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Labuschagne, Zani

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GRI and SRI: Acronyms for investor success?

Research Report

By: Zani Labuschagne

Student Number: 306566

Supervisor: Prof Gary Swartz

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DECLARATION

I declare that this research report is my own original work and that all sources have been accurately reported and acknowledged. It is submitted for the degree of Masters of Commerce to the University of Witwatersrand, Johannesburg. This research has not been submitted for any degree or examination at this or any other university.

Zani Labuschagne

Date

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I would like to express my gratitude towards Professor Gary Swartz, who through his encouragement and support taught me the meaning of the following words:

'Just keep following the heartlines on your hand'

~Florence and the Machine~

ABSTRACT

The global move towards sustainability and sustainability reporting, the rise and influence of the Global Reporting Initiative (GRI) and triple bottom line reporting, together with the launch of the King III Report, and revision of the Johannesburg Stock Exchange (JSE) listing requirements in South Africa, both requiring the preparation of an integrated report, have resulted in a uniquely altered information environment, in which investors are required to make investment decisions. The value-relevance of this new sustainability information is however to date untested in a South African context.

The introduction of the Social Responsible Investment (SRI) Index in South Africa provides a unique opportunity to evaluate the value-relevance of such new reporting. This research report tests the GRI, using the SRI Index as a proxy, to determine whether this accepted reporting standard is recognized as being value-relevant, from both a short term and long term perspective, on the JSE over the period 2004 to 2012. The short term value-relevance is tested using cumulative average abnormal returns in an event study methodology, while the long term effect was investigated using a 4-tiered portfolio construction technique, which uses the SRI Index category rankings to define the portfolios.

The results indicate that true to the long term nature of sustainability information, in the short term the quality of sustainability and sustainability reporting has no effect on the market value of a company. However, in the long term, a positive effect was found where the SRI listed portfolio, and the SRI best performer portfolio, significantly outperformed the non-listed portfolio on a consistent basis as measured using relative performance. The SRI persistent best performer portfolio however underperformed all other portfolios. This is however due to an overwhelming lack of diversification due to a low number of shares in the portfolio, as well as the portfolio being severely overweight in resource shares, which tend to be the best reporters, due to their large environmental impact. The research report therefore concludes that investing in a higher quality SRI/GRI sustainability portfolio, as opposed to a lower quality portfolio, resulted in excess returns to the investors over the period 2004-2012.

CHAPTER 1 – INTRODUCTION

1.1 INTRODUCTORY PARAGRAPHS

The importance of being seen to be ethical (adhering to good corporate governance practices) or green (adhering to good sustainability practices) has gained significant momentum in the past few years for corporates. Pressures are increasing to change focus from short term profitability, to demonstrating long term sustainable earnings growth, and adherence to good corporate governance practices (King, 2009). Companies are therefore moving towards a triple bottom line approach, considering not only economic performance, but also the sustainability of social and environmental impacts on their operations.

On a global basis, voluntary disclosures in the form of integrated and sustainability reports based on triple bottom line principles have resulted, as companies seek to lure investors and secure low-priced capital. However, unlike the preparation of financial statements, there is no international standard prescribing the format or content of an integrated or sustainability report. Hence such reports are not considered reliable, cannot be compared and investors cannot assess their quality.

In response to the lack of established standards, a number of guidelines have been developed to support companies and investors in the preparation and evaluation of integrated and sustainability reports, the most prominent of which is the Global Reporting Initiative (GRI) (GRI, 2006), which has become an accepted standard for sustainability reporting (King, 2009), it has however not yet gained any form of regulatory backing.

It is important to recognize that the publishing of a sustainability or integrated report does not make a company a sustainable investment; it is merely a reporting exercise. However, it does offer the investor an opportunity to evaluate and compare companies based on their sustainability practices, in order to make better informed investment decisions.

1.1.1 SOUTH AFRICAN PERSPECTIVE

South Africa pioneered the development of sustainability indices in developing countries through the introduction of the JSE Social Responsible Investment (SRI) Index in May 2004. South Africa was also the first country to legislate the preparation of integrated reports (and therefore indirectly, sustainability reports) through the launch of the King III Report in September 2009, which required the preparation of an integrated report (King, 2009), and the JSE aligning its listing requirements accordingly requiring this report for all listed entities.

The goal of the SRI Index is to identify South African listed companies which integrate the principles of triple bottom line and good corporate governance practices into their activities, to provide a tool for investors in order to assist them in assessing these policies, serve as a vehicle to facilitate investors integrating non-financial risk variables into their investment decisions, and to contribute towards responsible business practice in South Africa (JSE, 2011b), hence the SRI Index serves as a measure of sustainability performance and integrated and sustainability report quality.

1.2 STATEMENT OF THE PROBLEM

Driven by the new interest in socially responsible investing, the legal requirement in South Africa to produce an integrated report, and the introduction of the SRI Index as a tool for investors to assess report quality; determining whether excess short term and long term share price returns are achievable using the SRI Index as an investment tool is untested in a South African context. This research report assesses the value-relevance of integrated and sustainability reporting using the SRI Index as a proxy for report quality.

1.3 PURPOSE OF THE STUDY

The purpose of this study is to investigate the effects of different quality levels of integrated and sustainability reporting on share price returns in the short and long term, and thereby determine whether sustainability reporting holds any value-relevance for shareholders.

1.4 SIGNIFICANCE OF THE STUDY

The significance of this study can be found in its contribution to the existing research. This research report fills the gap in the current body of knowledge by investigating the long and short term effects that the quality of integrated and sustainability reporting have on share price returns, as yet untested in a South African context. It also contributes to the body of international research, as the SRI Index offers a unique and objective method for assessing the quality of integrated and sustainability reports, thus improving the current methodology used in other studies.

1.4 DEFINITION OF TERMS

Sustainability reporting: For the purposes of this report, the term sustainability reporting refers to both integrated reporting, and sustainability reporting.

1.5 RESEARCH HYPOTHESES

The problem expressed above will be addressed in this research report by investigating the following null-hypotheses:

H_1 = Sustainability and sustainability report quality does not have a short term effect on company value.

H_2 = Investing in companies demonstrating better quality sustainability and sustainability reporting will not generate abnormal returns for investors in the long term.

CHAPTER 2 – LITERATURE REVIEW

The research problem stated above, i.e. determining whether different quality levels of sustainability reporting can induce excess short term and long term share price returns through using the SRI Index as an investment tool, will now be addressed through a review of the relevant literature. The literature review has been divided into three sections. The first will speak towards what sustainability and sustainability reporting is. The second section will discuss the reasoning why excess returns can be expected in companies demonstrating good sustainability practices; in this section the value-relevance of good sustainability practices to shareholders and companies will be discussed and empirical evidence will be provided to substantiate the aforementioned notions. The final section will discuss how the methodology used in this study was developed. This will include a description of the relevance and advantages enjoyed through performing this study in a South African context, as well as how the methodology of prior studies have been drawn on and improved in this research report, followed by a discussion on the measure of report quality used.

2.1 WHAT IS SUSTAINABILITY AND SUSTAINABILITY REPORTING?

2.1.1 SUSTAINABILITY

Prior literature uses a wide variety of terms to describe sustainability. This section provides clarity on the meaning of terms used, and also provides the terminology that is used in this research report. It then discusses the ideals of, as well as provides some insight into, the development of sustainability reporting.

One of the most common sustainability references in prior research is that of Corporate Social Responsibility (CSR). CSR is defined by Doane (2005) as the efforts of companies to balance the needs of stakeholders against the need for profit, in other words, it focuses on the interaction with stakeholders through the inclusion of social and environmental concerns into business activities (Lo and Sheu, 2007).

Corporate Sustainability (CS), less frequently used, has been defined by the Dow Jones Sustainability Index website (DJSI) as cited in Lo and Sheu (2007), as a business approach that creates shareholder value by embracing opportunities and managing risk from economic, environmental and social dimensions. Thus it can be seen that there is a very fine line between CSR and CS. Clarity on this relationship is provided by Wempe and Kaptein (2002) as cited in Lo and Sheu (2007), who state that CSR is an intermediate stage where companies try to balance the triple bottom line (economic, social and environmental) in order to achieve the ultimate goal of CS.

Sustainability, as defined by the King III Report (King, 2009), is the conducting of operations in such a way as to meet existing needs while not compromising the ability of future generations to meet their needs. It includes environmental, social and governance issues. Gray and Milne (2002) expand on this definition by stating that sustainability emphasizes an efficient allocation of resources over time, fair distribution of resources and opportunities not only between the current generation but also the current and future generations, and an appropriate level of economic activity relative to ecological life support systems.

It is clear from the above that there are great similarities between the definitions of CSR, CS and sustainability. Therefore for consistency purposes this study will make reference to the term 'sustainability' to encompass CSR, CS and sustainability practices.

2.1.2 SUSTAINABILITY REPORTING

Having defined sustainability, the following section will discuss the rationale for the development of sustainability reporting, and describe the ideals of sustainability reporting.

Sustainability reporting was developed by companies to address the information demands of shareholders. In an environment of global warming, biodiversity erosion, and market globalisation, companies were the first to be indicted for their sustainability practices and performance (Berthelot, Coulmont and Serret, 2012). Companies realised that in order to remain competitive, they had to take externalities, such as the environment and their social standing within the community, into consideration when making decisions (Lo and Sheu, 2007). Due to the importance of sustainability, shareholders began placing increasing pressure on companies to improve their sustainability performance and to be sustainable. Shareholders are therefore demanding increasing amounts (Berthelot et al., 2012) and better access to sustainability information (Westerfors and Vesterberg, 2011). The attempt to address such demands by companies has been through the publication of a sustainability report.

Sustainability reporting is defined by the Global Reporting Initiative (GRI) as the measurement, disclosure and accountability for the organisation's performance in the area of sustainable development to external as well as internal stakeholders. The sustainability report is required to be a balanced representation of the sustainability performance of a company, i.e. both negative and positive aspects should be reported. The sustainability report can therefore be used as a benchmarking, demonstration and comparison tool (GRI, 2006).

The ultimate goal of sustainability reporting as envisaged by the GRI (GRI, 2006), as well as shareholders, can be found in the adage: 'what gets measured, gets managed' (KPMG, 2011), i.e. by shareholders demanding that companies publish sustainability reports, companies are forced to better manage their sustainability practices. It is the ideal that sustainability be integrated into the daily business activities of the company, and therefore sustainability reporting would naturally form part of mainstream reporting (KPMG (2010) as cited in Westerfors and Vesterberg (2011)). It can hence be deduced that with sustainability reporting becoming a requirement, and thus being measured by shareholders, it is likely to be better managed by the company, leading to a better quality sustainability report. Ultimately then, the quality of a company's sustainability report could be used as a proxy for the sustainability performance of the company. Although this logic is useful to this study, it is not vital.

According to Gray and Milne (2002), in order to hold companies fully accountable for their sustainability performance, a full set of social and environmental statements must be produced alongside the financial statements that are as important, rigorous and detailed as the financial statements. Hence, true sustainability reporting may be more complex than originally anticipated by shareholders.

True sustainability reporting therefore requires a collective and cumulative assessment of a company's economic activity relative to a resource base, i.e. it requires a thorough analysis of the present and past interactions between the company and its ecological systems, habitats, resources and societies, and allows comparison of such information to that of other companies.

In addition, a true sustainability report needs to incorporate a wider set of users than merely the shareholders, it needs to incorporate all stakeholders who are affected by the firms activities, which would include civil society, customers, local communities, other providers of capital, suppliers, employees, other workers, and trade unions (GRI, 2006).

Therefore, true sustainability reporting is clearly exceptionally difficult, and probably impossible for companies to accomplish in its purest form (Gray and Milne, 2002). Due to the complexity in preparing true sustainability reports, and the increased pressure from stakeholders for sustainability information, companies have responded by publishing reports based on a more manageable approach to sustainability reporting; reporting on their economic, social and environmental activities. This approach was named the 'triple bottom line' by John Elkington in 1997 (Norman and MacDonald, 2004; Gray, 2006).

The triple bottom line approach responds to all stakeholder demands, and thus defines the ultimate value of a company in financial, social and environmental terms (Norman and MacDonald, 2004). The publication of triple bottom line based reports has increased significantly over the past two decades (Dhaliwal, Li, Tsang and Yang, 2009; Berthelot et al., 2012), to where 95% of the 250 largest companies in the world (G250), are reporting on their sustainability issues using this approach (KPMG, 2011).

In summary, stakeholders are demanding sustainability information from companies in order to hold them accountable for their sustainability performance, and to motivate them to act more sustainably. Companies have answered the demands of stakeholders through the publication of triple bottom line reports.

Having defined sustainability and sustainability reporting, the next section discusses the theoretical relationships between sustainability reporting and market value: the value-relevance of sustainability reporting.

2.2 VALUE-RELEVANCE OF SUSTAINABILITY AND SUSTAINABILITY REPORTING

The reason for the increased popularity of sustainability reporting or triple bottom line reporting, as discussed above, can be found in the value-relevance that sustainability reporting holds for stakeholders as well as companies. The value-relevance of sustainability reporting is the foundation of this research report: the relationship between the quality of sustainability reporting and the market value of a company.

The following section will examine the arguments in favour of the value-relevance of sustainability reporting to companies and stakeholders. It will also present the empirical results of prior studies investigating these relationships.

2.2.1 THE VALUE-RELEVANCE TO STAKEHOLDERS

Sustainability reports are considered to be value-relevant to stakeholders if the information gained therefrom will influence their decisions. The following section discusses the ideal sustainability shareholder in particular (one that would promote sustainability values in current business practice), provides evidence suggesting that sustainability information is important to shareholders, as well as puts forth some issues experienced by shareholders in utilizing sustainability reports. As this research report is investigating value-relevance in the form of share price movements only, it is not measuring the importance of reporting to other stakeholders, and therefore focusses on the shareholder as the stakeholder only.

The ideal shareholder as envisaged by Gray (2006), in the current environmental, social and economic environment, is one that embraces compassion, trust, respect, life, safety, beauty, nature, water, air, sunshine, etc. Thus the shareholder should search for long term sustainability, not short term volatility, in their investment choices. It follows that an ideal socially responsible investor should consider both social and financial criteria when making investment decisions (Sauer, 1997). Hence in order to satisfy such a shareholder, through creating long term shareholder value, all types of capital (not just economic capital) need to be enhanced and preserved (ICAEW ((2004)) as cited in Gray (2006)).

A positive viewpoint on the nature of shareholders is offered by Lo and Sheu (2007), who conclude that ethical investment is gaining momentum world-wide. Furthermore, a survey performed by Epstein, McEwen and Spindle (1994) found that as much as 72% of shareholders are interested in disclosure of ethical issues, and that 58% of shareholders would go so far as to sacrifice profits for ethical behaviour. It is therefore posited that there should be shareholders that invest based on sustainability information and sustainability performance.

An alternative viewpoint is provided by Westerfors and Vesterberg (2011), who assert that shareholders have been late in integrating economic, social and governance (ESG) issues into their decision-making activities, and make limited use of sustainability reports (Jones, Frost, Loftus and Laan, 2007). Reasons offered for this behaviour are: firstly that shareholders are still seeking short term profits, as there is a lack of long term empirical evidence linking financial performance to ESG issues (Schadewitz and Niskala, 2010; Westerfors and Vesterberg, 2011), therefore only a minority of shareholders actually believe that sustainability affects company actions and market value (Starks, 2009) and; secondly, sustainability reports are inadequate (Jones et al., 2007), hence investors are finding it difficult to access comparable and reliable ESG information, and only a few professionals are capable of assessing this kind of information (Westerfors and Vesterberg, 2011).

It has also been found that social screening increases volatility, lowers returns and reduces diversification, through the exclusion of certain industries from sustainability indices (Sauer, 1997), thus including social screening into investment decisions increases portfolio management costs.

This research report attempts to address the above issues as follows: this study adds to the current body of empirical evidence investigating the long and short term relationship between ESG issues and market value; this study is performed in a South African context where the majority of companies are using the GRI Reporting Guidelines to prepare sustainability reports, thus contributing to the comparability of the reports; this study also uses the SRI Index as an

investment tool, which assists investors in assessing the adequacy of sustainability reports, as this activity is performed automatically by the index, the individual investor is therefore no longer required to perform these tasks, nor pay a fund manager to do so, therefore it reduces portfolio management costs; reduced diversification is also addressed as the SRI Index does not exclude any industries from its assessment process. The South African context, the GRI and the SRI Index are further discussed in sections 2.3.1, 2.3.4.1 and 2.3.4.2.

In conclusion, it appears from the previous discussion that shareholders are (and should continue to) placing more pressure on companies to enhance their sustainability practices through requiring the preparation of sustainability reports, which should carry significant value for shareholders. This research report investigates the relationship between the quality of sustainability and sustainability reporting, and the market value of a company; i.e. if sustainability and sustainability reporting is relevant to shareholders, one would expect that shareholders would reward better sustainability performance (high quality sustainability reports) through investment in such companies thus increasing the company's market value.

2.2.2 THE VALUE-RELEVANCE TO COMPANIES

Having established the value-relevance of sustainability and sustainability reporting to shareholders, the value-relevance to companies is explored next.

Westerfors and Vesterberg (2011) and Dhaliwal et al. (2009) found that companies publish sustainability reports as they are considered to be complimentary to the financial statements; it provides stakeholders with necessary information not contained in the financial statements. The financial statements can only inform users about the past performance of the company, they do not provide any forward looking information, nor do they reveal the full extent of the company's environmental and social intangible assets and liabilities, such as a company's ethical reputation (Schadewitz and Niskala (2010) and Chami, Cosimano and Fullenkamp (2002) as cited in Lo and Sheu (2007)); or the risks the company faces in the market (Lo and Sheu, 2007). The disclosure of non-financial information in the sustainability report therefore compliments financial disclosure by mitigating the negative effect of financial opacity on analyst forecast accuracy. This provides a better information environment, leads to less error in earnings forecasts by analysts (Dhaliwal et al., 2009), and decreases the information asymmetry between shareholders and company management (Schadewitz and Niskala, 2010).

Further motivations for reporting on sustainability matters found by Reverte (2009), as cited in Berthelot et al. (2012), included that companies had a moral and ethical obligation to act in a sustainable way; companies gained competitive advantage through sustainability reporting and; companies faced pressure from competitors that were reporting on their sustainability practices. Dawkins and Ngunjiri (2008) also found that companies engaged in sustainability reporting to enhance and maintain perceptions of legitimacy, and to manage key stakeholder perceptions.

According to KPMG (2011), companies are realising that the benefits of sustainability reporting extends beyond being a good corporate citizen, it also drives innovation and furthers learning, which promotes growth and increases company value. Sustainability reporting is therefore no longer seen as just fulfilling an obligation to society, but is increasingly recognised as a tool that is imperative to business.

The increasing attractiveness of sustainability reporting is evidenced through 47% of the G250 companies stating that sustainability reporting can increase the company's financial value (KPMG, 2011). Furthermore, Berthelot et al. (2012) conclude that companies publishing sustainability reports were traded at a price premium.

In addition to the attractiveness of reporting, it has been evidenced that higher quality sustainability reports elicited more positive market reactions (Schadewitz and Niskala, 2010) and that Brown, Guidry and Patten (2010) as cited in Berthelot et al. (2012) found that only reports with the highest quality enhanced corporate reputations.

2.2.3 INCREASING MARKET VALUE

The notion that sustainability reporting can increase the market value of a company is the foundation of this research report. Hence it is important to describe how sustainability reporting can increase the market value. The following literature explores the reasoning for the possible increase in market value.

KPMG (2011) suggested that companies used their sustainability reporting data to find new opportunities for improvement and expansion. Companies were attempting to manage their sustainability performance so as not to report negative outcomes in their sustainability reports (Ioannou and Serafeim, 2011).

Sauer (1997) found that companies with good sustainability performance were partial to greater customer loyalty, enjoyed good employee benefits, were less likely to be subjected to fines and lawsuits, and faced less product liability suits.

Lo and Sheu (2007), through citing Brickley, Smith and Zimmerman (2002) and Chami et al. (2002), linked sustainability to market value by stating that a company can gain a competitive advantage and differentiate its product through promising to act ethically, thus increasing demand, illustrating that a company's ethical reputation was a valuable intangible asset, that would affect the share price.

El Ghoul, Guedhami, Kwok and Mishra (2011) found that companies with better sustainability performance had higher valuations, and lower risk premiums, as these companies tended to have lower costs of equity. This relationship was particularly strong in companies exhibiting better employee relations, environmental policies and product strategies.

Finally Berthelot et al. (2012) stated that the increase in market value of companies with good sustainability practices could be attributable to lower expected production costs, increased sales or sophisticated communication strategies that generated political benefits.

In summary there are many reasons why companies publish sustainability reports, the most important of which is the potential increase in their market value. This increase in market value arises through obtaining competitive advantage, and enjoying greater customer loyalty, which could lead to greater revenue. These companies also tend to have lower costs of equity, and experience lower production costs.

The value-relevance of sustainability and sustainability reporting to shareholders and companies described above forms the basis of this research report. It is hypothesised that if the quality of sustainability practices and sustainability reporting are important to shareholders and companies, i.e. is value-relevant, good sustainability reporting should be rewarded in the market through an increase in market value. The next section investigates the empirical results of prior studies examining the relationship between sustainability and market value.

2.2.4 EMPIRICAL EVIDENCE

Prior empirical works were reviewed to establish prior results, to identify different methodologies utilized, and to determine the alternative sustainability measures used. The methodologies identified were interrogated to identify weaknesses. A summary of the empirical works is found in Table 1.

From Table 1 it is clear that there are a wide variety of results from prior studies on the relationship between sustainability performance and market value, ranging from negative to positive relationships. This can be attributed to

the variety of methodologies used, the different measures of sustainability used and the different circumstances and markets in which such studies were performed.

Through an inspection of Table 1, certain trends in the methodologies used in prior empirical studies can be identified. The first is the creation of portfolios in order to compare the performance of companies considered to be sustainable to non-sustainable companies, across a range of different metrics. These portfolios were created through the use of sustainability indices, i.e. companies listed on the sustainability indices were considered to be sustainable.

Table 1 also evidences the popularity of using an event study methodology for short term studies (i.e. a regression analysis around an event date). According to Jones et al. (2007) most previous studies investigating the relationship between share prices and sustainability disclosures used event study methodologies. This methodology however suffers from certain drawbacks. Firstly, sustainability disclosures are voluntary in countries the studies are set, limiting the investigation to only determining the effect of issuing sustainability reports versus not issuing reports. The comparability of these voluntary reports are also limited, hence a study that includes the quality of the disclosures is not possible. This is illustrated by the fact that most of the studies incorporating sustainability into their regression models do so through the use of dummy variables only, thus a company is either considered to be sustainable, or not, no degree of quality is investigated. Secondly only the value-relevance of specific information has been tested in these studies, thus they do not have external validity, hence in accordance with Schadewitz and Niskala (2010), prior literature is isolated and lacks any attempt to generalization.

Based on the trends in the methodologies identified above, as well as the shortcomings of these methodologies, the next section discusses how the methodology used in this study was developed.

Table 1 - Summary of Empirical Works Examined

Author	Results	Methodology	Sustainability Measure
Lopez, Garcia and Rodriguez (2007)	The results indicated a negative relationship between sustainability and financial information in the short term. However the negative impact was shown to diminish over time. Lopez et al. (2007) assert that in the short term only existing resources can be applied to sustainability practices, as additional financing cannot be obtained in this timeframe. Whereas in the long term sufficient financing can be obtained to acquire the resources needed to carry out sustainability strategies. The study concludes that a long term positive correlation could exist between good sustainability practices and share prices, as sustainability practices would be integrated into corporate management, which could create competitive advantage.	First, a regression analysis was performed between sustainability and financial measures through treating sustainability reporting as a dummy variable, in order to establish whether there was a relationship between these variables. Next, the evolution of the variables over time was considered through a comparison of the performance of firms considered to be sustainable, and those not. This was achieved through the creation of two portfolios. The first only including companies listed on the Dow Jones Sustainability Index (DJSI), thus representing firms considered to be sustainable, the second portfolio included companies listed on the Dow Jones Global Index but not the DJSI, thus representing companies considered not to be sustainable.	Companies listed on the Dow Jones Sustainability Index.
Sauer (1997)	This study concludes that socially screened portfolios do not necessarily have a negative impact on portfolio performance.	The study follows a portfolio construction method in line with Lopez et al. (2007). The average monthly raw returns and variability, Jensen's Alpha and the Sharpe ratio of a well-diversified, socially screened portfolio were compared to that of two unrestricted portfolios. The study considered companies listed on the Domini 400 Social Index (DSI) to be an ideal proxy for socially screened companies. A passive portfolio management strategy was followed, as investors can invest directly in the social index. Thus the study ignored transaction costs, management fees and manager specific investment policies.	Companies listed on the Domini 400 Social Index.

Author	Results	Methodology	Sustainability Measure
Jones et al. (2007)	This study investigated the relationship between the quantity (not quality) of sustainability disclosures in sustainability reports, and market returns. The hypothesis investigated was that companies with more sustainability disclosures should have higher abnormal returns. The results showed a systematic negative relationship between sustainability rankings and share returns, although only a few of the t-values were statistically significant, hence no definitive conclusion could be reached.	Companies were ranked based on the amount of sustainability disclosures in their sustainability reports. The scale of sustainability disclosures were based on the GRI Reporting Guidelines. The sustainability ranking was then regressed against the abnormal share returns of the companies investigated, where the abnormal returns were calculated by taking the raw monthly share price growth less the growth in the market index.	A sustainability ranking based on the quantity of sustainability disclosures in sustainability reports in line with the GRI Reporting Guidelines.
Lo and Sheu (2007)	A significantly positive relationship between corporate sustainability, market value and sales growth was found by this study. These findings support the argument that being sustainable increases company value.	A regression analysis was performed using panel data. A range of financial measures was regressed against sustainability performance, where sustainability performance was represented by a dummy variable. Tobin's Q was used as a proxy for firm value.	Companies listed on the Dow Jones Sustainability Group Indices (DJSGI).
Pava and Krausz (1996)	This study found that companies that were perceived to be sustainable reflected higher market returns than companies perceived not to be sustainable. It was also concluded that over the period tested, the sustainable companies outperformed the non-sustainable companies, showing nearly double the market returns. Through an examination of 21 other empirical works, Pava and Krausz (1996) also found that on average, companies perceived to be socially responsible outperformed or performed as well as other companies.	A comparison was performed between companies considered to be sustainable, and other non-sustainable companies, with respect to financial indicators, market indicators and other accounting factors.	The study used the services of the Council on Economic Priorities (CEP) to identify sustainable companies. The companies identified were similar to the constituents of the Domini 400 Social Index.
Schadewitz and Niskala (2010)	The results of this study showed that sustainability reporting is an important explanatory factor of company value (even more so than earnings and book value of equity) as it decreases the information asymmetry between the company management and investors.	The Ohlson model (Ohlson, 1995) was utilised by this study, which expressed company value in terms of book value of equity, accounting earnings and sustainability reporting (dummy variable to express whether the company prepared its sustainability report in accordance with the GRI Reporting Guidelines.	Sustainability reporting in accordance with the GRI Reporting Framework.

2.3 METHODOLOGY OVERVIEW

The methodology used in this study will be discussed in the following four sections: the South African context, short term methodology, long term methodology, and the measure of sustainability report quality.

2.3.1 THE SOUTH AFRICAN CONTEXT

South Africa is an ideal locale to perform a study investigating the relationship between sustainability reporting and market value. Dawkins and Ngunjiri (2008) state that emerging markets could be more receptive to social responsibility and stakeholder responsibility, and South Africa being the wealthiest emerging market in Africa, creates the perfect environment for such a study.

According to Westerfors and Vesterberg (2011), South Africa was the first country to legislate the preparation of integrated reports (and therefore indirectly, sustainability reports). This was accomplished through the launch of the King III Report in September 2009, which required the preparation of an integrated report (King, 2009), and the JSE aligning its listing requirements with this report, resulting in all listed companies publishing integrated reports for all financial years starting after 1 March 2010 (Westerfors and Vesterberg, 2011).

South Africa also pioneered the development of sustainability indices in developing countries through the introduction of the JSE Social Responsible Index (SRI Index) in May 2004 (Heese, 2005; Sonnenberg and Hamann, 2006).

Furthermore, the Integrated Reporting Committee (IRC) was launched in South Africa, which released a discussion paper on the 'Framework for Integrated Reporting and the Integrated Report' ((IRC), 2011) on 25 January 2011, which illustrated South Africa's commitment to sustainability reporting.

Dawkins and Ngunjiri (2008) further found that due to institutional pressure, South African companies report on a much higher level, and with greater frequency than the Global 100 Companies.

Discussing the effect of mandatory reporting such as that on the JSE, Ioannou and Serafeim (2011) found that mandatory reporting increased the social responsibility of leading companies as sustainable development, employee training, and better corporate governance practices became higher priorities, companies acted more ethically and managerial credibility increased. Ioannou and Serafeim (2011) conclude that mandatory

sustainability reporting increased transparency and altered corporate behaviour. Thus mandatory disclosure of economic, social and governance information forced companies to manage those areas effectively so as not to report negative performance.

It is therefore concluded that, through the regulation of sustainability reporting in South Africa, it appears to be an ideal context for testing the quality of the mandatory sustainability reports. The SRI Index also provides a useful comparative measure which avoids the use of dummy variable testing in previous studies.

2.3.2 SHORT TERM METHODOLOGY

The investigation of the short term effect of sustainability and sustainability report quality on market value utilises an event study method consistent with prior studies. The shortcomings of this methodology, identified by Jones et al. (2007), have been addressed as follows: the voluntary disclosure issue is automatically addressed in the South African context, as the publication of an integrated report (financial and sustainability reports) is a JSE listing requirement; and the external validity problem has been addressed in line with the method adopted in Jones et al. (2007), through investigating a broad range of company-specific sustainability disclosures, i.e. this study investigates the disclosures in the entire sustainability report.

2.3.3 LONG TERM METHODOLOGY

The investigation of the long term effect of report quality on market value utilises a portfolio construction method, consistent with prior studies. However, unlike prior studies that utilise one sustainability portfolio and a non-sustainability portfolio, three portfolios are created based on different quality levels of sustainability reports (sustainability portfolios), and one non-sustainable portfolio (the construction of the portfolios will be discussed in more detail in section 2.3.4.2). Consistent with the study performed by Sauer (1997), a passive investment strategy has been followed; thus transaction costs have been ignored.

In order to create the three portfolios, the sustainability performances (i.e. the sustainability reports) of companies were ranked. As prior studies did not investigate the effect of the quality of sustainability disclosures, no guidance was available due to the lack of legislation of sustainability reporting, as well as there being no prescribed reporting framework for the preparation of sustainability reports. This led to certain

negative trends in sustainability reporting, as identified by Gray and Milne (2002) and Sonnenberg and Hamann (2006), and therefore limited prior studies from ranking sustainability reports based on quality.

The negative trends in sustainability reporting identified by Gray and Milne (2002)and Sonnenberg and Hamann (2006) include: assertiveness, i.e. companies are disclosing information in an anecdotal and aspirational manner without providing context for the significance of the items disclosed; partiality to good news, reports tend to be unbalanced, focusing on disclosure of the achievements and not the failures of companies; reports are not comparable over time or to other companies; disclosures appear to be limited to using sustainability rhetoric, instead of focussing on comprehensive sustainability management; companies are not committing to stakeholder involvement, hence companies are following a stakeholder management approach, rather than a stakeholder engagement approach to sustainability reporting (Manetti, 2011) and; companies are focusing more on mandatory or recommended disclosures (such as corporate governance and BEE disclosures in South Africa) and not a full range of sustainability matters.

However not all sustainability trends are negative. Sonnenberg and Hamann (2006) found that leaders in sustainability reporting (companies with high environmental impact and companies with substantial international exposure) were moving towards reporting on a more systematic basis and providing more comparable and quantitative data, and where quantitative data was not appropriate, companies were starting to explain their strategies and programmes for addressing the key issues.

Sustainability reports are also frequently combined with financial statements to form integrated reports, where economic, social and governance issues are being integrated throughout the report (27% of the G250 are preparing integrated reports – (KPMG, 2011). Leaders are also reporting in a more balanced fashion on the full triple bottom line (Sonnenberg and Hamann, 2006). Most importantly, companies are increasingly making use of the GRI Reporting Framework when preparing their sustainability reports in order to report on the full triple bottom line.

From the above identified trends, the rationale for Jones et al. (2007) and Schadewitz and Niskala (2010) to use the GRI Reporting Guidelines to rank the sustainability disclosures of companies is made clear (Table 1) albeit on quantity, not on quality. As more companies are using this framework, reports are becoming more comparable. The GRI Reporting Guidelines are investigated in more detail in the following section in order to

determine whether they can be used as a suitable measure of sustainability report quality, as is specified by this study.

2.3.4 MEASURE OF REPORT QUALITY

2.3.4.1 GLOBAL REPORTING INITIATIVE (GRI)

As mentioned previously, sustainability reporting is subject to many weaknesses, which has led to market participants viewing such reports as inadequate, and making limited use of sustainability reports (Jones et al., 2007). However, according to Berthelot et al. (2012) sustainability reports add information to the financial statements, which is required for company valuation. This increases the need for the standardisation of information within sustainability reports.

The need for standardisation has resulted in the development of a number of frameworks, with the purpose of enhancing the comparability and the consistency of sustainability reports. Such frameworks include the AccountAbility Standards, the A4S (His Royal Highness The Prince of Whales Initiative), the UN Global Compact and the GRI Reporting Guidelines. Of these frameworks, the GRI Reporting Guidelines has become generally accepted (Jones et al., 2007) and most popular, with 80% of the G250 companies reporting according to the GRI Reporting Guidelines (KPMG, 2011). In South Africa, most listed companies, parastatals and municipalities utilise the GRI Reporting Guidelines for the preparation of their sustainability reports (Sonnenberg and Hamann, 2006). This is strongly attributed to the King II and III Report recommending reporting according to the GRI Reporting Guidelines, and compliance with King III being a JSE listing requirement, as well as the South African Integrated Reporting Committee's (IRC) discussion paper ((IRC), 2011) released on 25 January 2011, which recommends using the GRI Reporting Guidelines to prepare sustainability reports (Westerfors and Vesterberg, 2011).

Due to the acceptance of the GRI as the preferred reporting framework, a closer examination of the background, as well as the operation of the GRI is required, in order to establish whether the GRI can be used as a measure of sustainability report quality.

2.3.4.1.1 GRI REPORTING GUIDELINES

The Global Reporting Initiative (GRI) was founded in The Netherlands in 1997 (Pounder, 2011), and released the first GRI Reporting Guidelines in 2000 (Westerfors and Vesterberg, 2011). The mission of the GRI is to provide a credible and trusted framework that can be used for sustainability reporting by all organisations independent of size, sector or geographic location. It provides the opportunity for companies to communicate clearly about their sustainability issues (including economic social and environmental performance), using a globally shared framework, with consistent language and metrics (GRI, 2006).

According to Pounder (2011), the widespread credibility of the GRI is due mainly to the utilisation of a multi-stakeholder approach, including business, labour, non-governmental organisations, civil society, accounting, academia, and investors to develop its framework criteria. The GRI Reporting Framework is illustrated next:

2.3.4.1.2 GRI REPORTING FRAMEWORK

The GRI Reporting Framework includes general and sector-specific content that is considered to be generally applicable for reporting on a company's sustainability performance (GRI, 2006). The GRI Reporting Framework consists of the following parts, illustrated in Figure 1:

- Guidelines that contain the Principles of defining report content and quality,
- Standard Disclosures which includes the Performance Indicators, other disclosure items and guidance on technical topics,
- Sector Supplements where guidance is provided for application of the Performance Indicators in specific sectors
- Indicator Protocols where definitions, compilation guidance and other assistance for the preparation of the report can be found, and
- Technical Protocols which includes further guidance on reporting boundaries. The Technical Protocols should be used in conjunction with the Guidelines and Sector Supplements.

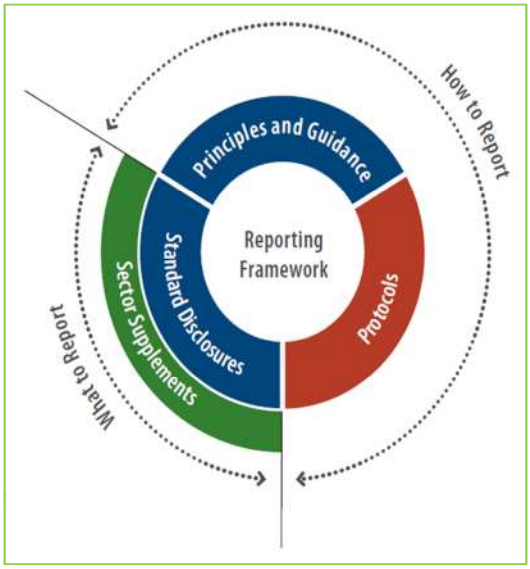


Figure 1: GRI Reporting Framework extracted from the GRI Reporting Guidelines (GRI, 2006)

Through this framework the GRI addresses the negative trends in sustainability reporting, i.e. assertiveness, unbalanced, non-comparable and stakeholder management as identified above. This is done as through the Principles and Guidance requiring compliance with the following reporting principles that define report content: completeness, materiality, sustainability context, and stakeholder inclusiveness as well as the reporting principles that ensure reporting quality through requiring adherence to the following: comparability, balance, accuracy, timeliness, reliability and clarity (GRI, 2006). Therefore the GRI Reporting Guidelines appear to provide a robust measure of reporting quality.

The GRI has different application levels (C, B, and A) with each level requiring more disclosure than the previous level. A company can self-declare a level of GRI application in the sustainability report, have the self-declaration checked by the GRI in an application level check which is noted in the sustainability report by a GRI-checked icon, alternatively the sustainability report can be externally verified (which is the recommended option by the GRI), in which case a plus sign will appear next to the level of application, for example, “A+” (GRI, 2006).

The application level check involves two steps, firstly the GRI checks the GRI content index (an index prepared by the company that lists all of the guideline disclosures addressed in the sustainability report), to determine whether the company has met all the standard disclosures for the application level declared, then the GRI takes a sample of the disclosures and checks if qualitative and quantitative disclosures are answered as such (GRI, 2006).

From the above it can be seen that the three different application levels can serve as a measure of report quality. However the reliability of the levels declared by companies is questionable. Some level of comfort is obtained through the application level check performed by the GRI, however this speaks more towards the quantity of the disclosures, not the quality. A greater degree of comfort over report quality can be found when the report is externally verified, however external verification of sustainability reports is optional, resulting in not all companies opting for this verification. Therefore, for purposes of this research report, the GRI reporting guidelines could not be used as a measure of report quality as the application levels declared by companies cannot be relied upon.

The use of Social Responsibility Indices (SRI Indices) as identified in prior literature is examined next in more detail, in order to establish whether these indices can be used as an appropriate measure of report quality.

2.3.4.2 REASON FOR THE EXISTENCE OF SRI INDICES

Before exploring the use of the South African SRI indices in more detail, it is important to understand why the SRI indices exist. Lopez et al. (2007) states that the rationale for the existence of SRI indices is to identify companies that implement sustainability practices, as they have the potential for long term value creation, hence it serves as a tool for the broader assessment of companies (Schadewitz and Niskala, 2010). It has been shown by Sonnenberg and Hamann (2006) that SRI Indices have the potential to be a vital market-based driver for corporate citizenship. Hence SRI indices serve as the stock market connection between doing well and doing good (Adam and Shavit, 2008).

To illustrate the above, in the South African context, the launch of the SRI Index contributed to the sustainability development front in the following ways (Sonnenberg and Hamann, 2006): it increased awareness of corporate citizenship in South Africa, especially amongst smaller SA companies; it contributed to companies realising the importance of triple bottom line reporting, and the reporting of non-financial information; it has provided the first set of South African criteria that is aligned with international standards, which defines priorities for South African corporate citizenship (JSE, 2011b) and; it serves as a benchmark for corporate reporting (Sonnenberg and Hamann, 2006).

Therefore it would seem that sustainability indices, especially the SRI Index, can be used as a measure of sustainability performance as seen in prior studies (Table 1). However as this study investigates the effect of different quality levels on market value, the specific index inclusion criteria need to be considered in order to establish whether the inclusion criteria can be used to distinguish between different levels of quality.

In South Africa, as the preparation of sustainability reports is a listing requirement, the criteria that have to be met in order to qualify as a constituent on the South African SRI Index is more stringent than merely preparing a sustainability report. Therefore the South African SRI Index can potentially be used as a measure of quality. The next section explores how the South African SRI Index can be used as a measure of report quality through its rigorous inclusion criteria and the different quality level publications.

2.3.4.2.1 THE SOUTH AFRICAN SRI INDEX

The JSE pioneered the development of the first sustainability index in an emerging market (Heese, 2005; Sonnenberg and Hamann, 2006), the Socially Responsible Investment (SRI) Index, which was launched on 20 May 2004. The SRI Index is distinguished from other indices of its kind as it is sponsored by the JSE, and not a focussed organisation, as in the case of the Dow Jones Sustainability Indices (DJSI). The index was founded to respond to the developing interest in responsible investment in South Africa (JSE, 2011a).

Currently the SRI Index series consists of two indices: the JSE SRI Index and the JSE SRI Swix Index, which are published as total return indices by FTSE International Ltd. The constituents of the SRI Swix Index is the same as that of the SRI Index, however the weightings of the constituents differ (JSE, 2011a).

Originally the SRI Index worked parallel with the King II report which required companies to report on the principles of the triple bottom line (Sonnenberg and Hamann, 2006), however in September 2009, South Africa was the first country to legislate the preparation of integrated reports through the JSE aligning its listing requirements with the King III Report, which requires the preparation of an integrated report (King, 2009) or an explanation why such a report is not prepared.

The SRI Index was launched with the following objectives: firstly to identify South African listed companies that integrate good corporate governance practices, as well as triple bottom line principles, into their business activities; secondly to provide a tool for assessing company practices and policies against globally aligned but locally relevant standards; third to serve as a vehicle to facilitate investors integrating non-financial risk variables into their investment decisions; and finally, to contribute to the development of responsible business practices in South Africa (JSE, 2011b).

As can be seen from the first key objective, the SRI Index's philosophy is based on the three components of the triple bottom line: environment, social and economic sustainability, all underpinned by good corporate governance practices. The index criteria has therefore been developed around the categories of Environment, Society, Governance and related sustainability concerns (ESG), in addition the focus area of Response to Climate Change was added in 2010. The goal of the criteria themes is to measure the integration of the principles of triple bottom line and good corporate governance across the three business areas of policy and strategy, management and performance, and reporting (JSE, 2011b).

It is evident from the above that the SRI Index criteria and the GRI reporting guidelines both have the principles of triple bottom line as a foundation; hence it would appear reasonable to use the SRI Index as a reliable tool to measure GRI disclosures. Even more appropriate for this study is that in order to meet the SRI Index listing requirements it is imperative to show integration of the criteria themes into business areas, not merely meet a range of disclosure requirements, thus the SRI Index not only measures the quantity of the sustainability disclosures but also the quality of these disclosures. Therefore the shortcomings in the Jones et al. (2007) study, i.e. to investigate quantity and not quality, is addressed through the use of the SRI Index in this research report. As the use of the SRI Index seemed promising as a measure of report quality, the SRI Index assessment process and criteria was investigated in order to determine whether the SRI Index could be used as a measure of sustainability report quality as needed by this report.

2.3.4.2.1.1 ASSESSMENT PROCESS

CONSTITUENTS AND QUALITY DISTINCTION

A company is accepted as one of the constituents of the SRI Index if it meets the listing requirements as set out by the index. The listing requirements require the company's sustainability performance to meet a set of criteria across the measurement areas of Environment, Social and Governance (ESG). The criteria to be met are split into core indicators that the company should meet as a minimum, and other desirable indicators that are considered to be advanced or aspirational.

This is where different measures of report quality can be found. If a company meets the minimum criteria it becomes a constituent of the index, whereas if the company meets a further set of criteria (desirable or advanced), it gets published on a best performer list. The SRI Index also publishes a persistent best performer list that contains the companies that have qualified as best performers annually over a certain time frame as set by the index. Therefore from utilising the aforementioned quality distinctions, this research report could create three quality differentiated portfolios: a persistent best performer portfolio, a best performer portfolio, and a portfolio that consists of all the other companies listed on the SRI Index but do not qualify as a persistent best, or a best performer, i.e. the listed portfolio.

ASSESSMENT PROCESS OVERVIEW

The SRI Index utilises the services of an international data provider, the Ethical Investment Research Services (EIRIS), assisted by the Stellenbosch Business School's Unit for Corporate Governance in Africa, to assess companies for inclusion on the index (JSE, 2011b, 2011a).

The annual assessment process, which ends in November each year, is two-fold: firstly, during May and July, EIRIS reviews all of the company specific information that is publically available, such as annual reports, sustainability reports and company websites (JSE, 2011b), as well as a selection of media sources for publicity relating to the companies under assessment with respect to a variety of issues such as human rights violations, environmental damage, health and safety, corruption, bribery, fraud and any other violations of ethical norms, in order to compile a portfolio, stating how the company performed with regards to the criteria. Secondly the company is allowed to respond to the profile through commenting, supplementing and clarifying the information contained in the profile, within a three week time frame (JSE, 2011a). Thus in the second phase the SRI Index has the opportunity to gain non-public information (JSE, 2011b).

All changes that come about due to the annual review are published as soon as possible after the review on the SRI Index announcement date (JSE, 2011b). Together with the ALSI, the SRI Indices are reviewed quarterly to ensure that all the constituents remain in compliance with the SRI Index Ground Rules (JSE, 2011a).

From the above process it can be seen that using the SRI Index as a quality measure of the sustainability performance of companies is ideal, as the SRI Index through EIRIS does not merely focus on the sustainability reports, but also verifies the information contained in the sustainability report through looking at other sources of information, and gaining non-public information from companies. The SRI Index also reviews all companies included on the index on a quarterly basis to ensure that the companies are still in compliance with the index.

BASE UNIVERSE

Companies contained in the FTSE/JSE Top 40 Index and the FTSE/JSE Mid Cap Index, following the quarterly review in March, as well as companies that were part of the SRI Index in the preceding year are automatically subject to the annual assessment process. Constituents of the FTSE/JSE Small Cap Index are assessed on a voluntary basis (JSE, 2011b). There are no exclusions from this base universe (JSE, 2011b).

This is one of the features that makes the SRI Index unique. Unlike the FTSE4Good and the Dow Jones Sustainability Indices (DJSI), the SRI Index avoids negative weighting of high-impact sectors, such as the extractive sector, as well as automatic exclusion of certain industries such as tobacco, alcohol, gambling, military weapons and nuclear power (Sauer, 1997). As can be seen above; all ALSI companies can participate in the SRI Index.

The reasoning for not excluding or negatively weighting such sectors is due to the large roles these sectors play in the South African economy as well as to encourage wide spread participation in the index, and thus enhancing the index's impact (Sonnenberg and Hamann, 2006). Therefore the goal of the SRI Index through not excluding any companies is consistent with the findings of Adam and Shavit (2008), which stated that when all companies are allowed to participate in a sustainability index, it creates a market incentive for all companies to improve their social responsibility performance.

Although small companies are only assessed on a voluntary basis, Sonnenberg and Hamann (2006) found that these companies would still opt for voluntary assessment, as inclusion on the SRI Index has reputational value and it is believed that corporate citizenship may have commercial benefits as mentioned earlier.

CRITERIA

Another reason why the SRI Index is an ideal measure of sustainability and sustainability report quality, can be found in the criteria (the amount of indicators) that a company has to meet in order to qualify as a constituent of the index. The amount of indicators a company has to meet is not consistent for all companies; it is tailored based on the environmental impact of each company; as a company's impact on the environment increases, the amount of indicators it has to meet also increases. Therefore the SRI Index focuses on the quality of the performance of each individual company, and does not apply blanket criteria to all companies.

ASSESSMENT OF ENVIRONMENTAL IMPACT

The SRI Index classifies all companies according to their environmental impact as either high, medium, or low. In order to classify companies, the business activities of the companies are analysed in order to identify in which economic sector the company belongs. The company is then rated based on the environmental impact of the sectors in which it operates. This classification will now be explained in more detail.

ECONOMIC SECTORS

EIRIS uses the measure of environmental damage to economic significance in order to group companies together in different industry sectors. Each sector is then rated according to its environmental impact as either high, medium, or low, based on the direct impacts the sector has on key issues such as climate change, air and water pollution, and waste and water consumption, as well as the indirect impact of the product life cycles and the supply chains within that sector. If a sector has a high impact on one of the key issues, or a medium impact on all five issues, it is qualified as a high impact sector. If it has a medium impact on at least two issues, it is classified as medium. The remaining sectors are classified as low impact sectors (JSE, 2011b).

COMPANY CLASSIFICATION

In order to classify a company according to its environmental impact, the company needs to be assigned to the different industry sectors identified above. A company is assigned to a sector if its business activities fall within that sector, and that activity contributes more than 15% of the company's annual turnover (hence a company can be assigned to more than one sector). The impact rating the company receives is that of the sector with the highest impact rating that the company is assigned to (JSE, 2011b).

In conclusion, the SRI Index is an ideal measure of sustainability and sustainability reporting quality as required by this research report, as it assesses the sustainability performance of companies, and rates companies (persistent best performers and best performers) which can be used as proxies for different quality levels. The SRI Index ratings can also be relied upon (unlike the GRI ratings), as the SRI Index assessment process is performed by EIRIS, an independent third party, that not only takes the disclosures of the companies into consideration, but also other sources of information, thus verifying the sustainability performance of companies. EIRIS also assesses companies based on their true sustainability performance, taking the environmental impact of the company into consideration, thus increasing the appropriateness of using the SRI Index as sustainability measure.

2.4 LITERATURE REVIEW CONCLUSION

The literature review defined sustainability and sustainability reporting, discussed the value-relevance of sustainability performance to shareholders and companies, provided empirical evidence as support to the value-relevance discussion, and stated how previous methodologies identified in the literature review have been used and improved in this research report. Most significantly, this research report will use an event study method, and a portfolio creation method, for the short and the long term studies respectively. Through the literature reviewed it has also been established that the SRI Index can be used as a proxy for sustainability, and sustainability report quality. In the section that follows, the short and long term methodology will be discussed in greater detail.

CHAPTER 3 – METHODOLOGY

In order to investigate the short term effect of sustainability and sustainability reporting quality on market value (first hypothesis), an event study methodology has been used to establish whether the announcement of being listed on the SRI Index, or a company's status change on the SRI Index, generates an abnormal share price return in the short term.

In order to investigate the long term effect of sustainability and sustainability report quality on market value (second hypothesis), a portfolio construction methodology was utilized, using the SRI Index as a proxy for the different quality levels of sustainability and sustainability reporting. The performance of four different sustainability quality portfolios was tracked to determine whether holding a higher quality sustainability reporting portfolio will outperform a lower quality sustainability portfolio in the long term.

3.1 TESTING HYPOTHESIS 1: SHORT TERM EFFECT OF SUSTAINABILITY AND SUSTAINABILITY REPORTING QUALITY

In order to investigate the effect that sustainability and sustainability report quality has on company value in the short term, the cumulative average abnormal return of each company that incurred a status change (change in quality level) on the SRI Index was examined. An event study methodology was followed, using the SRI Index announcement date as the event date. The research report investigates whether the share returns of the constituents of the SRI Index display abnormal returns (returns above the expected return) around the SRI Index announcement dates. This methodology, including the period of study is consistent with the methodology applied in Hope (2003).

3.1.1 EVENT STUDY METHODOLOGY

3.1.1.1 EVENT

The event under investigation is the SRI Index announcement date. The constituents of the SRI Index as well as the best performer list and the persistent best performer list were investigated at each announcement date in order to determine the population to be investigated. Table 2 contains all of the SRI Index announcement dates examined:

Table 2: SRI Index Announcement Dates

SRI Index Announcement Dates
19 May 2004
25 April 2005
25 April 2006
27 November 2007
26 November 2008
30 November 2009
01 December 2010
06 December 2011
28 November 2012

3.1.1.2 PERIOD OF STUDY

3.1.1.2.1 ESTIMATION WINDOW

The estimation window is defined as the period of time before the event window, which is used to calculate an unbiased estimate of a firm's expected return in the absence of the event being investigated. Expressed differently, the estimation period is important for establishing how the share returns behave without the effects of the event being present (Hirvonen, 2009). The estimation window used in this study consists of the 100 trading days before the start of the event window, thus -121 to -21 days before the SRI Index announcement date (day 0).

3.1.1.2.2 EVENT WINDOW

The event window defines the number of trading days investigated before and after the event (announcement date). The companies share returns 20 days before and after the event date will be investigated for abnormal share return behavior. The event window period is important as it shows how long the market takes to adjust to new information.

The period of study can be graphically illustrated as follows:

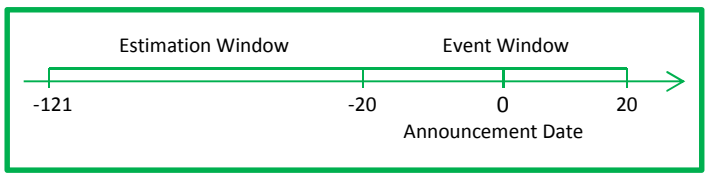


Figure 2: Period of Study

3.1.1.3 POPULATION AND SAMPLE

The population used consists of all companies listed and delisted on the SRI Index since its inception on 20 May 2004 until 28 November 2012. The sample investigated consisted of all the companies that had a status change on the SRI Index.

A status change, as defined by this study, could either be positive or negative in nature. A positive status change includes companies being listed on the index for the first time, as well as being classified as a best performer or a persistent best performer for the first time, thus companies that increased the quality of their sustainability performance and sustainability reporting. A negative status change included delisting from the index, or losing a best performer or persistent best performer status, thus companies that decreased the quality of their sustainability performance and sustainability reporting. To assist in the interpretation of the results the status increases and decreases were analyzed separately.

The status changes were identified through a comparison of the index constituents form one announcement date to the next. Where a status change is identified, but not enough information was available to complete the regression analysis in the estimation window (for instance when a company either listed or delisted during the estimation window), the company was removed from the sample.

3.1.1.4 EMPIRICAL ANALYSIS

Consistent with Hope (2003), the Cumulative Average Abnormal Returns (CAAR's) for all status changes identified above were calculated. This has been done by first calculating the Abnormal Returns (AR) for the status changes for every day during the event window, through deducting the company's expected share return from the actual share return.

3.1.1.4.1 EXPECTED SHARE RETURN

The expected share returns were calculated during the estimation window, using the Blume (1971) market model, which states that the only factor influencing the return on a share (R_i) at time t, is the market return (R_m) at time t.

$ER_{it} = \alpha_i + \beta_i (R_{mt}) + \varepsilon_{it}$

ER_{it} = expected return on share i at time t

α_i = intercept of the linear relationship between the market return (ALSI) and share i

β_i = slope of the linear relationship between the market return (ALSI) and share i

R_{mt} = market return represented by the ALSI at time t

ε_{it} = error term with respect to share i at time t

The market model is similar to the Capital Asset Pricing model (CAPM), except that it does not use the risk free rate as the y-intercept, instead, the constant in the linear relationship between the share return and the market return is used. The market model is used in this study as opposed to the CAPM as it has been illustrated by Ward and Muller (2012) that the CAPM is not appropriate to estimate expected returns on the JSE.

The parameters of the market model (α_i and β_i) have been calculated by performing a least squares regression between share i and the market benchmark. The market benchmark is the JSE All Share Index (ALSI), and not the SATRIX 40, firstly due to the SRI Index constituents not being limited to the top 40 shares, and secondly, as per Ward and Muller (2012), the 160 shares included in the ALSI accounts for 99% of the entire market capitalization, and furthermore, the remaining shares are considered to be too small and illiquid for most investors to include in their investment portfolios. The regression has been performed during the estimation window between T-121 and T-21 (T being announcement date) as it is assumed that returns 21 days before the announcement date are free from the influence of the event , thus this period can be viewed as the normal period.

3.1.1.4.2 ABNORMAL RETURNS

After estimating the parameters of the market model (α_i and β_i), this model was used during the event window (T-20 to T+20 days), to calculate the daily expected returns on the event shares. The expected return was then compared to the actual return of each share in order to calculate the daily abnormal return on share i.

$AR_{it} = R_{it} – ER_{it}$

AR_{it} = Abnormal Return of share i at time t

R_{it} = Actual Return of share i at time t

ER_{it} = Expected Return of share i at time t

3.1.1.4.3 AVERAGE ABNORMAL RETURNS

The daily average abnormal return (AAR) was then calculated by summing the daily abnormal returns (AR) of all companies investigated, and dividing the sum thereof by the number of companies investigated. The averaging process assists in eliminating any peculiarities in the measurements due to any individual share movements, and therefore will only reflect combined and averaged trends.

AAR = $1/n \sum_{i=1}^{n} ARit$

AAR = Average Abnormal Returns

n = number of shares

AR_{it} = Abnormal Return of share i at time t

3.1.1.4.4 CUMULATIVE AVERAGE ABNORMAL RETURNS

The cumulative average abnormal return (CAAR) was calculated by adding all the daily AAR's over the event window together. The CAAR is calculated from day -1 in order to see the full effect of the event date (day 0) as a movement in the CAAR, therefore the CAAR on day -1 will be equal to zero. The CAAR is calculated as it illustrates the aggregate effect of the abnormal returns, which is useful when the effect of the event does not happen exclusively on the event date.

CAAR = $\sum_{i=1}^{n} ARR$

CAAR = Cumulative Average Abnormal Return

ARR = Average Abnormal Returns

3.1.1.4.5 RESULTS INTERPRETATION AND PRESENTATION

In order to interpret and compare the CAAR's calculated, the results have been graphically illustrated using line graphs. As explained above all CAAR's will have a zero value on day -1 in order to illustrate the full effect of the release of the SRI Information during the event window.

3.2 TESTING HYPOTHESIS 2: LONG TERM EFFECT OF SUSTAINABILITY AND SUSTAINABILITY REPORTING QUALITY

The long term effect of sustainability and sustainability reporting quality on market value has been investigated through a portfolio construction methodology in line with that of Ward and Muller (2012). According to Ward and Muller (2012) the advantage of the construction of the portfolios is that it allows for reduced volatility in the data being examined as any abnormal effects of a single share is eliminated. The performance of the portfolios created is investigated cumulatively which allows for a visual comparison of the different portfolio results.

3.2.1 PORTFOLIO CONSTRUCTION METHODOLOGY

Four portfolios were created in order to compare the returns generated by companies with different levels of sustainability and sustainability reporting quality. The literature review evidenced that the SRI Index can be used as a measure of report quality, therefore the portfolios were created using the different rankings of the SRI Index as follows: The first three portfolios consist of the constituents of the SRI Index and were created based on the SRI Index rankings of reporting quality; i.e. a persistent best performers portfolio was created, a best performers portfolio, and a listed portfolio which consisted of all the other companies listed on the index, but did not qualify as a persistent best performer, or a best performer. The fourth portfolio consists of the balance of the companies listed on the JSE All Share Index (ALSI) but not listed on the SRI Index (non-listed control portfolio).

To avoid investment overlap, each company was only included in its highest possible ranking portfolio; for instance, a best performing company will be one of the listed companies on the index, but it was only included in the best performer portfolio.

As the SRI Index only started to release the best performer list in 2007 and the persistent best performer list in 2009, all the portfolios could not be created at the same time. Therefore in order to compare the performance of all portfolios, the results of the long term study has been broken down into three sections. The first starting on 20 May 2004, in which the non-listed and the listed portfolios were created and compared; the second starting on 27 November 2007, including the best performer the listed and the non-listed portfolios and; the last section starting on 30 November 2009 including all four portfolios.

All portfolios were created on an equally weighted basis by investing R 10,000 in each of the constituents of the portfolios when initially created. All portfolios were rebalanced at each announcement date, to ensure that each portfolio consists of shares with the appropriate status only. This process was achieved through taking the total value of the portfolio (including dividends) at announcement date and dividing it equally between the new constituents of the portfolio, ensuring that the portfolio stays equally weighted between all of the constituents throughout the period covered by the study.

The cumulative returns of each of the shares in the portfolio as well as the entire portfolio were tracked from the creation date to 28 November 2012 on a monthly basis. The portfolios were unitized for comparison purposes, i.e. all the portfolios were tracked and compared from a base of R1.00; this is to allow for visual comparison from a common base in line with Ward and Muller (2012). As mentioned previously, all of the portfolios did not originate on the same date as some of the portfolios were new initiatives developed by the SRI Index in later years, therefore all the applicable portfolios were unitized at the beginning of each of the three sections mentioned above.

As the portfolios were only rebalanced once a year, dividends received for shares held by the different portfolios were accumulated during the periods between announcement dates and included in the total portfolio value which was reinvested when the portfolios were rebalanced. This study followed a passive investment strategy, in accordance with Sauer (1997), through investment in the SRI Index, thus all transaction costs were ignored.

3.2.2 RESULTS INTERPRETATION AND PRESENTATION

In order to interpret the data, the cumulative index (value) of each portfolio was plotted and compared visually from a base of R 1.00 for all the periods under investigation through the use of line graphs. Value relative graphs were also constructed in order to assist in the interpretation of the data. Value relative graphs show the outperformance of one portfolio over the other. They are created by taking the performance of the highest ranking portfolio (within the period investigated) and dividing it by the performance of the lowest ranking portfolio, and therefore represents the excess investor returns that could be earned by investing in the shares of the highest ranking sustainability portfolio as compared to the lowest ranking sustainability portfolio.

3.3 DATA

3.3.1 POPULATION AND STUDY SAMPLE

The population examined in the short term study (hypothesis 1) consists of all companies listed on the SRI Index, whereas the sample investigated consisted of all the status changes identified. The population examined in the long term study (hypothesis 2) consists of all companies listed on the JSE All Share Index (ALSI). As explained above, four portfolios were created, the first three consisting of all the companies listed on the SRI Index and the fourth consisting of all companies on the ASLI that are not included in the SRI Index.

Thus the number of companies to be included is as follows:

Table 3: Total Population

	2004	2005	2006	2007	2008	2009	2010	2011	2012
SRI Constituents (H_1)	51	49	58	58	61	68	74	74	78
Non-Constituents	109	111	102	102	99	92	86	86	82
Total (H_2)	160	160	160	160	160	160	160	160	160

The SRI Constituents can be broken down into the following three portfolios:

Table 4: Number of Companies per Portfolio Created

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Listed	51	49	58	44	38	38	51	52	68
Best Performers	N/A	N/A	N/A	14	23	20	15	16	10
Persistent Best Performers	N/A	N/A	N/A	N/A	N/A	10	8	6	0

3.3.2 SOURCES OF DATA

3.3.2.1 SRI INDEX DATA

The constituents of the SRI Index, the status of each constituent (listed, best performer and consistent best performer), as well as SRI Index announcement dates was obtained from the JSE website at: http://www.jse.co.za/Products/SRI.aspx.

Where further information was required that could not be obtained from this website, or where data was required in a different format, for example in number processor format (Microsoft Excel format: .xls), it was obtained directly from the JSE.

3.3.2.2 SHARE PRICE DATA

The daily share price data of each of the constituents of the SRI Index, the constituents of the ALSI as well as the ALSI daily share price data were obtained from the BFA McGregor database.

3.3.3 DATA MANAGEMENT AND ANALYSIS

Data was collected and managed using number processing software, i.e. Microsoft Excel (2010).

The data analysis required for testing hypotheses one: regression analysis, calculation of expected, abnormal, average abnormal and cumulative average abnormal returns and graphical presentation, as well as the data analysis required for hypotheses two: construction of portfolios, rebalancing of portfolios, calculation of the cumulative return, graphical presentation of cumulative and value relative returns were also be performed using Microsoft Excel (2010).

3.3.4 ASSUMPTIONS, LIMITATIONS AND DELIMITATIONS

Transaction costs and taxes were ignored.

The conclusions reached in this study are linked to the nature of the SRI Index and therefore cannot necessarily be extrapolated to other indices or markets.

CHAPTER 4 – RESULTS

4.1 GENERAL DISCUSSION

The results for the short term and the long term study are presented in this chapter. The period investigated in this research report begins on 20 May 2004 as this was the inception date of the SRI Index. In order to take the publication developments of the SRI Index into consideration, i.e. the publication of the best performer list since 2007 and the persistent best performer list since 2009, the results have been broken down, and will be presented in three different subsections: Section 1, including the announcement dates for 2004-2006; Section 2 including the announcement dates for 2007 and 2008 and; Section 3 including the announcement dates for 2009-2012. These sections have been graphically illustrated in Figure 3 below.

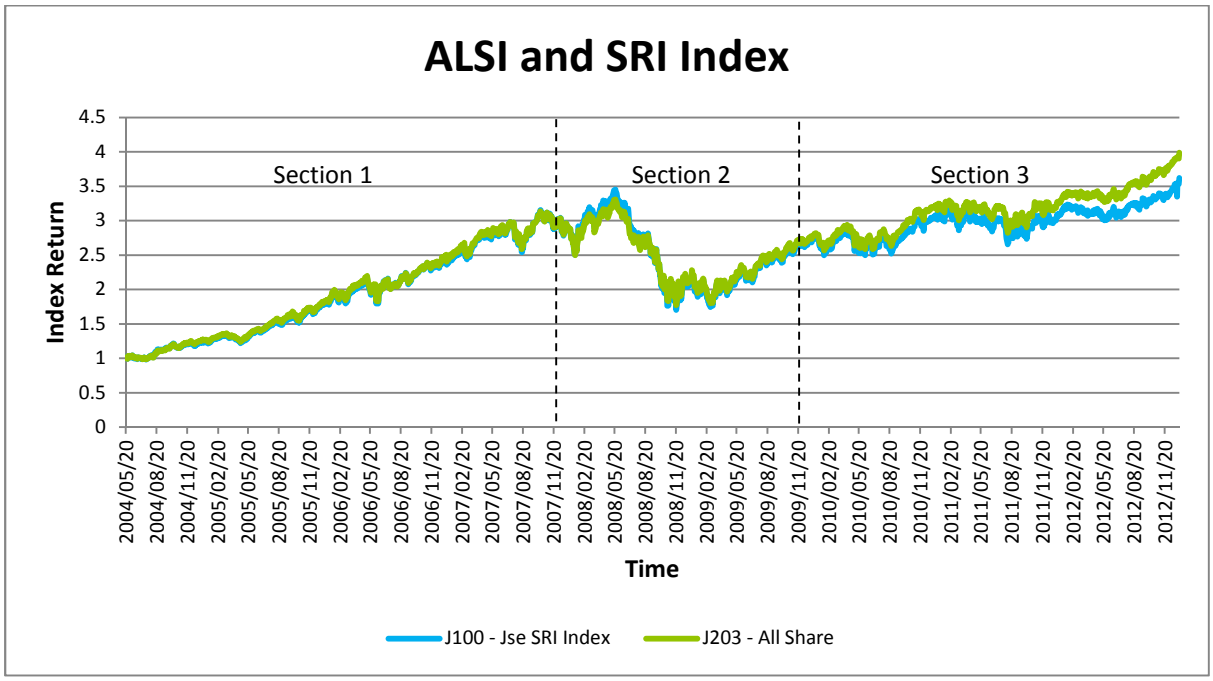


Figure 3: ALSI and SRI Index

Figure 3 also indicates that Section 1 is predominantly a bull market (share prices are increasing during this period), followed by the start of the economic recession in Section 2. This section is therefore more volatile as it starts off as a bull market up to May 2008, but is then followed by a bear market (decreases in share prices) until the end of 2008. The recovery period (bull market) then follows form the beginning of 2009. Section 3 is again predominantly characterised as a bull market.

From the above line graph it is also evident that using the SRI Index as a whole as an investment tool (without taking the different quality distinctions into consideration), investors would have earned largely the same

return as the market. However during the beginning of the 2008 year, slightly higher than market returns would have been earned and from August 2010 investors would have earned less than the market return. This illustrates the overall long term return of the SRI Index as compared to the market. In the results that follow, the short term reaction to the release of the SRI Index information will be analysed as well as the long term results. However unlike the above illustrated long term results, this research report will concentrate on the quality distinctions between sustainability and sustainability reporting through the use of the SRI Index and not the overall index results.

4.2 SHORT TERM STUDY RESULTS

The results of the short term study (event study) are presented as follows: firstly the overall results are presented and discussed on a high level, which is followed by a more detailed discussion on the results of the individual announcement dates investigated (CAAR's). The detailed discussion on the CAAR's is presented within the different sections as illustrated in Figure 3. In each of the sections the increases and decreases in the quality status are presented and discussed separately to assist in the interpretation of the results. Finally a table summary of all the results is provided. All results (CAAR's) are presented in graphical format.

INTERPRETATION OF RESULTS

As described in Chapter 3 – Methodology, the CAAR is calculated from day -1, thus the AAR's are added to zero from day -1 to day -20 and to day 20. All CAAR's therefore cut the x-axis on day -1. The CAAR's are interpreted in the following way: if the CAAR increases, it illustrates that positive AAR's have been generated, thus the actual share price is greater than the expected share price; conversely, if the CAAR decreases, negative AAR's have been generated, and therefore the actual share price is lower than the expected share price.

In order to reject the null hypothesis (sustainability and sustainability report quality does not have a short term effect on company value) it has to be proven that there is a clear and consistent reaction to the SRI Index information released on announcement date, thus the movements in the CAAR's for all the periods investigated has to be relatively similar, for instance all CAAR's should increase or decrease at the same time to the same extent. If this is not the case, and no clear consistent reaction to the information release can be seen, the null hypothesis cannot be rejected, and therefore it can be said that sustainability report quality does not have a short term effect on company value.

From Chapter 2 – Literature Review, it was found that sustainability holds value-relevance for both shareholders and companies and therefore sustainability reporting can increase company value. Schadewitz and Niskala (2010) in particular stated that high-quality reporting had a positive effect on market value. An expectation of possible results can therefore be developed. This expectation is as follows: an increase in the quality status of a company should be rewarded with a positive market reaction, i.e. an increase in the market value. This will be manifested in the results through the actual share price being higher than the expected share price as calculated through using the regression model. This price differentiation will lead to positive AAR's which in turn will lead to an increase in the CAAR. The opposite reaction is expected from a decrease in quality status of a company.

Following this guidance for interpretation of the results, the CAAR's are presented in the following sections.

4.2.1 OVERALL SHORT TERM RESULTS

The CAAR's presented in this and the following sections are analyzed for any pre and post announcement date reactions. However, due to the long term nature of sustainability information, as well as the SRI Index assessment process being under the control of the JSE (therefore leaking of information is unlikely), no pre-reaction to the information is expected.

Figure 4 illustrates the CAAR's for increases in status of companies for all announcement dates from 2004 to 2012. An overall inspection of the CAAR's indicates that no clear and consistent movements can be identified. The CAAR's presented appear to be volatile and unpredictable, showing erratic increases and decreases throughout the event window. The CAAR's appear to be predominantly positive (to a small extent) prior to the announcement date and mainly negative (to a small extent) post the announcement date. This is contradictory to the expected results. From Figure 4 it can also be seen, due to the volatility in the CAAR's, that there is no significant pre-reaction to the information released. This is consistent with the expectation developed above. There is therefore no evidence of pre or post reaction to the positive announcement event.

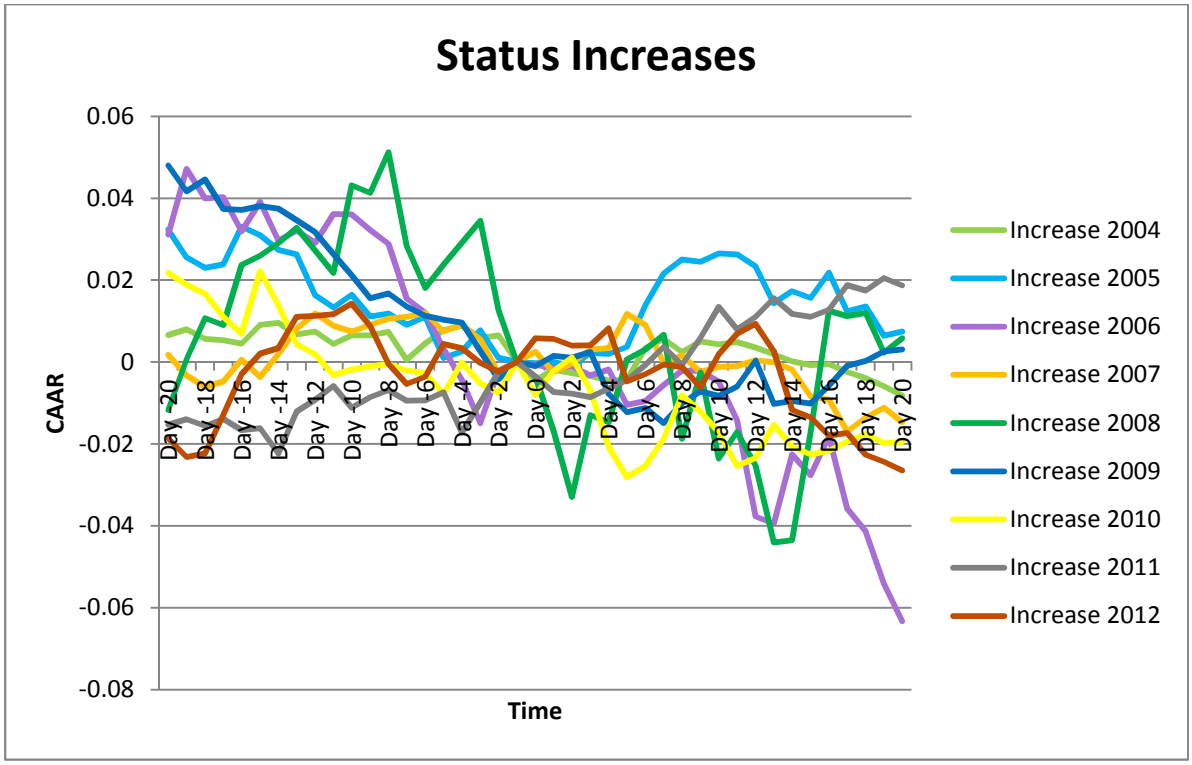


Figure 4: Status Increases

The CAAR's for the decreases in status for all announcement dates from 2004 to 2012 are presented in Figure 5.

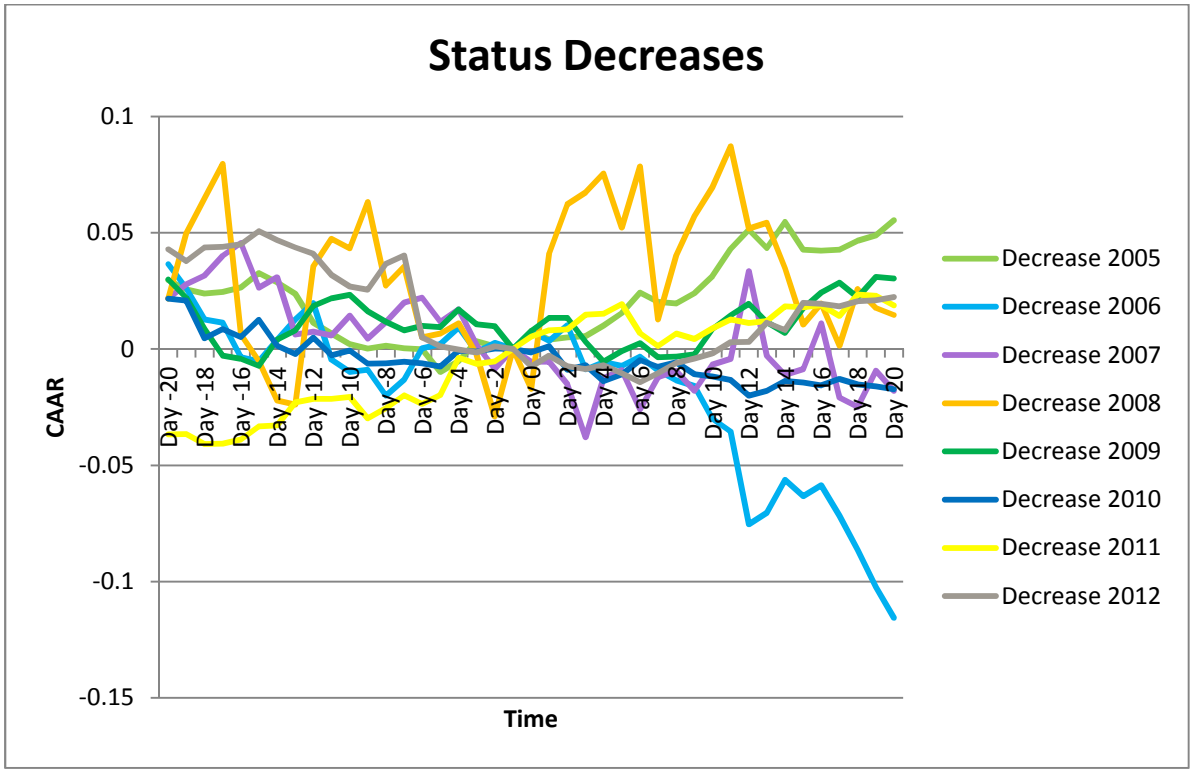


Figure 5: Status Decreases

Consistent with Figure 4, Figure 5 illustrates volatile, unpredictable CAAR's. Again no clear reaction to the information released on announcement date can be seen. The CAAR's are predominantly positive throughout the event window; this is inconsistent with the expected results as a decrease in quality status was expected to coincide with a decrease in the CAAR. It appears that the dispersion of the CAAR's is greater after announcement date, illustrating that there is even greater volatility after announcement date than before. This is consistent with the findings of Greeves and Lapido (2004) as cited in Schadewitz and Niskala (2010) who state that companies with better sustainability reporting practices experience less volatile share returns.

From Figure 5 it is also clear that no significant pre-reaction exists in the status decrease CAAR's consistent with the expectation developed and the above findings in the increase in status CAAR's. There is therefore no evidence of pre or post reaction to the negative announcement event.

The above analysis provides a broad overview of the results. In the following sections the CAAR's will be analysed individually within the different sections illustrated in Figure 3.

4.2.2 SECTION 1 - ANNOUNCEMENT DATES FOR THE YEARS 2004-2006

4.2.2.1 INCREASES

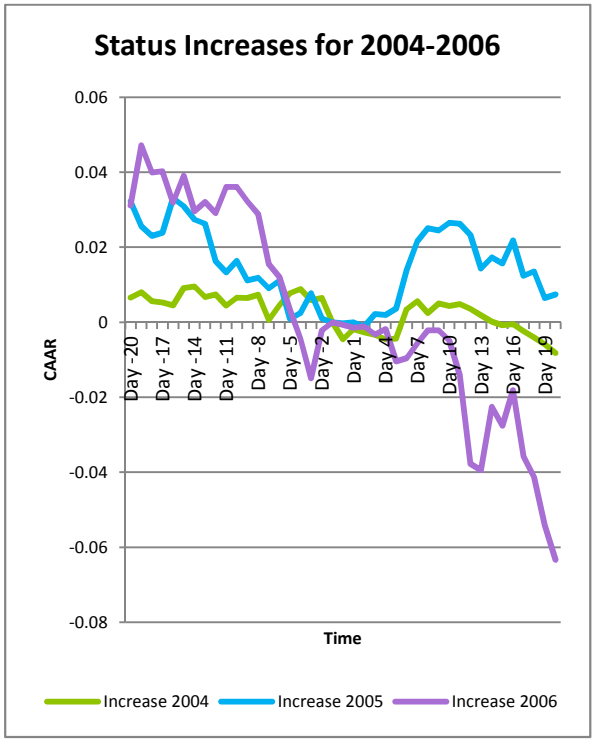


Figure 6: Status Increases for 2004-2006

Figure 6 illustrates the CAAR's for increases in status in the first section investigated, the 2004, 2005 and 2006 years. As can be seen from the line graphs, all three CAAR's are significantly different, with no clear, consistent reaction being evident, pre or post announcement date.

The 2004 CAAR remained relatively constant throughout the event window. After announcement date a slight increase in the CAAR can be seen from day 5 to day 7, followed by a decrease in the CAAR until the end of the event window. Therefore it seems as if investors could have shown a minor positive reaction to the

release of the status increase information. This could be attributed to the SRI Index information still being new to the market and the majority of investors not yet incorporating this information into their decision making activities.

The 2005 CAAR shows a greater reaction to the SRI Index information as compared to the 2004 CAAR. Post announcement date, a positive CAAR is evident with a relatively large increase in the CAAR from day 5 onwards, reaching a maximum on day 10. This increase is followed by a decrease in the CAAR until day 13, another increase in the CAAR until day 16, and finally the CAAR deceases until the end of the event window.

The 2006 CAAR, although negative post announcement date, follows the same pattern as the 2005 CAAR. It also increases from day 5, reaching a maximum after announcement date on day 9. This increase is also followed by a decrease until day 13, an increase until day 16 and the CAAR deceases for the rest of the event window. As can be seen from Figure 6, the movements are greater in magnitude than the 2005 movements.

The positive reaction (increasing CAAR) that can be seen from the above results (2005 and 2006 CAAR's) can be attributed to investors becoming more sophisticated in incorporating the SRI Index information into their decision making activities. Hence an increase in the quality status of sustainability and sustainability reporting is met with an increase in the abnormal returns generated, consistent with the expected results discussed in the Interpretation section of Chapter 4 - Results.

A possible explanation for the decreases in the CAAR's could be that the market is returning to equilibrium level (expected return level) after an initial overreaction (increasing CAAR) to the information released on announcement date.

In summary, the results for the increases in status in the first section show no pre-reaction to the information released on announcement date. A reaction to the information can be seen post announcement date as all three CAAR's increase from day 5 and the 2005 and 2006 CAAR's increase again form day 13. Although the CAAR's show similar movements, the size and the duration of the movements are different and not material. Therefore from the above analysis of the individual line graphs in Section 1 no clear, consistent, material short term reaction to the increase in quality level of shares can be seen.

4.2.2.2 DECREASES

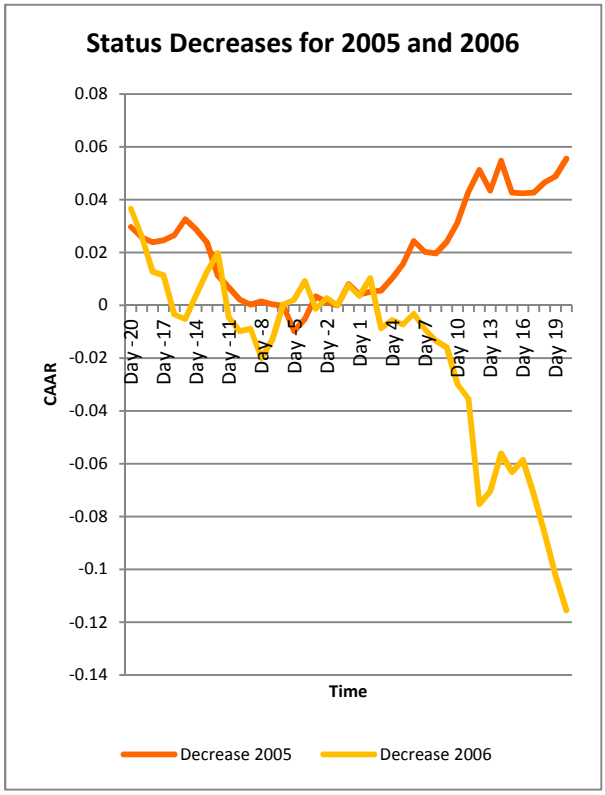


Figure 7: Status Decreases for 2005 and 2006

The Section 1 results for decreases in quality status are presented in Figure 7. There is no 2004 CAAR included in the line graph (only the CAAR's for 2005 and 2006) as no status decreases could exist in the 2004 year since the constituents of the SRI Index were only published for the first time in 2004, therefore the first time that a decrease in the quality status of a constituent could be observed was in the 2005 year.

From Figure 7 the difference between the 2005 and 2006 CAAR's is clearly evident, especially since the CAAR's show complete opposite results post announcement date, with the 2005 CAAR increasing and the 2006 CAAR decreasing. The 2006 CAAR movement is consistent with the anticipated results as described in the Interpretation section of this chapter, i.e. a decrease in quality status is met with a decreasing CAAR. The decrease in the 2006 CAAR starts relatively quickly after announcement date, on day 2, and continues until the end of the event window reflecting a significant net loss of just less than 12%. Relatively large decreases can be seen on day 2, from day 6 until day 12 and from day 16.

The 2005 CAAR shows a consistent increase from day -1 until the end of the event window, contradicting the expected results. The increase is however less significant at an increase of just less than 6%.

However, consistent with the 2006 CAAR, there seems to be a decrease in the 2005 CAAR on day 6.

Therefore through the analysis of the two decreases in status CAAR's in Section 1, the vast difference between the CAAR's is clear, however they do show one similarity in that they both decrease on day 6. Nevertheless, this decrease differs substantially in size and duration (the 2006 CAAR decreasing for 6 days and the 2005 CAAR only decreasing for 2 days), resulting in no clear

consistent reaction that could be identified between the CAAR's presented.

4.2.3 SECTION 2 – ANNOUNCEMENT DATES FOR THE YEARS 2007 AND 2008

4.2.3.1 INCREASES

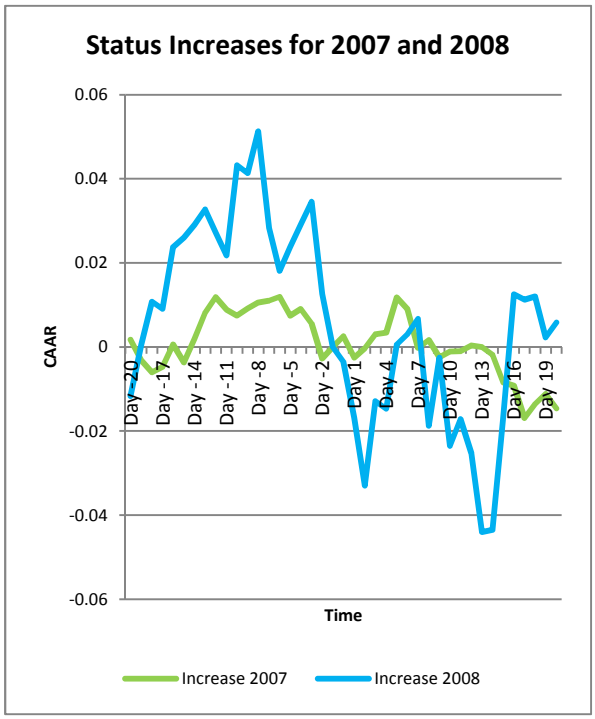


Figure 8: Status Increases for 2007 and 2008

The results of the increases in quality status in Section 2 are presented in Figure 8. As per the illustration in Figure 3, Section 2 falls within the period of the economic recession, hence the results in this section are expected to be more volatile. From Figure 8, the volatility in the 2008 CAAR is apparent through the drastic movements in the CAAR during the event window. The volatility in the CAAR complicates the interpretation thereof with respect to the SRI Index information, as the economic recession clearly had a substantial effect on the share movements, hence the reaction to announcement date activities cannot be seen in isolation.

The 2007 CAAR is more consistent throughout the event window in comparison to the 2008 CAAR. It increases from day 2 until day 5, which is then followed by a decrease until day 9. From day 9 to day 12 a slight increase can again be seen, however from day 9 until the end of the event window the CAAR decreases.

The 2008 CAAR, even though vastly different from the 2007 CAAR does show similar movements to the 2007 CAAR on day 2 and 9. However the difference in size and duration of these movements can clearly be seen in Figure 8. The size of the movements is also not considered to be significant, with maximum movements around the 4% positive and negative marks

Due to the volatility of the data, and the significant differences between the 2007 and 2008 CAAR's, and the lack of significant fluctuation values, no clear and consistent reaction to announcement date could be identified.

4.2.3.2 DECREASES

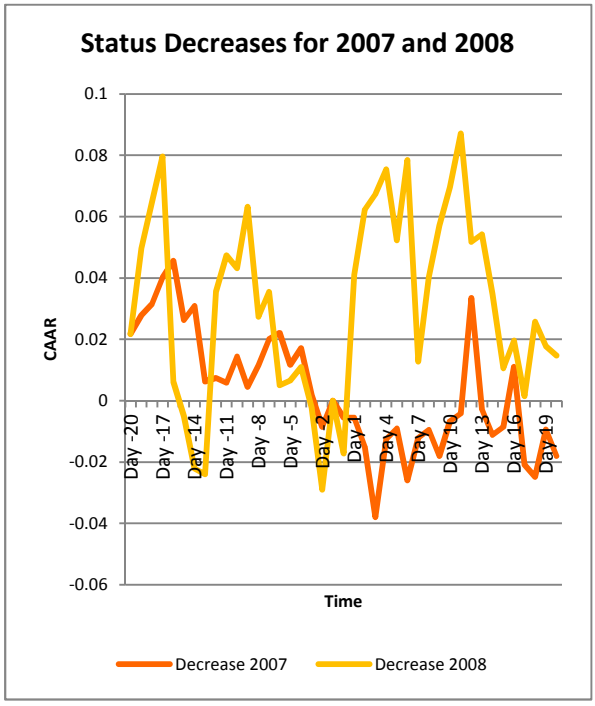


Figure 9: Status Decreases for 2007 and 2008

Figure 9, illustrating the results for the decreases in quality status in Section 2, show a similar picture to that of Figure 8 above, with respect to the volatility of the data. The rapid increases and decreases in the CAAR's presented in Figure 9 are characteristic of the unrepresentative recessionary period, which would distort the predictor.

The two CAAR's presented appear vastly different, as the 2007 CAAR is predominantly negative, whereas the 2008 CAAR is mainly positive after announcement date. The 2008 CAAR shows significant increases after announcement date, contrary to the expected results (a decrease in status should be met with a decreasing CAAR).

However a few similarities can be seen in the CAAR's, for instance: both CAAR's decrease from day -1, however the 2007 decrease extend over a longer period (until day 3) whereas the 2008 decrease stops on day 0; both CAAR's again show significant decreases later in the event window, the 2007 CAAR from day 12 to day 14 and the 2008 CAAR from day 11 to day 15, with both showing a corresponding decrease on day 13 and; both CAAR's show an increase on day 15 followed by a decrease on day 16.

Although the CAAR's show some similarity in the direction of the movements, the magnitude and the duration of the movements differ. Therefore from the above discussion and the volatility of the CAAR's, no clear consistent reaction to the announcement date information can be seen pre or post announcement date.

4.2.4 Section 3 – Announcement dates for the years 2009-2012

4.2.4.1 INCREASES

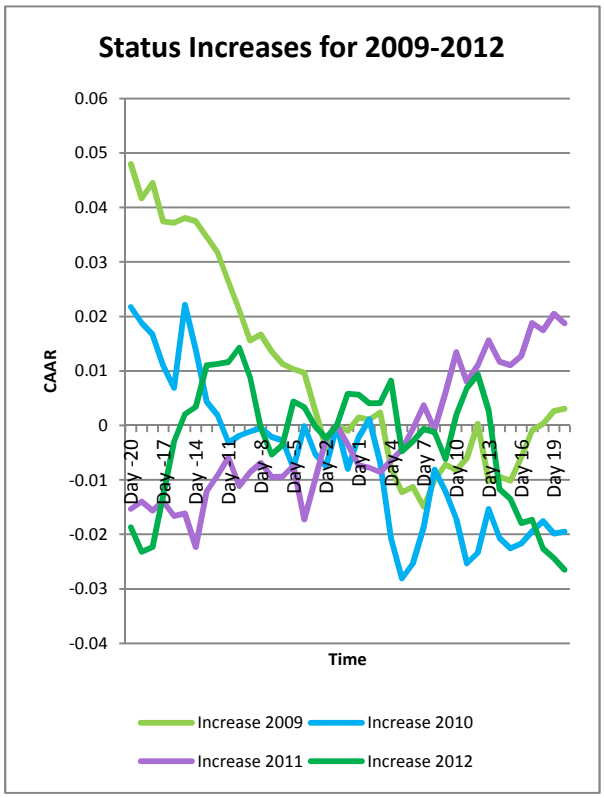


Figure 10: Status Increases for 2009-2012

The results for the increases in quality status for Section 3 are presented in Figure 10. Consistent with the Interpretation section of Chapter 4 - Results, no pre-reaction can be identified in the reaction to the information released on announcement date as there is no consistency in the CAAR movements before announcement date.

The results post announcement date do not appear to be any different. No overall consistency can be seen in the CAAR's as the 2009, 2010 and 2012 CAAR's are mainly negative, as opposed to the 2011 CAAR which is mostly positive. In line with the previous reaction, the significance of the movements is small, with a maximum deviation of less than +5%, and less than -3%, and therefore insignificant.

Certain similarities in the CAAR behaviors can be seen, for instance: the 2009, 2010, and 2011 CAAR's decrease initially on day 0, which is followed by an increase in in the 2009 and 2010 CAAR's; there in an increase in the 2010, 2011 and the 2012 CAAR's on day 5, continuing until day 7; all the CAAR's increase on day 11; the 2010, 2011 and 2012 CAAR's decrease on day 13 with the 2009 CAAR experiencing a slight decrease on day 14 and; the 2009, 2011 and 2012 CAAR's increase from day 15 until day 19.

Consistent with the results shown so far in Section 1 and 2, no clear, consistent, significant reaction to the information released on announcement date could be seen. Even though there are similarities between the CAAR's presented in Section 3, the similarities are not consistent in size and duration, hence no definite conclusion could be drawn from the results presented.

4.2.4.2 DECREASE

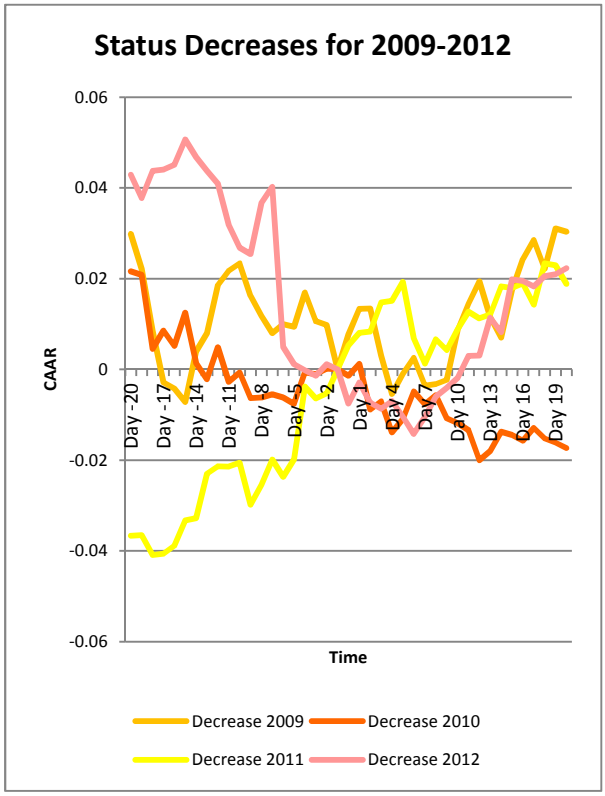


Figure 11: Status Decreases for 2009-2012

The Section 3 quality status decrease CAAR's are presented in Figure11. Consistent with the prior section's results, no significant pre-reaction can be seen as all the CAAR's are significantly different prior to the announcement date. The CAAR movements post the announcement date, specifically the 2009, 2011 and the 2012 CAAR's show an increasing trend from day 7 onwards, illustrating that positive abnormal share returns were generated during this period. This is inconsistent with the expected results, as a decrease in the CAAR was expected when a status decrease is experienced. In line with the previous reactions, the movements are again small, with a maximum deviation of less than +5%, and less than -4%, and can therefore be considered insignificant.

However, a decrease in the CAAR's (consistent with the anticipated results) can be seen on day 1 in the 2010 and the 2012 CAAR's, on day 2 in the 2009 CAAR, and on day 5 in the 2011 CAAR. A significant decrease can then again be seen in the in the 2010 CAAR from day 8 to day 12, and in the 2009 CAAR from day 12 to day 14.

From the results presented in Figure 11, no other consistencies, except for those discussed above, can be identified. The decreases identified also do not fully correlate, nor do they follow a pattern from year to year, for instance: the reaction occurring earlier in the event window in later years.

Therefore, no clear, consistent, significant reaction could be seen in the Section 3 decrease in status results, consistent with the other results presented in earlier sections.

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4.2.5 SUMMARY AND COMPARISON OF THE SHORT TERM STUDY RESULTS

The overall and section specific short term study results presented and discussed above indicated that there was no pre-announcement date reaction to the SRI Index information released, not for the status increases or decreases. In Table 5 and 6 the results as discussed above, specifically the similarities between the CAAR's analysed per section are presented.

Table 5: Summary Results for Increases in Status

Status Increases	Days Increased	Days Decreased
Section 1	5, 13	10, 16
Section 2	2, 9	None
Section 3	5, 11, 15	0, 13

When looking at the days the CAAR's increased simultaneously, it is evident that Section 1 and Section 3 CAAR's increased on day 5, whereas the Section 2 CAAR's increased on day 2. This can be explained through the volatility in the CAAR's during Section 2, or it could be said that the investors became more sophisticated in incorporating SRI Index information into their decision making activities during section 2, thus they took the information into account sooner, but after the shock of the economic recession, investors regressed to their original patterns before the recession. However it should be born in mind that even though there are some similarities in the movements of the CAAR's investigated above, the magnitude and the duration of these movements are significantly different.

A contradiction in the results can also be seen in the increase of the CAAR's on day 13 in Section 1, but the decrease in the CAAR's on the same day in Section 3. The decreases in the Section 1 CAAR's are also very close to the increases in Section 3, whereas there are no consistent decreases in the Section 2 results at all, consistent with the volatility during the Section 2 period.

Therefore through comparison of the different section increase in quality status results, it is clear that there are no consistent, significant reactions to the information released on announcement date.

The following table will summarise and compare the quality in status decreases.

Table 6: Summary Results for Decreases in Status

Status Decreases	Days Increased	Days Decreased
Section 1	None	6
Section 2	15	13, 16
Section 3	None	None

The results of the quality status decreases are even less comparable than the status increases. The CAAR's within the different sections did not show many similarities. The above however illustrates that the Section 2 decreases occurred after the Section 1, this again can be attributable to the volatility in the results of Section 2 due to the start of the economic recession in that period.

It would seem that there is a greater and more predictable reaction to an increase in a company's quality status than to a decrease in the quality status, as there are more similarities between the increase in status CAAR's than the decrease in status CAAR's.

However, from an overall perspective the results of the event study show no significant results whatsoever. From the empirical evidence provided it is clear that there is no concrete evidence that a relationship exists between the quality of sustainability and sustainability reporting and the market value of a firm (share price) in the short term. The null hypothesis is therefore not rejected. The findings are consistent with the findings of Sauer (1997) in that the effect of sustainability and sustainability reporting does not necessarily have a negative impact on the market value, as well as Jones et al. (2007), in that no significant results could be found. A t-test (as performed by Jones et al. (2007)) has however not been performed in this study as no significant relationship could be identified, hence testing the robustness of the relationship is irrelevant.

4.3 LONG TERM STUDY RESULTS

The results of the long term study are presented in graphical format (line graphs) in three sections. However, unlike the results of the short term study, showing the results on each of the announcement dates, the results of the long term study are continuous in nature. Hence the results for the applicable portfolios, created at the beginning of each section, are shown from the beginning of the section until the end of the total period investigated, i.e. 28 November 2012.

INTERPRETATION OF RESULTS

The performance of the different portfolios were tracked over the period investigated, starting from a base of R 1.00, in order to facilitate comparison. Therefore all portfolio performance graphs will cut the y-axis at 1.

It should be noted that the combined performance of the portfolios created cannot be aggregated to reflect the performance of the market benchmark (J203 – ALSI), although the combined constituents of the portfolios are the same as the constituents of the ALSI. This is due to the portfolios being weighted differently to the ALSI, i.e. the portfolios are equally weighted whereas the ALSI is weighted according to the market capitalisation of the constituents.

In order to reject null hypothesis two investigated by the long term study, i.e. that investing in companies with higher quality sustainability and sustainability reporting will not generate abnormal returns for investors in the long term, it has to be shown that the higher quality portfolio outperforms the lower quality portfolios. This is illustrated through the higher quality portfolio line graph lying above the lower quality portfolio line graphs, as well as the relative (highest quality portfolio/lowest quality portfolio) line graph being upward sloping to evidence continuous outperformance. It is important to note that when the relative line is upward sloping the higher quality portfolio is outperforming the lower quality portfolio (vice versa), thus the distance between the performance lines will increase, however when the line is constant the higher quality portfolio is merely tracking the lower quality portfolio, thus the higher quality portfolio line and the lower quality portfolio line will be parallel.

4.3.1 SECTION 1: START DATE 20 MAY 2004

The SRI Index was launched at the beginning of Section 1, however it had not yet started to publish the best performer and the persistent best performer lists, therefore the only portfolios that could be created as at 20 May 2004 was the SRI Index listed portfolio and the non-listed portfolio. Figure 12 illustrates the results for the 2 portfolios from 20 May 2004 to 28 November 2012 as well as the performance of the benchmark, the JSE ALSI (J203).

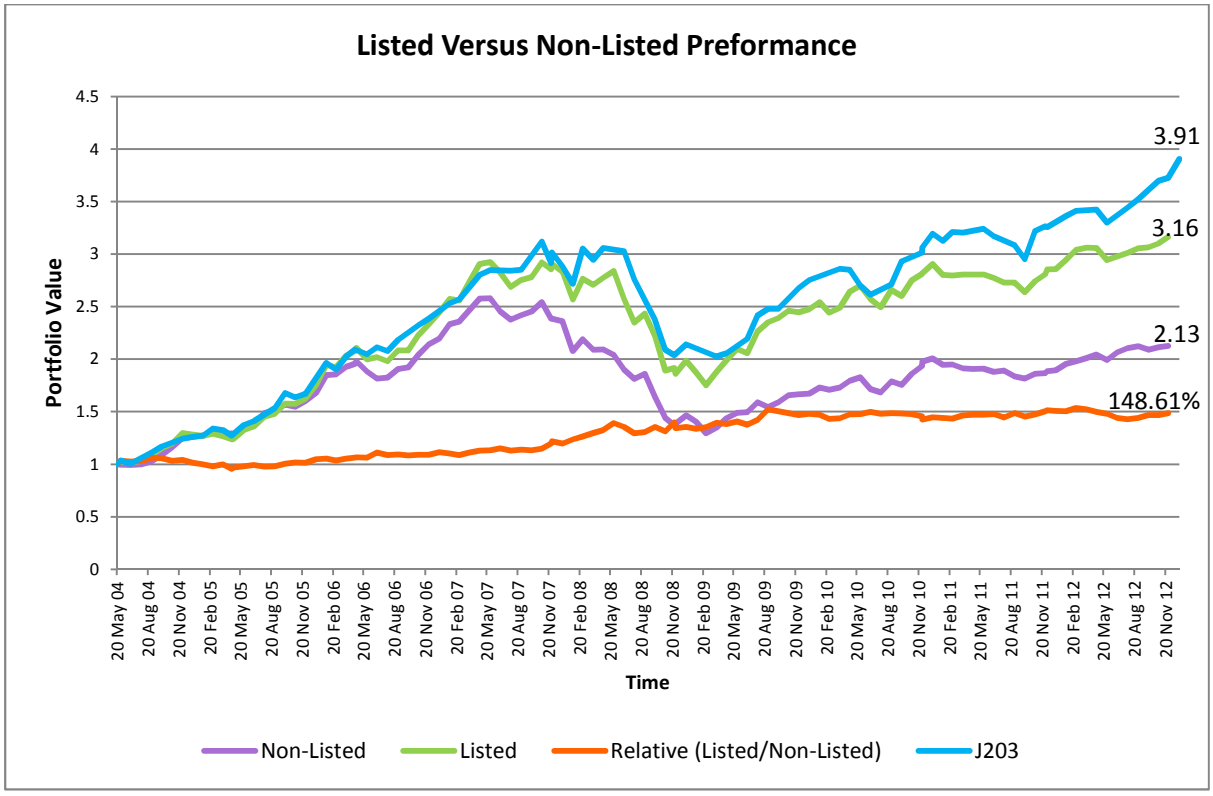


Figure 12: Listed and Non-Listed Performance

The Section 1 results show that the listed portfolio value increased from R 1.00 on 20 May 2004 to R 3.16 on 28 November 2012, illustrating a 316% growth and that the non-listed portfolio value increased from R 1.00 to R 2.13, illustrating a 213% growth. Therefore the listed portfolio was worth 148.61 % (R 1.13) more than the non-listed portfolio as illustrated by the relative line.

On closer inspection of the relative line it can be seen that the listed portfolio slightly underperformed the non-listed portfolio during 2004 and 2005 as the line was downward sloping over that period. This could be due to the SRI Index still being new to the market and not yet being incorporated into investor's decision making activities. However from the end of 2005 an increase in the value relative graph can be seen indicating that the listed portfolio increasingly outperformed the non-listed portfolio.

It should be noted that during the period of the economic recession (2007-2009), the highest outperformance occurred, evidenced by the steep upward sloping gradient in the relative line. It is also evident that the growth in the relative line reached a climax of 152.245% on 31 August 2009. Therefore it is concluded that even though most share prices decreased during the recessionary period (evident from the decrease in both the portfolio values illustrated above during the 2007-2008 period), the share prices of companies that showed

better sustainability practices, and issued higher quality sustainability reports (companies listed on the SRI Index), did not decrease to the same extent as those that did not show good sustainability practices or issued high quality sustainability reports (not listed on the SRI Index). Therefore, during the recessionary period, it is evident that investors were supporting companies illustrating higher quality sustainability practices to a greater extent than other companies showing lower quality sustainability practices.

Although the higher sustainability quality portfolio outperformed the lower quality portfolio, it did not outperform the market benchmark (J203 – ALSI), as the overall performance of the benchmark was R 0.75 higher than the SRI Index listed portfolio. Therefore an investor would generate long term excess returns when investing in a better quality sustainability portfolio as opposed to a lower quality portfolio, but would not generate returns higher than the market benchmark.

4.3.2 SECTION 2: START DATE 27 NOVEMBER 2007

On 27 November 2007, the SRI Index for the first time published the best performer list. Therefore Section 2 could split the comparison of different quality portfolios through the creation of the best performer portfolio (companies that illustrate sustainability practices beyond the minimum listing criteria) over and above the listed and the non-listed portfolios. As mentioned in Chapter 3 – Methodology, all the portfolios were created and unitised at the outset of each section; hence all the portfolios are comparable during each section presented. In Figure 13 the performance of the applicable portfolios can be seen from 27 November 2007 until 28 November 2012.

Figure 13 illustrates that during the period from November 2007 to November 2012, the non-listed portfolio lost value, as its value decreased from R 1.00 to R 0.89, thus experiencing a loss of 11%. The listed portfolio increased in value from R 1.00 to R 1.11, experiencing 11% growth. The best performer portfolio increased in value from R 1.00 to R 1.34, experiencing growth of 34%, and the market benchmark (J203 – ALSI) grew from R 1,00 to R 1.28, and therefore a growth of 28%.

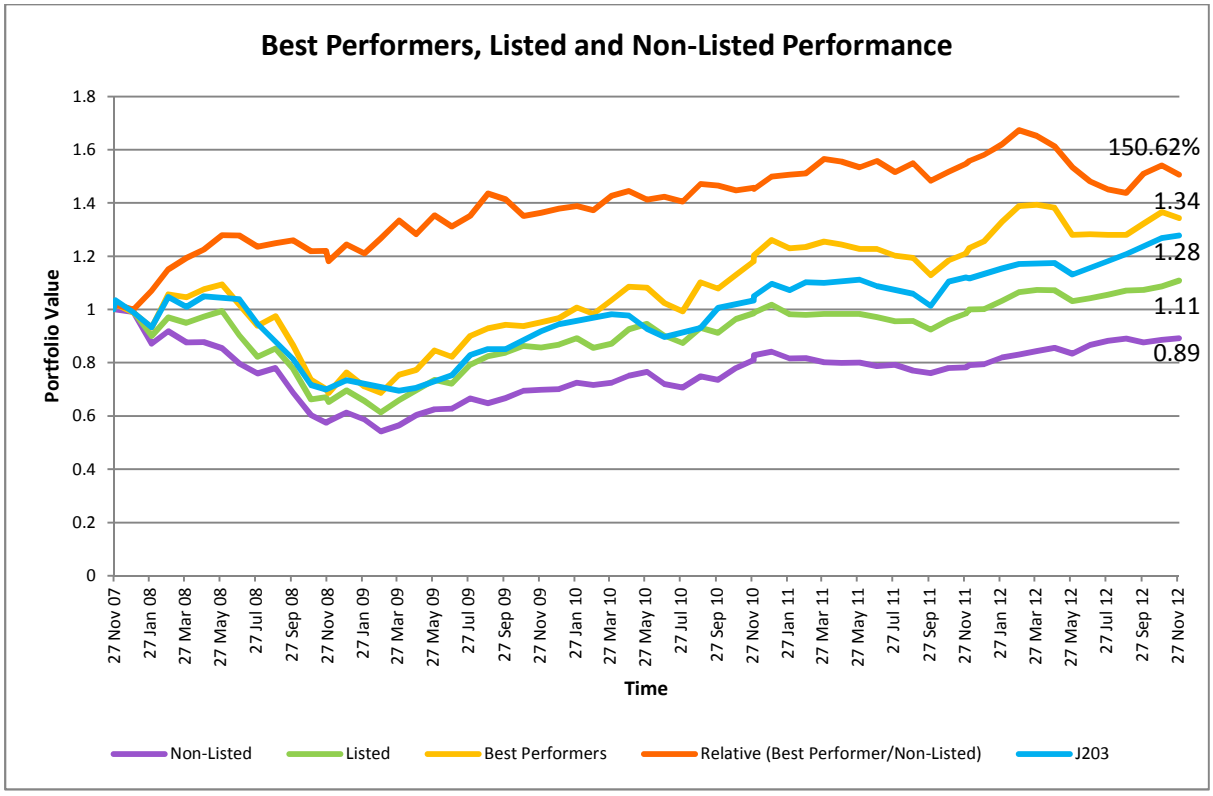


Figure 13: Best Performers, Listed and Non-Listed Performance

From the above it is clear that the listed portfolio is outperforming the non-listed portfolio, however it is still not outperforming the benchmark, consistent with the section 1 results. The best performer portfolio is outperforming not only the listed and the non-listed portfolios, but the benchmark as well.

The relative graph demonstrates that the best performer portfolio was worth 150.61% more that the non-listed portfolio at the end of the period examined. The graph is predominantly upward sloping, illustrating that the best performer portfolio consistently outperformed the non-listed portfolio during the period examined.

It is again evident that the greatest outperformance of the highest quality portfolio (best performers) over the lowest quality portfolio (non-listed) was during the start of the economic recession, reinforcing the conclusion in Section 1, i.e. that the share prices of companies with better sustainability practices and higher quality sustainability reports decreased less than other companies on the ASLI, but not on the SRI Index.

The findings of Section 2 are consistent with that of Section 1. Investors can earn excess returns when investing in the higher quality sustainability portfolio (the best performer portfolio) as opposed to a lower

quality portfolio or the market benchmark. However in Section 2 it was also found that investing in a better quality portfolio can generate returns above that of the market benchmark.

4.3.3 SECTION 3: START DATE 30 NOVEMBER 2009

Section 3 was able to add an additional quality level measure of sustainability and sustainability reports on share prices. The SRI Index published the persistent best performer list for the first time on 30 November 2009, allowing the creation of the persistent best performer portfolio, which was added to the study. The following diagram illustrates the performance of this portfolio as well as the other three portfolios already created for the period 30 November 2009 to 28 November 2012.

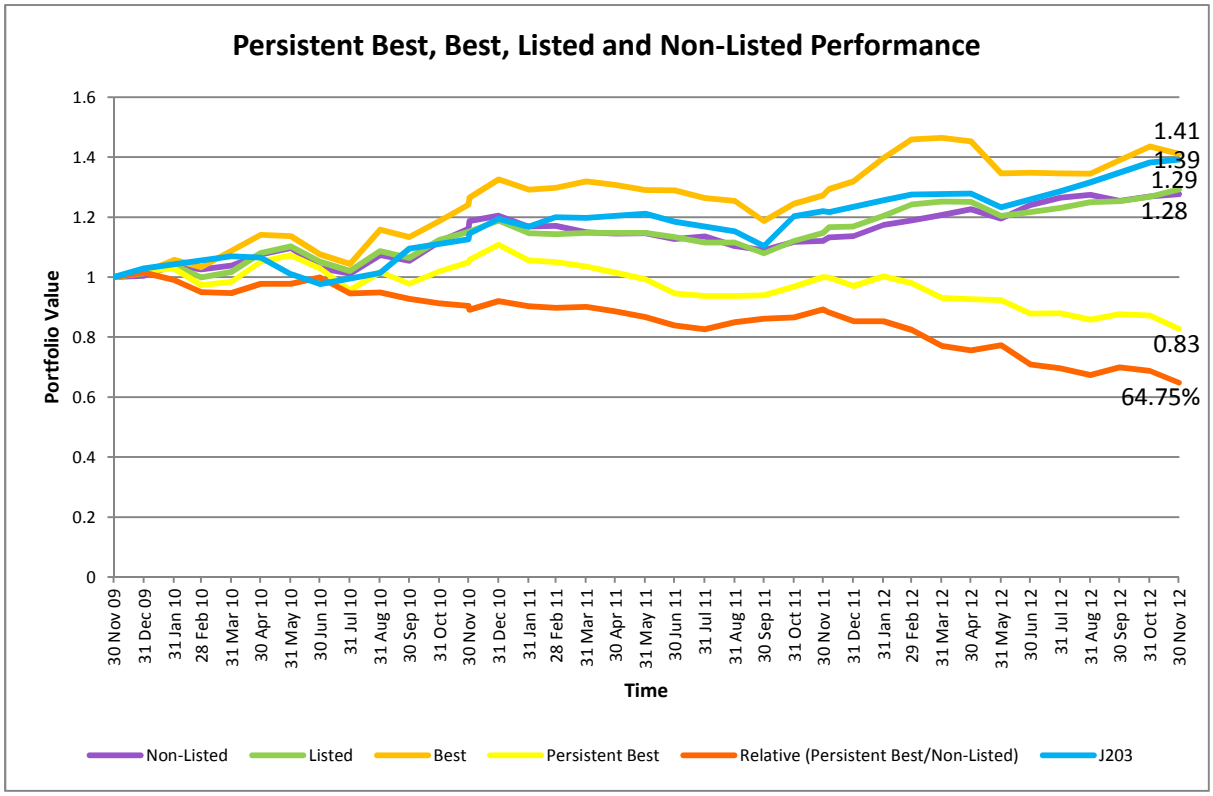


Figure 14: Persistent Best, Best, Listed and Non-Listed Performance

From Figure 14 it can be seen that the non-listed portfolio increased in value from R 1.00 to R 1.28, showing 28% growth for the period investigated; the listed portfolio's value increased from R 1.00 to R 1.29 during the period, showing a 29% increase; the best performer portfolio increased in value from R 1.00 to R 1.41, showing growth of 41%; the persistent best performer portfolio decreased in value from R 1.00 to R 0.83, therefore showing a loss of 17%, and the market benchmark (J203 – ALSI) increased in value from R 1.00 to R 1.39, showing 39% growth.

Consistent with the findings of Section 1 and 2, the listed portfolio is outperforming the non-listed portfolio, the best performer portfolio is outperforming the listed portfolio and the market benchmark, although by a smaller margin over this time period. This is potentially due to Section 3 being post the economic recession period, thus the sustainable portfolios did not have a large outperformance during that time frame, as well as Section 3 being a shorter period than the other sections thus the portfolios did not have as much time to outperform the other portfolios.

The persistent best performer portfolio is clearly underperforming all of the other portfolios. This is evident when analysing the downward sloping relative graph. The relative graph shows that the persistent best performer portfolio is worth 64.75% of the non-listed portfolio value at the end of the period examined. This underperformance could be attributed to the persistent best performer portfolio being a very small portfolio as can be seen in the Data section of Chapter 3 – Methodology, where in 2009 it consisted of 10 companies, in 2010 of 8 companies, and 2011 only 6 companies, and therefore is clearly lacking a diversification effect. The companies included in the persistent best performer portfolio are also mainly companies which fall within the resource sector, which underperformed significantly during the study period, contributing to the low performance of this portfolio. The number of companies within this portfolio therefore does not allow a conclusion to be reached regarding the quality of sustainability reporting, as the diversification and resource factors outweigh any sustainability quality performance.

From the above discussion it is concluded that the findings of Section 2 still hold in Section 3, however the new portfolio added in Section 3 did not perform consistently with the findings of Section 1 and 2, i.e. the further quality distinction portfolio did not outperform the other portfolios. However this under performance could be explained by the small size of the portfolio, as well as the nature of the constituents of the portfolio, both being overwhelming factors, and therefore not allowing a conclusion to be drawn on the persistent best performer portfolio.

4.3.4 SUMMARY OF THE LONG TERM STUDY RESULTS

The empirical evidence presented above illustrates that investors can generate excess share returns when investing in a higher quality sustainability and sustainability reporting portfolios as opposed to lower quality portfolios. The results of the long term study illustrates that the listed portfolio outperformed the non-listed

portfolio for all three sections presented; the best performer portfolio not only outperformed the listed and the non-listed portfolios, but also the market benchmark, indicating that investing in a better quality sustainability and sustainability reporting portfolio could generate returns higher than the market returns. Contrary to the aforementioned, the persistent best performer portfolio did not outperform the other portfolios created, but as mentioned in the previous section, this underperformance (or lack of outperformance) could be explained by the size and constituency of the portfolio.

It is important to note that the greatest outperformance occurred during the period of the economic downturn, illustrating that companies with good sustainability practices and sustainability reporting are less volatile than their non-listed counterparts, and it would seem that due to the better quality sustainability information disclosed to investors, there was greater confidence in these companies.

The above results are consistent with the findings of Lo and Sheu (2007) who stated that sustainability can increase market value, Lopez et al. (2007) who concluded that there could be a long term positive relationship between sustainability and market value, as in the long term sufficient financing could be obtained to devote to sustainability practices, as well as Pava and Krausz (1996) who stated that companies that are perceived to be sustainable show higher market returns than those companies perceived not to be sustainable, and that sustainable companies will outperform other non-sustainable companies in the long term.

From the results obtained through the performance of the long term study, it is clear that the second null hypothesis investigated in this research report (Investing in companies demonstrating higher quality sustainability and sustainability reporting will not generate abnormal returns for investors in the long term) can be rejected as there is evidence that positive abnormal (excess) returns can be generated by investors if they invest in a portfolio of companies illustrating higher quality sustainability and sustainability reporting. Therefore this study has presented clear empirical evidence that sustainability and sustainability reporting, true to the long term nature of the information, is value-relevant to shareholders and companies, in that companies with higher quality sustainability practices and reporting will generate higher share price returns (market value) in the long term as opposed to companies with lower sustainability and sustainability reporting quality.

CHAPTER 5 – CONCLUSION AND RECOMMENDATIONS

This study filled the gap in current empirical research through investigating the effect of different quality levels of sustainability and sustainability reporting on the market value of companies in the long and the short term. This was done through the utilization of an event study methodology to investigate whether a change in the quality level of a company's sustainability and sustainability reporting has a short term effect on the market value of a company; as well as a portfolio construction methodology to determine whether investing in a higher quality sustainability portfolio generates greater returns as compared to an investment in a lower sustainability quality portfolio.

Through the use of the SRI Index as an investment tool, as well as the different publications of the index, quality distinctions were made possible. Such quality distinctions were previously not possible in prior research performed due to the environment in which the prior research was performed, resulting in a unique research conclusion in this research report.

It is concluded that no significant short term effect of sustainability quality on market value exists, but that there is strong evidence suggesting that investing in higher quality sustainability portfolios will generate higher returns in the long term, hence high quality sustainability and sustainability reporting has a positive long term effect on market value.

This is explained through the long term nature of sustainability information. The purpose of sustainability performance is not to generate short term volatility, but rather long term sustainable growth. Sustainability reporting provides stakeholders with forward looking, more qualitative information, which requires a longer period to interpret and consider, in order to be taken into account in their long term decision making activities, hence a short term effect on market value is not expected.

It is also posited that as legislative requirements for institutional investors to disclose how they have taken sustainability practices into account in their investment decisions are introduced, investment tools such as the SRI Index, as well as the quality distinctions it provides, will become more prominent considerations, and that a short term quality effect on market value could develop in such circumstances. This therefore provides a possible avenue for future research.

REFERENCES

(IRC), I. R. C. (2011) Framework for integrated reporting and the integrated report, Discussion paper, http://www.sustainabilitysa.org/Portals/0/Documents/IRC%20of%20SA%20Integrated%20Reporting%20Guide%20Jan%2011.pdf *(accessed 2011-05-10)*.

Adam, A. M. and Shavit, T. (2008) How can a ratings-based method for assessing corporate social responsibility (CSR) provide an incentive to firms excluded from socially responsible investment indices to invest in CSR?, *Journal of Business Ethics,* 82(4), pp. 899-905.

Berthelot, S., Coulmont, M. and Serret, V. (2012) Do Investors Value Sustainability Reports? A Canadian Study, *Corporate Social Responsibility and Environmental Management*.

Blume, M. E. (1971) On the assessment of risk, *The Journal of Finance,* 26(1), pp. 1-10.

Brickley, J. A., Smith, C. W. and Zimmerman, J. L. (2002) Business Ethics and Organizational Architecture, *Journal of Banking and Finance,* 26, pp. 1821-1835.

Brown, D. L., Guidry, P. R. and Patten, D. M. (2010) Sustainability reporting and perceptions of corporate reputation: an anlysis using Fortune most admired scores, *Advances in Environmental Accounting and Management,* 4, pp. 83-104.

Chami, R., Cosimano, T. F. and Fullenkamp, C. (2002) Managing Ethical Risk: how investing in ethics adds value, *Journal of Banking and Finance,* 26, pp. 1697-1718.

Dawkins, C. and Ngunjiri, F. W. (2008) Corporate Social Responsibility Reporting in South Africa A Descriptive and Comparative Analysis, *Journal of Business Communication,* 45(3), pp. 286-307.

Dhaliwal, D. S., Li, O., Tsang, A. and Yang, Y. G. (2009) Voluntary non-financial disclosure and the cost of equity capital: the case of corporate social responsibility reporting, *Available at SSRN 1343453*.

DJSI Dow Jones Sustainability Indexes website, www.sustainability-indexes.com.

Doane, D. (2005) The myth of CSR, *Stanford Social Innovation Review,* 3(3), pp. 22-29.

El Ghoul, S., Guedhami, O., Kwok, C. C. Y. and Mishra, D. R. (2011) Does corporate social responsibility affect the cost of capital?, *Journal of Banking & Finance,* 35(9), pp. 2388-2406.

Epstein, M. J., McEwen, R. A. and Spindle, R. M. (1994) Shareholder preferences concerning corporate ethical performance, *Journal of Business Ethics,* 13(6), pp. 447-453.

Gray, R. (2006) Does sustainability reporting improve corporate behaviour?: Wrong question? Right time?, *Accounting and Business Research,* 36(sup1), pp. 65-88.

Gray, R. and Milne, M. (2002) Sustainability reporting: who's kidding whom?, *Chartered Accountants Journal of New Zealand,* 81(6), pp. 66-70.

Greeves, L. and Lapido, D. (2004) Added values? Measuring the 'value relevance' of sustainbaility reporting, *Imagination (GIC) and Lintstock: London*.

GRI (2006) *Sustainability Reporting Guidelines*, Global Reporting Innitiative (GRI), Amsterdam.

Heese, K. (2005) The development of socially responsible investment in South Africa: experience and evolution of SRI in global markets, *Development Southern Africa,* 22(5), pp. 729-739.

Hirvonen, J. (2009) Abnormal stock performance induced by the establishing of Russian operations: An event study on a portfolio of Finnish companies.

Hope, O. K. (2003) Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: An international study, *Journal of accounting research,* 41(2), pp. 235-272.

ICAEW ((2004)) Sustainability: the role of accountants (in the Information for Better Markets series), Institute of Chartered Accountants in Englang and Wales (ICAEW), London.

Ioannou, I. and Serafeim, G. (2011) The consequences of mandatory corporate sustainability reporting, *Harvard Business School Research Working Paper*(11-100).

Jones, S., Frost, G., Loftus, J. and Laan, S. (2007) An empirical examination of the market returns and financial performance of entities engaged in sustainability reporting, *Australian Accounting Review,* 17(41), pp. 78-87.

JSE (2011a) Ground Rules for the Management of the SRI Indices, *Johannesburg Stock Exchange*, *Johannesburg*.

JSE (2011b) SRI Index: Background and Selection Criteria, *Johannesburg Stock Exchange, Johannesburg*,

King, M. (2009) *King Code of Governance for South Africa*, Institute of Directors of South Africa, Parkland, SA.

KPMG (2010) Integrated reporting - Closing the loop of strategy, *http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/Integrated-Reporting.pdf (accessed 04-04-2011)*.

KPMG (2011) KPMG International Survey of Corporate Responsibility Reporting, *http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/corporate-responsibility/Documents/2011-survey.pdf (accessed 20-03-2013)*.

Lo, S. F. and Sheu, H. J. (2007) Is Corporate Sustainability a Value-Increasing Strategy for Business?, *Corporate Governance: An International Review,* 15(2), pp. 345-358.

Lopez, M. V., Garcia, A. and Rodriguez, L. (2007) Sustainable development and corporate performance: A study based on the Dow Jones Sustainability Index, *Journal of Business Ethics,* 75(3), pp. 285-300.

Manetti, G. (2011) The quality of stakeholder engagement in sustainability reporting: empirical evidence and critical points, *Corporate Social Responsibility and Environmental Management,* 18(2), pp. 110-122.

Norman, W. and MacDonald, C. (2004) Getting to the bottom of" triple bottom line", *Business Ethics Quarterly*, pp. 243-262.

Ohlson, J. (1995) Earnings, Book Values, and Dividends in Equity Valuation, *Contemporary Accounting Research,* 11(2), pp. 661-687.

Pava, M. L. and Krausz, J. (1996) The association between corporate social-responsibility and financial performance: The paradox of social cost, *Journal of Business Ethics,* 15(3), pp. 321-357.

Pounder, B. (2011) Trends in sustainability reporting, *Strategic Finance*, pp. 21-23.

Reverte, C. (2009) Determinants of corporate social responsibility disclosure ratings by Spanish listed firms, *Journal of Business Ethics,* 88, pp. 351-366.

Sauer, D. A. (1997) The impact of social-responsibility screens on investment performance: Evidence from the Domini 400 Social Index and Domini Equity Mutual Fund, *Review of Financial Economics,* 6(2), pp. 137-149.

Schadewitz, H. and Niskala, M. (2010) Communication via responsibility reporting and its effect on firm value in Finland, *Corporate Social Responsibility and Environmental Management,* 17, pp. 96-106.

Sonnenberg, D. and Hamann, R. (2006) The JSE Socially Responsible Investment Index and the state of sustainability reporting in South Africa, *Development Southern Africa,* 23(2), pp. 305-320.

Starks, L. T. (2009) EFA keynote speech:"Corporate governance and corporate social responsibility: What do investors care about? What should investors care about?", *Financial Review,* 44(4), pp. 461-468.

Ward, M. and Muller, C. (2012) Empirical Testing of the CAPM on the Johannesburg Stock Exchange, *Available at SSRN 2018197*.

Wempe, J. and Kaptein, M. (2002) The balanced company: A theory of corporate integrity, *Oxford: Oxford University Press*.

Westerfors, I. and Vesterberg, R. (2011) Integrated Reporting-Integrating environmental, social and governance issues in the annual report.

APPENDICES

The following appendices are included in this report:

- Appendix 1: SRI Constituents
- Appendix 2: SRI Best Performers
- Appendix 3: SRI Persistent Best Performers

As stated in Chapter 3 - Methodology, this information was obtained from the JSE website: http://www.jse.co.za/Products/SRI.aspx.

Appendix 1: SRI Constituents

2004	2005	2006	2007	2008	2009	2010	2011	2012
Absa Group Limited	ABSA Group Limited	ABSA Group Limited	Arcelor Mittal South Africa	ABSA Group Limited	ABSA Group Limited	ABSA Group Limited	ABSA Group	ABSA Group
African Bank Investment Limited	African Bank Investments Limited	AdvTech Limited	ABSA Group Limited	AdvTech Limited	AdvTech Limited	AdvTech Limited	AdvTech Limited	AdvTech Limited
African Oxygen Limited	African Oxygen Limited	African Bank Investments Limited	AdvTech Limited	African Bank Investments Limited	AECI	AECI	AECI Limited	AECI Limited
African Rainbow Minerals Limited	Alexander Forbes Limited	African Oxygen Limited	African Bank Investments Limited	African Oxygen Limited	African Bank Investments Limited	African Bank Investments Limited	African Bank Investments Limited	African Bank Investments Limited
Alexander Forbes Limited	Allied Electronics Corporation Limited	Alexander Forbes Limited	African Oxygen Limited	African Rainbow Minerals	African Oxygen Limited	African Oxygen Limited	African Oxygen Limited	African Oxygen Limited
Allied Electronics Corporation Limited	Allied Technologies Limited	Allied Electronics Corporation Limited	African Rainbow Minerals	Allied Electronics Corporation Limited	African Rainbow Minerals	African Rainbow Minerals	African Rainbow Minerals Limited	African Rainbow Minerals Limited
Allied Electronics Corporation Limited	AngloAmerican Platinum Corp Limited	Allied Technologies Limited	Allied Electronics Corporation Limited	Allied Technologies Limited	Allied Electronics	Allied Electronics Corporation Limited	Allied Electronics Corporation Limited	Allied Electronics Corporation Limited
Allied Technologies Limited	AngloAmerican plc	Anglo American Plc	Allied Technologies Limited	Anglo American Plc	Allied Electronics Corporation Limited	Allied Technologies Limited	Allied Technologies Limited	Allied Technologies Limited
Amalgamated Beverage Industries Limited	AngloGold Ashanti Limited	Anglo Platinum Corp Limited	Anglo American Plc	Anglo Platinum Limited	Allied Technologies Limited	Anglo American Plc	Anglo American Platinum Limited	Anglo American Platinum Limited
Anglo American Platinum Corporation Limited	Aveng Limited	AngloGold Ashanti Limited	Anglo Platinum Limited	AngloGold Ashanti Limited	Anglo American Plc	Anglo Platinum Limited	Anglo American Plc	Anglo American Plc
Anglo American Plc	Barloworld Limited	Aveng Limited	AngloGold Ashanti Limited	Arcelor Mittal South Africa	Anglo Platinum Limited	AngloGold Ashanti Limited	AngloGold Ashanti	AngloGold Ashanti
Anglo Ashanti Limited	BHP Billiton Plc	Barloworld Limited	Aveng Limited	Aveng Limited	AngloGold Ashanti Limited	Arcelor Mittal South Africa	Arcelor Mittal South Africa	Arcelor Mittal South Africa
Aveng Limited	Bidvest Group Limited	BHP Billiton Plc	Barloworld Limited	Barloworld Limited	Arcelor Mittal South Africa	Aspen Pharmacare Holdings Limited	Aspen Pharmacare Holdings Limited	Aspen Pharmacare Holdings Limited
AVI Limited	Brait S.A.	Brait S.A. (Societe Anonyme)	BHP Billiton Plc	BHP Billiton Plc	Aveng Limited	Aveng Limited	Aveng Limited	Aveng Limited
Barloworld Limited	City Lodge Hotels Limited	Bytes Technology Group Limited	Brait S.A	Brait S.A	Barloworld Limited	Barloworld Limited	Barloworld Limited	Barloworld Limited
BHP Billiton Plc	Discovery Holdings Limited	City Lodge Hotels Limited	Bytes Technology Group Limited	Capitec	BHP Billiton Plc	BHP Billiton Plc	BHP Billiton	BHP Billiton
City Lodge Hotels Limited	Edgars Consolidated Stores Limited	Discovery Holdings Limited	Discovery Holdings Limited	Discovery Holdings Limited	Discovery Holdings Limited	Blue Label Telecoms	Business Connection Group	British American Tobacco
Dimension Data Holdings Plc	Ellerine Holdings Limited	Edgars Consolidated Stores Limited	Exxaro Resources Limited	Exxaro Resources Limited	DRDGOLD Limited	Business Connection Group	Capital Shopping Centres Group Plc	Business Connection Group
Edgars Consolidated Stores Limited	FirstRand Limited	Firstrand Limited	Firstrand Limited	Firstrand Limited	Exxaro Resources Limited	Capital Shopping Centres Group Plc	Clicks Group limited	Capital Shopping Centres Group Plc
FirstRand Limited	Gold Fields Limited	Gold Fields Limited	Gold Fields Limited	Foschini	Firstrand Limited	Caxton CTP Publishers and Printers Limited	Discovery Holdings Limited	Clicks Group limited
Gold Fields Limited	Harmony Gold Mining Company Limited	Grindrod Limited	Grindrod Limited	Gold Fields Limited	Foschini	Clicks Group limited	DRDGOLD Limited	Discovery Holdings Limited

2004	2005	2006	2007	2008	2009	2010	2011	2012
Gold Reef Casino Resorts Limited	Impala Platinum Holdings Limited	Group Five Limited	Group Five Limited	Grindrod Limited	Gold Fields Limited	Discovery Holdings Limited	Exxaro Resources	DRDGOLD Limited
Harmony Gold Mining Company Limited	Imperial Holdings Limited	Harmony Gold Mining Company Limited	Harmony Gold Mining Company Limited	Group Five Limited	Grinrod Limited	DRDGOLD Limited	Firstrand Limited	Exxaro Resources
Illovo Sugar Limited	Investec Limited	Highveld Steel and Vanadium Corporation Limited	Highveld Steel and Vanadium Corporation Limited	Harmony Gold Mining Company Limited	Group Five Limited	Evraz Highveld Steel and Vanadium Limited	Gold Fields Limited	Firstrand Limited
Impala Platinum Holdings Limited	Investec Plc	Illovo Sugar Limited	Illovo Sugar Limited	Highveld Steel and Vanadium Corporation Limited	Growthpoint Properties Limited	Exxaro Resources Limited	Grindrod	Foschini Group
Investec Limited	Kumba Resources Limited	Impala Platinum Holdings Limited	Impala Platinum Holdings Limited	Hulamin	Harmony Gold Mining Company Limited	Firstrand Limited	Group Five	Gold Fields Limited
Iscor Limited	Liberty Group Limited	Imperial Holdings Limited	Investec Limited and Investec Plc	Illovo Sugar Limited	Highveld Steel and Vanadium Corporation Limited	Foschini	Growthpoint Properties	Grindrod
Johnnic Communications Limited	Liberty International Plc	Investec Limited and Investec Plc	JSE Limited	Impala Platinum Holdings Limited	Illovo Sugar Limited	Gold Fields Limited	Harmony Gold Mining Company Limited	Group Five
Kumba Resources Limited	Massmart Holdings Limited	Kumba Resources Limited	Kumba Iron Ore	Investec Limited and Investec Plc	Impala Platinum Holdings Limited	Grindrod	Hulamin	Growthpoint Properties
Liberty International Plc	Medi-Clinic Corporation Limited	Liberty Group Limited	Liberty Group Limited	JSE Limited	Investec Limited and Investec Plc	Group Five Limited	Illovo Sugar Limited	Harmony Gold Mining Company Limited
Massmart Holdings Limited	Merafe Limited	Liberty International Plc	Liberty International Plc	Kumba Iron Ore	JSE Limited	Growthpoint Properties Limited	Impala Platinum Holdings	Hulamin
MTN Group Limited	MTN Group Limited	Massmart Holdings Limited	Lonmin	Liberty Group Limited	Kumba Iron Ore	Harmony Gold Mining Company Limited	Imperial Holdings Limited	Illovo Sugar Limited
Murray and Roberts Holdings Limited	Murry & Roberts Holdings Limited	Medi-Clinic Corporation Limited	Massmart Holdings Limited	Liberty International Plc	Liberty Group Limited	Hulamin	Investec Limited and PLC	Impala Platinum Holdings
Nampak Limited	Nampak Limited	Merafe Resources Limited	Medi-Clinic Corporation Limited	Lonmin	Liberty International Plc	Illovo Sugar Limited	JSE Limited	Imperial Holdings Limited
Nedcor Limited	Nedcor Limited	Metropolitan Holdings Limited	Merafe Resources Limited	Massmart Holdings Limited	Lonmin	Impala Platinum Holdings Limited	Kumba Iron Ore	Investec Limited and PLC
Network Healthcare Holdings Limited	Network Healthcare Holdings Limited	Mittal Steel South Africa Limited	Metropolitan Holdings Limited	Medi-Clinic Corporation Limited	Massmart Holdings Limited	Imperial Holdings	Lewis Group Limited	JSE Limited
Northam Platinum Limited	Oceana Group Limited	MTN Group Limited	Mondi	Merafe Resources Limited	Medi-Clinic Corporation Limited	Investec Limited and Investec Plc	Liberty Holdings Limited	Kumba Iron Ore
Old Mutual Plc	Old Mutual Plc	Murray & Roberts holdings Limited	MTN Group Limited	Metropolitan Holdings Limited	Merafe Resources Limited	JSE Limited	Lonmin Plc	Lewis Group Limited
Pick n Pay Holdings Limited	Pick n Pay Stores Limited	Nampak Limited	Murray & Roberts Holdings Limited	Mondi	Metropolitan Holdings Limited	Kumba Iron Ore	Massmart Holdings Limited	Liberty Holdings Limited
Pretoria Portland Cement Company Limited	Remgro Limited	Nedbank Group Limited	Nedbank Group Limited	MTN Group Limited	Mondi	Liberty Holdings	Medi-Clinic International Limited	Lonmin Plc
Remgro Limited	SABMiller Limited	Network Healthcare Holdings Limited	Network Healthcare Holdings Limited	Murray & Roberts Holdings Limited	MTN Group Limited	Lonmin	Merafe Resources	Massmart Holdings Limited
SABMiller Plc	Sanlam Limited	Northam Platinum Limited	Northam Platinum Limited	Nampak	Murray & Roberts Holdings Limited	Massmart Holdings Limited	MMI Holdings Limited	Medi-Clinic International Limited

2004	2005	2006	2007	2008	2009	2010	2011	2012
Sappi Limited	SAPPI Limited	Oceana Group Limited	Oceana Group Limited	Nedbank Group Limited	Nampak	Medi-Clinic Corporation Limited	Mondi (Limited and Plc)	Merafe Resources
Sasol Limited	SASOL Limited	Old Mutual Plc	Old Mutual Plc	Netcare	Nedbank Group Limited	Merafe Resources Limited	MTN Group Limited	MMI Holdings Limited
South African Chrome and Alloys Limited	Standard Bank Group Limited	Pick 'n Pay Holdings Limited	Pick n Pay Holdings Limited	Northam Platinum Limited	Netcare	MMI Holdings	Murray & Roberts Holdings Limited	Mondi (Limited and Plc)
Standard Bank Group Limited	Telkom SA Limited	Pretoria Portland Cement Company Limited	Pretoria Portland Cement Company Limited	Oceana Group Limited	New Clicks Holdings Limited	Mondi	Nampak	MTN Group Limited
Telkom SA Limited	Tongaat-Hulett Group Limited	Remgro Limited	Remgro Limited	Old Mutual Plc	Northam Platinum Limited	MTN Group Limited	Nedbank Limited	Murray & Roberts Holdings Limited
The Bidvest Group Limited	Wilson Bayly Holmes-Ovcon Limited	SAB Miller Plc	SAB Miller Plc	Pick n Pay Holdings Limited	Oceana Group Limited	Murray & Roberts Holdings Limited	Netcare Limited	Nampak
The Tongaat-Hulett Group Limited	Woolworths Holding Limited	Sanlam Limited	Sanlam Limited	Pretoria Portland Cement Company Limited	Old Mutual Plc	Nampak	Northam Platinum Limited	Nedbank Limited
Venfin Limited		Santam Limited	Santam Limited	Remgro Limited	Palabora Mining Company Limited	Nedbank Group Limited	Oceana Group Limited	Netcare Limited
Woolworths Holdings Limited		Sappi Limited	Sappi Limited	SAB Miller Plc	Pick n Pay Holdings Limited	Netcare	Old Mutual	Northam Platinum Limited
		Sasol Limited	Sasol Limited	Sanlam Limited	Pretoria Portland Cement Company Limited	Northam Platinum Limited	Optimum Coal Holdings	Oceana Group Limited
		Standard Bank Group Limited	Standard Bank Group Limited	Santam Limited	Rainbow chicken Limited	Oceana Group Limited	Palabora Mining Company Limited	Old Mutual
		Telkom SA Limited	Telkom SA Limited	Sappi Limited	Remgro Limited	Old Mutual Plc	Pick n Pay	Palabora Mining Company Limited
		The Bidvest Group Limited	The Bidvest Group Limited	Standard Bank Group Limited	RMB	Palabora Mining Company Limited	Pretoria Portland Cement Company Limited	Pick n Pay
		The Tongaat-Hulett Group Limited	Tongaat Hulett	Sun International Limited	SAB Miller Plc	Pick n Pay Holdings Limited	Rainbow chicken Limited	Pretoria Portland Cement Company Limited
		Trans Hex Limited	Woolworths Holdings Limited	Telkom SA Limited	Sanlam Limited	Pretoria Portland Cement Company Limited	Remgro Limited	Rainbow chicken Limited
		Woolworths Holdings Limited		The Bidvest Group Limited	Santam Limited	Rainbow chicken Limited	RMB Holdings	Redefine Properties
				Tongaat Hulett	Sappi Limited	Remgro Limited	SAB Miller Plc	Remgro Limited
				Truworths International	Sasol	RMB	Sanlam	RMB Holdings
				Woolworths Holdings Limited	Standard Bank Group Limited	SAB Miller Plc	Santam	Royal Bafokeng Platinum Limited
					Steinhoff International Holdings Limited	Sanlam Limited	Sappi Limited	SAB Miller Plc
					Sun International Limited	Santam Limited	Sasol	Sanlam

2004	2005	2006	2007	2008	2009	2010	2011	2012
					Telkom SA Limited	Sappi Limited	Standard Bank Group	Santam
					The Bidvest Group Limited	Sasol	Steinhoff International Holdings	Sappi Limited
					Tongaat Hulett	Standard Bank Group Limited	Telkom SA Limited	Sasol
					Truworths International	Steinhoff International Holdings Limited	The Bidvest Group Limited	Standard Bank Group
					Vodacom Group Limited	Sun International Limited	The Foschini Group Limited	Steinhoff International Holdings
					Woolworths Holdings Limited	Telkom SA Limited	Tiger Brands Limited	Sun International Limited
						The Bidvest Group Limited	Tongaat Hulett	Telkom SA Limited
						Tiger Brands	Truworths International Limited	The Bidvest Group Limited
						Tongaat Hulett	Vodacom Group Limited	Tiger Brands Limited
						Truworths International	Wilson Bayly Holmes-Ovcon Limited	Tongaat Hulett
						Vodacom Group Limited	Woolworths Holdings	Truworths International Limited
						Woolworths Holdings Limited		Vodacom Group Limited
								Wilson Bayly Holmes-Ovcon Limited
								Woolworths Holdings

Appendix 2: SRI Best Performers

2007	2008	2009	2010	2011	2012
Absa Group	Absa Group	AECI	Absa Group	Absa Group	ArcelorMittal South Africa
African Bank Investments	African Bank Investments	Absa Group Limited	Anglo American	Anglo American PLC	Barloworld Limited
Anglo American	Anglo American	Allied Technologies	Anglo Gold Ashanti	Anglo Gold Ashanti	Massmart Holdings (Pty) Limited
Anglo Gold Ashanti	Anglo Gold Ashanti	Anglo American	ArcelorMittal South Africa	ArcelorMittal South Africa	Old Mutual Plc
Aveng	Aveng	Anglo Gold Ashanti	Barloworld Limited	Barloworld Limited	Pretorial Portland Cement Limited
Gold Fields	Bidvest Group	ArcelorMittal South Africa	Bidvest Group	Exxaro Resources	Santam Limited
Group Five	Discovery Holdings	Aveng Group	Exxaro Resources	Gold Fields Limited	Sappi Limited
Highveld Steel	Exxaro Resources	Barloworld Limited	Gold Fields	Impala Platinum Holdings	Standard Bank
Illovo Sugar	Foschini	Bidvest Group Limited	Group Five	Kumba Iron Ore	Steinhoff International Holdings
Massmart	Gold Fields	Discovery Holdings	Impala Platinum Holdings	Lonmin PLC	The Bidvest Group
Merafe Resources	Group Five	Exxaro Resources Limited	Kumba Iron Ore	Massmart Holdings	
Sasol	Highveld Steel and Vanadium	Foschini Group Limited	Lonmin PLC	Merafe Resources	
Standard Bank Group	Illovo Sugar	Gold Fields Limited	Merafe Resources	Mondi	
Tongaat Hulett	Impala Platinum Holdings	Group five	Murray & Roberts	Old Mutual	
	Lonmin Plc	Illovo Sugar Limited	Old Mutual	Pretoria Portland Cement	
	Massmart Holdings	Impala Platinum Mining	Pretoria Portland Cement	Santam Limited	
	Merafe Resources	Kumba Iron Ore	Sanlam	Sappi	
	Nampack	Lonmin PLC	Santam	Standard Bank Group	
	Netcare	Merafe Resources	Sappi	Steinhoff International Holdings	
	Sanlam	Mondi	Standard Bank Group	The Bidvest Group	
	Sappi	Nampak	Steinhoff International Holdings	Vodacom Group	
	Standard Bank Group	Old Mutual	Tongaat Hulett	Woolworths Holdings	
	Tongaat-Hulett	Pretorial Portland Cement	Woolworths Holdings		
		Sanlam Limited			
		Santam Limited			
		Sappi limited			
		Standard Bank Group			
		Tongaat Hulett			
		Truworths International			
		Woolworths Holdings			

Appendix 3: SRI Persistent Best Performers

2009	2010	2011	2012
ABSA Group Limited	ABSA Group Limited	ABSA Group Limited	Not Published
Anglo American Plc	Anglo American Plc	Anglo American Plc	
AngloGold Ashanti Limited	AngloGold Ashanti Limited	AngloGold Ashanti Limited	
Aveng Limited	Gold Fields Limited	Gold Fields Limited	
Gold Fields Limited	Group Five Limited	Merafe Resources Limited	
Group Five Limited	Merafe Resources Limited	Standard Bank Group Limited	
Illovo Sugar Limited	Standard Bank Group Limited		
Merafe Resources Limited	The Tongaat-Hulett Group Limited		
Standard Bank Group Limited			
The Tongaat-Hulett Group Limited			