

Corporate social responsibility and financial performance: Evidence from the Johannesburg Stock Exchange, South Africa

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Background: Stakeholders are increasingly concerned whether the companies they are involved with act in a socially responsible way. However, stakeholders like employees and shareholders also have a direct financial interest in those companies and need to be assured that company actions bring forth some financial benefit.

Aim: The research investigated one of the main questions surrounding the concept of corporate social responsibility, namely whether a company's investment in and effort towards corporate social responsibility results in improved financial performance. The purpose of this study was to narrow the gap in the body of knowledge in relation to corporate social responsibility and its relationship to financial performance.

Setting: This research investigated whether there was a relationship between being listed on the Johannesburg Stock Exchange (JSE) Socially Responsible Investment (SRI) Index and financial performance. The unit of study comprises 885 company-years of companies listed on the JSE over the period 2009–2014.

Methods: Logistic regression was used to find evidence of a relationship between a listing on the JSE SRI Index and financial performance.

Results: It is evident that there was no real relationship between inclusion on the JSE SRI Index and financial performance, but there was a direct relationship between the size of a company and having a listing on the JSE SRI Index.

Conclusion: A listing on the JSE SRI Index does not have a clear and direct impact on financial performance, but it appeared that larger companies are perhaps better able to invest in corporate social activities and are, as a result, more likely to be listed on the JSE SRI Index.

Introduction

The issue of corporate social responsibility remains increasingly relevant. Society is continuously bombarded with not only news about natural disasters all over the world but also the related reports of humanity's negative impact on the earth in terms of climate change, dwindling natural resources and the effect of waste and pollution on the environment. Stakeholders show an increasing interest in whether the companies they interact with, act in a socially and environmentally ethical way (Lins, Servaes & Tamayo 2017; Liu & Zhang 2017; Margolis & Walsh 2003; Orlitzky, Schmidt & Rynes 2003; Qiu, Shaikat & Tharyan 2016; Soobaroyen & Sheik-Ellahi 2008). However, many stakeholders have a direct financial interest in companies and need to be assured that the companies' actions also bring some financial benefit. This paper investigates the relationship between corporate social responsibility practices and financial performance.

According to Vaughn and Ryan (2006), good corporate governance practices are of particular importance in emerging economies such as the Brazil, Russia, India, China and South Africa (BRICS) countries, where foreign investment is needed for economic growth. One reason these authors, together with Baskin (2006), cite for South Africa's economic success as part of the African continent is its leadership in corporate governance reforms. Investors would pay almost 30% more for an investment in a company with 'good' corporate governance (Abdo & Fisher 2007; Braga-Alves & Shastri 2011). It is evident that companies in South Africa understand what good corporate governance and corporate social responsibility are, as well as the benefits they bring. Compliance with the *King Code of Corporate Governance*, as set out in King IV (IoDSA 2016), and implemented as a listing requirement of the Johannesburg Stock Exchange (JSE) (Johannesburg Stock Exchange [JSE] 2013), promotes the highest standard of corporate governance and corporate social responsibility.

There is a direct link between corporate governance and corporate social responsibility. Corporate governance is about the responsibility with which a company is run, through accountability, transparency and compliance to benefit all stakeholders (Muralidharan, 2016). Social responsibility refers to 'softer issues', that is, company actions that support social objectives considered to be sought after by investors (Rosen, Sandler & Shani 1991). Social investors are not only concerned about the financial performance of a company but also the non-financial dimensions of corporate performance, such as the impact on the environment, social relations and corporate governance and thus the interests of all stakeholders as per stakeholder theory (Galema, Plantinga & Scholtens 2008).

Improvements in a company's corporate governance and social responsibility practices have the potential to result in improved financial performance as a result of enhanced reputation (Preston & O'Bannon 1997; Ruf et al. 2001). However, companies that are financially unstable may find it difficult to invest in corporate social performance activities, while those that have a better financial standing have the resources to spend in ways that may enhance long-term strategic impacts (Alexander & Buchholz 1978; Waddock & Graves 1997). In South Africa, Viviers (2007) and Gladyssek and Chipeta (2012) found that socially responsible investment funds significantly outperformed their benchmark indices, which implies a positive relationship between corporate social responsibility and financial performance. However, despite numerous studies conducted worldwide to establish the relationship between corporate social responsibility and financial performance, there has not been any clear consensus on the existence of or direction of such a relationship.

Even though research on the relationship between corporate social responsibility and financial performance was conducted with data from as early as 1970 (Alexander & Buchholz 1978), the findings are contradictory and published research on this relationship for South African companies is scarce. This study sets out to fill this gap by investigating whether a listing on the JSE Socially Responsible Investment (SRI) Index can predict whether a company has better financial performance than a company not listed on the index.

The results ought to enable investors and other stakeholders with a financial interest in a company to better predict whether a company's shares are a potentially profitable investment. Even though the findings of this research are of interest to investors, business managers, company boards, regulators and academics, investors ought to derive the most benefit from the findings for purposes of investment decision-making.

The article next provides a detailed literature review to establish the theoretical foundation of the article, as well as giving account of what has been published in previous research in the field of corporate social responsibility and financial performance. This is followed by the research design and method, the quantitative data analysis, empirical findings and a summary and conclusions.

Literature review

Theoretical foundation

A company does not conduct its business activities in isolation. Engagements with and contributions by stakeholders (customers, suppliers, investors, the community and employees) need to be taken into account. This research is conducted from the viewpoint of stakeholder theory. The most well-known definition of a stakeholder is by Freeman (1984), stating that stakeholders are all the individuals or organisations that affect the achievement of a company's goals, or are affected by the activities of a company in achieving its objectives. There are numerous variations of this definition, but all point in the same direction. Evan and Freeman (1993) penned the most commonly used definition for stakeholder theory, namely that 'the real purpose of a company is to serve as a vehicle to coordinate the interests of stakeholders'. Stakeholder theory thus challenges the assumptions that underlie agency theory and argues that a company should be managed in the interests of all its stakeholders.

In terms of corporate governance, corporate social responsibility and socially responsible investments, the company's responsibility towards stakeholders comes to the fore as per stakeholder theory (Boaventura, Da Silva & Bandeira-de-Mello 2012; Margolis & Walsh 2003; Orlitzky et al. 2003; Preston & O'Bannon 1997; Ruf et al. 2001). This reflects on a company in two ways, firstly as an indicator whether a company has the means to invest in socially responsible activities and, secondly, as an indicator of the benefits investors and society can derive from socially responsible practices. By implication, stakeholder theory also involves legitimisation theory, where companies attempt to achieve legitimacy for their actions before their stakeholders (Callan & Thomas 2009).

Corporate social responsibility and socially responsible investments

The basis of corporate governance dates back many years to when the separation of ownership and management of a business first occurred (Abdo & Fisher 2007). The market is deeply involved in the business operations and performances of companies. Therefore, one of the means that could expedite transformation in market governance is that of socially responsible investments (Herringer, Firer & Viviers 2009).

After the apartheid regime in South Africa, along with the political reform thereafter, foreign investors felt it safe and strategic to reignite investments in South Africa for a couple of decades (Abdo & Fisher 2007). This subsequently created a platform for increased scrutiny into the conduct of business, which included governance structures and practices. Overall, from a World Bank survey of government and civil society representatives, corruption unfortunately was deemed a major obstacle to economic growth (World Bank – Civil Society Engagement 2013). However, corporate governance and corporate social responsibility practices can

reduce unethical behaviour and ensure that society faces no harm from the activities of a company.

Abdo and Fisher (2007) commented that effective corporate governance decreases the 'control rights' of managers over shareholders and can be beneficial but only if management has the best interests of the business, the company and its stakeholders at heart, as per stakeholder theory. Other than that, an agency problem could arise, which could unearth the corporate governance matters that could potentially run the business down. When applied effectively, together with the mitigation of any detrimental risks, corporate governance has the potential to serve as a tool to attract investors and influence the price they pay for company stock, as well as improve non-financial results (Abdo & Fisher 2007; Soobaroyen & Sheikh-Ellahi 2008). The King Committee highlights seven prime features of good corporate governance. These are discipline, transparency, independence, accountability, responsibility, fairness and social responsibility (Abdo & Fisher 2007; IoDSA 2009). The adoption of corporate governance principles in the business or corporate culture is aimed at improving internal activities, increasing accountability and transparency, and encouraging communal credibility, which can potentially migrate towards better managerial and operational performance and company value.

Chen, Feldmann and Tang (2015) claim that it is commonly expected for profitable organisations to have stronger incentives than others, to reveal information on social performance to enhance their public relations and reputation. However, there is the shortcoming of increased cost during the process as a result of corporate social responsibility activities (Alexander & Buchholz 1978; Michelon, Boesso & Kumar 2013; Pava & Krausz 1996). From an optimistic perspective, investors would rather pay a premium for the shares of companies with a corporate governance reputation against those companies with the same level of financial performance but with a poor reputation for bad corporate governance (Abdo & Fisher 2007).

Socially Responsible Investment Index

There is a direct link between the concepts of corporate governance, corporate social responsibility and socially responsible investments. Socially responsible investment is broadly described as an investment strategy that creates a balance between financial and social objectives (Herringer, et al. 2009; Statman 2006). Heightened concerns regarding climate change and its associated risk to portfolios have escalated the interest in socially responsible investment among managers and stakeholders at large.

Various SRI indices have been established around the world to allow investors to trade the shares of companies that are considered to be socially responsible. Examples include the FTSE4Good, JSE SRI, Domini-400 Index and the Dow Jones Sustainability Group Index (Gladyssek & Chipeta 2012; Statman 2006). These indices give assurance to investors and fund managers that the constituent companies have

been screened, monitored and assessed according to objective environmental, social and governance criteria.

The JSE first implemented an SRI Index in May 2004. The main objectives were to distinguish companies that make an effort to deliver on the triple bottom line (economic, social and governance reporting), to provide a benchmark to compare socially responsible and non-socially responsible companies (Gladyssek & Chipeta 2012) and to serve as an enabling conduit for responsible investment to those investors who wish to include non-financial risk variables in their investment decisions (JSE Limited 2014).

For a JSE-listed company to qualify for inclusion on the JSE SRI index, the company had to meet the criteria of the required number of indicators as set out in each individual area of measurement. The indicators are divided into the categories 'core', which is the bare minimum a company should adhere to, and 'desirable', which are more aspirational. The general criteria themes referred to in the index are environmental, societal and governance (ESG) and related sustainability concerns. The criteria of the JSE SRI Index have been influential to conventionalise sustainability for top South African companies across different sectors that have their own sector-specific challenges (Profile's Stock Exchange Handbook, 2015).

Corporate social responsibility and financial performance

The relationship between corporate governance and/or corporate social responsibility and financial performance has been extensively investigated in the past. Researchers have also conducted meta-analyses on prior research to establish the general trend of previous findings (Allouche & Laroche 2005; Boaventura et al. 2012; Margolis & Walsh 2003; Orlitzky et al. 2003; Pava & Krausz 1996; Revelli & Viviani 2015; Van Beurden & Gössling 2008). The main findings from the meta-analyses of over four decades' research reveal a mostly positive relationship between corporate social responsibility and financial performance, with a lagged effect in financial performance, with a few exceptions. This is in line with stakeholder theory, claiming that all stakeholders should benefit socially and financially from corporate actions. A company has responsibilities towards many stakeholders, and shareholders represent one of the most important ones (Ruf et al. 2001).

To establish the tone of prior research on corporate governance or corporate social responsibility and financial performance, this study investigated a sample of more recent studies (since 2000) on the topic (see Table 1). This gives the researcher an idea of the general direction regarding the relationship between corporate social responsibility and financial performance, as well as establishing the extent of research conducted in South Africa specifically. Note that this summary is by no means exhaustive.

As Table 1 shows, it appears that most previous studies were conducted in the United States of America (US), with only very few conducted in emerging economies.

TABLE 1: A summary of a selection of prior studies investigating the link between corporate social responsibility and financial performance (ordered chronologically).

Authors	Theory	Dataset	CSR measure	Financial performance	Technique	Findings
López-Quesada Martín, Camacho-Mifriano and Idowu (2018)	Agency theory	US-listed companies 2004–2009	Aggregate index developed by the authors	Comprehensive income	Multiple regressions	Superior corporate governance practices translate into better financial performance.
Abdallah and Ismail (2017)	None explicitly mentioned	Gulf Cooperative Council Companies (GCC) 2008–2012	Behavioural Assessment Score for Investors and Corporations developed for the GCC	<ul style="list-style-type: none"> Tobin's Q ROA ROE 	Generalised method of moments regression	Well-governed companies outperform others in terms of financial performance.
Ararat, Black and Yurtoglu (2017)	None explicitly mentioned	Turkish publicly listed companies 2006–2012	Turkey Corporate Governance Index, specifically developed for the paper	<ul style="list-style-type: none"> Tobin's Q Profitability 	Multiple regression	Better governance leads to a significant increase in company value and some increase in profitability.
Lins et al. (2017)	None explicitly mentioned	US-listed companies 2006–2009	MSCI ESG Stats Database	<ul style="list-style-type: none"> Stock performance Cash and/or total assets Long-term debt / total assets Operating income / total assets 	Multiple regression	Companies with high CSR outperform companies with low CSR in areas of stock returns and profitability.
Nollet, Filis and Mitrokostas (2016)	Stakeholder theory	US-listed companies 2007–2011	Bloomberg ESG disclosure score	<ul style="list-style-type: none"> ROA Return on capital Stock returns 	Panel regression	No linear relationship between CSR and financial performance. Positive non-linear relationship, showing that investment in CSR will improve financial performance when a critical balance is reached.
Qiu et al. (2016)	Resource-based view of the company voluntary disclosure theory	UK-listed companies 2005–2009	Bloomberg disclosure scores for social and environmental performance	<ul style="list-style-type: none"> ROA ROE Return on sales 	Multiple regression	Positive relationship between lagged profitability and current social disclosure. No such link for environmental disclosure.
Rodriguez-Fernandez (2016)	Agency, stewardship, resource dependency and stakeholder theories	Spanish-listed companies 2009	<ul style="list-style-type: none"> Social behavioural index, formed by: Global Reporting Initiative participation Dow Jones Sustainability Index company inclusion Good Corporate Governance Recommendations compliance Global Compact signee 	<ul style="list-style-type: none"> ROA ROE Tobin's Q 	Panel regression	CSR translates into higher profits and higher profits translate into better CSR.
Charlo, Moya and Muñoz (2015)	Determined by company's attitude: instrumental, political, integrative and ethical theories	FTSE4Good IBEX Spanish Sustainability Index 2008–2015	FTSE4Good IBEX Spanish Sustainability Index	<ul style="list-style-type: none"> Share price volatility ROE EPS Price–book value leverage 	Multiple regression	No clear evidence of the effect of financial returns on CSR. Larger companies seem to have better CSR.
Chen et al. (2015)	Institutional theory	GRI companies from manufacturing industry 2012	GRI guidelines	<ul style="list-style-type: none"> ROE Sales growth Cash flow–sales ratio 	Non-parametric correlations	Significant and positive correlation between most CSR indicators and ROE.
Elouidani and Zoubir (2015)	Stakeholder theory	Casablanca stock exchange 2007–2010	index based on Carroll (1979)	<ul style="list-style-type: none"> ROA ROE Ratio of Marris Tobin's Q 	Multiple regression	Significant negative impact of CSR on financial performance.
Flammer (2015)	Stakeholder theory	US-listed companies with RiskMetrics and SharkRepellent shareholder proposals 1997–2011	Kinder Lydenberg Domini – Domini 400 Social Index	<ul style="list-style-type: none"> ROA ROE Net profit margin Tobin's Q 	Multiple regression	CSR leads to shareholder value.
Srairi (2015)	None explicitly mentioned	commercial Islamic banks in the Middle East 2011–2013	Index developed by the authors	<ul style="list-style-type: none"> ROA ROE Tobin's Q 	Panel regression	Strong positive relationship between corporate governance disclosure and financial performance.
Nkomani (2013)	None explicitly mentioned	South African-listed companies 2002–2011	JSE SRI Index	<ul style="list-style-type: none"> Stock returns Market-to-book ratio Price earnings ratio Net profit margin ROA ROE 	Multiple regression	Positive relationship between CSR and financial performance.
Michelon et al. (2013)	Stakeholder theory	US-listed companies 2005–2007	Kinder Lydenberg Domini – Domini 400 Social Index	<ul style="list-style-type: none"> EBITDA Capital expenditure intangibles Company market value 	Panel regression	Prioritising CSR leads to increased financial performance.
Black, De Carvalho and Gorga (2012)	None explicitly mentioned	Brazil-listed companies 2004 comparison with previous studies	Brazil Corporate Governance Index	<ul style="list-style-type: none"> Tobin's Q 	<ul style="list-style-type: none"> Multiple regression Random effects panel regression 	Country characteristics strongly influence which aspects of governance predict market value and at which companies that association is found.

Table 1 continues on the next page →

TABLE 1 (Continues...): A summary of a selection of prior studies investigating the link between corporate social responsibility and financial performance (ordered chronologically).

Authors	Theory	Dataset	CSR measure	Financial performance	Technique	Findings
El Ghoul, Guedhami, Kwok and Mishra (2011)	Stakeholder theory	US-listed companies 1992–2007	Kinder Lydenberg Domini – Domini 400 Social Index	<ul style="list-style-type: none"> Cost of equity capital 	Multiple regression	Companies with high CSR scores have lower cost of equity.
Braga-Alves and Shastri (2011)	None explicitly mentioned	Brazil-listed companies 2001–2005	Novo Mercado listing	<ul style="list-style-type: none"> Stock returns Tobin's Q ROA 	Panel regression with fixed effects	Higher scores for CSR are related to greater market value but not to better profitability.
Ntoi (2010)	Theory of shareholder activism	South African-listed companies 2004–2010	JSE SRI Index	<ul style="list-style-type: none"> Stock returns Price-book value ratio Price earnings ratio 	<ul style="list-style-type: none"> Correlation Multiple regression 	SRI-listed companies tend to perform better financially than non-SRI-listed companies.
Balasubramanian, Black and Khanna (2010)	None explicitly mentioned	Indian-listed companies 2006	Indian Corporate Governance Index	<ul style="list-style-type: none"> Tobin's Q 	Multiple regression	Positive relationship between CSR and company market value.
Mishra and Suar (2010)	Consumer inference making, signalling and social identity theories	Indian-listed companies 2003–2006	Index developed by the authors	<ul style="list-style-type: none"> ROA 12-item scale developed by the authors 	<ul style="list-style-type: none"> Correlations Multiple regression 	Favourable CSR increases companies' performance.
Vander Bauwhede (2009)	None explicitly mentioned	FTSE Eurotop 300 index with a Deminor rating 2000–2001	Board structure and functioning, based on private rating agency (Deminor Rating) ratings	<ul style="list-style-type: none"> ROA ROE Net profit margin 	Multiple regression	Positive relationship between corporate governance and financial performance.
Nelling and Webb (2009)	None explicitly mentioned	US-listed companies 1993–2000	Kinder Lydenberg Domini – Domini 400 Social Index	<ul style="list-style-type: none"> ROA Stock returns 	<ul style="list-style-type: none"> Multiple regression Panel regression 	Multiple regression: Strong relationship between CSR and past financial performance. Panel regression: Weak relationship between CSR and financial performance.
Callan and Thomas (2009)	Stakeholder and legitimisation theories	US-listed companies 2004–2005	Kinder Lydenberg Domini – Domini 400 Social Index	<ul style="list-style-type: none"> ROA Return on sales ROE Tobin's Q 	Multiple regression	There is a positive relationship between CSR and financial performance.
Morey et al. (2009)	None explicitly mentioned	listed companies from 21 emerging-market countries 2001–2006	AllianceBernstein corporate governance ratings	<ul style="list-style-type: none"> Price-to-book ratio Tobin's Q 	Multiple regression	Improvements in corporate governance are linked with higher company valuations.
Galema et al. (2008)	EMH	US-listed companies 1992–2006	Kinder Lydenberg Domini – Domini 400 Social Index	<ul style="list-style-type: none"> individual and portfolio stock performance 	Multiple regression	SRI impacts favourably on stock returns from lower book-to-market ratios.
Van der Laan, Van Ees and Van Witteloostuijn (2008)	Resource dependence, prospect decision and stakeholder theories	US-listed companies 1997–2002	Kinder Lydenberg Domini – Domini 400 Social Index	<ul style="list-style-type: none"> ROA ROE EPS 	Panel regression	The impact of different stakeholder groups render it impossible to fully describe an alleged relationship between CSP and CFP.
Abdo and Fisher (2007)	None explicitly mentioned	JSE, all companies June 2003 to June 2006	G-score, specifically developed for the paper	<ul style="list-style-type: none"> Share price returns, market-to-book value P/E ratio 	Descriptive statistics and correlation analysis	Positive correlation between share price return and governance.
Da Silveira and Barros (2007)	None explicitly mentioned	Brazil-listed companies 2002	Index developed by the authors	<ul style="list-style-type: none"> Tobin's Q Price-to-book value ratio 	<ul style="list-style-type: none"> Multiple regression Panel regression 	Positive relationship between corporate governance quality and company value.
Leal and Carvalho da Silva (2007)	None explicitly mentioned	Brazil-listed companies Chile-listed companies 1998–2002	Index developed by the authors	<ul style="list-style-type: none"> Tobin's Q Stock returns 	Multiple regression	Corporate governance shows a positive, significant relationship with companies' value.
Zheka (2007)	Theory of value creation	Ukrainian-listed companies 2000–2002	Index developed by the authors	<ul style="list-style-type: none"> Profitability 	Panel regression	Positive relationship between most aspects of CSR and financial performance.
Statman (2006)	None explicitly mentioned	US-listed companies 1990–2004	<ul style="list-style-type: none"> Domini 400 Social Index Calvert Social Index Citizens' Index US portion of Dow Jones Sustainability Index 	<ul style="list-style-type: none"> Stock returns 	Correlation regression	Returns of companies with good CSR tend to be higher than those of other companies.
Brammer, Brooks and Pavelin (2006)	Stakeholder theory	UK-listed companies 2002–2003	Ethical Investment Research Service data	<ul style="list-style-type: none"> Stock returns 	Multiple regression	Companies with higher CSR scores tend to achieve lower returns while companies with the lowest CSP scores outperformed the market.
Black, Love and Rachinsky (2006)	None explicitly mentioned	Russian-listed companies 1999–2005	<ul style="list-style-type: none"> Brunswick UBS Warburg Troika Dialog Institute of Corporate Law and Governance S&P Governance scores Russian Institute of Directors 	<ul style="list-style-type: none"> Tobin's Q 	<ul style="list-style-type: none"> Multiple regression Panel regression with fixed effects 	Governance predicts company value, but the multiple regression and panel regression results differ vastly.

Table 1. continues on the next page →

TABLE 1 (Continues...): A summary of a selection of prior studies investigating the link between corporate social responsibility and financial performance (ordered chronologically).

Authors	Theory	Dataset	CSR measure	Financial performance	Technique	Findings
Black, Jang and Kim (2006)	None explicitly mentioned	Korean-listed companies 2001	Korean Corporate Governance Index	<ul style="list-style-type: none"> Tobin's Q 	Multiple regression	Corporate governance predicts higher market value but not higher profitability.
Luo and Bhattacharya (2006)	Institutional theory	US-listed companies 2002–2004	Fortune America's most admired corporations	<ul style="list-style-type: none"> Tobin's Q Stock returns 	Structured equation modelling	CSR harms customer satisfaction and therefore reduces market value.
Van de Velde, Vermeir and Corten (2005)	None explicitly mentioned	Eurozone companies 2000–2003	Vigeo corporate social responsibility scores	<ul style="list-style-type: none"> Stock returns 	Multiple regression	Companies with good CSR tend to outperform the rest.
Bauer, Guenster and Otten (2004)	None explicitly mentioned	UK- and Eurozone-listed companies 2000–2001	Demionor Corporate Governance Ratings	<ul style="list-style-type: none"> Net profit margin ROE Tobin's Q 	Multiple regression	There is a positive relationship between company value and CSR and a negative relationship between CSR, ROE and net profit margin.
Drobetz, Schillohofer and Zimmermann (2004)	Principal-agent theory	German-listed companies 1998–2002	Index developed by the authors	<ul style="list-style-type: none"> Stock returns 	Multiple regression	Positive relationship between corporate governance and company value.
Klapper and Love (2004)	None explicitly mentioned	companies from 14 countries 1999	CLSA corporate governance rankings	<ul style="list-style-type: none"> ROA Tobin's Q 	Panel regression with fixed effects	Positive relationship between corporate governance and financial performance.
Ruf et al. (2001)	Stakeholder theory	US-listed companies 1991–1995	Index developed by the authors	<ul style="list-style-type: none"> ROE Return on sales Growth in sales 	Multiple regression	Improvements in CSR lead to long-term financial benefits.

CSR, Corporate Social Responsibility; JSE, Johannesburg Stock Exchange; CSP, Corporate Social Performance; GRI, Global Reporting Initiative; ROA, Return on assets; ROE, return on equity; ESG, environmental, societal and governance; EPS, earnings per share; EBITDA, earnings before interest, tax, depreciation and amortisation; SRI, Socially Responsible Investment; EMH, efficient market hypothesis; US, United States; P/E, price/earnings; S&P, Standard & Poor's.

Many studies investigated individual aspects of corporate governance or corporate social responsibility, with similar findings (Bebchuk, Cohen & Ferrell 2008; Bhagat & Bolton 2008). The aim of this study is simply to investigate whether a JSE SRI Index listing is a sufficient predictor of a company's market and financial performance.

Research methods and design

This study was developed to understand the practices of business operations, their management and the financial performance outcomes of companies. The focus is concentrated towards an investigation and comparison of the financial results of the companies included on the JSE SRI Index against counterparts that are not included in the index.

Study design and data collection

The intention of the study was to analyse and assess JSE-listed companies over a period of five years from 2009 to 2014. The main reason for using 2009 as a base year was because the JSE, through its listing requirements, made it compulsory for all listed companies to comply with King III in 2009 (IoDSA 2009). Another reason for using 2009 as a base year is that it is subsequent to the 2008 global financial crisis. Therefore, it is reasonable to expect that companies had started their recovery and would no longer fully reflect the negative consequences of the financial crisis. The FTSE/JSE Responsible Investment Index Series replaced the JSE SRI Index in October 2015, reflecting an ongoing commitment to progress in corporate sustainability practices. The FTSE/JSE Responsible Investment Index Series considers a different set of requirements for companies to become a member; thus, it is not sensible to include data from 2015 onwards in this particular study.

The sample was not restricted to any specific industry. The industries represented in the sample are widespread within the South African JSE main board listings. Therefore, companies that delisted at any given point in time during the period 2009–2014 were not included in the sample, as they are not representative of the criteria needed to be a constituent in the JSE SRI Index. The dominant industries represented in the sample include basic materials, consumer goods, consumer services, financials, healthcare, industrials and telecommunications.

Previous researchers applied a variety of research approaches to find a relationship between corporate social responsibility or corporate governance performance and corporate financial performance. Firstly, good corporate social responsibility or corporate governance practice must be defined. In this paper, it is considered that if a company is one of the constituents of the JSE SRI Index, it can be deemed to have good corporate governance or corporate social responsibility practices, as these companies had to fulfil certain criteria in order to be included in the list for the year under review (Nkomani 2013). These criteria cut across the triple bottom line:

the environment, society and the economy, and governance. The unit of study comprises a total of 885 company-years, specifically 378 company-years categorised as constituents of the JSE SRI Index from 2009 to 2014 and 506 non-SRI-listed company-years for the same period. The original dataset was reduced by removing companies for which no information was available as a result of starting in a year after 2009 or delisting before 2015. In addition, to ensure comparability between the JSE SRI and non-SRI-listed companies, all non-SRI-listed companies with a market capitalisation of less than R1.3 billion were removed and all JSE SRI-listed companies with a market capitalisation of more than R7.0 trillion were removed.

The sample was divided into two categories, namely SRI-coded companies and non-SRI-coded companies (respectively coded as 1 and 0 in the dataset). The dominant industries represented in the sample include basic materials, consumer goods, consumer services, financials, healthcare, industrials and telecommunications. The sample contains more non-SRI-coded companies than SRI-coded companies, which could add bias to the sample; however, all the non-SRI-coded companies are representative of each of the industries of the JSE, South Africa.

Financial information for the selected companies was collected from the IRESS financial database. IRESS is a distinguished provider of fundamental stock market research data feeds and analysis tools covering market and corporate news for both the financial sector, as well as the market in general.

For financial performance, data was collected for the accounting return on equity, the market-based stock returns and the accounting or market-based price-earnings ratio. Meta-analysis of similar studies have indicated that these were ratios often used (Allouche & Laroche 2005; Boaventura et al. 2012; Margolis & Walsh 2003; Orlitzky et al. 2003; Pava & Krausz 1996; Revelli & Viviani 2015; Van Beurden & Gössling 2008). In addition, these financial performance measures were selected firstly on the basis of how easy they are to understand and secondly for how easy investors or other interested parties can obtain them. Tobin's Q is, for example, often used in similar studies but is unfamiliar to many investors and not easy to find in published financial information. Market capitalisation was added as a control

variable for size. Table 2 presents the descriptive analysis of the values for the selected variables.

For purposes of the analysis, a log transformation was performed for the market capitalisation values (presented here in South African rand). In its currency format, the values are excessively large and will impact the model fit unfavourably.

Data analysis

Logistic regression does not make assumptions regarding the distribution of the scores of predictor variables, as is the case with multiple regression (Pallant 2016). However, results can be sensitive to sample size, multicollinearity, the presence of outliers and lack of linearity of the logit for continuous variables (Field 2013). To lessen the problem of sample size, the predictor variables in this study were limited to one accounting-based measure, one market-based measure, one accounting- and market-based measure and one control variable for size. The dataset was tested for multicollinearity and the variance inflation factor and tolerance were found to be acceptable for all variables. Linearity tests also showed that all variables were linearly related to the log of the outcome variable. As is normally the case with financial data, there were outliers for all the variables. Therefore Winsorising of 5% was applied to reduce the extreme values to lesser values (Richardson et al. 2005). After these tests, binary logistic regression with bootstrapping, based on 1000 samples, was performed at a 95% confidence interval to examine whether there is a relationship between the financial performance of a company and its place on the JSE SRI Index.

To test whether a place on the JSE SRI Index predicts better financial performance for a company, the logistic regression model was structured as follows:

$$\text{logit}[\pi_i] = \log\left[\frac{\pi_i}{1-\pi_i}\right] = \beta_0 + \beta_{ROE} + \beta_{PE} + \beta_{Stock_Ret} + \beta_{Market_Cap}$$

[Eqn 1]

where π_i is the probability that the dependent variable takes on a value of 1, x_i represents the variables included in the regression, β represents the coefficients of the variables, β_0 is an intercept parameter, ROE represents the return on equity, PE represents the price-earnings ratio, Stock_Ret represents the stock returns and Market_Cap represents the market capitalisation of each company.

TABLE 2: Descriptive statistics for the data set ($n = 885$).

Variables	M	SD	1	2	3	4	5
Dependent variable							
SRI listing yes or no (binary 1 or 0)	-	-	1.000	-0.013	-0.000	-0.114**	0.222**
Independent variables							
Return on equity	16.52	16.45	-0.013	1.000	-0.012	0.098*	0.024
Price/Earnings	15.16	21.10	-0.000	-0.012	1.000	0.002	0.056
Stock returns	22.63	46.06	-0.114**	0.098*	0.002	1.000	-0.018
Control variable	-	-	-	-	-	-	-
Market capitalisation	42 billion	94 billion	0.222**	0.024	0.056	-0.018	1.000

*, Correlation is significant at the 0.05 level (two-tailed); **, Correlation is significant at the 0.01 level (two-tailed). SD, standard deviation; M, mean; SRI, Socially Responsible Investment.

Results

The aim of this research was to ascertain if there exist a relationship between the socially responsible investment practices and financial performance of South African companies, with particular reference to the companies listed on the JSE. Worldwide trends towards social, environmental and economic sustainability initiatives are on the increase. There are benefits and disadvantages to the implementation of socially responsible investments in a company, and one of the main concerns connects with the cost of implementation and its impact on the company's financials. However, studies have indicated that those companies with higher corporate social responsibility scores enjoy a considerably lower cost of equity capital (El Ghouli et al. 2011). In hindsight, it is of benefit to ascertain whether investment in socially responsible activities results in financial gains for a business. In this field of study, the greatest hindrance is to establish the most suitable internationally recognised measurement criteria.

Logistic regression was performed to assess the impact of accounting and market-based factors on the likelihood that a company would be listed on the JSE SRI Index. The model contained four independent variables (return on equity, price-earnings ratio, stock return and market capitalisation). The full model containing all predictors was statistically significant, $\chi(4) = 201.39, p < 0.05$, indicating that the model was able to distinguish between companies listed on the JSE SRI Index and those that are not. The model as a whole explained between 27.3% (Cox and Snell R-squared) and 36.7% (Nagelkerke R-squared) of the variance. An inspection of the individual predictors (as shown in Table 2) revealed that only two of the variables made a significant contribution to the model, namely the stock return ($\beta = 0.994, p < 0.05$) and market capitalisation ($\beta = 2.711, p < 0.05$). The strongest predictor of a listing on the JSE SRI Index was market capitalisation, with an odds ratio of 2.71. A comparatively larger company thus has a 2.71 better chance of being on the JSE SRI Index than a smaller company. The odds ratio for stock return is close to 1, indicating that stock returns for both companies listed on the JSE SRI Index and those not listed are nearly the same. The final logistic regression model correctly classified 75% of cases. The overall model is presented in Table 3.

Note that an analysis using market capitalisation without log transformation resulted in the same conclusion.

The results reveal that size is the most likely predictor for a company to be considered for a listing on the JSE SRI Index. From the studies considered in Table 1, this finding only corresponds to the study by Charlo et al. (2015), which was conducted in Spain. The explanation for these results may be as simple as that smaller, financially unstable companies may find it difficult to invest in traditional corporate social responsibility activities, while larger companies in better financial standing have the economies of scale and resources to spend in ways that may have long-term strategic impacts. This highlights an issue of cost and cost structure and its impact on the extent of focusing on corporate societal matters. However, the results may also indicate a more far-reaching effect of corporate social responsibility on a company's profile and thus its investment prospects.

Discussion and conclusion

This study sought to investigate the relationship between the financial performance of JSE-listed companies included in the SRI Index over the period 2009–2014, as compared to those companies that were not included as JSE SRI constituents.

The study analysed the return on equity, price-earnings ratio and stock returns to reflect the companies' financial performance and internal efficiency. The market capitalisation of each company is included for each year to account for any size effect. The findings of the study points to a definitive relationship between company size and a listing on the JSE SRI Index, but no clear relationship between a listing on the JSE SRI Index and accounting- or market-related financial performance.

The JSE SRI Index criteria have been influential in a process to conventionalise sustainability for top South African companies across different sectors. In conclusion, the financial performance of a JSE-listed company does not make a significant contribution towards determining its likelihood of being included in the JSE SRI Index as a constituent in any financial year. This knowledge is of value to investors, business leaders, market analysts and company management, as it indicates how socially responsible investment and financial performance interact.

According to the definition of stakeholder theory as per Evan and Freeman (1993), that 'the real purpose of a company

TABLE 3: Coefficients of the model predicting the relationship between company financial performance and being listed on the Johannesburg Stock Exchange Socially Responsible Investment Index.

Variables	B	SE	Wald	df	p	Odds ratio	95% CI for odds ratio	
							Lower	Upper
Return on equity	-0.009	0.006	2.301	1	0.129	0.991	0.980	1.003
Price/Earnings	-0.004	0.005	0.622	1	0.430	0.996	0.988	1.005
Stock return	-0.006	0.002	6.081	1	0.014	0.994	0.990	0.999
Market capitalisation	0.997	0.088	128.015	1	0.000	2.711	2.281	3.222
Constant	-23.231	2.039	129.860	1	0.000	0.000	-	-

Note: 95% BCa bootstrap confidence intervals based on 1000 samples.

$R^2 = 0.23$ (Hosmer & Lemeshow), 0.273 (Cox & Snell), 0.367 (Nagelkerke). Model $\chi(1) = 201.39, p < 0.05$.

B, Beta; SE, standard error; CI, confidence interval; BCa, bias-corrected and accelerated, df, degrees of freedom; Wald, Wald Chi-squared test; p, significance.

is to serve as a vehicle to coordinate the interests of [all] stakeholders', it stands to reason that companies are perhaps not investing in socially responsible activities for the benefit of the wider society but rather because they have the financial means to do so (as a result of size) and can use it as a legitimisation strategy to improve their companies' reputation.

Limitations and future research

Boaventura et al. (2012) highlight the fact that theoretical empirical studies on the affiliations between corporate financial performance and corporate social performance have encouraged an increasing trend over the years, which emphasises the need for continuous research in this field. The performance of companies has been at the forefront of interest areas among researchers (Shah, Haldar & Nageswara Rao 2015). Future research in this area has the potential to bring advancements in a number of ways. There is still a significant gap in the literature surrounding socially responsible investment, the value it adds and creates, as well as the importance of its content and context, more specifically with reference to socially responsible investment. It is recommended that future studies focus on those aspects. It will also be to the benefit of investors and other interested parties to know whether good financial performance results in good corporate social responsibility practices or vice versa. The reliability and sustainability of socially responsible investment on the financial performance of JSE-listed companies could also be researched and investigated. This recommendation has an impact on all stakeholders, with the emphasis on investors and business leaders, together with academics and novice researchers.

The research was conducted on South African JSE-listed companies. There are thus certain limitations in terms of the environment of the study. The environment conforms to the regulations of the country, which includes the performance of the economic market of South Africa in relation to the rest of the world. Expansion of the study to cover a larger period or conducting the study for individual periods and/or over various countries may deliver interesting results.

A few further delimitations for the study, which can translate into future research areas, are as follows:

- There are other operational factors that may have an effect on a company's corporate financial performance, regardless of corporate social responsibility, but these fall outside the scope of this investigation.
- Some of the companies listed on the JSE may have dual listings and may be linked to multinational companies. This could be an added advantage for those companies in terms of economic exposure and, therefore, financial performance.
- The base years fall into the period of recovery from the global financial crisis (2007–2010). Therefore, comparison of financial performance has a lower base year and could misrepresent the magnitude of improvement in financial performance.

- The ratios used in the study have their own limitations and constraints. They could hamper the findings of the overall study if looked at in isolation.
- The study did not focus on the position of the industry life cycle, although other scholars indicated that extrinsic factors such as the growth of an industry positively regulate correlations between environmental and economic performance (Surroca, Tribó & Waddock 2010).

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

E.d.T. was the project leader, made contributions to the literature review and conducted the statistical analyses. K.L. was responsible for the majority of the literature review and collection of data for analysis.

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