
Corporate social responsibility initiatives and its impact on firm share price performance: Evidence from South Africa

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Abstract

This paper investigates the market reaction to corporate entry and exit from the JSE Socially Responsible Investment (SRI) Index between 2004 and 2014. The event study shows significant positive abnormal returns for new companies added to the annual SRI Index listing in both initial and subsequent years of publication. Over longer holding periods, the JSE Social Responsibility sample companies consistently outperform the FTSE/JSE All Share Index, but do not significantly outperform the matched set of companies. However, a rebalancing strategy based on only adding newly listed companies, and dropping consecutive winners outperforms the FTSE/JSE All Share Index and the matched company portfolio.

Key phrases

Event study; JSE SRI Index; portfolio rebalancing strategy; share price reaction; social responsibility initiatives

1. INTRODUCTION

A number of studies have focused on the rewards to stock market participants from investing in good companies. Reputation, family-friendliness and social responsibility have all being investigated in the literature (Walker & Dyck 2014:147-174). Examining the returns of firms with 'special' characteristics has been the most common form of analysis. The results are mixed. In many cases, researchers find that these firms do indeed outperform the market (Capelle-Blancard & Monjon 2014:497). Others find that the returns to 'good companies' are not significantly different from market returns (Revelli & Viviani 2015:167). In this study, the

information contained in the announcement itself is investigated. Do companies included in the JSE Socially Responsible Investment (SRI) Index have an impact on the market price of a firm and the shareholder value of investors? This is followed by examining the holding period returns to shareholders. Raw, risk-adjusted and long-term abnormal returns are explored. Does fostering a socially responsible environment in the workplace translate into higher annual returns for the company's shareholders?

Companies are increasingly being involved in corporate social responsibility (CSR) activities. However, with a few notable exceptions, the finance literature is deficient in providing significant empirical research on this topic, in particular from the perspectives of investors and the capital market (Skilton & Purdy 2017:106). This paper contributes to the literature by tracing the stock market reaction to entries and exits from the JSE SRI Index. This provides interesting insights on the impact of CSR on shareholders' value. A crucial issue to consider when establishing the effects of the announcement of an event related to the CSR choice is the investigation of the relationship between CSR and corporate performance. For the purpose of this investigation, corporate performance will be represented by shareholders' value.

Around the world, the phrase 'corporate social responsibility' is commonly used to describe the practice of good corporate citizenship. The use of the phrase 'corporate social investment' is a peculiarly South African development. It may be argued that this is a result of history and developments in South Africa. Skinner and Mersham (2008:245) have suggested that the term 'corporate social responsibility' has been abandoned by most South African companies in favour of the term 'corporate social investment' to divert attention from calls on businesses to redress the results of its historical contribution to the apartheid system.

The focus of this study is on the companies included in the JSE SRI Index published annually by the JSE Securities Exchange (JSE). It examines the share price reaction to the JSE SRI Index publications as well as the subsequent holding period returns to shareholders invested in SRI Index companies (Social Responsibility sample). Risk-adjusted and buy-and-hold abnormal returns (BHARs) are all examined as measures of performance and compared with matched sample of companies and market indices.

This paper investigates the corporate sociability initiatives and the related market reaction to corporate entry and exit from the JSE SRI Index between 2004 and 2014. Statistically significant positive abnormal returns (ARs) are observed for new companies added to the annual SRI Index listing on the initial publication date, as well as on the release date of subsequent listings. Over longer holding periods, the SRI Index companies consistently outperform the FTSE/JSE All Share Index (ALSI). However, the returns are not significantly different from those of a matched set of companies, with the exception of the initial listing year (2004). A rebalancing strategy based on new additions, outperforms both the ALSI and the matched portfolio. These positive results cast socially responsible behaviour by companies, and socially responsible investing in a more positive light, and increase the interest in identifying the underlying economic factors driving these higher returns.

2. LITERATURE REVIEW

2.1 Corporate social responsibility and financial performance

Using *Fortune* magazine's ranking of most admired companies, McGuire, Sundgren and Schneeweis (1988:854-872) examine the relationship between perceptions of firms' CSR and their financial performance. While socially responsible actions may impose costs on firms, the actual benefits may be higher than the costs if firms benefit from improvement in employee morale and productivity (Oh & Park 2015:92). Mazutis and Slawinski (2015:142) show that a firm's prior financial performance is closely related with perceptions of social responsibility. However, post-ranking financial performance measures do not have a significant relationship with perceptions of social responsibility. The measures of financial risk also explain a significant portion of variability in social responsibility scores across firms (Skilton & Purdy 2014:639).

Several studies investigate the stock market reaction to inclusions in lists that are indicative of companies' degree of social responsibility. Jones and Murrell (2001:59-78) conduct an event study of firms named to *Working Mothers* magazine's list of *Most Family-friendly Companies* for the first time between 1989 and 1994 and find statistically significant positive abnormal returns for such firms. The authors suggest that exemplary social performance can serve as a positive signal of the firm's business performance to shareholders. However, Filbeck and Preece (2003: 91) find a negative stock market response associated with the announcement.

Several other studies have investigated the relationship between Corporate Social Performance (CSP) and firm financial performance. Ding, Ferreria and Wongchoti (2016:93) find a positive relationship between the degree of CSP and sales growth in the current and subsequent years. Similarly, Geetika (2017:48) find a positive link between social and financial performance for banking firms. Mir and Shah (2018:57) find a positive association between a firm's degree of CSP and long-term institutional investment. Galant and Cadez (2017:26) find an inverse relationship between a firm's degree of CSP and firm risk, which supports the findings of Mazutis and Slawinski (2015). These studies suggest that a firm exhibiting a higher degree of CSP generally provide superior financial performance in the context of the risk/return spectrum.

2.2 Corporate social responsibility and stock market performance

The literature on firm reputation suggests that firms enjoying a better reputation perform better and are rewarded by stock market participants. Several studies have investigated whether companies engaging in CSR initiatives enjoy superior stock market performance in relation to those companies perceived to be less enthusiastic about engaging in social responsibility initiatives.

Becchetti, Ciciretti and Hasan (2007:1-33) conducted empirical research on CSR's impact and relevance in the capital market. They used event study methodology to trace the market reaction to corporate entry and exit from the Domini 400 Social Index (the recognised CSR benchmark) between 1990 and 2004. Their two main findings are: (1) a significant upward trend in absolute value abnormal returns, irrespective of the type of event (for example, addition or deletion from the index), and (2) a significant negative effect on abnormal returns after exit announcements from the Domini Index. They also find that the latter effect persists even after controlling for concurring financial distress shocks and stock market seasonality.

Capelle-Blancard and Couderc (2009:76-86) conducted an event study to determine the stock market reaction to additions and deletions from three families of SRI stock indexes, including DJSI, FTSE 4 Good, and Aspi. The sample consisted of 546 inclusions and 281 exclusions over the 2000 to 2005 period. They found that stocks included in the SRI indexes experienced statistically significant positive abnormal returns two days before the effective change in stock status. This was followed by a significant price reversal in the week following the stock inclusion announcement. It was suggested that the temporary effect on prices for

stocks included in the SRI indexes could probably be related to the presence of passive shareholders or fund managers rebalancing their portfolios.

There were no significant abnormal returns around the effective date for deletion from the SRI indexes. Capelle-Blancard and Couderc (2009:82) contended that these asymmetric stock price responses to index additions and deletions may be explained by the integration of investor awareness as a possible reason. They contend that investor awareness may increase following the inclusion in the SRI index, but awareness is less likely to diminish when a stock is excluded from the SRI index. Ahmed, Nanda and Schnusenberg (2010:859) do not observe any asymmetric share price response to index additions and deletions. Rather they observe that being included on the SRI index is viewed positively by the stock market and deletion results in a negative stock market reaction.

Arya and Zhang (2009:1089-1112) conducted a study that explored CSR in South Africa subsequent to the ending of apartheid in 1994. The companies investigated were white owned South African companies that placed equity capital in the hands of new black owners to contribute to the correction of historic socio-economic imbalances in the economy. The study covered the ten-year period from 1996 to 2005 and examined whether the timing and monetary value of the CSR initiatives influenced the share prices of the companies listed on the JSE Securities Exchange. Arya and Zhang (2009:1105) found the CSR initiatives adopted in the initial and late phases of institutional reforms are interpreted by investors in a distinctly different way. During the initial phase of the CSR initiatives, the investor reaction was negative and during the late phase investors reacted positively. Furthermore, CSR announcements of substantive monetary value result in significantly higher shareholder returns.

Demetriades (2011:1-217) investigated the stock market and financial performance of companies included in the JSE SRI Index. The SRI Index was used as a proxy for social performance in the South African context. All companies included in the JSE SRI Index during the period 2004 to 2009 were investigated to assess whether the experience of social performance in South Africa follows that of other countries. It was found that in the case of the 1-day event window, there were no significant share price effects on SRI Index shares around the announcement dates of JSE SRI Index constituent lists. The investigation also showed that the stock market returns of the SRI Index portfolios over the sample period

(2004-2009) were superior to those of conventional firms. Regression analysis revealed that the SRI Index constituents attained a return on equity (ROE) that was 11.2 per cent higher than conventional peers and that social performance was positively correlated with ROE.

Chetty, Naidoo and Seetharam (2015:193-213) evaluated the short-term market reaction of CSR announcements on share price reactions of firms included and excluded from the JSE SRI Index covering the period 2004 to 2013. The event study showed that investors were rewarded when firms entered the index and were penalized when they exited the index. Using regression analysis to evaluate the long-term impact of CSR, Chetty *et al.* (2015:206) showed that CSR is positively related to share price performance. They conclude that there is a significant difference in share price performance between constituents and non-constituents of the JSE SRI Index.

Muller and Wikstrom (2016) investigated the impact of different types of CSR activities on the stock price of all firms listed on the New York Stock Exchange between 2006 and 2016. The event study investigated the firm's announcements of CSR activities of type environmental, ethical and philanthropic. Muller and Wikstrom (2016:44) concluded that generally a firm's engagement in environmental and ethical CSR activities do affect the stock price positively, whereas engaging in philanthropic type of CSR activities tend to yield a neutral effect on a firm's stock price.

The objective of this paper is to extend and update the work of Demetriades (2011), Chetty *et al.* (2015) as well as other studies by examining whether the publication of the JSE SRI Index contains news sensitive information or, that the inclusion on SRI Index list does not necessarily translate into shareholder wealth over and above what one might expect to earn on a risk-adjusted basis.

3. RESEARCH METHODOLOGY

3.1 Hypothesis and description of the JSE SRI Index

The general hypothesis is that there will be abnormal returns associated with the announcement of the SRI Index for companies included in the index. Given this general hypothesis, there are three possible outcomes. First, the market will respond with positive and significant returns. This hypothesis is consistent with the market's perception that such companies merit a positive re-evaluation in their share prices. This scenario supports the

theory that positive benefits accruing to the company, such as improved profitability, and enhanced recruitment of staff and management, outweigh the costs of providing the benefits.

Second, if the returns are negative and significant, the implication is that the costs of implementing the socially responsible programmes outweigh any benefits. Given that there is a time lag between the cost of implementation and realization of the benefits by the company, this is not an unlikely outcome. Companies creating a socially responsible environment may see profits and possibly share prices decline in the short to medium term.

Finally, the market may not respond at all to the announcement of a company included in the SRI Index, in which case the abnormal returns would not differ statistically from zero. This would indicate that either the market does not incrementally value the information contained in the JSE SENS announcement or that the 'news' contained in announcement is already in the share prices. This outcome would be in line with the efficient market hypothesis, which implies that the informational content of companies listed on the SRI Index is fully impounded in the share prices of the companies concerned at the time of the announcement (Moosa & Vaz 2015:406).

Filbeck, Gorman and Zhao (2009: 239-262) investigated the key characteristics of companies making up the popular ranking 100 Best Corporate Citizens as identified by the editors of the publication *Business Ethics*. Based on this investigation, they observe that serving shareholders is not the only definition of corporate success. They further state that among the benefits of being a good corporate citizen are better employees, customer loyalty, minimal costs of litigation, and possibly a lower cost of capital. In their view, a good corporate citizen is one that excels at serving a variety of stakeholders well. This view is supported by Hinson and Ndhlovu (2011: 333) who state that there is a wide consensus in the corporate world that the concept of corporate social responsibility is based on a company attaining a balance between the interests of all stakeholders within its strategic planning and operations.

To test the existence of CSR in the South African context it is necessary to measure corporate social performance (CSP). Research on CSR in South Africa has been hindered by a distinct lack of a measure of CSP. The JSE took the initiative to develop the Socially Responsible Investment (SRI) index. The JSE SRI Index was launched in May 2004 and is based on the well-known FTSE4Good Index (Hinson & Ndhlovu 2011:342). The JSE SRI

Index provides a measurement of the triple bottom line performance of participating companies in line with the *King 4 Report on Corporate Governance for South Africa* (King 2016). Companies that are constituents of the FTSE/JSE All Share Index are invited annually to participate in the assessment, and performance is measured against a range of sustainability issues, namely: environment, society, governance (ESG) and related sustainability issues (SRI Index 2009).

The JSE used a research organization The Ethical Investment Research Services (EIRIS) which specializes in the measurement of corporate social performance against an objective set of criteria, principally for use by institutional investors (Brammer, Brooks & Pavelin 2006: 103). EIRIS surveys companies concerning social performance, but also undertakes its own research. As a result, it is able to provide social performance scores for a company irrespective of whether the company participates in its survey. The JSE SRI Index is not the first index of its kind internationally. However, it is the first of its kind sponsored by a stock exchange and the first in emerging markets. This sets the JSE apart in championing the measurement of corporate social responsibility.

3.2 The Social Responsibility sample

The sample period for this study includes the entire eleven years (2004-2014) of publication of the JSE SRI Index constituents in the JSE news services publication *Stock Exchange News Service* (SENS). The initial list was published on 20 May 2004 and was terminated in 2014. From 2015 onwards the JSE introduced a radically changed index, the FTSE/JSE Responsible Investment Index Series. The sample includes all companies that have been included in the JSE SRI Index at any time between 2004 and 2014. To be included in the sample, the company must meet the following criteria.

- The ordinary shares of the sample companies must have traded for the entire estimation period (days -250 to -50) and also the 11-day period covering the event study.
- The sample companies must have share price data on the McGregor/BFA database after the announcement date until the publication date of the next JSE SRI Index.
- The company must not have any other announcement during the 5 days before and 5 days after the JSE SRI announcement.

Across the eleven years of list publication, there were 721 viable announcements for JSE SRI Index companies. These companies constitute the 'Social Responsibility sample'. A matched sample on the basis of market capitalization and book value of ordinary share equity-to-market value of ordinary share equity (BE/ME) ratio is constructed. Chen, Liu and Chen (2014:691) argue that matching sample companies to control companies of similar sizes and BE/ME ratio will correct for possible sources of misspecification and yield well-specified test statistics. Following Loughran and Ritter (1995:23-51), there is no need to match the sample by market capitalization and industry for two reasons: first, the proposed matching method will minimize possible industry misclassification and second, suitable industry matches are not always possible due to the limited number of available companies within the industry that match up comparatively to sample companies. The Social Responsibility sample and the matched sample are very similar in market capitalization and BE/ME ratio. In addition, the investment performance of the sample companies will be compared to the larger, more diversified FTSE/JSE All Share Index.

4. SHARE PRICE PERFORMANCE OF THE SOCIAL RESPONSIBILITY SAMPLE

This section examines the announcement effect for the Social Responsibility sample. The tests are conducted in two parts. Section 4.1 examines the short-run market impact for the Social Responsibility sample using an event study, and this is followed by the long-run share price performance in section 4.2.

4.1 Short-run market impact

Company announcements are usually accompanied by a leakage of information to the press or shareholders a few days prior to the event date. This would argue for a share price run-up leading up to the event date. This possibility of leakage of information is minimized in the case of releasing the SRI Index. The SRI Index is published exclusively in JSE SENS and there is no accompanying press release. The event date ($t=0$) for the first year of the SRI Index publication was 20 May 2004.

The event study methodology of Mallikarjunappa and Dsouza (2014:94-106) was followed. The short-run share price response to the release of the SRI Index list is measured over the 11-day event window. The results are tested by calculating daily abnormal returns (ARs) and

cumulative abnormal returns (CARs) over the event window (days -5 to +5) based on the estimates of the parameters calculated for the trading period (-250 to -50) using the market model and tested based on the work of Das, Kyonghee & Patro (2012:905-935). Table 1 reports the results of the event study for companies included in the Social Responsibility sample. Panel A shows the ARs around the event date, and Panel B shows the CARs. The results of the Social Responsibility sample show no significant positive ARs prior to the event date. However, a positive CAR of 0.887 per cent (significant at 1 per cent level) is observed for the event window (1, 5) and 0.731 per cent (significant at 5 per cent level) for the event period (-5, 5).

Since the individual companies in the Social Responsibility sample will have the same SENS release date in each year, the statistical tests may be biased due to a lack of independence. To address this potential bias, event portfolios are formed each year consisting of all companies announced on the same date and repeat the event study using these portfolios rather than the individual companies. The results (reported in Table 1) of event portfolios show qualitatively similar ARs across event windows. However, since none of the CARs for the event portfolio tests is significant, it suggests that lack of independence may pose some problem for the results obtained, and we need to interpret the event study results with caution.

Table 1: ARs and CARs around event date for the Social Responsibility sample

Panel A: ARs (%) around event date			
Day	Individual Companies		Event Portfolios
	AR	Z-statistic	AR
-5	0.088	1.26	0.094
-4	0.019	0.24	0.022
-3	-0.284	-2.95**	-0.279
-2	-0.192	-2.73**	-0.195
-1	0.066	0.82	0.071

0	0.147	1.62	0.139
1	0.125	1.43	0.130
2	0.491	4.19**	0.503
3	-0.063	-0.83	-0.078
4	0.470	4.37**	0.481
5	-0.136	-1.50	-0.129

Panel B: CARs (%) around event date			
Interval	CAR	Z-statistic	CAR
(-5, -2)	-0.369	-1.51	-0.358
(-1, 0)	-0.213	-1.45	-0.210
(1, 5)	-0.887	-4.02**	-0.907
(-5, 5)	-0.731	-2.45*	-0.753

** and * indicate statistical significance at the 1% and 5% level, respectively

Source: Calculated from event study investigation

The results for each sample year were examined (and are not reported for brevity) and it was observed that the share price response to the 2004 Social Responsibility sample companies is positive and statistically significant after the event date ($t=0$). In four of the five days after JSE SENS publication, there are significant positive ARs. During the event window (-5, 5), there is a statistically significant (1 per cent level) CAR of 2.143 per cent for the year 2004. However no significant market response is observed in subsequent years. A possible explanation for this result is that the 2004 JSE SENS publication contains new information not perceived by the market, and there is a positive price effect following the publication. Given that the Socially Responsible sample companies are unlikely to negatively change their behaviour in the short term, investors may expect a strong persistency in their profiles. Investors would not view the subsequent year listings as containing incremental

information for the previously identified companies that would be worthy of significantly revaluing these companies' share prices.

To test whether this argument is valid, subsamples of the Social Responsibility sample shares were examined. First, it is necessary to examine whether the Social Responsibility sample is relatively persistent in composition over subsequent years. Between 80 per cent and 90 per cent of the companies listed as a previous year's socially responsible company will repeat the honour in the subsequent year. For example, on the 2005 Social Responsibility list, the 48 companies listed were also included on the 2004 list.

There is also a need to explore whether announcements related to those companies that only represent new listings contain new information. In addition, the overall Social Responsibility sample results in Table 1 do not show whether the subgroups of companies in the sample show different share price responses around the event date. For example, if a company appears on the list, falls off the next year, and then reappears ('return winners'), will the share price response for this company differ from those of the remaining companies? Also of interest is whether a positive market reaction for initial admission to the list will be followed by a negative market reaction associated with being deleted from the list ('losers').

To address these issues, the following four subsamples are constructed for each year:

- The 'new listing' subsample contains only companies that were not previously listed in the SRI Index. This grouping will include all companies that were included in the 2004 SRI Index since it was the first year of the listing. For subsequent years, only companies that were not included in the Social Responsibility sample in the previous year will be included.
- The 'consecutive eleven-year winners' sample contains companies that are listed in the Social Responsibility sample for the entire eleven years of the investigation.
- The 'return winners' sample contains companies that have been deleted from the list and then reappear in the list afterward.
- The 'losers' sample contains companies that have been deleted from the list in a particular year.

If the argument about the positive benefits of new information is valid, we should expect positive share price effects around the subsequent announcement dates for the new listing sample and no significant effect for the samples of consecutive winners.

The event study results for the subsamples are reported in Table 2. The new listing sample displays positive ARs following the JSE SENS release date and exhibits a statistically significant (1 per cent level) CAR of 1.454 per cent during the (-5,5) event window. However, there are no significant effects observed with either the ARs or the CARs for the 'consecutive eleven-year winners' sample. The 'return winners' sample shows smaller positive (though not statistically significant) CARs during the (-5, 5) event window than the 'new listing' sample. The 'losers' sample shows a statistically significant (1 per cent level) negative CAR of 1.185 per cent during the (-5, 5) event window.

Table 2: ARs and CARs around event date for the Social Responsibility sub-samples

	New Listing Sample (n=103)		Consecutive eight-year winners (n=31)		Return winners (n=12)		Losers (n=28)	
Panel A: ARs (%) around event date								
Day	AR	Z-stat	AR	Z-stat	AR	Z-stat	AR	Z-stat
-5	0.196	1.24	-0.026	-0.32	0.119	0.64	-0.031	-0.23
-4	0.143	0.89	-0.087	-0.81	0.069	0.41	-0.186	-1.39
-3	-0.487	-3.07**	-0.142	-1.47	-0.131	-0.75	-0.254	-2.16*
-2	-0.269	-1.98*	0.039	0.25	-0.046	-0.32	0.229	1.54
-1	-0.164	-1.09	-0.127	-1.12	0.079	0.46	-0.278	-2.01*
0	0.036	0.41	0.044	0.41	0.145	0.83	-0.266	-2.08*
1	0.187	1.25	-0.121	1.13	0.167	0.92	-0.249	-1.83
2	0.427	2.73**	-0.064	-0.59	-0.065	-0.39	0.085	0.72

3	0.295	2.38*	0.072	0.63	0.094	0.57	0.032	0.19
4	0.415	2.62**	-0.063	-0.52	-0.032	-0.20	-0.231	-1.57
5	0.681	3.50**	0.130	-1.20	-0.042	-0.31	0.035	0.28

Panel B: CARs (%) around event date								
Interval	CAR	t-stat	CAR	t-stat	CAR	t-stat	CAR	t-stat
(-5, -2)	-0.471	-1.53	-0.216	-1.24	0.011	0.15	-0.242	-1.08
(-1, 0)	-0.128	-0.61	-0.083	-0.51	0.224	0.98	-0.544	-2.53*
(1, 5)	2.002	4.82**	-0.046	-0.35	0.122	0.43	-0.399	-1.29
(-5, 5)	1.454	3.26**	-0.345	-1.17	0.357	1.04	-1.185	-2.82**

** and * indicate statistical significance at the 1% and 5% level, respectively

Source: Calculated from event study investigation

In summary, the event study results indicate that the stock market reacts favourably on the days surrounding the JSE SENS release date of Social Responsibility sample shares when the company initially appears on the SRI Index lists. Consecutive-year winners on the list do not experience a significant share price effect during the event window. Since the significant returns are only found in the initial year of a company appearing in the SRI Index, this should allay concerns that this research has simply identified a sample of successful companies that continue to be successful. The abnormally high returns in the first year followed by a resumption of normal returns in subsequent years is consistent with the supposition that new information is being priced when a company initially lists on the Socially Responsible sample, whereas subsequent listings add little new information about the companies' prospects. This is also true if a company disappears from the list for a year or two and then reappears. However, if the company was deleted from the list, we observe a negative market reaction (implying negative information) for the 'losers' sample. Additional tests that address this issue follow in sections 4.2 and 5.

4.2 Long-term share return performance

Besides the lack of independence of the announcement dates mentioned previously, a second reason for having some reservations about the robustness of the event study results is that SENS is not as prominent a publication as the *Business Day* which is used for most event studies in South Africa. It can be expected that some investors will first react to the SRI Index list release when reading about the event in the financial press such as *Business Day*. The same concern applies to the continued 'announcements' made by the individual companies following the initial list release by SENS. For these reasons, the use of return measures involving longer holding periods may be more revealing.

This section examines the long-term return performance of the Social Responsibility sample after each event date. Researchers such as Fama (1998:296) and Loughran and Ritter (2000: 27) have shown that the magnitude and in some cases even the sign, of the long-term ARs are sensitive to alternative measurement methods. To determine the sensitivity of the results, the long-term return performance of the Social Responsibility sample companies will be examined using several approaches.

The long-term share performance of the Social Responsibility sample is first tested by forming a portfolio consisting of the 51 companies on the event date in 2004. This portfolio is 'held' until the event date in the next year, at which point, the portfolio is rebalanced to reflect the inclusion of newly listed companies and the elimination of companies not appearing on the subsequent year listing. This sample process is used for subsequent holding periods.

Two types of benchmarking portfolios are used to test the ARs of the Social Responsibility sample: the FTSE/JSE All Share Index and the matched sample (matched by market capitalization and BE/ME ratio). To determine ARs, a variety of risk-adjusted performance measures are calculated. In addition, the Fama and French (1993) three-factor and four-factor models are used to test the ARs. The method and test results are discussed in the following section.

4.2.1 Risk-adjusted performance measures

Three risk-adjusted performance measures are calculated: the Sharpe (1966, 1994) ratio, Treynor (1965) ratio and Jensen's (1968) alpha. The results of the risk-adjusted performance measures are shown in Table 3. When annual holding period returns for the Social

Responsibility sample and subsamples are compared to those of the FTSE/JSE All Share Index, all three performance measures (Sharpe ratio, Treynor ratio and Jensen's alpha) exceed their respective counterpart measures for the FTSE/JSE All Share Index. When the Social Responsibility sample is compared to the matched sample, the three performance measures are still higher than the matched sample, though to a lesser degree. Both the Social Responsibility sample and the matched sample show positive Jensen's alphas, although the alphas in the matched sample are lower compared to the Social Responsibility sample.

Table 3: Risk-adjusted performance measure of the Social Responsibility sample compared to the FTSE/JSE All Share Index and the matched sample

	Social Responsibility Sample (n=721)	New Listing Sample (n=103)	Consecutive eight-year winners (n=31)	Return winners (n=12)
Sharpe ratio:				
Social Responsibility (1)	0.391	0.183	0.160	0.152
Matched (2)	0.247	0.149	0.121	0.118
FTSE/JSE All Share Index (3)	0.146	0.094	0.085	0.070
Treynor ratio:				
Social Responsibility (1)	9.841	11.632	7.514	8.176
Matched (2)	6.525	7.509	6.320	7.340
FTSE/JSE All Share Index (3)	4.437	3.263	4.285	4.385
Jensen's alpha:				

Social Responsibility (1)	1.342**	1.607**	0.691	0.749
Matched (2)	0.893*	1.134*	0.536	0.580

** and * indicate statistical significance at the 1% and 5% level, respectively

Source: Calculated from event study investigation

4.2.2 Fama and French three-factor and four factor models

The three-factor model is applied by regressing the post-event daily excess return for portfolio p on a market factor, a size factor, and a book-to-market factor. The four-factor model is constructed by integrating the Fama and French (1993:3-56) three-factor model with an additional factor capturing the one-year momentum anomaly reported by Jegadeesh & Titman (1993: 65-91). The three-and four-factor models are defined respectively as:

$$R_{pt} - R_{ft} = \alpha + b(R_{mt} - R_{ft}) + sSMB_t + hHML_t + e_{pt}, (1)$$

$$R_{pt} - R_{ft} = \alpha + b(R_{mt} - R_{ft}) + sSMB_t + hHML_t + mUMD_t + e_{pt}, (2)$$

Where

R_{pt} is the return on the portfolio;

R_{ft} is the return on one-month RSA Treasury Bills;

R_{mt} is the return on a value-weighted market index;

SMB_t is the return on a value-weighted portfolio of small shares less the return on a value-weighted portfolio of large shares;

HML_t is the return on a value-weighted portfolio of high book-to-market shares less the return on a value-weighted portfolio of low book-to-market shares; and

UMD is the return on the two prior high return portfolios less the return on the two prior low return portfolios.

A positive intercept for these regressions, α , indicates that after controlling for the market, size, book-to-market ratio, and momentum factors in returns, the sample portfolio has performed better than expected.

Table 4 shows the results of the two regressions for the Social Responsibility sample, matched sample and each of the four subsamples. Only the regression intercepts and their respective *t*-statistics are reported for brevity. The results show that in all cases except for the losers subsample the regression intercepts are positive, although there are significant intercepts (1 per cent level) for new listing subsample, and marginally significant (5 per cent level) for the Social Responsibility overall sample. These results are similar to the event study results which showed that the Social Responsibility sample and the new listings subsample have better than expected returns. In this case the same results are obtained even after controlling for the market, size, book-to-market ratio, and momentum factors.

Table 4: Regression intercept obtained from using the Fama and French three-and four-factor model for the Social Responsibility sample

	Social Responsibility Sample (n=721)	Matched Sample (n=721)	New Listing Sample (n=103)	Consecutive eight-year winners (n=31)	Return winners (n=12)	Losers (n=28)
Panel A: Fama and French three-factor model						
Intercept Coefficient	0.0356	0.0281	0.0490	0.0051	0.0064	-0.0093
t-statistics	2.27*	1.20	3.19**	0.20	0.13	-0.75

Panel B: Fama and French four-factor model						
Intercept Coefficient	0.0349	0.0275	0.0493	0.0057	0.0070	-0.0098
t-statistics	2.31*	1.27	3.34**	0.25	0.18	-0.73

** and * indicate statistical significance at the 1% and 5% level, respectively

Source: Calculated from event study investigation

4.2.3 Buy-and-hold abnormal returns (BHARs)

Long-term performance is also assessed by using buy-and hold abnormal returns (BHARs). Developing on the work of Mitchell and Stafford (2000), Chen *et al.* (2014:685) find that BHARs can be used to address several issues regarding portfolio performance. A BHAR is the difference between the return on a buy-and-hold investment in a company of interest less the return on a buy-and-hold investment in a similar asset/portfolio. Chen *et al.* (2014:692) note that BHARs can overcome several biases inherent in estimating long-term CARs. Specifically, BHAR is calculated as:

$$BHAR_{iT} = \prod_{t=1}^T [1 + R_{it}] - \prod_{t=1}^T [1 + E(R_{it})], \quad (3)$$

Where $BHAR_{iT}$ is defined as buy-and hold abnormal returns for share i in the Social Responsibility sample over a defined holding period T , R_{it} is the day t return of share i in the Social Responsibility sample, and $E(R_{it})$ is the day t expected return for share i in the matched sample. Chen *et al.* (2014:697) argue that by matching sample companies to control companies of similar sizes and BE/ME ratios will correct for the possible sources of misspecification. For the calculation of BHAR in this study, the matched sample is used as a benchmark portfolio for the purposes of calculating the daily expected returns for the sample companies. Therefore, in this study, $BHAR_{iT}$ is measured as the buy-and-hold return in a Social Responsibility sample less the buy-and-hold return of its matched company.

The results are presented in Table 5. Panel A shows that in general, the Social Responsibility sample does not outperform its matched sample using the annual buy-and-hold strategy. The only exception is in 2004 (which yields a statistically significant BHAR of 17.3 per cent. If we construct a Social Responsibility investment strategy with annual rebalancing over all listing periods (from 2004 to 2014), there is a CAR of 5.4 per cent (though not statistically significant) compared with the matched sample. This result is similar to the event study results.

For the subsamples comparisons in Panel B of Table 5, the BHARs results are similar to those found with the event study tests. The new listing subsample yields a statistically significant (5 per cent level) BHAR of 9.4 per cent compared with the matched sample, while

the consecutive eight-year winners subsample and return winners sample do not yield significant ARs compared with the marched sample.

Table 5: BHARs obtained for the Social Responsibility sample and sub-samples.

Panel A: Full Social Responsibility sample				
Year	$\prod [1+R_{it}]$	$\prod [1+E(R_{it})]$	BHAR	t-test
2004 (n=51)	1.289	1.116	0.173	2.17*
2005 (n=49)	1.493	1.346	0.147	1.69
2006 (n=58)	1.447	1.298	0.149	1.71
2007 (n=57)	1.216	1.165	0.051	0.62
2008 (n=61)	0.779	0.765	0.014	0.40
2009 (n=67)	1.345	1.401	-0.056	-0.63
2010 (n=74)	1.211	1.283	-0.072	-0.85
2011 (n=74)	1.044	1.118	-0.074	-0.87
2012 (n=76)	1.271	1.186	0.085	1.15
2013 (n=72)	1.225	1.114	0.111	1.34
2014 (n=82)	1.118	1.043	0.075	0.91
2004-2014 (n=721)	1.221	1.167	0.054	0.62

Panel B: Sub-samples				
	$\prod [1+R_{it}]$	$\prod [1+E(R_{it})]$	BHAR	t-test
New listing, sample (n=103)	1.369	1.275	0.094	2.33*
Consecutive eleven-year winners (n=31)	1.293	1.272	0.021	0.37
Return winners (n=12)	1.208	1.173	0.035	0.41

* indicate statistical significance at the 5% level

Source: Calculated from event study investigation

Overall, the tests on long-term share return performance indicate that only the new listing sample provides significant positive ARs, and this conclusion is not sensitive to different test statistics and measurement methods employed in this paper. The consecutive eleven-year winners subsample and the return winners sample are not statistically different from returns of benchmark portfolios. The losers sample yields negative alphas after controlling for the market return, size, the BE/ME ratio, and momentum factors, though the intercepts are not statistically significant.

5. PERFORMANCE OF SOCIAL RESPONSIBILITY COMPANIES IN THE LONGER TERM

The results so far indicate that Socially Responsible sample companies outperform the FTSE/JSE All Share Index and their matched companies one year after being on the list. However, one question particularly relevant to potential investors that remains unanswered is whether the Social Responsibility sample companies continue to perform better in the longer term.

To investigate this issue, the share performance of Social Responsibility companies three and five years after being selected is evaluated. Specifically, the BHARs of the Social Responsibility companies and the matched sample are compared three and five years after being listed. The results are reported in Panels A and B of Table 6. Furthermore, the Fama and French three-and four model will be used to test the regression coefficients of the intercepts after controlling for market, size, BE/ME ratio and momentum factors. The results are reported in Panels C and D of Table 6.

Table 6: Longer-term share price performance results for the Social Responsibility sample

Variable	Social Responsibility Sample	New Listing Sample	Consecutive eight-year winners	Return winners
Panel A: BHARs three years after being listed				
Social Responsibility	2.172	2.183	2.161	2.179
Matched Sample	2.035	2.027	2.108	2.130
BHARs	0.087*	0.156*	0.053	0.049

Panel B: BHARs five years after being listed				
Social Responsibility	2.4152	2.441	2.493	2.408
Matched Sample	2.229	2.212	2.356	2.313
BHARs	0.186*	0.229*	0.137	0.095

Panel C: Regression intercept for Fama and French three-and four-factor model three years after being listed					
Three-Factor	Coefficient	0.0236	0.0389	0.0041	0.0053
	t-statistics	2.01*	2.54*	0.36	0.43
Four-Factor	Coefficient	0.0231	0.0382	0.0039	0.0046
	t-statistics	1.95	2.51*	0.33	0.39

Panel D: Regression intercept for Fama and French three-and four-factor model five years after being listed					
Three-Factor	Coefficient	0.0238	0.0378	0.0044	0.0058
	t-statistics	2.49*	2.72**	0.37	0.44
Four-Factor	Coefficient	0.0235	0.0373	0.0031	0.0046
	t-statistics	2.43*	2.51*	0.28	0.38

** and * indicate statistical significance at the 1% and 5% level, respectively

Source: Calculated from event study investigation

The results show that the Social Responsibility sample still outperforms its matched sample and the market in the longer term. Specifically, the Social Responsibility sample obtains a BHAR of 8.7 per cent and 18.6 per cent ,respectively , compared with its matched companies three and five years after being listed. We find qualitatively similar results using Fama and French models, suggesting that the improvements in share return performance are not short -lived for the Social Responsibility sample. When investigating the results for

subsamples, we find that they are consistent with the previous results: We find larger improvements in share performance measures for the new listings subsample, and insignificant test results for all the other subsamples.

6. DISCUSSION AND CONCLUSIONS

Since 2004 the JSE has published an annual list of companies that are included in the SRI Index. An event study shows that positive and statistically significant ARs exist for newly listed companies on the SRI Index around the JSE SENS announcement date of each listing during the 2004 to 2014 period. However, there are no significant returns for subsamples composed of companies experiencing repeated listings (consecutive winners). This can be attributed to the supposition that repeated listings add little new information about the companies' prospects.

This study investigates the holding period results from an examination of the performance of the JSE Social Responsibility sample companies compared to the performance of the FTSE/JSE All Share Index as well as the performance of a portfolio formed from a matched sample of companies. Several methods were employed to test the long-run performance of the Social Responsibility sample: risk-adjusted returns, Fama and French three-factor and four-factor models, and BHARs. While the returns from the Social Responsibility sample companies consistently outperform those of the FTSE/JSE All Share Index, they are not significantly different from the returns on the portfolio of matched companies (except for the 2004 initial listing year). However, if we rebalance the portfolio every year, adding only newly listed companies, and dropping consecutive winners, the Social Responsibility portfolio outperforms both the FTSE/JSE All Share Index and the matched sample.

Since consecutive winners seem to experience a type of 'winner's curse', investors can rebalance their portfolio holdings every year around the time of the JSE SENS publication, drop the 'consecutive winners' from the previous years, and add only newly listed companies in the SRI Index. Based on this strategy, an investor can form a portfolio of new Socially Responsible companies that outperforms both the market (JSE/FTSE All Share Index) and the matched portfolio.

The negative ARs to the 'losers' portfolio, those dropped from the SRI Index list is also worthy of note in that these companies appear to be severely punished by shareholders.

However, it could be argued that the penalty for exit from the Social Responsibility sample might depend more from the reaction of fund managers rather than shareholders' expectation of poor future performance. This interpretation is consistent with the growth in size of investment funds managed by social responsibility fund managers. Their behaviour on the stock market has a pronounced effect on companies deleted from social responsibility indexes – inability to meet social responsibility criteria could lead to a sell-off of a given share independent from investors' expectations of its future performance (Chetty *et al.* 2015:205).

The observed superior investment performance of the social responsibility companies may well be explained by the behaviour of institutional investors. Investment managers tend to invest in well-reputed companies such as those companies included in the JSE SRI Index, so as to protect their own reputations. In the case of underperformance, most of their clients and supervisors are more likely to blame the companies in which the investment was made or the stock market rather than the investment managers, who after all, simply invested in well-regarded companies (Tripathi & Bhandari 2016:103). It could be said that investing in socially responsible companies is the safe thing to do. Rathner (2013:358) have shown that asset managers are evaluated not only on the basis of their investment performance, but also on the basis of their investment holding. This suggests a motive for window dressing portfolios that gives prominence to companies with favourable social responsibility reputations.

The results of this paper make a noteworthy contribution to the literature on corporate social responsibility investing in that it provides compelling evidence in support of socially responsible behaviour by companies and socially responsible investing by investors. This study should be viewed as evidence of the consistency between social responsibility and share price performance. The results confirm the rapidly gaining belief that socially responsible companies are not wasting resources meant for shareholders on pet projects and unviable environmental initiatives. Investors are also recognizing that there is indeed legitimacy in the actions of socially responsible companies, and that their community and environmental activities enable investors to better predict the future earnings of these companies (Walker & Dyck 2014:165).

Gregory, Whittaker and Yan (2016:24) have shown that corporate social responsibility promotes sustainability by being a source of opportunity, innovation and competitive advantage. Sharma and Mehta (2012:74-75) has suggested that sustainability can be achieved by companies being as socially responsible as they can, while maintaining value for themselves as well as surrounding communities. A key characteristic of good corporate citizens such as companies engaged in socially responsible initiatives is that they serve a variety of stakeholders and not their shareholders only. This focus on a variety of stakeholders enables socially responsible companies to respond to the changing economic, social, political and environmental landscape. By incorporating the interests of these diverse stakeholders in their business objectives and strategies, socially responsible companies can enhance the sustainability of their operations.

Given a likely time lag between implementation and realization of the benefits of socially responsible initiatives, future researchers could then determine whether the response is the result of the early period (when the cost of implementation is high), the later period (when benefits should begin to accrue to companies), or the entire sample period. Further research on the specific social responsibility programmes undertaken by South African companies (such as Black Economic Empowerment, the AIDS issue, health, housing and education) would be useful. The FTSE/JSE Responsible Investment Index came into existence in 2015. A useful future study is to investigate the share price performance of those companies included in the Responsible Investment Index.

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