSP. Neither does CSP appear to boost accounting performance. Leading CSP firms do not seem to suffer from engaging in CSR activities much the same way lagging CSP firms do not seem to gain from lesser engagement in CSR activities. These findings may provide support to the theory that, given the large number of variables that intervene between firms' CSP and CFP, there is no reason to assume a direct relation should exist. Alternatively, they may suggest that the relation has positive and negative consequences. In aggregate, these

opposing forces will cancel each other out thus making it impossible to detect any CSP-CFP relationship.

The lack of significant findings could also be as a result of the inability or inadequacy of the accounting measures in determining true firm performance.

Similarly, markets do not appear to distinguish between leading and lagging CSP firms. They neither seem to penalise leading and lagging CSP firms nor reward leading and lagging CSP firms.

These findings may imply that CSR is a strategic investment with the potential for long-term and sustainable advantage that may not become automatically realised over a five-year cycle. Investment in CSR may not have financial penalties or rewards but may be beneficial in terms of improving key stakeholder relations (Waddock et al 1997). In the longer term, these benefits may be priced by the stakeholders, leading to improved market performance. This argument seems to suggest that firms that tend to engage in leading CSP activities in the longer term may reap financial rewards while those firms that manipulate their CSP profiles may not sustainably do so in the longer term.

Finally, it can be argued that CSP-CFP relationships are always driven into equilibrium. This means that if leading or lagging CSP firms were to offer higher profits, they would attract more players until there was no difference in performance (Demacarty 2009).

6.3 Recommendations

The findings of this research will be of value to business managers, investors and potential investors (relevant stakeholders).

The findings may disappoint those stakeholders who would have hoped to improve financial performance as they engage in CSR activities as well as those stakeholders who would be willing to accept lower financial performance for engaging in worthwhile CSR activities.

However, the findings provide a compromise in that there is neither a detrimental impact nor a reward for engaging in CSR activities. Managers and investors can therefore afford to be socially responsible.

There may be beneficial non-financial spin-offs arising from such investments, e.g. improvement of relations with key stakeholder relations. Managers may use CSP as a reputational lever by generating good public relations derived from perceptions of market analysts, public interest groups and the media (Orlitzky et al 2003).

6.4 Suggestions for further research

The delimitations discussed in Chapter 1 and the limitations discussed in Chapter 3 can provide some possibilities to extend this research.

In this study, the Environmental Responsibility was used as the only proxy for Corporate Social Responsibility. This was derived from JSE's SRI Index. In future, other CSR proxies such as social and corporate governance issues should also be used as proxies. This approach would add knowledge regarding how these other CSP measures relate to financial performance in South Africa.

This study can also be extended by exploring whether CSP causes CFP, CFP causes CSP or whether there exists a feedback mechanism. The direction of causality has been a focus of some studies with two theories emerging: slack resources theory and good management theory. This is discussed in Chapter 2.

Existing literature suggest that industry, risk and size have are important control variables. Risk and size were not considered, given the small size of the available sample. As more and more companies continue to join JSE's SRI Index, future studies should consider using these variables to extend this study. A larger sample will also result to more robust findings.

This study may be extended by conducting a similar research over a longer period of time as data becomes more and more available from JSE SRI Index. This would enhance reliability of the research as suggested by literature.

Finally, future research can be extended to cover endogeneity. Endogeneity has been cited as a significant factor that could contribute to inconsistent findings (Garcia-Castro et al 2010). This refers to internal factors that are well known by the managers that may affect CSR decisions but are not easily observable by the researcher (e.g. quality of management, values, corporate culture etc).

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APPENDIX A: SRI INDEX CONSTITUENTS FOR 2005-2009

Year 2009

ABSA Group Limited
AdvTech Limited
AECI
African Bank Investments Limited
African Oxygen Limited
African Rainbow Minerals
Allied Electronics Corporation Limited
Allied Technologies Limited
Anglo American plc
Anglo Platinum Limited
AngloGold Ashanti Limited
Arcelor Mittal South Africa
Aveng Limited
Barloworld Limited
BHP Billiton plc
The Bidvest Group Limited
Discovery Holdings Limited
DRDGOLD Limited
Exxaro Resources Limited
Firstrand Limited
Foschini
Gold Fields Limited
Group Five Limited
Growthpoint Properties Limited
Harmony Gold Mining Company Limited
Highveld Steel and Vanadium Corporation Limited
Illovo Sugar Limited
Impala Platinum Holdings Limited
Investec Limited and Investec plc
JSE Limited
Kumba Iron Ore
Liberty Group Limited
Liberty International plc
Lonmin
Massmart Holdings Limited
Medi-Clinic Corporation Limited
Merafe Resources Limited
Metropolitan Holdings Limited
Mondi
MTN Group Limited
Murray & Roberts Holdings Limited
Nampak
Nedbank Group Limited
Netcare
New Clicks Holdings Limited
Northam Platinum Limited
Oceana Group Limited
Old Mutual plc
Palabora Mining Company Limited
Pick n Pay Holdings Limited
Pretoria Portland Cement Company Limited
Rainbow chicken Limited
Remgro Limited
RMB
SAB Miller plc
Sanlam Limited
Santam Limited
Sappi Limited
Sasol
Standard Bank Group Limited
Steinhoff International Holdings Limited
Sun International Limited
Telkom SA Limited
Tongaat Hulett
Truworths International
Vodacom Group Limited
Woolworths Holdings Limited

Year 2008

ABSA Group Limited

AdvTech Limited

African Bank Investments Limited

African Oxygen Limited

African Rainbow Minerals

Allied Electronics Corporation Limited

Allied Technologies Limited

Anglo American plc

Anglo Platinum Limited

AngloGold Ashanti Limited

Arcelor Mittal South Africa

Aveng Limited

Barloworld Limited

BHP Billiton plc

The Bidvest Group Limited

Brait S.A

Capitec

Discovery Holdings Limited

Exxaro Resources Limited

Firstrand Limited

Foschini

Gold Fields Limited

Grindrod Limited

Group Five Limited

Harmony Gold Mining Company Limited

Highveld Steel and Vanadium Corp Limited

Hulamin

Illovo Sugar Limited

Impala Platinum Holdings Limited

Investec Limited and Investec plc

JSE Limited

Kumba Iron Ore

Liberty Group Limited

Liberty International plc

Lonmin

Massmart Holdings Limited

Medi-Clinic Corporation Limited

Merafe Resources Limited

Metropolitan Holdings Limited

Mondi

MTN Group Limited

Murray & Roberts Holdings Limited

Nampak

Nedbank Group Limited

Netcare

Northam Platinum Limited

Oceana Group Limited

Old Mutual plc

Pick n Pay Holdings Limited

Pretoria Portland Cement Company Limited

Remgro Limited

SAB Miller plc

Sanlam Limited

Santam Limited

Sappi Limited

Standard Bank Group Limited

Sun International Limited

Telkom SA Limited

Tongaat Hulett

Truworths International

Woolworths Holdings Limited

Year 2007

ABSA Group Limited
AdvTech Limited
African Bank Investments Limited
African Oxygen Limited
African Rainbow Minerals
Allied Electronics Corporation Limited
Allied Technologies Limited
Anglo American plc
Anglo Platinum Limited
AngloGold Ashanti Limited
Arcelor Mittal South Africa
Aveng Limited
Barloworld Limited
BHP Billiton plc
The Bidvest Group Limited
Brait S.A
Bytes Technology Group Limited
Discovery Holdings Limited
Exxaro Resources Limited
Firstrand Limited
Gold Fields Limited
Grindrod Limited
Group Five Limited
Harmony Gold Mining Company Limited
Highveld Steel and Vanadium Corporation Limited
Illovo Sugar Limited
Impala Platinum Holdings Limited
Investec Limited and Investec plc
JSE Limited
Kumba Iron Ore
Liberty Group Limited
Liberty International plc
Lonmin
Massmart Holdings Limited
Medi-Clinic Corporation Limited
Merafe Resources Limited
Metropolitan Holdings Limited
Mondi
MTN Group Limited
Murray & Roberts Holdings Limited
Nedbank Group Limited
Network Healthcare Holdings Limited
Northam Platinum Limited
Oceana Group Limited
Old Mutual plc
Pick n Pay Holdings Limited
Pretoria Portland Cement Company Limited
Remgro Limited
SAB Miller plc
Sanlam Limited
Santam Limited
Sappi Limited
Sasol Limited
Standard Bank Group Limited
Telkom SA Limited
Tongaat Hulett
Woolworths Holdings Limited

Year 2006

ABSA Group Limited
AdvTech Limited
African Bank Investments Limited
African Oxygen Limited
Alexander Forbes Limited
Allied Electronics Corporation Limited
Allied Technologies Limited
Anglo American plc
Anglo Platinum Limited
AngloGold Ashanti Limited
Aveng Limited
Barloworld Limited
BHP Billiton plc
The Bidvest Group Limited
Brait S.A
Bytes Technology Group Limited
City Lodge Hotels Limited
Discovery Holdings Limited
Edgars Consolidated Stores Limited
Exxaro Resources Limited
Firstrand Limited
Gold Fields Limited
Grindrod Limited
Group Five Limited
Harmony Gold Mining Company Limited
Highveld Steel and Vanadium Corporation Limited
Illovo Sugar Limited
Impala Platinum Holdings Limited
Imperial Holdings Limited
Investec Limited and Investec plc
Liberty Group Limited
Liberty International plc
Massmart Holdings Limited
Medi-Clinic Corporation Limited
Merafe Resources Limited
Metropolitan Holdings Limited
Mittal Steel South Africa Limited
MTN Group Limited
Murray & Roberts holdings Limited
Nampak Limited
Nedbank Group Limited
Network Healthcare Holdings Limited
Northam Platinum Limited
Oceana Group Limited

Year 2005

ABSA Group Ltd
African Bank Investments Ltd
African Oxygen Ltd
Alexander Forbes Ltd
Allied Electronics Corporation Ltd
Allied Technologies Ltd
AngloAmerican Platinum Corp Ltd
AngloAmerican plc
AngloGold Ashanti Ltd
Aveng LtdBarloworld Ltd
BHP Billiton plc
Bidvest Group Ltd
Brait S.A.
City Lodge Hotels Ltd
Discovery Holdings Ltd
Edgars Consolidated Stores Ltd
Ellerine Holdings Ltd
FirstRand Ltd
Gold Fields Ltd
Harmony Gold Mining Company Ltd
Impala Platinum Holdings Ltd
Imperial Holdings Ltd
Investec Ltd
Investec Plc
Kumba Resources Ltd
Liberty Group Ltd
Liberty International Plc
Massmart Holdings Ltd
Medi-Clinic Corporation Ltd
Merafe Ltd
MTN Group Ltd
Murry & Roberts Holdings Ltd
Nampak Ltd
Nedcor Ltd
Network Healthcare Holdings Ltd
Oceana Group Ltd
Old Mutual Plc
Pick n Pay Stores Ltd
Remgro Ltd
SABMiller Ltd
Sanlam Ltd
SAPPI Ltd
SASOL Ltd
Standard Bank Group Ltd
Telkom SA Ltd
Tongaat-Hulett Group Ltd
Wilson Bayly Holmes-Ovcon Ltd
Woolworths Holding Ltd

APPENDIX B: SRI DATA EMAIL REQUESTS FROM JSE



Peter Kimingi <peter.kimingi@gmail.com>

SRI Research and Info Search

5 messages

Peter Kimingi <peter.kimingi@gmail.com> **Wed, Feb 17, 2010 at 3:36 PM**

To: makhibam@jse.co.za

Hi Makhiba,

Great to have talked to you a moment ago. I appreciate your feedback and willingness to assist in future. I am doing an MBA research on CSR and corporate performance so I may need your assistance again.

Many thanks and kind regards,

Peter.

Peter Kimingi <peter.kimingi@gmail.com> **Sat, Mar 20, 2010 at 5:17 PM**

To: makhibam@jse.co.za

Hi Makhiba,

I trust you had a relaxing long weekend.

I am progressing well with my thesis. However, there is some information that I will need from you as it does not seem to be on the JSE website. I am looking for companies listed as "Best Performers" in SRI for the years 2004-2007 (a separate list for each of the years). I have checked on the internet and there appears to be Best Performers for 2008 and 2009 only.

I will sincerely appreciate your assistance.

Regards,

Peter
Tel.: 012 336 7040

Cell: 073 099 5168

[Quoted text hidden]

Peter Kimingi <peter.kimingi@gmail.com> **Fri, Mar 26, 2010 at 3:08 PM**

To: maryn@jse.co.za

Dear Mary,

We just talked a moment ago.

Please see the request I made to Makhiba earlier in week and see how you can help me. I am a final year MBA student at Wits and currently doing a thesis on the relationship between SRI on Environmental Responsibility and financial performance.

I trust you can assist me with the info.

Thanking you in advance.

Regards,

Peter Kimingi
012 336 7040
073 099 5168

[Quoted text hidden]

Corli Le Roux <CorliLR@jse.co.za> **Tue, Mar 30, 2010 at 10:14 AM**

To: peter.kimingi@gmail.com

Cc: Makhiba Mollo <MakhibaM@jse.co.za>

Dear Peter

Mary asked me to respond to your query as Makhiba is on leave until 14 April. Kindly see the information you requested attached - it is also on the web site under each individual year's results. For the sake of completeness I included 2008 and 2009 again. Please note that we only started acknowledging best performers since 2005. Since 2007 the methodology to identify best performers changed slightly, and we used the same methodology in 2008 and 2009 as well, therefore, the fact that some companies have not been best performers since 2006 may in some cases be due to methodology considerations rather than a drop in performance level. However, you will still see a strong overlap in some consistently good performers.

If you have any queries or need any further information, please do not hesitate to contact me.

Kind Regards

Corli le Roux
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-----Original Message-----
From: Mary Nkwanyane
Sent: 30 March 2010 10:06 AM
To: Corli Le Roux
Subject: FW: SRI Research and Info Search

Hi Corli
Can you assist with the request below?

Regards,

Mary

[Quoted text hidden]

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6 attachments

Outstanding Performers 2005- press pack.doc
390K

SRI Index Top Performers.doc
40K

SRI Index.Best Performers.2007.doc
40K

SRI Index.Best Performers.2008.doc
49K

Best performers 2009.doc
132K

Consistent Best performers 2009.doc
122K

Peter Kimingi <peter.kimingi@gmail.com> **Tue, Mar 30, 2010 at 7:46 PM**

To: Corli Le Roux <CorliLR@jse.co.za>, Makhiba Mollo <MakhibaM@jse.co.za>, maryn@jse.co.za

Hi guys,

Thank you very much guys for the information; you gave me exactly what I was looking for.

I appreciate the help and the efficiency in availing the information.

Have a great day.

Warm regards,

Peter Kimingi

APPENDIX C: CONSISTENCY MATRIX

Research problem: The purpose of this research is to define the relationship between a firm's corporate social responsibility and its financial performance as measured by both accounting and market-based measures.

Sub-problem	Literature Review	Hypotheses or Propositions or Research questions	Source of data	Type of data	Analysis
Sub-problem 1: To define the relationship between a firm's corporate social responsibility and its financial performance as determined by accounting-based measures.	Friedman (1970), Aupperle, Carroll and Hatfield (1985), Ullman (1985), Cochran and Wood (1984), Waddock and Graves (1997), Griffin and Mahon (1997), Berman, Wicks, Kotha and Jones (1999), Statman (2000), Knoll (2002), Orlitzky, Schmidt and Ryes (2003), Derwall, Guenster, Bauer and Koedijk (2005), Verschoor (2005), Demarcarty (2009), Shen and Chang (2009) Lee, Faff, and Langfield-Smith (2009), Merchant and Sandino (2009),	**Hypothesis 1**: The financial performance of leading CSP firms, as measured by accounting measures, is significantly higher than that of lagging CSP firms. **Hypothesis 2**: The financial performance of lagging CSP firms, as measured by accounting measures, is expected to be significantly higher than that of leading CSP firms.	Secondary sources of data, i.e. CSP data from JSE's SRI Index and CFP data I-Net Bridge	Nominal data was used, i.e. accounting measures of performance data for leading and lagging CSP firms	Tests of Significance-Independent Two sample T-tests (two-tail)

Research problem: The purpose of this research is to define the relationship between a firm's corporate social responsibility and its financial performance as measured by both accounting and market-based measures.

Sub-problem	Literature Review	Hypotheses or Propositions or Research questions	Source of data	Type of data	Analysis
Sub-problem 2: To define the relationship between a firm's corporate social responsibility and its financial performance as determined by market-based measures.	Ullman (1985), Davidson and Worrell (1990), Mezna, Nigh and Kwok (1994), Knoll (2002), Hamilton, Jo and Statman (1993), Fama (1997), Rowley and Berman (2000), Statman (2000), Hillman and Keim (2001), Velde, Vermeir and Corten (2005), Derwall, Guenster, Bauer and Koedijk (2005), Verschoor (2005), Mittal, Sinha and Singh (2008), Kristoffersen, Gerrans and Clark-Murphy (2008), Lee, Faff, and Langfield-Smith (2009), Demarcarty (2009), Garcia-Castro, Arino and Canela (2010)	**Hypothesis 3:** Leading CSP firms have significantly higher financial performance as determined by market-based measures compared to lagging CSP firms. **Hypothesis 4**: Lagging CSP firms have significantly higher financial performance as determined by market-based measures compared to leading CSP firms.	Secondary sources of data, i.e. CSP data from JSE's SRI Index and CFP data I-Net Bridge	Nominal data was used, i.e. accounting measures of performance data for leading and lagging CSP firms	Independent Two sample T-tests (two-tail)