

**The relationship between Environmental Social and Governance  
(ESG) disclosure and financial performance of South African  
listed equities.**

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**ABSTRACT**

The objective was to understand the relationship between environmental, social and governmental (ESG) disclosure and financial performance. An ESG disclosure scorecard enabled a univariate ranked style-based graphical time-series analysis approach to determine associations with share returns. Findings were that portfolios with the highest ranked ESG disclosure had the lowest financial performance whereas the fourth portfolio quintile was found to have the highest CFP. A longer time period for analysis could ensure differentiation between temporary and permanent changes on the dependent variable. This study contributes to ESG literature in South Africa by granulising the metric of analysis using aggregated ESG disclosure scores.

**Keywords**

ESG, socially responsible investing, sustainability reporting, integrated reporting, financial performance

## 1. INTRODUCTION

Over the last two decades, there has been increased pressure on companies to strive for transparency (Galbreth, 2013) by disclosing more than just financial information to their various stakeholders. Thus, emerged the advent of sustainability and Integrated Reporting <IR> (Dumay, Bernardi, Guthrie & Demartini, 2016), which included the disclosure of information about the Environment, Social and Governance (ESG) aspects affected and effected by the business. Disclosure of non-financial information such as ESG has increasingly become an important supplement to financial information, particularly for investors, in their decision-making process (Hanson, 2013).

Friedman (1970) argued that the main purpose of businesses was to maximise profits, and that costs incurred due to social and environmental considerations in management decisions would incur costs and reduce financial performance. Since then, a body of evidence has emerged in order to address this question of how ESG disclosure may influence corporate financial performance (CFP), and vice versa.

The majority of the literature pertaining to sustainability and ESG reporting have found a positive relationship between ESG and CFP (Revelli & Viviani, 2014), through empirical studies and meta-analyses. However, a limitation is that studies have been conducted in the context of developed markets. The uptake of sustainability and ESG reporting has been comparatively slower in emerging markets like South Africa, despite a greater need for it. To bridge this gap, the aim of the study was therefore to explore the relationship between ESG disclosure and financial performance of listed equities on the Johannesburg Stock Exchange (JSE).

This study will first examine the literature surrounding: the background of sustainability, <IR> and ESG (terms that will be used interchangeably) reporting, challenges and the factors that influence the above; theoretical understanding why companies may choose to, or not, initiate and report on ESG practices. The relevance of ESG reporting to investors will also be discussed in relation to Socially Responsible Investing (SRI). This study's objective is to contribute to literature by taking a more granular definition of SRI using ESG disclosure to gain insight into the traction of transparency in integrated reporting and identify whether it currently has a positive relationship to financial performance, in the South African context of JSE listed entities.

## **2. LITERATURE**

### **2.2. Sustainability and Integrated Reporting**

#### **2.2.1. Introduction to Sustainability and Integrated Reporting**

The preparation of a company's annual report had typically been prepared from a purely financial accounting perspective providing information such as: income, profitability, cash flow and shareholding of companies. Insight into non-financial information, including: intangible assets, key performance indicators (KPIs) and ESG information (Maniora, 2015), were disregarded. A combination of both types of disclosure (financial and non-financial) has now been considered as important for many stakeholders including investors in their decision-making process (Atkins and Maroun, 2015).

This limited perspective regarding the value of a company, based on only financial factors, lead society to question companies' narrow goal of wealth creation whilst not being accountable for value creation or justice for people, society and the environment (Dumay et al., 2016).

According to Dumay et al. (2016), the concept of reporting on a 'triple bottom line' of a company's social, economic and environmental aspects (Elkington, 1997) occurred in the 1990s. However, the concept of sustainability; defined as: "a company's integration of environment, social and governance (ESG) factors into its policies and decision-making with the aim of maximising long-term value creation" (Odell & Ali, 2016, p.96); appears to have emerged much earlier.

Thus, to bridge this gap, to combine financial and non-financial information, Integrated Reporting <IR> had emerged (Dumay et al., 2016). Setia, Abhayawansa, Joshi and Huynh (2015), argued that there is a difference between <IR> and traditional ESG and sustainability reporting, as <IR> has more of an impact on investor interest, and capital market efficiency, compared to ESG reporting that simply discusses environmental, social and governance factors. The distinction can further be described as 'value-to-society' in sustainability reporting, versus 'value-to-investors' of <IR> (Flower, 2015).

Matthews (2013) described <IR> as an improvement on communication between companies and capital markets, which aimed to provide more corporate transparency and accountability (Dumay et al., 2016). This was relevant as companies had been striving to be more transparent than before (Galbreth, 2013), especially since the 2007 to 2008 global financial crisis which had prompted scrutiny and company transparency.

These were factors that were considered pivotal in order to ensure the survival of companies within a difficult market (Garcia-Benau, Sierra-Garcia & Zorio, 2013). ESG information and <IR> were therefore

considered as an “extra set of intelligence” (Verheyden, Eccles & Feiner, 2016, p.47) that could also assist in shifting financial capital from a short-term to a long-term investment prospect (Setia et al., 2015).

In the South African context, studies conducted by Kolobe (2010) and Abdo & Fisher (2007) found that there was a positive correlation between the level of disclosure of governance and financial performance, however there appears to be a gap in the literature regarding overall ESG disclosure specifically and financial performance within the South African context of JSE listed companies.

### **2.2.2. Environmental, Social and Governance factors**

Reporting on environmental factors include: resource scarcity, innovation, climate change and pollution and policy shift (Odell & Ali, 2016). Hanson (2013), took this further by adding energy intensity and efficiency considerations to the ‘E’ aspect.

According to Hanson (2013), apart from society, the ‘S’ also stands for stakeholder, safety, social contract, symmetry and scuttlebutt. Scuttlebutt research identified four competitors of a company and had asked managers of each company to identify strengths and weaknesses of the other four companies; thus, providing useful insight into operations (Hanson, 2013). This was an example of a study that highlighted the role of employee, consumer and community influence which constitute social factors of ESG reporting (Odell & Ali, 2016). To succeed, companies have to be ‘wanted’ by the community within which they operate (Hanson, 2013). In South Africa this societal aspect can be considered an imperative, given the history of Apartheid and the influence it had on how workers were treated, and the poor

industrial relation practices thereof (Herringer, Firer & Viviers, 2009).

Governance considerations include: corruption, accounting and disclosure; ownership and alignment of interests; board composition and independence; shareholder rights and enforcement mechanisms (Odell & Ali, 2016). A survey conducted by Eccles, Serafeim and Armbruster (2012), found that factors of corporate governance, development of infrastructure, Black economic empowerment (BBBEE, 2003), employee relations and sustainability were deemed as the most important ESG issues in the South African context.

### **2.2.3. Sustainability and Integrated Reporting in South Africa**

'Sustainability reporting' and 'sustainable practices' are terms that have been used synonymously within the literature (Ameer & Othman, 2012). The integration of <IR> and ESG in emerging markets has been slower than that of developed markets, despite the greater need for issues around sustainability due to operational challenges such as lack of regulatory oversight, poor governance and weak institutions (Odell & Ali, 2016). Despite these challenges, South Africa, as an emerging market, has been at the forefront of <IR> framework adoption and practice, through the implementation of the King Code of Corporate Governance Principles (Ahmed Haji & Anifowose, 2017).

The Johannesburg Stock Exchange (JSE) had mandated that all listed companies were required to issue integrated reports for financial years starting on or after 1 March 2010, or provide reasons for not doing so (Setia et al., 2015); this was the 'apply or explain' approach of corporate governance. China, Denmark and Malaysia were also countries to pass a similar mandate (Serafeim, 2014). With several

years of gradual improvement and adoption of <IR> in South Africa this study finds the timing ripe for a test of the financial performance and transparency of JSE listed entities.

#### **2.2.4. Major role players**

Having presented South Africa's position in presenting the King Codes to the international arena, other significant role-players must also be identified. Galbreth (2013), had stated that ESG focus emerged in the 1970s, and was heightened by two major institutions: The United Nations; and a collaboration between the United Nations Environmental Programme (UNEP) with Coalition for Environmentally Responsible Economies (CERES) resulting in the Global Reporting Initiative in 1997 (GRI). The aim of the GRI was to develop a framework of accountability for CERES compliant companies in terms of environmental conduct (GRI, 2017) with GRI principles having since been used in over 1300 companies, governments, social sectors and other organisations (Boerner, 2011).

The other major role players who have been involved in increasing the prevalence of <IR> and ESG information were the:

- Sustainability Accounting Standards Board (SASB) who developed sustainable accounting standards specific to different industries, thus allowing listed companies to comply with Securities and Exchange Commission (SEC) requirements (Kotsantonis, Pinney & Serafeim, 2016).
- The International Integrated Reporting Council (IIRC), constituted of regulators, investors and companies amongst others, to provide a conceptual framework



for preparing a concise and user-friendly <IR>  
(Cheng, Green, Conradie, Konishi & Romi, 2014).

- United Nations Principles for Responsible Investment (UN PRI), an initiative founded in 2006, that consisted of the world's largest institutional investors, to develop the PRI (PRI, 2017).

### **2.2.5. Factors that influence ESG reporting**

Pressure from stakeholders of a company as well as public opinion (Wagner & Blom, 2011) were found to have positively influenced sustainable practices (Kassanis & Vafeas, 2006). Corporate Social Responsibility (CSR) reporting was applauded as “an effective management tool which offers confidence to stakeholders as the company is perceived as responsible and trustworthy” (Garcia-Benau et al., 2013, p.1529). Ethical reasons, financial reasons and regulatory demands have also been described as three factors that influence whether a business initiates sustainable practices (Wagner & Blom, 2011).

According to Maniora (2015), ethical behaviour in accounting is related to a company's obligation to disclose a fair and true representation of the company's overall performance, which includes financial and non-financial information. Similarly, unethical accounting has been likened to the “conscious or unconscious misbehaviour of companies during the process of identifying and preparing relevant ESG information” (Maniora, 2015, p.756).

In terms of regulations and government requirements for sustainable business, complying companies may be provided with the means to differentiate themselves from competitors alongside other cost

advantages of over-compliance to regulations (Porter & van der Linde, 1995). This concept of cost advantage has been questioned by researchers who argue otherwise (Palmer, Oates & Portney, 1995); that sustainability requires significant funding and resources, thus incurring costs to the company (Orlitzky, 2011).

Results from a study of financial institutions found that quality of environmental and sustainability reporting was positively correlated with the size and profitability of an organisation (Weber, 2014; Alberici & Querci, 2015), again suggesting that financial ability may influence the uptake of sustainability practices and reporting (Fischer & Sawczyn, 2013). As a result of variances in company profiles and reporting procedures, a limitation to studies exploring ESG issues is that all the ESG dimensions are not assessed systematically and simultaneously in understanding the risk profiles of companies (Galbreth, 2013).

#### **2.2.6. Challenges and Improvements of ESG Reporting**

It has been stated that there is no 'silver bullet' set way of reporting ESG matters; individual companies must report in an authentic and substantive way that allows their shareholders to have a clear and informed understanding of the business (Hanson, 2013). Communication regarding ESG matters should be credible, long term, strategic and operationally similar to financial information communication (Hanson, 2013).

Guillot (2017) stated that ratings have historically been biased towards quantity of information provided whereas it is the quality of disclosure that is imperative. This is relevant to recent studies which have shown that the breadth of disclosure is not a reliable indicator for good

performance in terms of sustainability (Ailman et al., 2017). Thus, implying that more information and disclosure is not necessarily better disclosure nor performance. An inverse relationship was also found between the quantity and quality of ESG disclosure - that companies who had ESG problems were possibly compelled to do more reporting (Ailman et al., 2017). Therefore, less and more focused reporting may be more valuable to investors (Ailman et al., 2017), as opposed to disclosure overload which may occur as a result of overzealous reporting (Hanson, 2013). Reporting must be focused (Gray, 2013), cohesive, multidimensional and clear (Atkins & Maroun, 2015). The IIRC also call for there to be stewardship and accountability involved in <IR> (IIRC, 2013).

Following on from the quality of ESG reporting, Hanson (2013) had stated that it is not acceptable to have a sensational, obfuscating or “excessively self-promoting” (Hanson, 2013, p.29) CSR report that has little substance or authenticity, which could lead to ‘greenwashing’ (Hanson, 2013). Greenwashing, is when investors may be misled and management’s views may be distorted thus causing harm to businesses in terms of ineffective management. False precision is also an aspect to be wary of, in financial and non-financial reporting (Hanson, 2013).

Surveys of South African companies conducted by PwC, identified certain shortcomings and opportunities to improve integrated reporting (PwC, 2014). Suggesting that improvements need to be made with regard to how integrated reports are prepared in South Africa (Solomon & Maroun, 2012).

Another limitation of ESG disclosure was that disclosure of ESG

factors may not necessarily mean that the ESG performance was positive; as was found by Meng, Zeng, Shi, Qi and Zhang (2014); who discovered a nonlinear relationship between environmental performance and environmental disclosure of Chinese firms.

### **2.3. The Theoretical Case of ESG disclosure and CFP**

As the focus of this study was on the disclosure of ESG factors, it was deemed that the Stakeholder theory and Stewardship theory were the most appropriate theories to apply. Stakeholder theory has stated that the consideration of other parties, such as: suppliers, government, employees, customers, society, investors and shareholders, is important in the success of organisations (Harrison & Wicks, 2013). Stakeholder theory also suggests that organisations are obliged to fulfil the needs of their stakeholders within and outside of the firm (Freeman and McVea, 2001). Management and board members are therefore also stakeholders of an organisation and it is up to them to determine the disclosure of the firm's activities, which will then have an impact on the other stakeholders. In the case of this study, investors (existing and potential), and shareholders are the important stakeholders. As the focus of this study is on ESG disclosure that encompasses environmental, social and governance aspects; stakeholder theory appeared to have embraced and included all the above-mentioned considerations. Harrison and Wicks (2013), also stated that in serving the interests of a broad range of stakeholders, the perceived value of the organisation is increased.

Revelli (2016)'s embeddedness model for Socially Responsible Investing (SRI), adapted from Polanyi's (1944) embeddedness theory, may also have contributed to the application of stakeholder theory in this study, as it stated that investment decisions should be embedded

in social relationships. This emphasis on social acceptance may also be related to the legitimacy theory which stated that the survival of an organization is dependent on its values that should be congruent with society's values and norms (Lokuwaduge and Heenetigala, 2017).

Murphy and McGrath (2013) offered another theoretical approach of 'Deterrence theory' to understand why companies report on ESG. This includes the concept of avoidance, in that corporations are influenced purely by economic cost and benefit calculations, which are drivers in influencing how companies voluntarily report on ESG. Companies therefore disclose information in order to avoid costs incurred through: litigation and penalties of noncompliance and nondisclosure.

In relation to this study, a positive relationship between ESG performance and CFP has been addressed by Weber (2017) using theories such as the: slack resources theory; good management theory (Waddock & Graves, 1997); and institutional theory (DiMaggio & Powell, 1983).

#### **2.4. The Business Case of ESG disclosure and CFP**

Having elaborated upon the ethical and theoretical reasons for ESG disclosure, this section will focus on the financial reasons for why ESG reporting may be financially beneficial for companies and whether it is possible to be "doing well whilst doing good" (Revelli & Viviani, 2015, p.160).

Although different studies have looked at the environmental, society and governance to different degrees (some individually and others collectively) in relation to corporate financial performance (CFP), the findings will be presented collectively in this research report. Especially as the aim of this study was not to isolate each aspect, but to gain an

understanding on the association of ESG disclosure and reporting on CFP.

#### **2.4.1. The Value of a Business**

It has been stated that although the main focus of retail investors is on financial value, increased attention has also been given to corporate values (Ailman et al., 2017). Hanson (2013) went on to emphasise that a complete picture of a company's activities and assets is needed in order to gain a complete understanding of a business's value (Hanson, 2013). This had led to the exploration of the impact of ESG on business value investing, which has been referred to as 'Graham and Dodd investing': the importance of value in a company, was shifted from "tangible to less tangible assets" (Hanson, 2013, p.21). Thus, delivering a subjective 'earnings-power' approach to businesses that endure competitive advantages reflected by high returns on capital and high profitability. This contrasts with the conventional earnings-power approach of asset-based valuation (Hanson, 2013).

Odell and Ali (2016) used a formula that calculated the value of a company, based on: the amount of capital invested (I); the company's rate of return on invested capital (R); growth rate of cash flow or operating earnings (G); and cost of capital, or required return on investor capital (K). The formula was as follows:

$$V = \sum I (r-g)/k$$

This calculation was used to argue that ESG disclosure can create value of a business by increasing: efficiency, profitability; ability to maintain growth opportunities and reduce the cost of capital by improving risk management (Odell & Ali, 2016).

#### **2.4.2. Investor Involvement/Influences**

The Principles for Responsible Investment (PRI) corporation (backed by the United Nations) (UN PRI) is an organisation that champions responsible investment by institutional investors worldwide with a focus on ESG at its core (PRI, 2017). The PRI's signatories by 2015 were managing assets worth US\$59 trillion (PRI, 2015). South Africa currently has 54 signatories (7 asset owners, 36 investment managers and 11 service providers) to the PRI which indicates the commitment of South African institutional investors (PRI, 2017).

The Institute of Directors in Southern Africa sought to incorporate the PRI principles into the South African corporate governance framework with the launch of the Code for Responsible Investing in South Africa (CRISA) which was intended to focus corporate governance for and give guidance to institutional investors on how they must take ESG considerations into their investment analysis and activities (CRISA, 2011).

Non-financial issues of: corporate culture, governance, relations (between employees, customers and supplies) and competitive position have been found to be integral to how investment decisions are made by investors (Hanson, 2013). Business value investors have consequently come to increasingly expect non-financial reporting as a valuable complement to financial reporting (Hanson, 2013).

As a result of this expectation, firms have been encouraged to produce high quality integrated reports in order to relay the relevance of value of ESG disclosure with consideration to be given towards the business case and context of high quality disclosure (de Klerk & de Villiers,

2012), otherwise it is of limited use to investors (Hanson, 2013).

In the South African context, Atkins and Maroun (2015) identified the gap in the literature pertaining to how stakeholders such as institutional investors viewed the first set of integrated reports in South Africa; which is important given that it is institutional investors who have been identified as the primary users of integrated reports (IIRC, 2013). This is since the investment community had appeared to regard ESG as 'financially material' to an investment portfolio (Richardson, 2009). The importance of ESG disclosure has been acknowledged by 'locked-in' and long term, indexed investors as well as active investors (Ailman et al., 2017). Retail investors have increasingly been attracted to ESG considerations due to three reasons: sustainability disclosure by public companies; ESG research and data providers; and academic research on ESG materiality (Roselle, 2016).

#### **2.4.3 Socially Responsible Investing**

The aim of this study was to explore the relationship between ESG disclosure and CFP amongst companies listed on the JSE. It has been understood that financial markets rely on indices to "define a particular universe of securities in which an investor can trade and serve as benchmarks of performance" (Herringer et al., 2009, p.14). Revelli and Viviani (2015)'s meta-analysis research was insightful in exploring the difference between SRI portfolios and conventional portfolios in terms of the relationship with CFP; which concluded that there was no real cost nor benefit to investing in SRI portfolios.

In the South African context, the quality of individuals as workers was so imperative that foreign investors (Europe, North America and Japan), had divested their South African investments due to the



Apartheid era in the 1970s and 1980s (Herringer et al., 2009). Schueth (2003) and Heese (2005) were amongst few researchers to have further explored SRI in South Africa. SRI in South Africa may also be traced back to the 1990s when trade unions refused to invest in companies that were seen to not only support apartheid but also firms that had poor industrial relations practices (Herringer et al., 2009).

Despite the challenges faced by several stakeholders in the South African SRI sector (Herringer et al. 2009), Viviers et al. (2009) suggested that the proper implementation of SRI could enable South Africa to become a valued example for other developing countries. However, the perception appears as though South Africa is not yet at that stage (Herringer et al., 2009).

Some studies explored different measurements of CFP (other than share returns) in relation to sustainability practices using screening methods where: ten equally weighted ESG Key Performance Indicators (KPIs) and a Transparency Indicator (Ameer & Othman, 2012) were used. The scoring basis was: a score of 0 to 1 per KPI and a score of 0 to 1 for the Transparency Indicator; the sum of these were then “normalised to a scale of 0-100” (Ameer & Othman, 2012, p.65) to give the overall score used to rank the companies in the sample.

#### **2.4.4. Relationship between ESG disclosure and CFP**

Ameer and Othman (2012) used variables such as sales growth (SG), return on assets (ROA), profit before tax (PBT) and cash flows from operating activities (CFO) as indicators of financial performance. These were adopted from an earlier study conducted by Lopez, Garcia and Rodriguez (2007). Other indicators of financial performance used in similar studies were return on sales (Wagner & Blom, 2011). This

study used cumulative share returns including dividends as the financial performance measure, in accordance with a number of studies (Fama and French, 1992; Muller & Ward, 2013; Ward & Muller, 2010; Ward, 2012; Taljaard, Ward and Muller, 2015) as it was taken that a company's share price factors in what shareholder's think; especially highly skilled analysts at institutional investors, such as pension funds.

There has been a mixed consensus in the literature regarding the link between ESG disclosure and CFP. Orlitzky (2008)'s meta-analysis confirmed that the link between sustainability and financial performance was ambiguous. Meta studies were described by Kurtz (2005) as a major step forward by using statistical techniques to aggregate the results of smaller studies in order to reveal the direction of causality (Revelli and Viviani, 2015).

Although some studies have shown the costs associated with the implementation of ESG initiatives to reduce profit margins in the short term (Preston & O'Bannon, 1997) the majority of the literature appears to have found a positive correlation between ESG measures and financial performance (Friede, Busch & Bassen, 2015), through empirical evidence and meta-analytical studies (Revelli & Viviani, 2015). Despite a positive correlation, the need to differentiate between portfolio and non-portfolio studies, regions and young asset classes was recognised (Friede et al., 2015).

Similar findings were obtained from Ameer and Othman's (2012) study; that companies with more sustainability practices had higher performances financially in terms of ROA, PBT and CFO. These findings were supported by Eccles, Ioannou & Serafeim (2014), who

also found that companies who were highly sustainable outperformed companies that were less sustainable in terms of accounting performance and the stock market.

Clark, Feiner and Viehs (2015), categorised more than 200 sources and found that business practices that were sustainable were positively correlated to economic performance. From the data of the reviewed studies, it was found that 88% of companies who had 'robust sustainability practices' reflected better cash flow and performance in terms of their operations. Clark et al. (2015)'s report also found that 80% of their case studies showed that concern for sustainability influenced investment performance positively. This may be of relevance as it may increase investor confidence about a company's 'staying power' (Hanson, 2013) and thus achieve sustainability within a difficult market.

A corporate social/environmental performance (CSP) versus corporate financial performance meta-analysis study (Orlitzky, Schmidt, Rynes & Rynes, 2003), found that corporate virtue through social and a lesser extent environmental responsibility 'is likely to pay off'. Although Orlitzky et al. (2003) do note however that CSP seems to be better correlated with accounting-based measures than market-based indicators; and CSP reputation indices are more highly correlated with CFP than other indicators of CSP.

The link between social responsibility and financial performance emerged from as early as 1981, with more recent studies showing a positive relationship between ESG performance and financial performance (Verheyden et al., 2016). Weber (2017)'s research brought forth the practical and social implications of finding a positive

correlation between sustainability and financial performance. Practically, this meant that institutions (in Weber's, 2017, case, banks) could invest in corporate sustainability to increase financial success, and then re-invest the returns, or 'slack' resources in other sustainability activities. Sustainable practices need not imply further costs to a company, but may in fact be beneficial by generating "revenue and reputation" (Wagner & Blom, 2011, p.419). In relation to environmental factors, when energy consumption is reduced, the savings that are generated may in turn be used to adopt newer technologies and resource (Hanson, 2013), relating back to the 'slack resources' theory.

The environmental implications of positive correlation between financial gain and sustainability have been found to result in "greener economies and less polluting without sacrificing financial returns" (Weber, 2017, p.1). From a social perspective, research that explored the link between social responsibility and financial performance of companies, were also divided by opposing views (Ameer and Othman, 2012). One school of thought believed that firms face a 'trade-off' between social responsibility and financial performance; so, socially responsibility actions incur costs to firms. Supporting the view that the costs involved in social responsibility actually worsen a company's financial performance (Friedman, 1980; Preston and O'Bannon, 1997). Whereas the contrasting opinion was that corporate social responsibility costs are minimal and that the activities thereof may instead, financially benefit the organisation (McGuire, Sundgren & Schneeweis, 1988).

### 3. RESEARCH QUESTIONS

The purpose of this research is to establish if there is a positive relationship between ESG disclosure and financial performance of JSE listed equities.

The following research questions were used to determine the relationship between ESG disclosure and financial performance:

3.1 Question 1: Does an ESG ranked style-based portfolio show a consistent, superior share price return?

$H1_{Null}$ : the average returns of all 5 style-based portfolio quintiles are equal at a 5% level of significance.

$H1_{Alternate}$ : the average returns of the 5 style-based portfolio quintiles are not equal at a 5% level of significance.

3.2 Question 2: Does an ESG ranked style-based portfolio outperform the market portfolio?

$H2_{Null}$ : the average returns of the best performing style-based portfolio quintile is less than or equal to the average returns of the market portfolio at a 5% level of significance.

$H2_{Alternate}$ : the average returns of the best performing style-based portfolio quintile is greater than the average returns of the market portfolio at a 5% level of significance.

3.3 Question 3: Does an ESG ranked style-based portfolio's highest ranked portfolio's return show persistent outperformance against the lowest ranked portfolio?

The persistence can be measured by the division of the highest

ranked portfolio quintile by the lowest ranked portfolio quintile;  
which is then graphically illustrated.

## **4. METHODOLOGY**

### **4.1 Research Design and Methodology**

A univariate ranked style-based graphical time-series analysis (Muller & Ward, 2013) was used to determine associations with share price returns on the JSE. Muller and Ward (2013)'s research methodology to study cross-sectional equity returns is based on a style variable analysis that builds on Fama and French (1992)'s study that finds strong associations with the variables size, price to earnings ratio, gearing and book to market ratio.

Muller and Ward (2013)'s graphical time-series approach is a powerful analysis technique that uses ranked style-based portfolios covering a time period that allows for a visual comparison of the cumulative share returns performance. The graphical time-series approach has been used to successfully observe variables of interest such the capital asset pricing model on the JSE, share price reaction to Black Economic Empowerment announcements on the JSE and board diversity's effect on financial performance (Muller & Ward, 2013; Ward & Muller, 2010; Ward, 2012; Taljaard, Ward and Muller, 2015).

Muller and Ward (2013) contest that the traditional approach that most researchers have used when conducting similar studies, by using t-tests to test for significant differences between average monthly or quarterly portfolio returns is methodologically weak compared to cumulative returns. However, Muller and Ward (2013) agree that portfolio construction is necessary to reduce volatility.

The Wilcoxon signed-rank test was used to determine statistically significant differences between the ESG style-based portfolio quintiles' log-normal returns; between each other and between each portfolio quintile and the JSE's market portfolio. The use of the JSE All Share

Index (JSE, 2017) was consistent with the rationale of Muller and Ward (2013) where the index is a suitable proxy of the market against which performance can be referenced.

#### **4.2 Sampling method and size**

The timeframe for the sample analysed was between 2014 and 2017. Initially the sample started with the JSE Top 100 companies in 2014 by market capitalisation; and the sample set grew due to the addition of new Top 100 companies each year without removing the original constituents. The sample for the four years was 100, 100, 113 and 115 companies analysed (for ESG reporting) respectively for the years 2014, 2015, 2016 and 2017.

#### **4.3 Construct for ESG Disclosure**

Comparable data is required for financial reporting, also time periods are an important consideration. This affects reliability from an investors perspective (Ailman, 2017). A standardised data set is required. The difficulties that arise in attempting to aggregate different factors into a simple score in order to present a ranking have been acknowledged (Ailman et al., 2017). Despite these challenges, scores are an important starting point in terms of engaging conversations with managers in terms of ESG.

The ESG disclosure proxy that was used in this study consisted of an aggregate of 71 metrics encompassing the three components of ESG, namely environment, social and governance considerations. The total ESG disclosure metric list is in Appendix 1. There were metrics used from the Global Reporting Initiative's (GRI) Sustainability Reporting Standards and also other metrics used that do not feature on the GRI's standards (GRI, 2017).



The ESG disclosure scorecard in this study had a binary disclosure scale of 1 for disclosure and 0 for non-disclosure for very specific metrics. The sum of positive disclosures was then divided by the total number of metrics, 71, to make a normalised ESG disclosure score. The ESG scores that were used to make up the ranked list (for portfolio construction) of top 100 companies used the full 71 metrics to derive the ESG disclosure score per company on an annual basis.

#### **4.4 Measurement instrument: The Style Engine**

Muller and Ward (2013) constructed a 'style engine' to analyse the financial metric – corporate or business financial performance. The style engine has robust data (of share returns) from their data set through parameterised inputs that can alter settings and styles. The share returns include both the capital gains and dividends. Muller and Ward (2013)'s style engine database dates back to 1985 and focuses on the JSE's largest 160 shares by market capitalisation.

The style engine is so called because it predominantly assists in research questions relating to investment styles or factors (Fama and French, 1992). Typically, the style engine can analyse for common financial considerations for good investment styles such as testing whether small size companies outperform large size companies, value shares outperforming growth shares, liquid shares outperforming illiquid shares and whether financial ratios are useful in predicting business or corporate financial performance (Muller & Ward, 2013; Ward & Muller, 2010; Ward, 2012; Taljaard, Ward & Muller, 2015). However, the style engine is also capable of testing for non-financial considerations such as whether companies with board diversity outperform or whether corruption pays. This study will leverage the style

engine's ability to test the non-financial style of ESG disclosure to determine whether there is outperformance with higher disclosure.

The method of analysis was to group the top 100 ranked companies (the sample of companies varied in this study over the four years) according to their ESG scorecard, being the style, into five quintiles, with a total of 100 companies; each portfolio will then have 20 constituents which are equally weighted. The cumulative index (value) for each quintile was then calculated by the style engine (on a daily basis) and a graphical time-series representation allowed for visual analysis of whether there was a distinct pattern to address the research questions (Muller and Ward, 2013).

The portfolio was rebalanced annually as the ESG scorecard was only calculated on an annual basis from sustainability data from each company's annual integrated report. At the rebalancing point, each quintile's value is retained, the ranking based on ESG is recalculated and the retained portfolio values are placed back into the new quintile ordering. As can be expected, some constituents may remain in the same quintile ordering whereas other constituents may swop quintiles or even drop out of the sample altogether.

## 5. RESULTS

INSERT FIGURE 1 ABOUT HERE

### 5.1.1 Research Question One and Hypothesis One

The graphical time-series plot in Figure 1 of the cumulative portfolio returns enables us to observe that the order of the ESG portfolio quintiles do not have a linear order. Hence the highest ranked ESG portfolio quintile does not show consistent superior returns compared to the other ESG portfolio quintiles. In fact, the highest performing quintile was ESG portfolio four with a compound annual growth rate (CAGR) of 13.1%.

The remaining order of the quintile performances was ESG portfolios five, three, two and one. The aggregate median ESG disclosure score for ESG portfolio quintile four was 35.89%. This implies that the fourth worst ESG disclosure score was the best performing portfolio.

The Wilcoxon signed-rank test results for research question one all yielded p-values for each related pair test within portfolios values above 0.05, the result of the Wilcoxon signed-rank test fails to reject the Null hypothesis. This means that there was no statistical difference between the portfolios, or put differently, they are statistically equal at a 5% level of significance. The closest portfolio pair statistically at 24.2% was the ESG portfolios two and four. This can be seen visually on the graphical time-series plot in Figure 1.

### 5.1.2 Research Question Two and Hypothesis Two

Figure 1 shows that the highest ranked ESG portfolio quintile does

not show superior performance compared to the market portfolio, the J203T. The market portfolio had a CAGR of 9.0% compared to ESG portfolio quintile one which had 3.2%. Visually from Figure 1 it can be seen that ESG portfolio quintile four had the superior return compared to the market portfolio with the spread between them at 4.1%.

The Wilcoxon signed-rank test results for research question two all yielded p-values for each related pair test within portfolios values above 0.05. The result of the Wilcoxon signed-rank test fails to reject the Null hypothesis. This means that there was no statistical difference between any of the ESG portfolios and the J203T market portfolio at the 5% level of significance.

### **Research Question Three**

Visually it can be seen that the cumulative returns performance of ESG portfolio quintile one is below the ESG portfolio quintile five in Figure 1. The price relative gradient of ESG portfolio quintile one divided by ESG portfolio quintile five illustrates predominantly a negative gradient with a negative 4.2% difference in returns. Visually from Figure 1 it can be seen that initially there was a positive difference in returns from December 2014 to December 2015 and the price relative plot was close to the market portfolio. After December 2015, the price relative uncouples from the market portfolio and stays relatively flat which indicates that there was no persistence or out-performance of ESG portfolio quintile one versus five. It is notable that the spread between the best performing portfolio's (quintile four) cumulative returns and the worst performing portfolio (quintile one) is 9.9%; and their respective aggregate median ESG disclosure scores were 35.89% and 57.98% respectively.

## 5. DISCUSSION

The results from the primary analysis tool used in this study, the style-based graphical time-series analysis, gives insight into a trend that can be discussed even though the secondary confirmatory tool of the statistical tests failed to reject the null hypotheses (and hence failed to find a statistical difference between the performance of the five different ESG ranked portfolios). The graphical time-series results found that the portfolio of companies that had the highest ranked ESG disclosure scores had the lowest CFP. Incidentally, the portfolio of companies with the second worst ranked ESG disclosure scores were found to have the highest CFP over the time period observed in the study.

### 5.1 A negative relationship between ESG disclosure and CFP

A review of the literature surrounding ESG practices and CFP led to the emergence of three schools of thought (Siew, Balatbat & Carmichael, 2013); those who found a positive relationship between ESG practices and CFP (Eccles, Ioannou & Serafeim, 2014; Clark, Feiner & Viehs, 2015; Weber, 2017); some who found a negative relationship (Friedman, 1970; Preston & O'Bannon, 1997; Schaltegger & Synnestvedt, 2002); and those who remained neutral - that there is no differentiation between the returns of SRI and non-SRI funds (Gregory & Whittaker, 2007).

Findings of this study therefore supported the camp, introduced by the seminal work of Friedman (1970) who stated that the primary objective of companies was to maximise profits and to reduce costs (incurred by including social and environmental aspects in

management decisions) (Revelli and Viviani, 2015).

## **5.2 High ESG disclosure**

The results of this study may corroborate with the argument that there is a bias towards the quantity of disclosure rather than the quality of disclosure. Similarly, Ailman et al. (2017) also found that the breadth of disclosure was not a reliable indicator for good sustainability performance. Ailman et al. (2017) postulates that it may be that companies who had ESG problems felt compelled to ensure high reporting or disclosure.

Hanson (2013) warns against excessive self-promoting that could lead to 'greenwashing' – and the results of this study may indicate that this indeed occurs.

## **5.3 Industry Specific Standards for Disclosure**

The statistical view of the results may give insight into the problematic scenario of an aggregated ESG disclosure score that is too generic to be useful. Companies employing different styles of ESG disclosure may have different considerations depending on the specific industries within which they operate. Sector-based specificity and standards were discussed by Eccles et al. (2012b) who related challenges faced by sustainability reporting in terms of rigour to be: the lack of standards to enable “apples-to-apples” (Eccles et al., 2012b, p.65) comparisons over time; and determining which of the environmental, social or governance factors, have the most significance in terms of value creation.

Taking the example of climate-change disclosures by companies,

Eccles et al. (2012b), classified the companies in their sample according to a quality continuum of: “No Disclosure”, “Boilerplate Statement”, “Industry Specific”, and “Quantitative Metrics”; with no disclosure being the worst and quantitative metrics being the best type of disclosure. Boilerplate statements were the inability to quantify financial impacts, but which used general terms regarding potential risks from regulation, and which adds no value to financial statements. Industry specific disclosure was when specific language was used. It was found that industries such as banking, real-estate and insurance were least likely to disclose climate related information as they deemed their impact on climate issues minimal (Eccles et al., 2012b). Therefore, consideration of the individual elements in proportion to the total ESG score may have provided granular metric details and thus a better insight into disclosure practices. Eccles et al. (2012b) also stated that businesses in the same industries may have similar business models, regulatory requirements, resource approaches, products and services; hence their disclosure materiality may be similar.

Literature surrounding the relationship between firm behaviour and ESG has predominantly used a single rating of ESG, which consolidated the performance based on the three individual elements (Limkriangkrai, Koh & Durand, 2017). Although this may allow insight into how engagement of ESG activities may be beneficial, it must be noted that companies engage in the individual activities to differing degrees (Limkriangkrai et al., 2017). For example, a mining company may focus more on environmental sustainable activities than social or governance aspect (Carels, Maroun & Padia, 2013). This was illustrated in a report of 36 studies that were: published in peer-reviewed journals; examined different factors of ESG; or

considered influential in applying traditional finance theory to non-financial aspects (Siew, Balatbat & Carmichael, 2013). Although the results had showed that the majority of the studies (55.5%) represented a positive relationship between ESG disclosure and CFP, only 22.2% of the studies focussed on all aspects of ESG equally (Siew et al., 2013). From an investors' perspective and in terms of the hierarchy of concern, Falko et al. (2015) showed that investors may be disengaged from certain aspects of ESG. Limkriangkrai et al. (2017) therefore stated that a fine-grained analysis of individual ratings may enable a better grasp of the impact of ESG activities on a company's CFP.

#### **5.4 Theoretical Case**

At the literature review stage of this study, the stakeholder and stewardship theories were initially deemed the most appropriate theories to explain ESG disclosure and CFP of the entities studied. However, having yielded the results, which showed that higher ESG disclosure does not necessitate higher CFP, the theories of disclosure were therefore revisited.

Stewardship theory had proposed that managers have a responsibility to behave ethically, even if this may result in reduced long-term profits for the company – and this theory seems to hold with the results of the study possibly indicating that high ESG disclosure is prevalent even though it yields poorer returns.



## 6. CONCLUSION

The objective of this research was to explore the relationship of ESG disclosure to financial performance on JSE listed equities. Muller and Ward (2013)'s style-based graphical time-series approach was used to analyse the relationship; which used cumulative share returns including dividends as the dependent variable. ESG disclosure was the independent style variable which was used to rank the sample of listed companies according to their aggregate ESG scores.

The graphical time-series results found that the portfolio of companies that had the highest ranked ESG disclosure scores had the lowest CFP. Incidentally, the portfolio of companies with the second worst ranked ESG disclosure scores were found to have the highest CFP over the time period observed in the study. Although a Wilcoxon signed-rank test for differences between five ESG ranked portfolio quintiles found no statistical differences in financial performance.

The implications this has for management may be explained stewardship theory where managers have a responsibility to behave ethically, even if this may result in reduced long-term profits for the company. In terms of the hierarchy of concern investors may be disengaged from certain aspects of ESG disclosure.

Limkriangkrai et al. (2017) therefore stated that a fine-grained analysis of individual ESG metric performance may enable a better grasp of the impact of ESG activities on a company's financial performance.

A drawback is the short period for which the ESG scorecards can be

obtained. ESG reporting is still a relatively new field, especially in South Africa, and to therefore get reliable historical data for more than 10 years is nigh impossible. This may then cause difficulty in the time period being unable to exclude for unusual or short-term market factors that may have affected the analysis. Zikmund (2003) suggests that a longer timeframe is required to ensure differentiation between temporary and permanent changes on the dependent variable.

This study did not consider other financial performance measures other than the cumulative share and dividend returns. It may have yielded different results if other financial performance measures such as net profit margin, return on equity or return on assets were used. Other statistical tests may have also yielded different results.

The researcher was constrained by time and would have preferred to perform an audit on the data received from the ESG scorecard data source by ensuring that through alternative sources (primary scanning of the published sustainability report data) the data was robust. The researcher would then also have been better equipped to rebalance the ESG portfolios more accurately based on when the most up-to-date companies' respective integrated reports, and therefore ESG data was published and available.

The method of analysis used was to mix industries through the population sample obtained based on market capitalisation. It may be prudent for future research to consider doing an analysis by sector rather than top 160 or top 100; or at least sectoral analysis within the top 100 equities by market capitalisation.

Due to the inconclusive nature of the results, a mixed method study is suggested for future research when more ESG data is available for a time-series study and a qualitative study such as Herringer et al.

(2009). This may allow for more insight regarding the state of ESG reporting in South Africa and its impact on financial performance.

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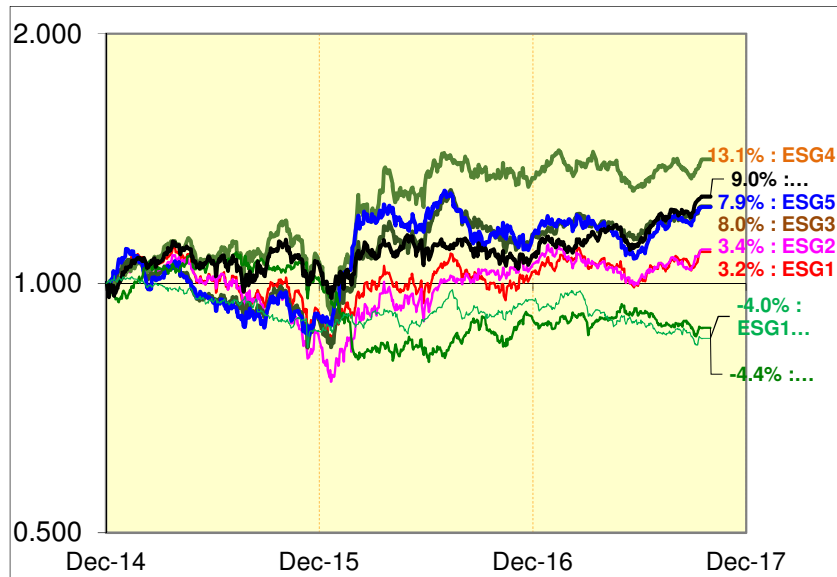
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Figure 1: Graphical Time-Series of ESG Disclosure Style



Appendix 1: Full ESG Disclosure Metrics from independent stock broker

FULL ESG DISCLOSURE METRICS	
No.	Environmental metrics
1	Environmental disclosure
2	Environmental policy
3	Designated director responsible for env issues
4	Subscribe to Equator Principles
5	Environmental targets disclosed
6	Performance measured against targets
7	Environmental supply chain policy
8	Green building policy
9	Waste policy
10	Water policy



11	Climate change policy
12	Recent environmental fines
13	Environmental training costs & donations to rev.
14	GHG per revenue
15	Energy usage to revenue
16	Water usage per revenue
17	Percentage of water recycled
18	Paper recycled
	<b>Social metrics</b>
19	Social disclosure
20	Social procurement policy
21	Health and safety policy
22	Fair remuneration policy
23	Human development policy
24	Human rights policy
25	Business ethics policy re. bribery
26	Whistle blower policy
27	Business ethics re. sensitive countries
28	Community/social spending to revenue
29	Payroll cost per average no. of employees
30	CEO total comp to average comp per employee
31	Percentage of contract to total workforce
32	Unionisation and collective bargaining permitted
33	Percentage of unionised employees
34	Health and safety programs and targets disclosed
35	Health costs to operating costs
36	Female board members to total board members
37	Female managers to total managers
38	Female employees to total workforce

39	BBEE or BEE ownership percentage
40	BEE rating
41	PDI managers to total managers
42	PDI employees to workforce
43	Employees with disabilities to workforce
44	Time lost (work days)
45	Fatalities per 1000 employees
46	LTIFR
47	Training costs to operating costs
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**Gordon Institute  
of Business Science**  
University of Pretoria

**The relationship between environmental social and governance (ESG) disclosure  
and financial performance of South African listed equities.**

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

6 November 2017

## **ABSTRACT**

This paper's objective was to understand the relationship between environmental, social and governmental (ESG) disclosure and financial performance of listed equities on the Johannesburg Stock Exchange (JSE) bourse. International studies have been inconclusive where there have been several positive relationships found but also a few neutral and negative relationships in meta study analyses.

An ESG disclosure scorecard for each of the top 100 companies on the JSE enabled a univariate ranked style-based graphical time-series analysis (Muller & Ward, 2013) approach to determine associations with cumulative share price returns.

The study found that the portfolio quintile with the highest ranked ESG disclosure scores had the lowest financial performance whereas the fourth portfolio quintile was found to have the highest CFP.

The time-series period was four years due to the limited ESG reporting data available. Ideally future research will have a longer time period for analysis which could then ensure differentiation between temporary and permanent changes on the dependent variable (Zikmund, 2003).

In the South African context this study contributes to socially responsible investing literature by granulating the metric of analysis using aggregated ESG disclosure scores to test for an association to financial performance.

## **Keywords**

ESG, socially responsible investing, sustainability reporting, integrated reporting, financial performance

## Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

The name and the original signature of the student and the date should follow the declaration.

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Dakshesh Naik

6 November 2017

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## **1. EXTENDED VERSION OF LITERATURE REVIEW**

### **1.1. Introduction**

The aim of the study was to explore the relationship between environmental, social and governance (ESG) disclosure and financial performance of listed equities on the Johannesburg Stock Exchange. To understand this relationship, this literature review will first provide an insight into: the issue and relevance of sustainability; the advent of Integrated Reporting <IR>; the aspects and influences of ESG disclosure; in order to understand how and why ESG disclosure may influence financial performance. The role of Socially Responsible Investing (SRI) will also be discussed to highlight the significance to institutional investors. The abovementioned topics will be presented within the context of South Africa as an emerging market.

Effort will be made to define and distinguish terminology, however, ESG and sustainability will be used interchangeably throughout this report. Also, ESG reporting and disclosure will be used synonymously. Although Corporate Social Responsibility (CSR) is an important consideration that has in some studies been addressed interchangeably (Eccles, Krzus, Rogers & Serafeim, 2012b), this study will follow the premise that there is a distinction between CSR and ESG; in that CSR has been recognised as noble deeds, portrayed through charitable efforts which are relatively independent of the core business, and can be value destroying for shareholders (Odell and Ali, 2016). For this reason, CSR will not be included in the literature review. ESG considerations, on the other hand, may be considered as fundamental to adding value in business (Ailman, Edkins, Mitchem, Eliopoulos & Guillot, 2017), and will be discussed in relation to CFP, later in this chapter.

### **1.2. Sustainability and Integrated Reporting**

#### **1.2.1. Introduction to Sustainability and Integrated Reporting**

The preparation of a company's annual report had typically been prepared from a purely financial accounting perspective providing information such as: income, profitability, cash flow and shareholding of companies. Insight into non-financial information, including: intangible assets, key performance indicators (KPIs) and ESG information (Maniora, 2015), were disregarded. A combination of both types of disclosure (financial and non-financial) has now been considered as important for investors in their decision-making process (Atkin and Maroun, 2015).

This limited perspective regarding the value of a company, based on only financial factors, lead society to question companies' narrow goal of wealth creation whilst not being accountable for value creation or justice for people, society and the environment (Dumay, Bernardi, Guthrie & Demartini, 2016).

According to Dumay et al. (2016), the concept of reporting on a 'triple bottom line' of a company's social, economic and environmental aspects (Elkington, 1997) occurred in the 1990s. However, the concept of sustainability; defined as: "a company's integration of environment, social and governance (ESG) factors into its policies and decision-making with the aim of maximising long-term value creation" (Odell & Ali, 2016, p.96); appears to have emerged much earlier.

Thus, to bridge this gap, to combine financial and non-financial information, Integrated Reporting <IR> had emerged (Dumay et al., 2016). Setia, Abhayawansa, Joshi and Huynh (2015), stated that there is a difference between <IR> and traditional ESG and sustainability reporting, as <IR> has more of an impact on investor interest, and capital market efficiency, compared to ESG reporting that simply discusses environmental, social and governance factors. The distinction can further be described as 'value-to-society' in sustainability reporting, versus 'value-to-investors' of <IR> (Flower, 2015). For the purposes of this study, the literature pertaining to both the perspectives will be discussed.

Matthews (2013) described <IR> as an improvement on communication between companies and capital markets, which aimed to provide more corporate transparency and accountability (Dumay et al., 2016). This was relevant as companies had been striving to be more transparent than before (Galbreth, 2013), especially since the 2007 to 2008 global financial crisis which had prompted scrutiny and company transparency.

Corporate failures that occurred within the international (Enron and Worldcom in the United States of America) and South African (African Bank, Leisurenet and Regal Bank) contexts, had also led to a greater need for better corporate governance, especially in an emerging market such as South Africa, which relies heavily on foreign investments (Kolobe, 2010).

These were factors that were considered pivotal in order to ensure the survival of companies within a difficult market (Garcia-Benau, Sierra-Garcia & Zorio, 2013). ESG information and <IR> were therefore considered as an 'extra set of intelligence'

(Verheyden, Eccles & Feiner, 2016, p.47) that could also assist in shifting financial capital from a short-term to a long-term investment prospect (Setia et al., 2015).

In the South African context, studies conducted by Kolobe (2010) and Abdo & Fisher (2007) found that there was a correlation between the level of disclosure of governance and financial performance, however there appears to be a gap in the literature regarding overall ESG disclosure specifically and financial performance within the South African context of JSE listed companies.

### 1.2.2. Environmental, Social and Governance factors

Reporting on environmental factors include: resource scarcity, innovation, climate change and pollution and policy shift (Odell & Ali, 2016). Hanson (2013), takes this further by adding energy intensity and efficiency considerations to the 'E' aspect.

According to Hanson (2013), apart from society, the 'S' also stands for stakeholder, safety, social contract, symmetry and scuttlebutt. Scuttlebutt research was presented by Phil Fisher who had identified four competitors of a company and had asked managers of each company to identify strengths and weaknesses of the other four companies; thus, providing a useful insight into operations (Hanson, 2013). This was an example of a study that highlighted the role of employee, consumer and community influence which constitute social factors of ESG reporting (Odell & Ali, 2016). To succeed, companies have to be 'wanted' by the community within which they operate (Hanson, 2013). In the South African context, this societal aspect can be considered as imperative, given the history of Apartheid and the influence it had on how workers were treated, and the poor industrial relation practices thereof (Herringer, Firer & Viviers, 2009).

Governance considerations include: corruption, accounting and disclosure; ownership and alignment of interests; board composition and independence; shareholder rights and enforcement mechanisms (Odell & Ali, 2016). A survey conducted by Eccles, Serafeim & Armbrester (2012), found that factors of corporate governance, development of infrastructure, black economic empowerment, employee relations and sustainability were deemed as the most important ESG issues in the South African context.

### 1.2.3. Sustainability and Integrated Reporting in South Africa

'Sustainability reporting' and 'sustainable practices' are terms that have been used synonymously within the literature (Ameer & Othman, 2012). The integration of <IR>

and ESG in emerging markets has been slower than that of developed markets, despite the greater need for issues around sustainability due to operational challenges such as: lack of regulatory oversight, poor governance and weak institutions (Odell & Ali, 2016). Despite these challenges, South Africa, as an emerging market, has been at the forefront of <IR> framework adoption and practice, through the implementation of the King Code of Corporate Governance Principles (Ahmed Haji & Anifowose, 2017).

The first version of the King Code was first issued in South Africa, in 1994, and was the first corporate governance framework to take an inclusive stakeholder view, rather than a rigid shareholder view (Dumay et al., 2016). Thereafter, the King code evolved through King II in 2002, King III and King IV, to include Integrated Sustainability Reporting and thus presented an integrated view of a company's performance from both a financial and sustainability perspective (Dumay et al., 2016). South Africa was therefore at the forefront of <IR>, even before it became regulated.

The Johannesburg Stock Exchange (JSE) had mandated that all listed companies were required to issue integrated reports for financial years starting on or after 1 March 2010, or provide reasons for not doing so (Setia et al., 2015); this was the 'apply or explain' approach of corporate governance. China, Denmark and Malaysia were also countries to pass a similar mandate (Serafeim, 2014). Subsequently, aspects of the King II Code were also adopted by the New York Stock Exchange and integrated into the Sarbanes-Oxley Act (Dumay et al., 2016).

#### 1.2.4. Major role players

Having presented South Africa's position in presenting the King Codes to the international arena, other significant role-players must also be identified. Galbreth (2013), had stated that ESG focus emerged in the 1970s, and was heightened by two major institutions: The United Nations; and a collaboration between the United Nations Environmental Programme (UNEP) with Coalition for Environmentally Responsible Economies (CERES) resulting in the Global Reporting Initiative in 1997 (GRI). The aim of the GRI was to develop a framework of accountability for CERES compliant companies in terms of environmental conduct (GRI, 2017) with GRI principles having since been used in over 1300 companies, governments, social sectors and other organisations (Boerner, 2011).

The other major role players who have been involved in increasing the prevalence of <IR> and ESG information were the:

- Sustainability Accounting Standards Board (SASB) who developed sustainable accounting standards specific to different industries, thus allowing listed companies to comply with Securities and Exchange Commission (SEC) requirements (Kotsantonis, Pinney & Serafeim, 2016).
- The International Integrated Reporting Council (IIRC), constituted of regulators, investors and companies amongst others, to provide a conceptual framework for preparing a concise and user-friendly <IR> (Cheng, Green, Conradie, Konishi & Romi, 2014).
- United Nations Principals for Responsible Investment (UN PRI), an initiative founded in 2006, that consisted of the world's largest institutional investors, to develop the PRI (PRI, 2017).

KPMG International (2016) noted that <IR> application was still in its infancy but in the South African context, there has been a positive response from JSE-listed companies, despite many companies having to go back to the drawing board regarding their ESG measurement and reporting procedures (Eccles et al., 2012).

#### 1.2.5. Factors that influence ESG reporting

Pressure from stakeholders of a company as well as public opinion (Wagner & Blom, 2011) were found to have positively influenced sustainable practices (Kassanis & Vafeas, 2006). CSR reporting was applauded 'an effective management tool which offers confidence to stakeholders as the company is perceived as responsible and trustworthy' (Garcia-Benau et al., 2013, p.1529).

Ethical reasons, financial reasons and regulatory demands have also been described as three factors that influence whether a business initiates sustainable practices (Wagner & Blom (2011).

According to Maniora (2015), ethical behaviour in accounting is related to a company's obligation to disclose a fair and true representation of the company's overall performance, that includes financial and non-financial information. Similarly, unethical accounting has been likened to the "conscious or unconscious misbehaviour of companies during the process of identifying and preparing relevant ESG information" (Maniora, 2015, p.756).

In terms of regulations and government requirements for sustainable business,

complying companies may be provided with the means to differentiate itself from its competitors in the industry, alongside other cost advantages of overcompliance to regulations (Porter & van der Linde, 1995). This concept of cost advantage has been questioned by research that argues otherwise (Palmer, Oates & Portney, 1995); that sustainability requires significant funding and resources, thus incurring costs to the company (Orlitzky, 2011).

Results from a study of financial institutions found that quality of environmental and sustainability reporting was positively correlated with the size and profitability of an organisation (Weber, 2014; Alberici & Querci, 2015), again suggesting that financial ability may influence the uptake of sustainability practices and reporting (Fischer & Sawczyn, 2013). As a result of variances in company profiles and reporting procedures, if any, a limitation of studies exploring ESG issues is that all the ESG dimensions are not assessed systematically and simultaneously in understanding the risk profiles of companies (Galbreth, 2013).

#### **1.2.6. Challenges and Improvements of ESG Reporting**

It has been stated that there is no 'silver bullet' set way of reporting ESG matters; individual companies must report in an authentic and substantive way that allows their shareholders to have a clear and informed understanding of the business (Hanson, 2013). Communication regarding ESG matters should be credible, long term, strategic, operational like financial communication (Hanson, 2013).

Guillot (2017) stated that ratings have historically been biased towards quantity of information provided whereas it is the quality of disclosure that is imperative. This is relevant to recent studies which have shown that the breadth of disclosure is not a reliable indicator for good performance in terms of sustainability (Ailman et al., 2017). Thus, implying that more information and disclosure is not necessarily better disclosure nor performance. An inverse relationship was also found between the quantity and quality of ESG disclosure- that companies who had ESG problems were possibly compelled to do more reporting (Ailman et al., 2017). Therefore, less and more focused reporting may be more valuable to investors (Ailman et al., 2017), as opposed to disclosure overload which may occur as a result of overzealous reporting (Hanson, 2013). Reporting must be focussed (Gray, 2013), cohesive, multidimensional and clear (Atkin & Maroun, 2015). The IIRC also call for there to be stewardship and accountability involved in IR (IIRC, 2013).

Following on from the quality of ESG reporting, Hanson (2013) had stated that it is not acceptable to have a sensational, obfuscating or 'excessively self-promoting' (Hanson, 2013, p.29). CSR report that has little substance or authenticity, which could lead to 'greenwashing' (Hanson, 2013). Greenwashing, is when investors may be misled and management's views may be distorted thus causing harm to businesses in terms of ineffective management. False precision is also an aspect to be wary of, in financial and non-financial reporting (Hanson, 2013).

Surveys of South African companies conducted by PwC, identified certain shortcomings and opportunities to improve integrated reporting (PwC, 2014). Suggesting that improvements need to be made with regard to how integrated reports are prepared in South Africa (Solomon & Maroun, 2012).

Another limitation of ESG disclosure was that disclosure of ESG factors may not necessarily mean that the performance was positive; as was found by Meng, Zeng, Shi, Qi and Zhang (2014); who discovered a nonlinear relationship between environmental performance and environmental disclosure of Chinese firms.

This leads on the aspect of a scale to measure the quality of disclosures (Carels, Maroun & Padia, 2013; Churet & Eccles, 2014; Stent & Dowler, 2015). The ESG Scorecard or Index will be discussed in the methodology chapter of this report.

### 1.3. The Theoretical Case of ESG disclosure and CFP

As the focus of this study was on the disclosure of ESG factors, it was deemed that the Stakeholder theory and Stewardship theory were the most appropriate theories to apply. Stakeholder theory has stated that the consideration of other parties, such as: suppliers, government, employees, customers, society, investors and shareholders, is important in the success of organisations. Stakeholder theory also suggests that organisations are obliged to fulfil the needs of their stakeholders within and outside of the firm (Freeman and McVea, 2001). Management and board members are therefore also stakeholders of an organisation and it is up to them to determine the disclosure of the firm's activities, which will then have an impact on the other stakeholders. In the case of this study, investors (existing and potential), and shareholders are the important stakeholders. As the focus of this study is on ESG disclosure that encompasses environmental, social and governance aspects; stakeholder theory appeared to have embraced and included all the above-mentioned considerations. Harrison and Wicks (2013), also stated that in



serving the interests of a broad range of stakeholders, the perceived value of the organisation is increased.

Revelli (2016)'s embeddedness model for Socially Responsible Investing (SRI), adapted from Polanyi's (1944) embeddedness theory, may also contribute to the application of stakeholder theory in this study, as it states that investment decisions should be embedded in social relationships. This emphasis on social acceptance may also be related to the legitimacy theory which stated that the survival of an organization is dependent on its values that should be congruent with society's values and norms (Lokuwaduge and Heenetigala, 2017). In context of this study, the concept of value of a business will be address later in this literature review.

Murphy and McGrath (2013) offered another theoretical approach of 'Deterrence theory' to understand why companies report on ESG. This includes the concept of avoidance, in that corporations are influenced purely by economic cost and benefit calculations, which are drivers in influencing how companies voluntarily report on ESG. Companies therefore disclosure information in order to avoid costs incurred through: litigation and penalties of noncompliance and nondisclosure.

In relation to this study, a positive relationship between ESG performance and CFP has been addressed by Weber (2017) using theories such as the: slack resources theory; good management theory (Waddock & Graves, 1997); and institutional theory (DiMaggio & Powell, 1983).

#### **1.4. The Business Case of ESG disclosure and CFP**

Having elaborated upon the ethical and theoretical reasons for ESG disclosure, this section will focus on the financial reasons for why ESG reporting may be financially beneficial for companies and whether it is possible to be "doing well whilst doing good" (Rivelli & Viviani, 2015, p.160).

Although different studies have looked at the environmental, society and governance to different degrees (some individually and others collectively) in relation to corporate financial performance (CFP), the findings will be presented collectively in this research report. Especially as the aim of this study was not to isolate each aspect, but to gain an understanding on how ESG disclosure and reporting may affect CFP, and vice versa.

#### 1.4.1. The Value of a Business

It has been stated that although the main focus of retail investors is on financial value, increased attention has also been given to corporate values (Ailman et al., 2017). Hanson (2013) went on to emphasise that a complete picture of a company's activities and assets is needed in order to gain a complete understanding of a business's value (Hanson, 2013). This had led to the exploration of the impact of ESG on business value investing, which has been referred to as 'Graham and Dodd investing': the importance of value in a company, was shifted from 'tangible to less tangible assets' (Hanson, 2013, p.21). Thus, delivering a subjective 'earnings-power' approach to businesses that endure competitive advantages reflected by high returns on capital and high profitability. This contrasts with the conventional earnings-power approach of asset-based valuation (Hanson, 2013).

Odell and Ali (2016) used a formula that calculated the value of a company, based on: the amount of capital invested (I); the company's rate of return on invested capital (R); growth rate of cash flow or operating earnings (G); and cost of capital, or required return on investor capital (K). The formula was as follows:

$$V = \sum I (r-g)/k$$

This calculation was used to argue that ESG disclosure can create value of a business by increasing: efficiency, profitability; ability to maintain growth opportunities and reduce the cost of capital by improving risk management (Odell & Ali, 2016).

#### 1.4.2. Investor Involvement/Influences

The Principles for Responsible Investment (PRI) corporation (backed by the United Nations) (UN PRI) is an organisation that champions responsible investment by institutional investors worldwide with a focus on ESG at its core (PRI, 2017). The PRI's signatories by 2015 were managing assets worth US\$59 trillion (PRI, 2015). South Africa currently has 54 signatories (7 asset owners, 36 investment managers and 11 service providers) to the PRI which indicates the commitment of South African institutional investors (PRI, 2017).

The Institute of Directors in Southern Africa sought to incorporate the PRI principles into the South African corporate governance framework with the launch of the Code for Responsible Investing in South Africa (CRISA) which is intended to focus corporate governance for and give guidance to institutional investors on how they must take ESG

considerations into their investment analysis and activities (CRISA, 2011).

Non-financial issues of: corporate culture, governance, relations (between employees, customers and supplies) and competitive position have been found to be integral to how investment decisions are made by investors (Hanson, 2013). Business value investors have consequently come to increasingly expect non-financial reporting as a valuable complement to financial reporting (Hanson, 2013).

As a result of this expectation, firms have been encouraged to produce high quality integrated reports in order to relay the relevance of value of ESG disclosure with consideration to be given towards the business case and context of high quality disclosure (De Klerk & De Villiers, 2012), otherwise it is of limited use to investors (Hanson, 2013).

In the South African context, Atkin and Maroun (2015) identified the gap in the literature pertaining to how stakeholders such as institutional investors viewed the first set of integrated reports in South Africa; which is important given that it is institutional investors who have been identified as the primary users of integrated reports (IIRC, 2013). This is since the investment community had appeared to regard ESG as 'financially material' to an investment portfolio (Richardson, 2009). Edkins (2017) stated that ESG disclosure is important to 'locked-in' and long term, indexed investors as well as active investors (Ailman et al., 2017). Retail investors have increasingly been attracted to ESG considerations due to three reasons: sustainability disclosure by public companies; ESG research and data providers; and academic research on ESG materiality (Roselle, 2016).

In terms of the hierarchy of concern, Cohen, Holder-Webb, Nath and Wood (2011) found that from their sample of 750, most of the retail investors were most concerned about information pertaining to economic performance followed by corporate governance policy and only then corporate social responsibility. This 'disengaged' interest of investors regarding sustainable investing is supported by Falko, Busch and Chesney (2015) whose study also explored the barriers that prevented a sample of private investors from sustainable investing.

Within the South African context, Atkins and Maroun (2015) conducted qualitative research in order to gain an understanding of institutional investors' opinions and attitudes regarding integrated reporting of companies on the JSE. Due to the qualitative nature of studies such as the above, light may be shed on the subtle influences of

how investors may base their investment decisions; especially as studies show that millennial women have been found to have a distinct desire to invest in causes that have a positive social impact (Ailman et al., 2017). Majority of SRI investing has been conducted by large organisations who have the means and motive to: conduct their own research; outsource third-party analytics and build extensive ESG datasets (Roselle, 2016).

#### 1.4.3 Socially Responsible Investing

The aim of this study was to explore the relationship between ESG disclosure and CFP amongst companies listed on the JSE. It has been understood that financial markets rely on indices to 'define a particular universe of securities in which an investor can trade and serve as benchmarks of performance' (Herringer et al., 2009, p.14). Rivelli and Viviani (2015)'s meta-analysis research was insightful in exploring the difference between SRI portfolios and conventional portfolios in terms of the relationship with CFP; which concluded that there was no real cost nor benefit to investing in SRI portfolios.

SRI does not have a clear, standardised definition but rather represents an investment strategy that encompasses the balancing of financial and social objectives (Herringer et al., 2009). SRI takes into account: ethical, environmental, social and governance aspects, as elaborated upon earlier in this literature review, into investments; which attempts to address the conflict between maximization of profit and creating a sustainable world (Herringer et al., 2009).

Mansley (2000) had set forth a definition of SRI: 'A set of approaches which include moral and ESG considerations along with conventional financial criteria in decisions regarding the selection, retention and realization of particular investments.' (Herringer et al, 2009, p.11). Other names for SRI have been found to be: 'ethical investing', 'value-based investing', 'sustainable investing', 'responsible investing' (Viviers, Bosch, Smit & Buijs, 2008) and 'green investing' (Herringer et al., 2009). Ultimately, from a SRI perspective, the financial objectives of a company must therefore stem from the ethical and social objectives in the global investment universe (Revelli, 2016).

Historically, SRI appears to have originated in the 18th Century, when certain religious factions shunned investments in 'sin stocks' such as: alcohol, tobacco, weapons and slaves (Roselle, 2016). Since then, SRI as an investment policy seemed to have gained more attention in the 1960s and 1970s, due to issues just as equal rights and protection of the environment. From a perspective of 'negative or exclusionary screening', this is

when investors refrain from investing in companies that produce ‘undesirable’ products and services in ‘undesirable’ industries and countries (Viviers et al., 2008). Other strategies that have been used in responsible investing were also: shareholder activism; targeted or cause-based investing; and screening. ESG disclosure may in contrast be perceived to be a positive or inclusionary screening technique where investments are made in portfolios that are perceived to be ‘good’ (Viviers et al., 2008).

In 2008, Europe was found to have the largest SRI market on the globe, with the USA growing at a fast rate (Herringer et al., 2009). Herringer et al. (2009) stated that the South African SRI sector has not been able to attract the same funding as other countries. The promotion of SRI in South Africa was, according to Leeman (2005), from the black economic empowerment Act (Act No. 53 of 2003) and the creation of several BEE scorecards and sector charters. This was an example of a positive screen in South Africa, compared to screens pertaining to factors such as fair labour practices, climate change and resource utilization in developed countries (Viviers et al., 2008).

In the South African context, the quality of individuals as workers was so imperative that foreign investors (Europe, North America and Japan), had divested their stocks in South Africa due to the Apartheid era in the 1970s and 1980s (Herringer et al., 2009). Schueth (2003) and Heese (2005) were amongst few researchers to have further explored SRI in South Africa. SRI in South Africa may also be traced back to the 1990s when trade unions refused to invest in companies that were seen to not only support apartheid but also firms that had poor industrial relations practices (Herringer et al., 2009).

Despite the challenges faced by several stakeholders in the South African SRI sector (Herringer et al. 2009), Viviers et al. (2009) suggested that the proper implementation of SRI could enable South Africa to become a valued example for other developing countries. However, the perception appears as though South Africa is not yet at that stage (Herringer et al., 2009).

In South Africa, this benchmark was represented by the FTSE/JSE Socially Responsible Investing Index (SRI) that was launched in 2004 and was the first such index in an emerging market (Herringer et al., 2009). The objectives of the SRI Index were: to highlight listed companies with good sustainability practices; to provide a basis for financial SRI products; and to find an objective and accepted method of measuring sustainability performance of listed companies (Sonnenberg & Hammon, 2006). Participation of companies in this index was voluntary, but required a minimum score to

be accepted into the index. The score was calculated according to around 70 indicators or criteria that were deemed relevant to the South African context, and were grouped into categories of society, corporate governance, environment and economy (Sonnenberg & Hammon, 2006). The JSE SRI Index was established in order to: track JSE listed entities with creditable business practices in sustainability; and to provide a vehicle for socially responsible investing (Chawana, 2014). As it only includes companies who meet the criteria for sustainability, it can be identified as a positive screening index (Chawana, 2014).

Similar studies that explored different measurements of CFP (other than share returns) in relation to sustainability practices used screening methods where: ten equally weighted ESG Key Performance Indicators (KPIs) and a Transparency Indicator (Ameer & Othman, 2012) were used. The scoring basis was: a score of 0 to 1 per KPI and a score of 0 to 1 for the Transparency Indicator; the sum of these were then “normalised to a scale of 0-100” (Ameer & Othman, 2012, p.65) to give the overall score used to rank the companies in the sample.

#### **1.4.4. Relationship between ESG practices and CFP**

Ameer and Othman (2012) used variables such as sales growth (SG), return on assets (ROA), profit before tax (PBT) and cash flows from operating activities (CFO) as indicators of financial performance. These were adopted from an earlier study conducted by Lopez, Garcia and Rodriguez (2007). Other indicators of financial performance used in similar studies were return on sales (Wagner & Blom, 2011). This study used cumulative share returns including dividends as the financial performance measure, in accordance with a number of studies (Fama and French, 1992; Muller & Ward, 2013; Muller and Ward, 2010; Ward, 2012; Taljaard, Ward and Muller, 2015) as it was taken that a company's share price factors in what shareholder's think especially highly skilled analysts at institutional investors such as pension funds (Muller and Ward, 2013).

Findings of Ameer and Othman's (2012) study were that companies with more sustainability practices have higher performances financially in terms of ROA, PBT and CFO. These findings were supported by Eccles, Loannou & Serafeim (2014), who also found that companies who were highly sustainable outperformed companies that were less sustainable in terms of accounting performance and the stock market.

A corporate social/environmental performance (CSP) versus corporate financial performance meta-analysis study (Orlitzky, Schmidt, Rynes & Rynes, 2003), found that

corporate virtue through social and a lesser extent environmental responsibility 'is likely to pay off'. Although Orlitzky et al. (2003) do note however that CSP seems to be 'more correlated with accounting-based measures than market-based indicators, and CSP reputation indices are more highly correlated with CFP than other indicators of CSP'.

Another meta-study of ESG and CFP in emerging markets, by Friede, Busch and Bassen (2015), focusing on the ESG-CFP relationship, indicated that there is need to differentiate between portfolio and non-portfolio studies, regions and young asset classes.

Although some studies have shown the costs associated with the implementation of ESG initiatives to reduce profit margins in the short term (Preston & O'Bannon, 1997) the majority of the literature appears to have found a positive correlation between ESG measures and financial performance (Friede et al., 2015) through empirical evidence and meta-analytical studies (Revelli & Viviani, 2015). Meta studies were described by Kurtz (2005) as a major step forward by using statistical techniques to aggregate the results of smaller studies in order to reveal the direction of causality (Revelli and Viviani, 2015).

Clark, Feiner and Viehs (2015), categorised more than 200 sources and found that business practices that were sustainable were positively correlated to economic performance. From the data of the reviewed studies, it was found that 88% of companies who had 'robust sustainability practices' reflected better cash flow and performance in terms of their operations. Clark et al.'s (2015) report also found that 80% of their case studies showed that concern for sustainability influenced investment performance positively. This may be of relevance as it may increase investor confidence about a company's 'staying power' (Hanson, 2013) and thus achieve sustainability within a difficult market.

There was a mixed consensus in the literature regarding the link between ESG disclosure and CFP. Orlitzky (2008)'s meta study confirmed that the link between sustainability and financial performance was ambiguous.

Majority studies have shown a positive relationship between financial performance and sustainability performance, but there is uncertainty regarding the direction of this causality (Weber, 2017). In contrast, a study that explored the financial performance of the top 100 sustainable companies worldwide, showed a bi-directional relationship

between corporate social responsibility practices and financial performance (Ameer & Othman, 2012). This meant that financial performance affects the corporate social responsibility practices implemented in firms and vice versa. This was supported by a study that found a positive, bi-directional causality between sustainability performances of Chinese banks and the financial performance thereof (Weber, 2017).

Weber (2017)'s research also brought forth the practical and social implications of finding a positive correlation between sustainability and financial performance. Practically, this meant that institutions (in Weber's, 2017, case, banks) could invest in corporate sustainability to increase financial success, and then re-invest the returns, or 'slack' resources in other sustainability activities. Sustainable practices need not imply further costs to a company, but may in fact be beneficial by generating "revenue and reputation" (Wagner & Blom, 2011, p.419). In relation to environmental factors, when energy consumption is reduced, the savings that are generated may in turn be used to adopt newer technologies and resource (Hanson, 2013), relating back to the 'slack resources' theory.

The social implications of positive correlation between financial gain and sustainability have been found to result in 'greener economies and less polluting without sacrificing financial returns' (Weber, 2017, p.1). Research that explored the link between social responsibility and financial performance of companies, were also divided by opposing views (Ameer and Othman, 2012). One school of thought believed that firms face a 'trade-off' between social responsibility and financial performance; so, socially responsibility actions incur costs to firms. Supporting the view that the costs involved in social responsibility actually worsen a company's financial performance (Friedman, 1980; Preston and O'Bannon, 1997). Whereas the contrasting opinion was that corporate social responsibility costs are minimal and that the activities thereof may instead, financially benefit the organisation (McGuire, Sundgren & Schneeweis, 1988). The link between social responsibility and financial performance from as early as 1981, with more recent studies showing a positive relationship between ESG performance and financial performance (Verheyden et al., 2016).

For environmental considerations and practices to be financial rewarding, Schaltegger and Synnestvedt (2002)'s dynamic theoretical framework stated that when organisations initially set up environmental protection activities, economic success is reduced in the short term; and only once the marginal costs are reduced as a result of the environmental technologies, does the economic performance improve (Ameer & Othman, 2012). They



also go onto state that external and internal variables determine whether it 'pays to be green' (Ameer & Othman, 2012, p.62).

## 1.5. Conclusion

The aim of the study was to explore the relationship between ESG disclosure and financial performance of listed equities on the JSE.

Setia et al. (2015) noted that integrated reporting <IR> has an impact on investor interest and capital market efficiency. Matthews (2013) describes <IR> as an improvement on communication between companies and capital markets. ESG information and <IR> were considered as an 'extra set of intelligence' by Verheyden et al. (2016) that could assist in shifting financial capital from a short-term to a long-term investment prospect (Setia et al.,2015).

In the South African context, the level of governance disclosure has been broadly studied (Kolobe, 2010; Abdo and Fisher, 2007; Rambajan, 2011; Taljaard, Ward and Muller, 2015). ESG considerations for investors has been studied in South Africa (Gianmporcaro and Pretorius, 2012; Eccles et al.,2008) and have found that a major challenge in SRI adoption has been lack of institutional demand.

Having prefaced the literature and background to ESG in general and in the emerging market of South Africa, this study contributes to literature by taking a more granular definition of SRI using ESG disclosure to gain insight into the traction of transparency in integrated reporting and resolve whether it has a positive relationship to financial performance.

## 2. EXTENDED VERSION OF METHODOLOGY

### 2.1 Research Design and Methodology

The purpose of this research was to study ESG disclosure of Johannesburg Stock Exchange listed companies and to determine if there was a positive CFP relationship.

The most suitable philosophy related to the research that was undertaken was that of pragmatism. This approach was taken because the 'most important determinant of the research philosophy are the research questions and objectives' (Saunders & Lewis, 2012, p.106).

The study used induction as the 'bottom up' approach of theory development, so that the researcher could 'observe patterns and repeated occurrences of phenomena and formulate some speculative hypotheses which could be investigated, with a view to developing some general conclusions/theories' (Saunders and Lewis, 2012, p.109). The particular phenomena studied was ESG disclosure and whether it was related to positive corporate financial performance.

The focus of this research was to study the relationship between ESG scorecard data versus the performance of its related share price return. These methods are thus most appropriately suited to an explanatory strategy (Saunders & Lewis, 2012, p.113).

As the study had a time constraint of approximately six months, only a quantitative study was done which was fit for the purpose of an initial study by the researcher. Due to time constraint, the researcher used historical secondary data collected by reputable third party organisations to perform a longitudinal time scale study (Saunders and Lewis, 2012, p.124).

A univariate ranked style-based graphical time-series analysis (Muller & Ward, 2013) was used to determine associations with share price returns on the JSE. Muller and Ward (2013)'s research methodology to study cross-sectional equity returns is based on a style variable analysis that builds on Fama and French (1992)'s study that finds strong associations with the variables size, price to earnings ratio, gearing and book to market ratio.

Muller and Ward (2013)'s graphical time-series approach is a powerful analysis technique that results in ranked style-based portfolios covering a time period that allows for a visual comparison of the share returns performance. The graphical time-series

approach has been used to successfully observe variables of interest such the capital asset pricing model on the JSE, share price reaction to Black Economic Empowerment announcements on the JSE and board diversity's effect on financial performance (Muller & Ward, 2013; Muller and Ward, 2010; Ward, 2012; Taljaard, Ward and Muller, 2015). The results of this study were therefore depicted in line with Muller and Ward (2013)'s graphical time-series for analysis to answer the three research questions.

Muller and Ward (2013) contest that the traditional approach that most researchers have used when conducting similar studies, by using t-tests to test for significant differences between average monthly or quarterly portfolio returns is methodologically weak compared to cumulative returns. However, Muller and Ward (2013) agree that portfolio construction is necessary to reduce volatility.

A Wilcoxon signed-rank test is appropriate to test hypotheses one and two from the research questions. The Wilcoxon signed-rank test is a non-parametric test procedure for the analysis of a matched-pair data based on differences (Woolson, 2008). The Wilcoxon signed-rank test was used to determine if there were statistically significant differences between the ESG style-based portfolio quintiles' log-normal returns; between each other and between each portfolio quintile and the JSE's market portfolio (which is the equivalent of the J203T FTSE/JSE All Share Index which covers 99% of the JSE's listed companies based on market capitalisation). The use of the JSE All Share Index was consistent with the rationale of Muller and Ward (2013) where the index is a suitable proxy of the market against which performance can be referenced. This market index was an equal weighted index.

## 2.2 Unit of analysis

The unit of analysis is the Share Price of a listed company on the Johannesburg Stock Exchange. This share price and dividends paid unit will lead to a cumulative return per share and subsequently for each portfolio which will then be analysed using a graphical time-series approach.

## 2.3 Population

The population was all the listed equities on the JSE. The time period was determined by the third parties from whom data access was obtained.

## 2.4 Sampling method and size

The sample depended on an independent stock brokerage firm that incorporate ESG factors into their services based on their client needs and requirements. The number of

companies that were researched by the independent stock brokerage firm for ESG reporting was the limitation on the sample size. The timeframe for the sample analysed was between 2014 and 2017. Initially the sample started with the JSE Top 100 companies in 2014 by market capitalisation; and the sample set grew due to the addition of new Top 100 companies each year without removing the original constituents. The sample for the four years was 100, 100, 113 and 115 companies analysed (for ESG reporting) respectively for the years 2014, 2015, 2016 and 2017.

## 2.5 Construct for ESG Disclosure

Comparable data is required for financial reporting, also time periods are an important consideration. This affects reliability from an investors perspective (Ailman, 2017). A standardised data set is required. Guillot (2017), and Ailman (2017), acknowledged the difficulties that arise in attempting to aggregate different factors into a simple score in order to present a ranking. Despite these challenges, scores are an important starting point in terms of engaging conversations with managers in terms of ESG.

Wagner and Blom (2011) used an environmental management system (EMS) as a proxy for the sustainability level of an organisation, and found that EMS were only positively associated with firms with high financial performance, implying that the implementation of an EMS is not enough to change the financial performance of a company from good to bad, and vice versa.

Although methods such as third-party accreditation processes; external audits; indices (Lopez et al., 2007); codes and standards of benchmarking (Singh, Murty, Dikshit & Gupta, 2009), have attempted to measure sustainability practices, there remains a lack of consensus regarding the standardisation of such measures (Ameer & Othman, 2012). Another ranking system, brought forth by Henri and Journeault (2010), ranked the environmental performance of companies according to two scales; process versus results; and internal versus external dimensions to produce an organised view of environmental activities. Ameer and Othman (2012) scored the companies in their sample from 0 to +4; with 0 allocated to companies who had no discussion of the aspect and having full disclosure of the environmental aspect. This scoring system was akin to the SustainAbility and the United Nations Environment Programme (Sustainability-UNEP, 1997).

Eccles et al. (2014) used ESG disclosure scores from Bloomberg and Thomas Reuters in order to determine 'high sustainability' companies compared to 'low sustainability'

companies.

The ESG disclosure proxy that was used in this study consisted of an aggregate of 71 metrics encompassing the three components of ESG, namely environment, social and governance considerations. The total ESG disclosure metric list is in Appendix 1. There were metrics used from the Global Reporting Initiative's (GRI) Sustainability Reporting Standards and also other metrics used that do not feature on the GRI's standards (GRI, 2017).

Measuring ESG can be partially subjective as apart from the quantitative metrics, there are qualitative and policy metrics which are not easy to compare on a like for like basis. For this reason, an ESG disclosure scorecard makes measurement more objective and consistent similar to the governance scorecard from the Kolobe (2010) and Abdo and Fisher (2007) studies.

The ESG disclosure scorecard in this study had a binary disclosure scale of 1 for disclosure and 0 for non-disclosure for very specific metrics. Table 1 below is an extract of the ESG disclosure scorecard which depicts the construct of the ESG disclosure scorecard value. In Table 1 there are six of nine disclosures which results in a score of 66.67%. The ESG scores that were used to make up the ranked list (for portfolio construction) of top 100 companies used the full 71 metrics to derive the ESG disclosure score per company on an annual basis.

Table 1: ESG Disclosure Scorecard extract

EXTRACT OF ESG DISCLOSURE SCORECARD		
No.	ENVIROMENTAL METRICS	Disclosure
1	Waste policy	0
2	Water policy	1
3	GHG per revenue	1
	SOCIAL METRICS	
4	Social disclosure	1
5	Social procurement policy	0
6	Health and safety policy	1
	GOVERNANCE METRICS	
7	Governance Disclosure	1

8	Controlling shareholder?	1
9	Golden handshakes/parachutes policy	0
	ESG DISCLOSURE SCORE	66.67%

## 2.6 Measurement instrument: The Style Engine

Muller and Ward (2013) constructed a 'style engine' to analyse the financial metric – corporate or business financial performance. The style engine has robust data (of share returns) from their data set through parameterised inputs that can alter settings and styles. The share returns include both the capital gains and dividends. Data considerations are covered with survivorship bias as noted by Gilbert and Strugnell (2010) accounted for in the style engine where the data sample includes for companies that have failed when looking back; and corporate actions such as share splits or acquisitions/mergers/spin-offs that have an effect on performance data are managed within the style engine. Muller and Ward (2013)'s style engine database dates back to 1985 and focuses on the JSE's largest 160 shares by market capitalisation.

The style engine is so called because it predominantly assists in research questions relating to investment styles or factors (Fama and French, 1992). Typically, the style engine can analyse for common financial considerations for good investment styles such as testing whether small size companies outperform large size companies, value shares outperforming growth shares, liquid shares outperforming illiquid shares and whether financial ratios are useful in predicting business or corporate financial performance (Muller & Ward, 2013; Muller and Ward, 2010; Ward, 2012; Taljaard, Ward and Muller, 2015). Although the style engine is also capable of testing for non-financial considerations such as whether companies with board diversity out-perform or whether corruption pays (incorporate fines paid and whether fines were sufficient to impact financial performance). This study will leverage the style engine's ability to test the non-financial style of ESG disclosure and whether there is outperformance with higher disclosure.

The advantage of the style engine is that it is set up to deal with the issue of 'very small effects' and 'very noisy data' (Muller and Ward, 2013) through the 'buy-and-hold portfolio analysis'. The cumulative effect of 'very small effects' over a large period of time (since 1985) will then be visible and the 'very noisy data' is handled by creating portfolios to minimise volatility (Muller and Ward, 2013). A drawback of this method is that it does not

incorporate transaction costs when rebalancing the portfolios. Muller and Ward (2013) contest that transaction costs apply to all the portfolios, and so they would be the same and immaterial.

## 2.7 Analysis approach

Fama and French (1992) provide evidence for strong associations between cross-sectional equity returns and style variables. Muller and Ward (2013)'s database of share returns (including dividends) was updated with 2017 financial data which was suitable for the purposes of using ESG disclosure scorecard data which is more current (up to 2017).

As noted in section 4.2.4, Muller and Ward's (2013) style engine will be used to process the cumulative share price returns for each of the quintile portfolio analysis. The method of analysis is to group the top 100 ranked companies (the sample of companies varied in this study over the four years) according to their ESG scorecard, being the style, into five quintiles, with a total of 100 companies.; each portfolio will then have 20 constituents which are equally weighted. The cumulative index (value) for each quintile will be calculated by the style engine (on a daily basis) and a graphical time-series representation will allow for visual analysis of whether there is a distinct pattern to answer the hypotheses (Muller and Ward, 2013).

The portfolio will be rebalanced annually as the ESG scorecard is only calculated on an annual basis from sustainability data from each company's annual integrated report. At the rebalancing point, each quintile's value is retained, the ranking based on ESG is recalculated and the retained portfolio values are placed back into the new quintile ordering. As can be expected, some constituents may remain in the same quintile ordering whereas other constituents may swap quintiles or even drop out of the sample altogether.

Research question one was assessed based on a visual comparison of the five ESG portfolios to identify if there was a distinguishable order in the graphical time series plot between the cumulative indices (Muller and Ward, 2013). Research question two was assessed based on a visual comparison of the highest performing ESG portfolio and the market index to identify if there was a clear distinction in the graphical time series plot between the two indices.

Research question three was assessed by a division of the highest ranked ESG portfolio by the lowest ranked ESG portfolio; the resulting "price relative" plot allows insight into

periods when there is outperformance, no out-performance or underperformance of the highest ranked versus lowest ranked ESG portfolios depending on whether the gradient of the price relative is positive, flat or negative respectively (Muller and Ward, 2013).

A Wilcoxon signed-rank test was used to test the hypotheses one and two from research questions one and two. The Wilcoxon signed-rank test is a non-parametric test procedure for the analysis of a matched-pair data based on differences (Woolson, 2008). A limitation to the Wilcoxon signed-rank test in this time-series study is that the difference between (quintile/portfolio) means can be statistically insignificant, yet portfolios can have very different paths yet the cumulative returns end up at the same point.

## 2.8 Data gathering process

The nature of this study was such that it required the use of historical secondary data of both the JSE share price returns and for a pre-existing, but current, ESG scorecard.

The researcher had made contact with the three organisations identified that possessed the appropriate secondary data for this study. One set of data, an index on the JSE was deemed to be out of the scope of this study and therefore not used. The two independent companies' ESG scorecards were offered initially for research purposes, but unfortunately only one set of data was secured. The scarcity of publicly available ESG disclosure scorecard data is testament to the necessity for this study and for advocacy of standardisation and adoption of minimum ESG disclosure from companies.

The JSE's share price returns data was used with permission from Muller and Ward's (2017) database.

## 2.9 Ensuring quality of the research

Validity, reliability and objectivity are also important considerations when maximising data quality. These are: does the research measure what it intended to research; if the same procedure was used under similar conditions, would the same results be yielded; and are results not influenced in anyway (Whittaker, 2016).

Ward and Muller (2013) tested their data set and methodology for robustness by:

- Testing the integrity of the share return data by reconstructing a market capitalisation weighted index (including dividends) (from 31 December 1994) and compare it to the JSE's ALSI total return index (J203T). Since the J203T was only launched in 2003, the JSE's backward constructed J203T for 10 years prior was used. The style engine's data from the reconstructed index closely tracked the



J203T, confirming a robust data sample.

- Testing the methodology by selecting the top 160 shares but randomising the ranking of the sample for each quarter by creating a style score of random numbers and ranking them. Muller and Ward (2013)'s randomised portfolio analysis confirmed that there was no graphical separation between the portfolios, and therefore no pre-existing bias would affect the study.

## 2.10 Limitations

The research limitations of this study were as follows:

- The ESG scorecard may hold too many variables within it that when aggregated into one score as a proxy of ESG per company may not yield anything useful other than a disclosure and therefore transparency percentage. It would have been prudent to consider breaking the ESG score down into its metrics and performing a style analysis based on a particular metric or theme/group of metrics. Unfortunately, only an aggregate ESG score was available from the independent stock broker and therefore a breakdown of the ESG metrics was available.
- The short period for which the ESG scorecards can be obtained. This is still a relatively new field, especially in South Africa, and to therefore get reliable historical data for more than 10 years is nigh impossible. The Integrated Reporting, Global Reporting Initiative and therefore ESG and sustainability standards are still finding searching for globally applicable and acceptable standards and are also still evolving. This may then cause difficulty in the time period being unable to exclude for unusual or short-term market factors that may have affected the analysis. Zikmund (2003) suggests that a longer timeframe is required to ensure differentiation between temporary and permanent changes on the dependent variable.
- The envisaged method of analysis is to mix industries through the population sample. It may be prudent here to consider doing an analysis by sector rather than top 160 or top 100; or at least sectoral analysis within the top 100 equities by market capitalisation.
- This study did not consider other financial performance measures other than the cumulative share and dividend returns. It may have yielded different results if other financial performance measures such as net profit margin, return on equity or

return on assets were used (Rambajan, 2010).

- The researcher was constrained by time and would have preferred to perform an audit on the data received from the ESG scorecard data source by ensuring that through alternative sources (primary scanning of the published sustainability report data) the data was robust. The researcher would then also have been better equipped to rebalance the ESG portfolios more accurately based on when the most up-to-date companies' respective integrated reports, and therefore ESG data was published and available. An appropriate 'look ahead bias' period would be used to adjust the reflection in share prices of publicised annual integrated reports (Muller and Ward, 2013).

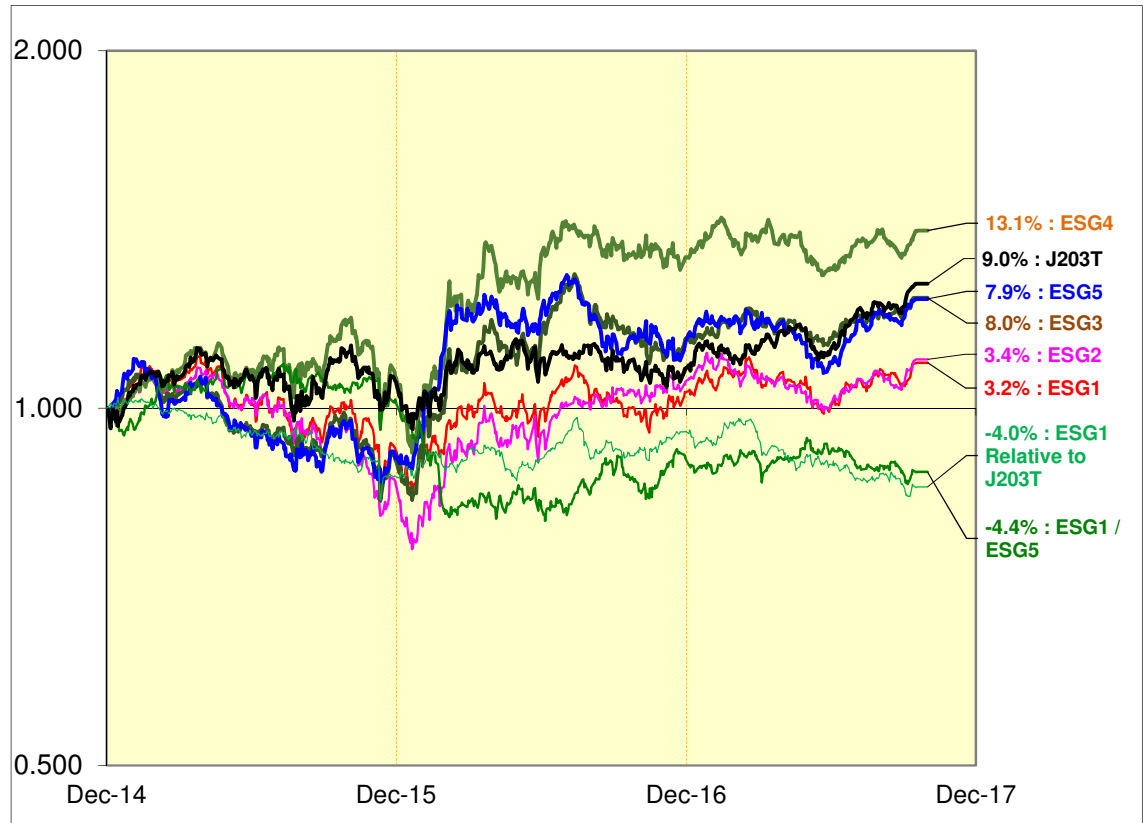
### 2.11 Research ethics

Due to one of the ESG scorecards being obtained from an existing independent stock broker, where the scorecards are intellectual property used for business enterprise; the researcher will sign non-disclosure agreements as necessary after the university's ethics approval process. Where compromises are necessary to ensure that the organisation wishes not to disclose proprietary information, the researcher will have to use what is available and not comment on information that is not in the researcher's possession.

Either way, confidentiality of the data from the third party was maintained by omitting identifiable information as required and the organisations' identity remained anonymous.

### 3. RESULTS

Figure 1: Graphical Time-Series of ESG Disclosure Style



#### 3.1 Research Question One and Hypothesis One

The graphical time-series plot in Figure 1 of the cumulative portfolio returns enables us to observe that the order of the ESG portfolio quintiles do not have a linear order. Hence the highest ranked ESG portfolio quintile does not show consistent superior returns compared to the other ESG portfolio quintiles. In fact, the highest performing quintile was ESG portfolio four with a compound annual growth rate (CAGR) of 13.1%.

The remaining order of the quintile performances was ESG portfolios five, three, two and one with CAGR's as per Table 2. The aggregate median ESG disclosure score for ESG portfolio quintile four was 35.89%. This implies that the fourth worst ESG disclosure score was the best performing portfolio.

Table 2: Descriptive Statistics of lognormal returns for ESG portfolios

Portfolio	N	Minimum	Maximum	Sum	Mean	Std. Deviation	CAGR
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	
ESG1	697	-0.0694	0.0382	0.0869	0.000125	0.0101857	3.2%
ESG2	697	-0.0472	0.0341	0.0945	0.000136	0.0099561	3.4%
ESG3	697	-0.0356	0.0563	0.2131	0.000306	0.0098862	8.0%
ESG4	697	-0.0520	0.0651	0.3435	0.000493	0.0115096	<b>13.1%</b>
ESG5	697	-0.0410	0.0395	0.2121	0.000304	0.0098746	7.9%
J203T	697	-0.0362	0.0306	0.2407	0.000345	0.0096380	<b>9.0%</b>

There were 697 lognormal daily returns for the portfolios over the period from 2 January 2015 to 16 October 2017 that were analysed. The Wilcoxon signed-rank test results for research question one are shown in Table 3 below. Since the p-values for each related pair test within portfolios all yielded values above 0.05, the result of the Wilcoxon signed-rank test fails to reject the Null hypothesis. This means that there was no statistical difference between the portfolios, or put differently, they are statistically equal at a 5% level of significance. The closest portfolio pair statistically at 24.2% was the ESG portfolios two and four. This can be seen visually on the graphical time-series plot in Figure 1.

Table 3: Portfolio Results for Wilcoxon Signed-Rank Test - ESG related pairs test

The median of differences between related pairs:		Distribution Symmetrical	Wilcoxon signed-rank test	
			Std Test Statistic	p-value
ESG2	ESG4	Yes	1.171	<b>0.242</b>
ESG1	ESG4	Yes	0.915	<b>0.360</b>
ESG4	ESG5	Yes	-0.676	0.499
ESG1	ESG3	Yes	0.580	0.562
ESG3	ESG4	Yes	0.535	0.593
ESG2	ESG3	Yes	0.482	0.629
ESG3	ESG5	Yes	-0.136	0.892
ESG2	ESG5	Yes	0.101	0.920
ESG1	ESG5	Yes	0.062	0.951
ESG1	ESG2	Yes	0.028	0.978

### 3.2 Research Question Two and Hypothesis Two

Figure 1 shows that the highest ranked ESG portfolio quintile does not show superior performance compared to the market portfolio, the J203T. The market portfolio had a CAGR of 9.0% compared to ESG portfolio quintile one which had 3.2%. Visually from Figure 1 it can be seen that ESG portfolio quintile four had the superior return compared to the market portfolio with the spread between them at 4.1%.

The Wilcoxon signed-rank test results for research question two are shown in Table 4 below. Since the p-values for each related pair test within portfolios all yielded values above 0.05, the result of the Wilcoxon signed-rank test fails to reject the Null hypothesis. This means that there was no statistical difference between any of the ESG portfolios and the J203T market portfolio at the 5% level of significance.

Table 4: Portfolio Results for Wilcoxon Signed-Rank Test - ESG to J203T related pair

The median of differences between related pairs:		Distribution Symmetrical	Wilcoxon signed-rank test	
			Std Test Statistic	p-value
ESG5	J203T	Yes	-0.620	0.536
ESG2	J203T	Yes	0.581	0.561
ESG3	J203T	Yes	0.503	0.615
ESG4	J203T	Yes	-0.380	0.704
ESG1	J203T	Yes	0.334	0.738

### 3.3 Research Question Three

Visually it can be seen that the cumulative returns performance of ESG portfolio quintile one is below the ESG portfolio quintile five in Figure 1. The price relative gradient of ESG portfolio quintile one divided by ESG portfolio quintile five illustrates predominantly a negative gradient with a negative 4.2% difference in returns. Visually from Figure 1 it can be seen that initially there was a positive difference in returns from December 2014 to December 2015 and the price relative plot was close to the market portfolio. After December 2015, the price relative uncouples from the market portfolio and stays relatively flat which indicates that there was no persistence or out-performance of ESG portfolio quintile one versus five. It is notable that the spread between the best performing portfolio's (quintile four) cumulative returns and the worst performing portfolio (quintile one) is 9.9%; and their respective aggregate median ESG disclosure scores were 35.89% and 57.98% respectively.

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## Appendix 1: Ethical Clearance Letter

**Gordon  
Institute  
of Business  
Science**  
University  
of Pretoria

23 August 2017

Dakshesh Naik

Dear Dakshesh,

*Please be advised that your application for Ethical Clearance has been approved.*

*You are therefore allowed to continue collecting your data.*

*We wish you everything of the best for the rest of the project.*

*Kind Regards*

GIBS MBA Research Ethical Clearance Committee

## Appendix 2: Full ESG Disclosure Metrics from independent stock broker

<b>FULL ESG DISCLOSURE METRICS</b>	
<b>No.</b>	<b>Environmental metrics</b>
1	Environmental disclosure
2	Environmental policy
3	Designated director responsible for env issues
4	Subscribe to Equator Principles
5	Environmental targets disclosed
6	Performance measured against targets
7	Environmental supply chain policy
8	Green building policy
9	Waste policy
10	Water policy
11	Climate change policy
12	Recent environmental fines
13	Environmental training costs & donations to rev.
14	GHG per revenue
15	Energy usage to revenue
16	Water usage per revenue
17	Percentage of water recycled
18	Paper recycled
	<b>Social metrics</b>
19	Social disclosure
20	Social procurement policy
21	Health and safety policy
22	Fair remuneration policy
23	Human development policy
24	Human rights policy
25	Business ethics policy re. bribery
26	Whistle blower policy
27	Business ethics re. sensitive countries
28	Community/social spending to revenue
29	Payroll cost per average no. of employees
30	CEO total comp to average comp per employee

31	Percentage of contract to total workforce
32	Unionisation and collective bargaining permitted
33	Percentage of unionised employees
34	Health and safety programs and targets disclosed
35	Health costs to operating costs
36	Female board members to total board members
37	Female managers to total managers
38	Female employees to total workforce
39	BBEE or BEE ownership percentage
40	BEE rating
41	PDI managers to total managers
42	PDI employees to workforce
43	Employees with disabilities to workforce
44	Time lost (work days)
45	Fatalities per 1000 employees
46	LTIFR
47	Training costs to operating costs
48	Employee turnover ratio
49	BBEE procurement to total procurement costs
	<b>Governance metrics</b>
50	Governance Disclosure
51	Controlling shareholder?
52	Independent chairperson
53	Independent directors to total directors
54	Non-exec to total directors
55	Audit fees to operating costs
56	Non-audit fees to audit fees
57	Tenure of auditors
58	Independent directors to total audit comm
59	Independent directors to nomination comm members
60	Independent directors to remuneration comm
61	CEO comp to total remuneration
62	Executive comp to total remuneration
63	Executive claw back provisions
64	Golden handshakes/parachutes policy

65	CEO share-based comp. to total compensation
66	Board meeting attendance percentage
67	Board election period
68	Multiple classes of shares Y/N
69	Board Size
70	Loans given to executives
71	Executive share based to total comp