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THE CORRELATION BETWEEN CORPORATE SOCIAL RESPONSIBILITY DISCLOSURE AND BETA

ABSTRACT

Companies are becoming more aware of their corporate social responsibility (CSR) activities, but the question as to what benefit these activities bring the company are inconclusive. By analysing the CSR rankings of 69 JSE listed companies and statistically comparing them to the beta rank of that company, a rank correlation between the level of CSR activity and a company's beta was drawn. The results of the research showed a weak negative correlation between the variables, indicating that more research into this relationship may provide fruitful.

1 INTRODUCTION

Agency theory asserts that management of companies have one responsibility – to maximise the profits of the company, without deception or fraud, in open and free competition, to the benefit of the shareholder (Jensen and Meckling, 1976, Friedman, 1970). This view is in contrast with the stakeholder theory which maintains that managers have a duty to all stakeholders. Under this theory management are seen as agents acting on behalf of all stakeholders of the company and not just its shareholder (Freeman et al., 2007).

In particular a criticism of the traditional wealth maximisation assumption, at the heart of agency theory, is that it has led to a focus on financial performance, to the detriment of all other variables that may impact the organisation (Solomon, 2010). For example, management is often incentivised to prioritize short-term goals rather than the best practice for

the organisation and wider society (Graham et al., 2005). The ramifications of these actions are seen in recent corporate scandals where management have taken decisions which, in the end, conflict with their fiduciary duty and the going concern of their organisations (Fairfax, 2005)[37]. In this context, there is an ever growing awareness of the actions which companies take and the impact of these actions on wider society. This has gone hand-in-hand with awareness for more sustainable, ethical forms and business and an increase in corporate responsibility and accountability to multiple stakeholder groups (Institute of Directors [IOD], 2009; Solomon, 2010). In turn, this has led to the proliferation of non-financial disclosures (IOD, 2009; Integrated Reporting Committee RC, 2011; Solomon, 2010) as society calls for more comprehensive disclosure by organisations, including their social, environmental and economic impact – whether positive or negative (Flöstrand and Ström, 2006).

As a result, the disclosure of non-financial information in a company's external report is of increasing prominence and relevance. (Flöstrand and Ström, 2006). This is evidenced by the fact that, in February 2010, South Africa became the first country to require companies listed on the Johannesburg Stock Exchange (JSE) to comply with mandatory integrated reporting criteria (IOD, 2009, JSE, 2012). In addition, the JSE created a Sustainable Reporting Index (SRI) which measures the sustainable reporting of certain JSE listed companies. Research on the impact of CSR activities on financial performance, as well as the impact of various factors on beta, has taken place (For example Carroll and Shabana, 2010, De Meuse et al., 1994, McGuire et al., 1988, Paleari and Redondi, 2005). For example, prior studies have concluded that corporate decisions have an impact on a company's beta (Karaibrahimoğlu, 2010, Rowe, 2005). In addition, the impact of CSR activities upon financial measures, such as financial performance, has been documented (Carroll and Shabana, 2010). No research has, however, been carried out on the relationship

[37] The assessment of whether or not there is any *quantifiable* benefit to a company in following either a shareholder or the stakeholder approach is still a topic of debate which is not directly addressed by this research

between the level of CSR disclosure by a company and the beta of that company. This is especially true when it comes to CSR-based research outside of a traditional Anglo-Saxon setting (Brennan and Solomon, 2008).

Consequently, this research explores the relationship between CSR disclosures and beta for a sample of companies listed on the JSE's main board. In doing so, the study provides a base for future research on the relevance of CSR in a South African setting and, to a lesser extent, in the context of developing economies. In addition, much of the prior finance literature focuses primarily on financial performance and business risk measures (For example Carroll and Shabana, 2010, De Meuse et al., 1994). This paper, therefore, seeks to add to the understanding of the corporate-financial paradigm by considering CSR, in addition to traditional financial metrics, as a relevant component of organisational beta. In addition, the analysis between CSR and beta used in this study can be applied in future studies which aim to critically and interpretively analyse the different components of CSR activities and their impact on a company's beta.

Companies were ranked per a standard set of fifteen CSR criteria [38] in 2009 and 2011. The scoring system was derived from King-III (IOD, 2009), the Global Reporting Initiative (2011) and prior academic literature dealing with CSR disclosures. Their total score, per the standardized rating, and their beta score, published per the JSE, were contrast. A Spearman's Rank Correlation Coefficient was used to determine whether a statistical correlation between the two variables existed. The application of the Spearman's Rank Correlation required the ranking of both the CSR scores and the beta scores, both variables being ranked, independently, from 'best' to 'worst'. The ranks were then compared using the Spearman's Analysis to compare whether there was a statistical relevance between the

[38] Criteria include: ethical leadership and corporate citizenship, boards and directors, audit committee, risk management committee, remuneration committee, nomination committee, internal audit function, the governance of information technology, compliance with laws, rules, codes and standards, governing stakeholder relationships, integrated reporting, sustainability – economic, sustainability – social, sustainability – environmental and other indicators (see Section 2.1.3)

level of CSR activities and the beta of the company. Based on the correlation between the two ranks, a conclusion was drawn as to whether or not any association between the ranked variables is statistically significant. A Spearman's Rank Correlation was seen as appropriate in showing a baseline correlation. Other statistical non-correlative methods were deemed, by an independent actuary, to not explain a correlation but rather a statistical significance between two variables. In addition, a rank test does not require knowledge about the statistical distribution of the data sets thus is reliable in showing a correlation (Savage, 2012).

LITERATURE REVIEW

Although CSR is a relatively recent occurrence (Carroll, 1991), it has its roots in the classic principle-agent paradigm where information asymmetries between managements and agents necessitate the need for a system of checks and balances, including added disclosure of performance (Solomon, 2010). In terms of agency theory, moral hazard and adverse selection give rise to agency-associated losses that detract from the value of the firm and the return of shareholders (Laffont and Martimort, 2002, Jensen and Meckling, 1976). Stakeholder theory is conceptually similar, albeit that corporate governance systems become concern with managing the interests of a broader group of stakeholders (Carroll, 1999).

This stakeholder-centric view is at the heart of recent codes of corporate governance (Solomon, 2010). In South Africa, the UK and the USA, for example, corporate governance adopts a holistic view of the role of organisations in society and their associated duties. As a result companies become expected to do more than just issue statements of accounts to owners. Corporate reports are published in the public domain and, increasingly, take cognisance of the relevance of non-financial information, including social, health and environmental issues (Solomon, 2010; Brennan and Solomon, 2008). In this context, under King-III (2009), the

JSE Listing Requirements (2012) and the IRC (2011), companies are expected to provide integrated insights into the short and long terms sustainability of their organisations. This has resulted in an increased emphasis of the relevance of non-financial reporting, including, for the purpose of this research, CSR disclosures.

The relevance of corporate governance and CSR

The onset of social activism, health and safety, environmental protection agencies and employment equity, each monitoring the interests of the different stakeholders within a company, have highlighted the relevance of CSR initiatives of companies (Carroll, 1991, IOD, 1994, Solomon, 2010). As the importance of stakeholders interests in the actions of companies became more prominent, the idea of CSR took shape. From the 1960's up to the start of 1990's corporate social responsibility was seen as a theoretical and ethical debate rather than business practice; neither required nor actively encouraged by stakeholders (Carroll, 1999).

In 1994 the first King Report on Corporate Governance (IOD, 1994) was issued in South Africa. It adopted a conceptual approach to corporate governance that recommended best practice to boards of directors and emphasised a stakeholder views of governance. This message was reaffirmed by King-II (2002) which stressed the relevance of comprehensive disclosure, including the provision of non-financial information with an aim to providing 'triple-bottom-line reports' (IOD, 2002). During 2009 King-III was released, stressing that while financial and non-financial information was highly relevant, what must not be lost sight of is the integration of these metrics for effective communication of short- and long-term corporate sustainability. Although not acts of parliament, the King Codes have been indirectly enforced. For example, some aspects are legislated in the Companies Act No. 71 of 2008 (Companies Act), or are mandated by the JSE (IOD, 2002, Parliament, 2008). Interestingly, compliance with sound codes of corporate

governance are also paramount for maintaining a reputation as a legitimate social actor with the result stakeholder activism indirectly compels companies to comply with King-III or face the wrath of investors (IOD, 2009; IRC, 2011; Solomon, 2010).

Collectively, JSE listing requirements, legal enforceability of certain Companies Act provisions and a global movement of increased CSR actions and disclosure, have, therefore, led to a new culture of corporate leadership (IOD, 2009, Luthans et al., 2004). The focus on CSR activities has been heightened by the on-going financial crisis which has highlighted the inadequacies of the current financial reporting standards (Karaibrahimoğlu, 2010). Following the sovereign debt crisis, globally, companies acknowledged that existing standards of financial reporting were not adequately disclosing companies strategic actions and the effect which is has had on the stakeholders (Karaibrahimoğlu, 2010). The spate of financial calamity has created a push from external parties to demand higher levels of CSR from companies (Karaibrahimoğlu, 2010). Therefore, it is seen that CSR has evolved from a business theory into a strategic consideration for companies listed on the JSE. This is in line with global trends towards sustainability, reporting and good corporate citizenship (Garriga and Melé, 2004, Roberts, 1992)

The ranking of CSR activities

From 2008, the JSE has published the Socially Responsible Investment (SRI) Index classifications. This is a process for ranking those companies which are required or who have opted to comply with King III. Three broad categories including: (1) environmental, (2) societal and (3) governance and related sustainability concerns are dealt with and used to rank the respective companies in terms of their CSR disclosures. Underpinning the aforementioned categories is the implementation of each within the company's policy and strategy, management and performance and reporting (JSE, 2011). These criteria are used by the JSE and an advisory

committee of independent experts to measure the policy, management and performance and reporting under the environmental, society and governance and related sustainability pillars (IOD, 2009, Luthans et al., 2004).

Only a limited number of companies have, however, been included in the ranking process, commencing in 2008. Twenty-three companies were voluntarily ranked in 2008 and 2010. Twenty nine were included in the scoring in 2009 and twenty-one in 2011. (JSE, 2004, JSE, 2011, JSE, 2012) In addition, the criterion used within the SRI Index rating is ambiguous. The exact processes used for evaluating the companies; detailed score sheets; expert commentary and validity-reliability safeguards are not clearly disclosed. While the areas considered in the scoring are readily available, the application, weighting, scale and range of scores are not. Only two ranks are, thus, disclosed 'Top Performers' and 'Consistently Top Performers'[39] (JSE, 2004, JSE, 2011, JSE, 2012).

The lack of transparency in the ratings application and volume of companies listed on the SRI Index necessitates the use of a more comprehensive system to rank companies in terms of their CSR activities. Based on the work of Makiwane (2012), this paper uses fourteen categories, including one hundred and eleven identified sub-categories, to rank CSR activities of sixty nine companies on the JSE. The numeric scale used to rate the companies is shown in the table below (courtesy Makiwane, 2012):

Table 1: Compliance level, percentage and score for CSR activities

Compliance level	Percentage compliance range	Score
No compliance	0%	1
Little detail provided	0% to 25%	2
Some detail provided	25% to 50%	3
More detailed provided	50% to 75%	4

[39] The researcher's requests for more detailed information were declined by the JSE's representatives.

Much detail provided	75% to 100%	5

This paper relies on the final disclosed scores derived by Makiwane (2012). The scores were assigned by Makiwane, using his standard CSR ratings, to a random sample of JSE listed company's financial statements (Makiwane, 2012). Categories included: ethical leadership and corporate citizenship, boards and directors, audit committee, risk management committee, remuneration committee, nomination committee, internal audit function, the governance of information technology, compliance with laws, rules, codes and standards, governing stakeholder relationships, integrated reporting, sustainability – economic, sustainability – social, sustainability – environmental and other indicators. Scores from each category were aggregated by the researchers to determine, for the purpose of this research, a total CSR score, as discussed in more detail in Section 3.

Although Makiwane (2012) measurement instrument was not certified by the JSE, the CSR scoring system was piloted to ensure that it was appropriately 'calibrated' and applied consistently (Makiwane 2012). The instrument was also subject to independent peer review and, as discussed, is broader and more detailed than the limited SRI index used by the JSE. As an additional reliability safeguard, the researcher examined each of the scale 'elements' to ensure that these were informed by the researcher's understanding of the prior literature, including King-III, the Global Reporting Initiative (GRI) and IRC (2011). No material issues were noted.

Hypothesis development

Shareholder-centric theories on management maintain that the actions of CSR are better left to governments and the most socially responsible action a company can take is to increase profits (Banerjee, 2008, Friedman, 1970). An alternate view is that improved CSR can lead to

tangible benefits to companies and, in turn, multiple stakeholder groups (Solomon, 2010). These benefits may be in the form of improved competitive advantage, gains from risk reduction and reputation benefits (Carroll and Shabana, 2010). Further, King-III (2009) and the IRC (2011) are of the opinion that only those companies mindful of their social and environmental impact will be able to continue operating in a sustainable fashion into the long-term. As the effects of a growing population, climate change, worker-unrest and ever more scare natural resources become more pronounced, new threats and opportunities will arise that must be addressed by organisations (IOD, 2009, Solomon, 2010, Committee, 2011). In other words, to meet the needs of a growing body of stakeholders, companies will be expected to find new and innovative ways of doing business and in communicating both the financial, as well as the social implications, of their chosen strategies (IRC, 2011). In this context, those companies with more evolved CSR initiatives and better associated disclosures are predicated to be better received by the market-place as they come to be associated with more ethical, responsible and sustainable business practice. Hence, it is postulated that:

H1: There will be a positive relationship between the CSR rank of a company and their Beta rank.

Beta is used to measure a securities volatility by comparing it to the volatility of the market in which it operates (Correia, 2011). A beta of one indicates that the security moves perfectly in line with the market (i.e. only systematic risk), a beta of less than one indicates that the security moves less when the market moves (i.e. less systematic risk than the market) and conversely a beta of more than one indicates that the security moves more than the market (i.e. systematic and unsystematic risk) (Fabozzi et al., 1984). The volatility of an asset is seen as the risk associated with holding that specific security. It therefore follows that beta is measured as the covariance of the asset within a market over the variance of that market. This is mathematically expressed in Equation 1:

Equation 1: Beta expression

$$\beta_{\text{asset}} = \frac{\text{Covariance of the assets}'\text{return in market x}}{\text{Variance of market x}'\text{s return}}$$

(Correia, 2011)

Prior research confirms that a company's strategic action has an effect on the beta measure (Karaibrahimoğlu, 2010, Rowe, 2005). For example, in a study measuring the impact of retrenchment announcements upon various performance measures of a company, one being the beta, it was found that the job cutting announcement, a perceivably negative action, increased the company's beta (De Meuse et al., 1994). It is maintained that beta is impacted by the actions which a company takes and the perceived benefit or detriment of their actions are upheld in the company's beta (De Meuse et al., 1994). Further research has shown how external legal constraints have impacted upon a company's beta. The variations of legal constraints were mapped to the performance of the English electricity distributors over time, showing a negative correlation between regulation increase and the beta of the industry (Paleari and Redondi, 2005). This research has shown that beta is impacted by legislative regulation, a factor external to the actions a company, and the effects of the regulation are quantifiable in terms of the decrease in the company's beta as the regulations increase (Paleari and Redondi, 2005). Therefore, it is seen that the measurement of a company's beta can be, and has been, reliably used to quantify the impacts of both an internal action and external regulation upon a company. This, together with the guidance of King III and the IRC (2011) would suggest that CSR-based disclosures would also have relevance for a company's beta. The prior literature reveals that the onset of CSR has led to companies, specifically those listed on the JSE, embarking on actions of corporate citizenship (JSE, 2004, JSE, 2011, JSE, 2012). Regardless of whether shareholder or stakeholder views are taken by management, CSR actions have previously been quantified and shown to add tangible benefits to a company (Carroll and Shabana, 2010,

McGuire et al., 1988). As beta has been shown to react to actions of a company and the external regulatory environment, it would follow that CSR disclosures taken by a company should impact on their beta, ultimately increasing or decreasing their beta depending on the level of their corporately social activity score (De Meuse et al., 1994, Paleari and Redondi, 2005).

METHOD

The aim of this study is not to provide a detailed account of the social drivers of CSR or a critical perspective on the role of CSR. Instead, the research seeks, simply, to identify if there is a relationship between CSR rank and beta rank. Archival information is used to test whether a relationship exists between CSR, using the standard rating system developed by Makiwane (Makiwane, 2012) and the beta of each respective company.

At the time of carrying out this research, there were four hundred and six companies listed on the JSE's main board (JSE, 2012). As recommended by Creswell (2009), a random sampling technique was used to select 100 companies. Of these, only sixty nine companies had been ranked in terms of their CSR scores by Makiwane (Makiwane, 2012) and had published betas for the period under review (2009 to 2011).

The data used was obtained from archival sources namely: the JSEBulletin (for the beta) and Makiwane (for the CSR rank) (Makiwane, 2012). Data was collected for 2009 and 2011 only. Data was collected for 2009 as this marked the date of the release of King-III when most companies would have prepared annual reports under previous codes of best practice (Makiwane, 2012). This is then contrast with the position during 2011 when the 1st set of integrated reports were prepared (IRC, 2011). As such, the research is able to meaningfully explore the effect of

changes in the CSR disclosures on betas which are expected to be material due to the transition to King-III and the integrated reporting paradigm[40].

To evaluate the relationship between companies' CSR ratings and their betas, a Spearman's Rank Correlation Coefficient was used. Companies were ranked according to their relative beta and CSR scores. Differences in the rankings were then identified. The difference between a company's CSR rank and their beta rank allows for the calculation of a ranking difference, being the difference between their CSR rank and their beta rank. The ranking difference is then used to assess whether a correlation exists between the two variables. A change in a company's CSR ranking (the independent variable) is expected to result in a change in that company's beta rank (the dependant variable). The company with the highest CSR score was assigned a rank of one. The lowest CSR scoring company was ranked sixty nine. The process was then repeated for ranking the company's betas. The company with a beta closest to zero was ranked first. The larger the absolute beta, the higher the assigned rank. The same process of ranking was applied in the 2009 and 2011 years. Using the rankings of the independent and dependant variable, each company had their rank compared. The comparison between the CSR rank and the beta rank created a difference, allowing the Spearman's Rank Correlation to be calculated (the Spearman's Rank Correlation is defined in Appendix A).

To ensure validity and reliability of the findings, the researcher ensured that requirement for cardinality and monotonicity were met (Savage, 2012, Siegel, 1957). Both the CSR and beta scores are capable of being assigned a ranking order. The higher cumulative CSR rating equates to a higher CSR ranking whereas the closer the beta score is to zero

[40] The focus on 2009 and 2011 only is also due to limited availability of CSR-related data MAKIWANE, T. S. 2012. Evaluation of Corporate Integrated Reporting in South Africa Post King III Release

represents a higher beta ranking. For the purposes of ranking in the Spearman's Rank Correlation companies with the same rank are assigned an average rank over the tied companies (Savage, 2012, Siegel, 1957)[41] (the ranking formula is presented in Appendix B). The researcher also conformed the monotonic scale of the CSR and Beta scores/ranks, as to which refer to Appendix C. As a final quality check, the statistical manipulations performed, as well as the choice of method, was reviewed by an independent statistician.

RESULTS AND DISCUSSION

As discussed in Section 3, Method, the column named 'Raw (X_i)' for the CSR score was the sum of the CSR scores per Makiwane (Makiwane, 2012). This was used to assign a rank to the data, denoted by the column 'Rank', which was used, in turn, to calculate the 'Useable Rank (x_i)'. The 'Useable Rank (x_i)' was determined by applying the formula for tied rankings, that being when two companies have the same CSR score or beta score. The beta rank was calculated by measuring the distance of the beta from a beta of zero (i.e. no unsystematic nor systematic risk when compared to the market). The 'Raw (Y_i)' is the beta score from 'JSEBulletin' where the column 'Absolute Yi', which was used to rank the companies, is the absolute value of the 'Raw (Y_i)' column. The assignment of the rank is the same as for the SCR score; albeit no beta scores were identical thus the tied ranking formula was not applied.

A sample of the results of applying the Spearman's Rank Correlation test for the 2009 year (Appendix A; Appendix B) are shown in Table 2 and Table 3 below:

Table 2: Extract of Corporate Social Responsibility rank[42], 2009.

[41] As tied data was known to exist the formula application for strictly untied data was not appropriate
[42] The company names were removed to ensure confidentiality and avoid subjective result assessment due to associations drawn between names (brands) and results.

CSR Rank	Raw (Xi)	Rank	Useable Rank (xi)
Company 46	331	46	46
Company 47	330	47	47
Company 48	324	48	48
Company 49	323	49	49
Company 50	316	50	50.5
Company 51	316	51	50.5
Company 52	311	52	52
Company 53	308	53	53
Company 54	307	54	54
Company 55	304	55	55

Table 3: Extract of Beta rank, 2009.

Beta Rank	Raw (Yi)	Absolute Yi	Rank	Useable Rank (yi)
Company 20	-0.053127101	0.053127101	6	6
Company 40	-0.058826924	0.058826924	7	7
Company 61	-0.075795781	0.075795781	8	8
Company 30	0.08092558	0.08092558	9	9
Company 59	0.081430632	0.081430632	10	10
Company 68	0.089918238	0.089918238	11	11
Company 60	0.100428197	0.100428197	12	12
Company 46	-0.128770759	0.128770759	13	13
Company 11	0.12996802	0.12996802	14	14
Company 51	0.131189487	0.131189487	15	15

Table 4 summarises the inputs for and solution to Equation 1 (Appendix A) in the 2009 year:

Table 4: Inputs to and solution for Equation 1 (Appendix A), 2009.

Equation element	Value of element
$\sum_i (x_{i-\bar{x}})(y_{i-\bar{y}})$	-11795.5

$\sum_i (x_{i-\bar{x}})^2$	27395
$\sum_i (y_{i-\bar{y}})^2$	27370
$\bar{x}$	35
$\bar{y}$	35
$rho = \frac{\sum_i (x_{i-\bar{x}})(y_{i-\bar{y}})}{\sqrt{\sum_i (x_{i-\bar{x}})^2 \sum_i (y_{i-\bar{y}})^2}}$	-0.430768

The ranking process applied to the CSR scores and the Beta in the 2011 year are identical to that in the 2009 year. Table 5 summarises the inputs for and solution to Equation 1 (Appendix A) in the 2011 year:

Table 5: Inputs to and solution for Equation 1 (Appendix A), 2011.

Equation element	**Value of element**
$\sum_i (x_{i-\bar{x}})(y_{i-\bar{y}})$	-11317
$\sum_i (x_{i-\bar{x}})^2$	27363.5
$\sum_i (y_{i-\bar{y}})^2$	27370

$\bar{x}$	35
$\bar{y}$	35
$rho = \frac{\sum_i (x_{i-\bar{x}})(y_{i-\bar{y}})}{\sqrt{\sum_i (x_{i-\bar{x}})^2 \sum_i (y_{i-\bar{y}})^2}}$	-0.413531

The application of a Spearman's Rank Correlation Test returns a value between one and negative one. The rho, being the correlation between the CSR rank and the beta rank, is, in both the 2009 and 2011 years, a negative number representing a negative correlation. The magnitude of the correlation is defined by the rho's tendency to one. In both the 2009 and the 2011 years the magnitude of the rho is closer to zero indicating that the correlation between the corporate social responsibility rank and a company's beta rank is a weak negative correlation.

Figure 1: Scatter plot of correlation between CSR rank and beta rank, 2009.

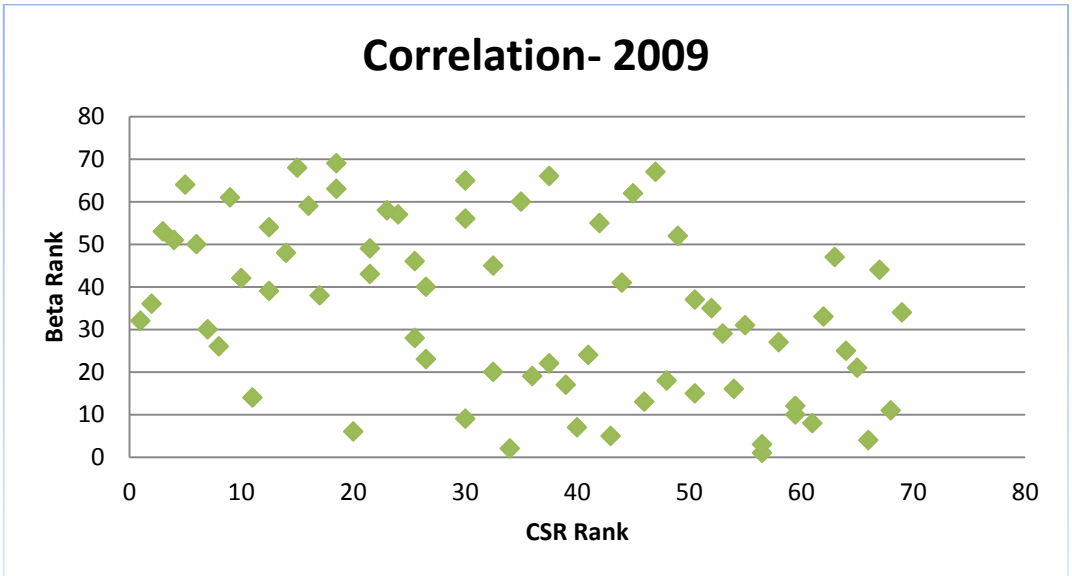
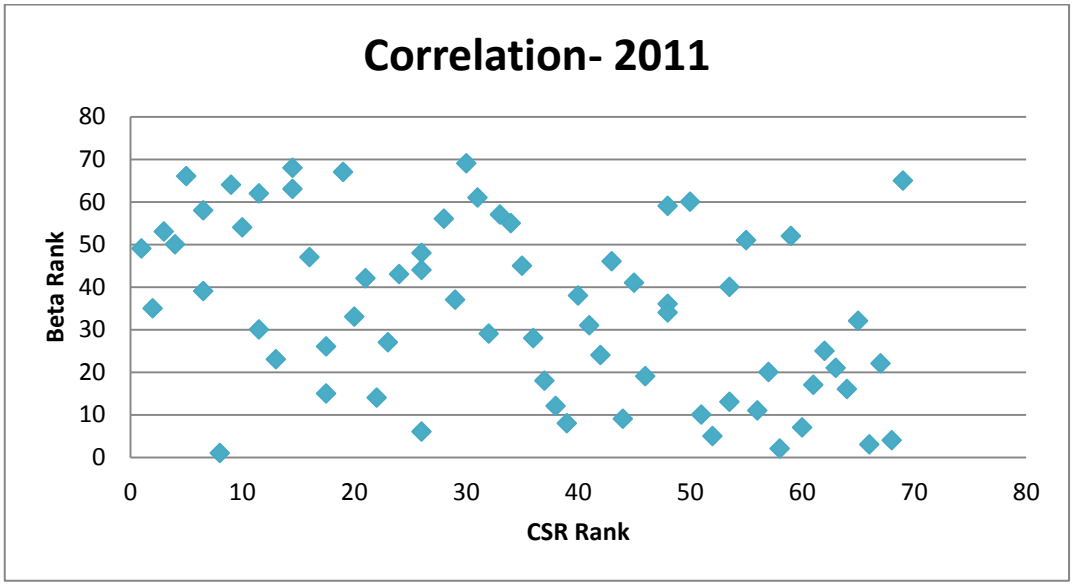


Figure 2: Scatter plot of correlation between CSR rank and beta rank, 2011.



The initial hypothesis in section 2.3 is rejected as there is no clear statistical relevance between the CSR rank of a company and their respective beta. The results of a correlation over both the 2009 and 2011 years, however, do suggest that the correlation between the two variables is not statistically arbitrary (Savage, 2012, Siegel, 1957). The link between the CSR levels of a company and different financial measures, such as profitability, has previously been shown to have a variety of effects depending on the method used to measure the correlation (Carroll and Shabana, 2010, McWilliams and Siegel, 2000). The isolation of different external factors, which were excluded from this research, as well as more critical and interpretive research into the CSR activities on a company's risk profile, may provide richer insight into the impact of CSR and a company's beta (McWilliams and Siegel, 2000, McWilliams et al., 2006).

CONCLUSION

In prior studies it has been shown that there is a positive link between CSR actions of a company and other business factors, such as profitability and that company's competitive advantage. To date the study of CSR

activities and the impact of these actions upon a company's beta has yet to be shown. This research offers evidence to suggest a relationship between the CSR ranking of a company and their respective beta rank. The research does not attempt to draw reasons for the link but rather show whether there is a statistical correlation between the two variables.

Using a standard set of CSR criteria[43], and the published beta for sixty nine JSE listed companies the researcher was able rank the top performing companies, in both the 2009 and 2011 years, according to their relative CSR score and their beta's volatility. The research finds that there is weak evidence, in both the 2009 and 2011 years, to conclude that a high CSR ranking is an indication of a low ranking beta. Nevertheless there is a negative relationship between the CSR rank and the beta rank of the companies listed in the JSE and ranked per the standard corporate social responsibility rating. This indicates that future critical and interpretive studies may provide more insight into the relationship between the two variables. These findings suggest that improved CSR awareness is, therefore, not necessarily an important determinant of beta. In other words, improved CSR disclosure does not lead to a reduced level of risk, being both systematic and unsystematic, and hence a lower beta as alluded to by proponents of the CSR movement. This should not, however be construed as implying that CSR disclosures are irrelevant. They may, for example, be important for companies within a given risk profile seeking to compete for scarce capital funds. Material CSR-related issues may also have already been taken into account by a semi-strong form efficient market. The weak correlation between CSR rank and beta rank may also imply that, while CSR issues are relevant, currently companies need to concentrate on more integrated disclosure to better communicate key issues to market participants as argued by the IRC. Each of these could provide a basis for future research on the relevance of CSR disclosures.

[7]Ethical leadership and corporate citizenship, boards and directors, audit committee, risk management committee, remuneration committee, nomination committee, internal audit function, the governance of information technology, compliance with laws, rules, codes and standards, governing stakeholder relationships, integrated reporting, sustainability – economic, sustainability – social, sustainability – environmental and other indicators

On a final note, this report's findings should be considered in light of a number of inherent limitations. The extent of the research is, for example, limited to two years being 2009 and 2011. The limitation reduces the historic trend analysis of the correlations. The methods used within this research are able to be extended when new CSR ratings take place in future years. The availability of more data would provide interesting analysis over the levels of CSR and the beta volatility, which may prove to be insightful for future research into the impacts of CSR activities on a company's beta.

It is also important to note that no regard has been given to external factors, other than CSR activities, on the beta of a company. The attribution of movements in beta to other factors, external to the CSR activities, would involve tedious examination of events which occurred over the period in which the beta was calculated and a complex, not to mention highly subjective approach, in attributing the different movements away from the CSR movements. In addition, the use of statistical analysis and interpretation, based purely on the rho, created a desire to perform additional qualitative and quantitative research which would aim to describe and explain the phenomenon which has been studied within this paper. An exploration of both these characteristics would add to the exploratory potential of this research.

APPENDIX A: SPEARMAN'S RANK CORRELATION FOR SETS OF DATA IN WHICH TIED PAIRS ARE KNOWN TO EXIST

$$\rho = \frac{\sum_i (x_{i-\bar{x}})(y_{i-\bar{y}})}{\sqrt{\sum_i (x_{i-\bar{x}})^2 \sum_i (y_{i-\bar{y}})^2}}$$

- 'P' is the Spearman's Rank Correlation Coefficient. This is a number between -1, being perfectly negatively correlated, and 1, being perfectly positively correlated. A score of 0 represents no rank correlation.
- 'd_i' is the defined as the difference between the independent variable, the CSR rank, and the dependant variable, the beta rank.
- 'n' is the number of items ranked and included within the Spearman's Rank Correlation calculation.

APPENDIX B: TIED SCORE RANKING

$$\bar{r} = \frac{\sum_n r}{n}$$

- '$\bar{r}$' is the rank assigned to the tied scores
- 'n' is the number of ties scores
- 'r' is the individual rank of the tied score

APPENDIX C: MONOTONIC NATURE OF THE CSR AND BETA DATA

Data is defined as monotonic when it preserves a given order. In the most basic of terms the data may only increase or stay the same or decrease or stay the same. This is visually represented below for all ranked data sets:

Figure 3: Monotonic scale of CSR rank, 2011

The figure presented below graphically represents the monotonic nature of the CSR rank for 2011

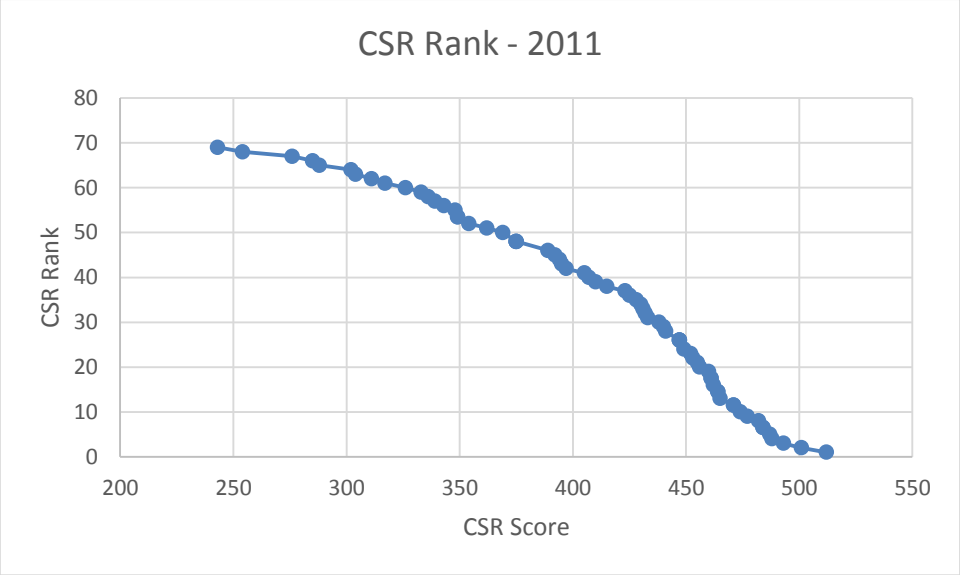


Figure 4: Monotonic scale of beta rank, 2011

The figure presented below graphically represents the monotonic nature of the beta rank for 2011

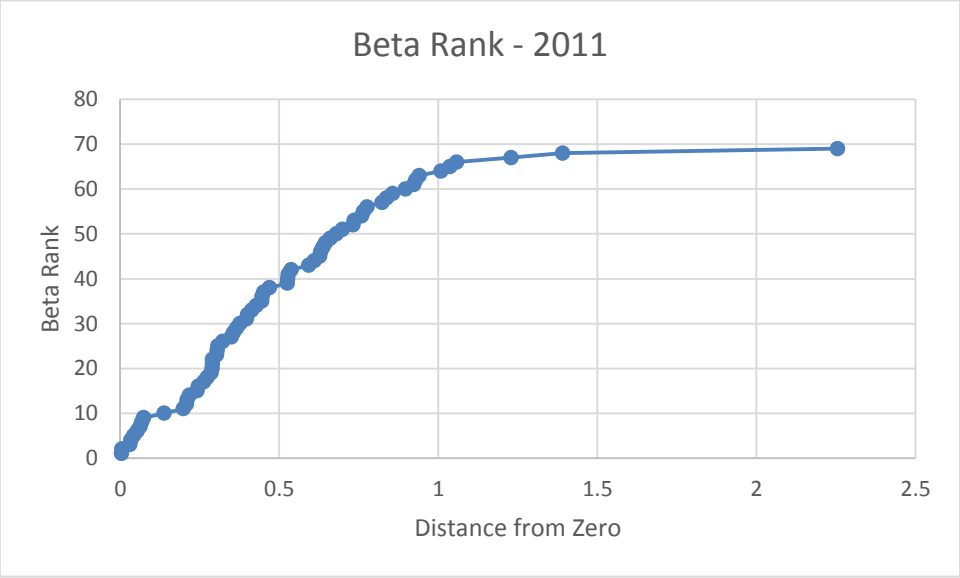


Figure 5: Monotonic scale of CSR rank, 2009

The figure presented below graphically represents the monotonic nature of the CSR rank for 2009

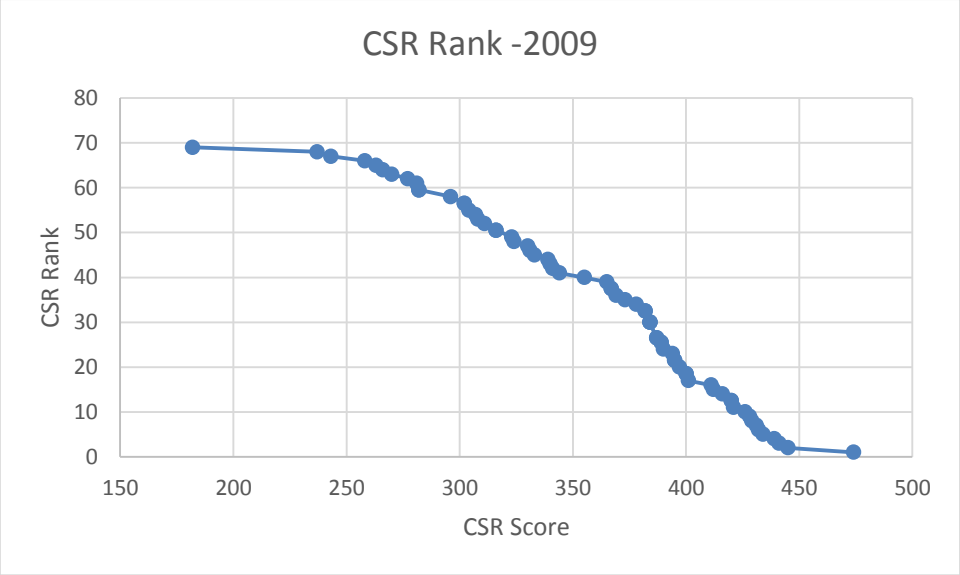
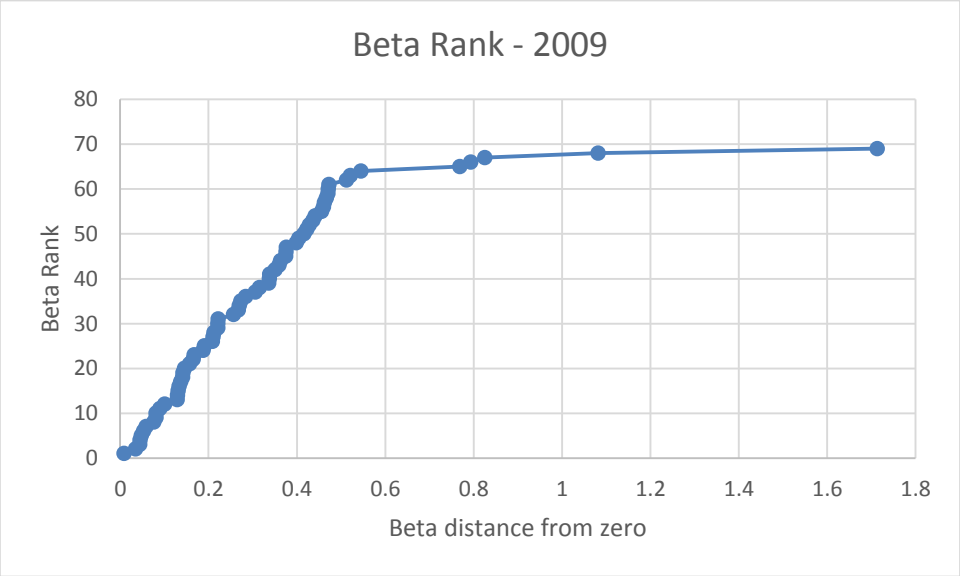


Figure 6: Monotonic scale of beta rank, 2009

The figure presented below graphically represents the monotonic nature of the beta rank for 2009



It is therefore seen that all data sets used in the Spearman's rank Correlation are monotonic as the order of data is preserved.

Non-parametric tests, such as the Spearman's Rank Correlation, do not require the data to conform to any statistical probability distributions. It is

therefore not necessary to base the interpretation of the correlation on another statistical distribution.

BANERJEE, S. B. 2008. Corporate social responsibility: The good, the bad and the ugly. *Critical Sociology,* 34**,** 51-79.

CARROLL, A. B. 1991. The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business horizons,* 34**,** 39-48.

CARROLL, A. B. 1999. Corporate social responsibility. *Business & society,* 38**,** 268-295.

CARROLL, A. B. & SHABANA, K. M. 2010. The business case for corporate social responsibility: a review of concepts, research and practice. *International Journal of Management Reviews,* 12**,** 85-105.

COMMITTEE, I. R. 2011. Framework for Integrated Reporting and the Integrated Report.

CORREIA, C. 2011. *Financial Management*, Juta, Landsdowne, South Africa.

DE MEUSE, K. P., VANDERHEIDEN, P. A. & BERGMANN, T. J. 1994. Announced layoffs: Their effect on corporate financial performance. *Human Resource Management,* 33**,** 509-530.

FABOZZI, F. J., BALDEV, R. & VINOD, H. D. 1984. The stability of the systematic risk of individual stocks: an application of ridge regression. *Communications in Statistics-Theory and Methods,* 13**,** 151-161.

FAIRFAX, L. 2005. Spare the Rod, Spoil the Director? Revitalizing Directors' Fiduciary Duty Through Legal Liability. *Houston Law Review,* 42**,** 393-456.

FLÖSTRAND, P. & STRÖM, N. 2006. The valuation relevance of non-financial information. *Management Research News,* 29**,** 580-597.

FREEMAN, R., HARRISON, J. & WICKS, A. 2007. Managing for stakeholders: Business in the 21st century. New Haven, CT: Yale University Press.

FRIEDMAN, M. 1970. The Social Responsibility of Business Is to Increase Its Profits. *New York Times Magazine*, September 13.

GARRIGA, E. & MELÉ, D. 2004. Corporate social responsibility theories: mapping the territory. *Journal of Business Ethics,* 53**,** 51-71.

GRAHAM, J. R., HARVEY, C. R. & RAJGOPAL, S. 2005. The economic implications of corporate financial reporting. *Journal of accounting and economics,* 40**,** 3-73.

IOD 1994. The King Code of Governance for South Africa (1994) and King Report on Governance for South Africa (1994). First ed.: Lexis Nexus South Africa, Johannesburg, South Africa.

IOD 2002. The King Code of Governance for South Africa (2002) and King Report on Governance for South Africa (2002) (King-II). Second ed.: Lexis Nexus South Africa, Johannesburg, South Africa.

IOD 2009. The King Code of Governance for South Africa (2009) and King Report on Governance for South Africa (2009) (King-III). Third ed.: Lexis Nexus South Africa, Johannesburg, South Africa.

JENSEN, M. C. & MECKLING, W. H. 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics,* 3**,** 305-360.

JSE. 2004. *SRI Criteria* [Online]. Johannesburg Stock Exchange. Available: http://www.jse.co.za/About-Us/SRI/Criteria.aspx.

JSE. 2011. *Johannesburg Stock Exchange SRI Index* [Online].

JSE. 2012. *Main Board listed companies* [Online]. Johannesburg Stock Exchange. Available: http://www.jse.co.za/How-To-List/Main-Board/Main-Board-Listed-companies.aspx [Accessed 7 November 2012].

KARAIBRAHIMOĞLU, Y. Z. 2010. Corporate social responsibility in times of financial crisis. *Afr. J. Bus. Manage,* 4**,** 382-389.

LAFFONT, J. J. & MARTIMORT, D. 2002. *The theory of incentives: the principal-agent model*, Princeton Univ Pr.

LUTHANS, F., VAN WYK, R. & WALUMBWA, F. O. 2004. Recognition and development of hope for South African organizational leaders. *Leadership & Organization Development Journal,* 25**,** 512-527.

MAKIWANE, T. S. 2012. Evaluation of Corporate Integrated Reporting in South Africa Post King III Release

MCGUIRE, J. B., SUNDGREN, A. & SCHNEEWEIS, T. 1988. Corporate social responsibility and firm financial performance. *Academy of management journal***,** 854-872.

MCWILLIAMS, A. & SIEGEL, D. 2000. Corporate social responsibility and financial performance: correlation or misspecification? *Strategic Management Journal,* 21**,** 603-609.

MCWILLIAMS, A., SIEGEL, D. S. & WRIGHT, P. M. 2006. Corporate social responsibility: Strategic implications*. *Journal of Management Studies,* 43**,** 1-18.

PALEARI, S. & REDONDI, R. 2005. Regulation Effects on Company Beta Components*. *Bulletin of Economic Research,* 57**,** 317-346.

PARLIAMENT, S. A. 2008. Companies Act, 2008 (Act No. 71 of 2008). Parliament.

ROBERTS, R. W. 1992. Determinants of corporate social responsibility disclosure: an application of stakeholder theory. *Accounting, Organizations and Society,* 17**,** 595-612.

ROWE, J. 2005. Corporate social responsibility as business strategy.

SAVAGE, N. 14 November 2012 2012. *RE: Commentary on Spearmans Rank Correlation.* Type to MARCIA, A. M.

SIEGEL, S. 1957. Nonparametric statistics. *The American Statistician,* 11**,** 13-19.

SOLOMON, J. 2010. *Corporate Governance and Accountability, Third Edition,* West Susex, United Kingdom, John Wiley & Sons Ltd.