

**Gordon Institute
of Business Science**
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**The association between integrated reporting
and company financial performance:
A graphical time-series approach**

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Abstract

This aim of this research is to examine the association between integrated reports and company financial performance in the context of the mandatory introduction of integrated reporting on the Johannesburg Stock Exchange. The focus of this research was ascertain whether the differences in the quality of integrated reports will be associated with share returns. Empirical studies conducted on this emerging field of company disclosure pointed to an association between the differences in the quality of integrated reports and share returns. The research employed the investment style engine analysis to examine the association between integrated report scores and share returns of the top 40 JSE listed companies for the period 2012 to 2017. Integrated report scores are determined using the International Integrated Reporting Framework. The results found that there is no association between the differences in the quality of integrated reports and share returns. These results contradict the literature reviewed and indicate that the introduction of integrated reporting is not rewarded by investors. Consequently, it is advisable not to use integrated reports as an investment style.

Keywords

Integrated Reports

International Integrated Reporting Framework

Company 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.

Signed: Vusumuzi Dube

Date

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1. Introduction To Research Problem

1.1 Background

In a market based economy, companies play a substantial role in contributing to economic growth, employment creation and technological developments. In the fulfilment of this role, companies need to raise funds to invest in productive assets. The two main sources of funds available to companies are debt and equity. Debt funding is raised by companies from financial institutions such as banks, whereas, equity funding is raised from shareholders, referred to in this report as investors. Typically, companies that are listed on stock exchanges have many investors, often spanning across different countries, which makes communication between companies and investors rather complex. Despite this complexities, it is essential for companies to maintain effective communication channels between themselves and investors. This will facilitate a healthy relationship between companies and investors and help to keep the funding sources open.

Companies therefore, need to perpetually provide investors with relevant and appropriate information which can be used by investors to analyse past performance and assess future prospects. Companies achieve this through the provision of annual reports. Respectively, these reports act as an important medium through which companies and investors interact in the economy.

Various other key stakeholders, such as governments, communities, and non-governmental organisations, also rely on company annual reports to gather details needed to monitor company's behaviour in the economy. Therefore, not only are company annual reports important to investors, they are equally important to all the other stakeholders that are interested in the conduct of companies. It is not surprising then that over time, companies, particularly publicly listed companies, have been under increasing pressure to improve the level and quality of communication to all stakeholders. As stated by Miller and Skinner (2015), the manner in which companies communicate their conduct and performance has significant influence on stakeholders. This has led to calls, mostly from investors, for improvements in the quality of annual reports and in the manner in which companies communicate.

Investors use annual reports provided by companies to make capital allocation decisions (Zhou, Simnett, & Green, 2017). These annual reports serve as a critical tool used by investors and companies to compete for funding. Hence, companies spend a significant amount of time designing their communication plan as this has a bearing on financial performance (Miller & Skinner, 2015).

Nevertheless, the conventional annual reports that companies produce have been criticised for not providing the relevant and complete information required by investors who seek to assess historical performance and future prospects of a company (Bernardi & Stark, 2016; Dumay, Bernardi, Guthrie & Demartini, 2016; Lee & Yeo, 2016). The level and quality of information contained in these reports has been regarded as inadequate (Cohen, Holder-Webb, Nath, & Wood, 2012), and not timely in presenting the financial performance (Lee & Yeo, 2016).

The major criticism of conventional company annual reports is that they are fundamentally designed to communicate financial information which is historical in nature (Cohen et al., 2012). Often, these reports hardly contain non-financial information and furthermore, they fail to adequately communicate any other additional information which may be deemed important when analysing future prospects of companies (Bernardi & Stark, 2016). Consequently, there has been increasing pressure for companies to improve their quality of reporting by including non-financial information in their annual reports. Cohen et al. (2012) stated that the importance and usefulness of non-financial information has been growing stronger over the past several decades. In a survey of various executives of large international companies, it was revealed that non-financial information is viewed as more important than financial information when evaluating company's long-term future (Cohen et al., 2012).

Accordingly, there have been demands from investors for companies to produce reports which also contain non-financial information that must include environmental, social and governance metrics (Bernardi & Stark, 2016). In response to these demands, the reporting regime has been evolving (Melloni, Caglio, & Perego, 2017) and increasingly, companies have been voluntarily reporting supplementary

information (Dumay et al., 2016) which included sustainability information such as environmental, social and governance metrics (Cheng, Green, & Ko, 2015). This is confirmed by Cohen et al. (2012) who stated that the changing information needs of investors has resulted in the enhanced quantity of non-financial information provided by companies. This has been observed by de Villiers, Rinaldi and Unerman (2014), Stubbs and Higgins (2014), who mentioned that the level of reporting of non-financial information has increased.

However, unlike financial information, which is mainly reported through conventional annual reports, de Villiers et al. (2014), Bernardi and Stark (2016) found that the non-financial information has been reported in separate company reports. Consequently, this has created further problems, especially for investors. These separate company reports that are used to convey non-financial information, have tended to be “cluttered”, lengthy, and complicated, and they also fail to relate this information with financial information that is reported in conventional annual reports (Bernardi & Stark, 2016; de Villiers et al., 2014; Lee & Yeo, 2016; Melloni et al., 2017; Zhou et al., 2017).

This observed disconnect between financial information and non-financial information contained in different company reports, makes it difficult for investors to competently assess past performance and future prospects of companies. This dichotomy led to the initiation of efforts to address this problem and to find alternative company reporting formats that will present all relevant information in a comprehensive manner. The outcome of these efforts have led to the concept of integrated reporting and the invention of an integrated report (Bernardi & Stark, 2016; de Villiers et al., 2014). The rationale of an integrated report is “to provide concise and holistic information” in a manner that interrelates the financial and non-financial aspect of the company’s operating environment (Adams, 2015; Baboukardos & Rimmel, 2016; Bernardi & Stark, 2016; Cheng et al., 2015; Cohen et al., 2012; de Villiers et al., 2014; Flower, 2015; Higgins, Stubbs, & Love, 2014; International Integrated Reporting Council, 2013; Lee & Yeo, 2016; Lodhia, 2015; Melloni et al., 2017; Stubbs & Higgins, 2014; Zhou et al., 2017).

Such integration would allow for better appraisal of the company’s past results and its future outlook. Whilst the integrated report will be useful to all company stakeholders,

the International Integrated Reporting Council (IIRC) (2013), specifically stated that the objective of integrated reporting is to “improve the quality of information available to providers of financial capital to enable a more efficient and productive allocation of capital” (p. 2). Thus, according to IIRC (2013), the main audience of integrated reporting are those stakeholders that contribute funding such as investors and banks.

Thus, in line with the view expressed by the IIRC, it is anticipated therefore that, if integrated reporting enhances the quality of the information to investors, then there should be economic benefits to companies producing integrated reports (Lee & Yeo, 2016). In studies conducted by Barth, Cahan, Chen and Venter (2017), Lee and Yeo (2016), and Zhou et al. (2017) it was demonstrated that there is a connection between integrated reporting and company financial outcomes. Furthermore, according to studies conducted by Bernardi and Stark (2016), Baboukardos and Rimmel (2016), Cheng et al. (2015), Cohen et al. (2012) and Qiu, Shaukat and Tharyan (2016) integrated reporting benefits investors and is also associated with company financial performance.

This research therefore, seeks to understand whether investors place any prominence on companies which produce better quality integrated reports. Moreover, the researcher aims to contribute to the contemporary view that integrated reporting is advantageous to both companies and investors. This research also hopes to undertake an empirical analysis of Johannesburg Stock Exchange (JSE) listed companies in order to ascertain whether higher-quality integrated reports can be an indicator of company financial outcome in terms of share returns. Therefore, this research seeks to gain more insights into the association of integrated reports and company financial performance.

1.2 Research Motivation

The significance of gaining further insights into the association between integrated reports and company financial performance is critical for economic growth. In order to contribute to economic growth, companies need to attract capital to invest into productive capacity expansion. Companies raise this capital from investors and as such, credible communication with investors is paramount. Consequently, companies

produce annual reports which are used by investors to make investment decisions. Accordingly, it is important for companies to provide investors with the required quality information to assist them in the formulation of investment decisions.

Thus, if this research is able to establish an association between integrated reports and company financial performance, then this may encourage more companies to produce high-quality integrated reports with the aim of improving their financial performance. Financial investments into companies play a crucial role in assuaging unemployment, advance innovation and technology, promote entrepreneurship and contribute to tax revenues (Sarkar, 2012).

Companies contribute to economic growth, advance the social development of citizens and increase global trade of goods and services. The Organisation for Economic Co-operation and Development (2012) stated that companies play a critical role in economic development of countries, and they achieve this by investing in innovation. It is therefore important that companies continue to be profitable and sustainable, and that their ability to attract investors is enhanced.

This is important for companies to be able to access funding from investors. Hence, if integrated reporting is associated with company financial performance, then it can lead to enhanced investor appetite and facilitate investments which will result in companies investing in capacity expansions that will result in economic growth.

Companies are important participants in the capitalist system which is regarded by Porter and Kramer (2011), as the medium for satisfying human needs, increasing prosperity, enhancing productivity and creating employment. Companies accomplish their role in the capitalist system by raising capital from investors for investments in productive capacity. Therefore, it is important that communication between companies and investors is improved to facilitate the flow of investments and economic activity.

1.3 Past Research

This topic is still new and has not been extensively researched by scholars. Studies conducted by de Villiers et al. (2014) and Dumay et al. (2016) presented the background and history of integrated reporting and provided a synopsis on the concept of integrated reports. According to Brown and Dillard (2014) and de Villiers et al. (2014), while integrated reporting is an emerging field, the practice of reporting non-financial information, including environmental and social metrics, have been around for many years. However, Brown and Dillard (2014) argued that narrowing the scope of integrated reports to focus mostly on investors, may limit the potential that integrated reports may have in fulfilling the information needs of all stakeholders, other than just investors.

In other studies wherein the scholars investigated the disclosure of non-financial information, such as disclosure of environmental, social and governance metrics, it was demonstrated that disclosing non-financial information has positive economic effects for the disclosing companies (Bernardi & Stark, 2016; Cheng et al., 2015; Qiu et al., 2016). Bernardi and Stark (2016) found that the association between environmental, social and governance metrics and financial performance was stronger after the mandatory introduction of integrated reporting in listed companies on the JSE. Cheng et al. (2015) argued that linking the strategy of the company with environmental, social and governance disclosures, in line with the principles of integrated reporting, can significantly enhance the investment activity. Intriguingly, Qiu et al. (2016) in their study, found an association between social parameters and company valuation, but did not find an association between environmental parameters and company valuation.

Various other studies investigated the link between non-financial disclosures and company financial performance by studying the economic consequences of corporate social responsibility reporting on company financial performance (Dhaliwal, Li, Tsang, & Yang, 2014; Dhaliwal, Radhakrishnan, Tsang, & Yang, 2012). According to these studies, there were positive economic effects on companies as a result of social responsibility reporting.

Nonetheless, there have been limited studies specifically investigating the association between integrated reports and company financial performance. From the literature search conducted, three studies were found (Barth et al., 2017; Lee & Yeo, 2016; Zhou et al., 2017) which investigated the association of integrated reports and company financial performance.

Lee and Yeo (2016) investigated the association between integrated reports and company financial performance by studying the differences in the quality of integrated reports and company valuation. They used a self-designed integrated report rating scorecard to determine the quality of integrated reports of JSE listed companies. In their study, Tobin's Q was used as a proxy for company financial performance. Lee and Yeo (2016) found that there is a correlation between high-quality integrated reports and company financial performance.

Their finding was supported by Zhou et al. (2017) who found that integrated reports have a positive impact on capital markets, based on their study of the differences in the quality of integrated reports and their impact on capital markets. They used the improvements in analysts' projections accuracy and the reduction in the costs of equity capital as proxy for capital market effects. Barth et al. (2017) also found a positive association between the differences in the quality of integrated reports and company financial performance.

1.4 Research Objectives

The objective of this research is to investigate whether there is an association between the differences in the quality of integrated reports and company financial performance of JSE listed companies. JSE companies are required to produce integrated reports annually and to disclose both financial and non-financial information. Although it is a requirement for JSE listed companies to produce integrated reports, it is expected that there will be differences in the quality of reports produced. JSE listed companies have flexibility in the compilation of their integrated reports. This is as a consequence of the "apply or explain" principle (Dumay et al., 2016; Flower, 2015; Lee & Yeo, 2016; Zhou et al., 2017). It is thus expected that there

will be differences in the quality of integrated reports produced as a consequence of this principle.

It is on this basis that the objective of this research is to investigate whether companies that produce higher-quality integrated reports will outperform companies that produce lower-quality integrated reports. It is not the objective of this research to prove causality. Proving causality between integrated reports and company financial performance will be tenuous due a number of external variables that cannot be factored in this research, which may results in problems regarding endogeneity (Taljaard, Ward & Muller, 2015).

1.5 Research Scope

The integrated reports of the top 40 JSE listed companies by market capitalisation will be analysed, rated and ranked according to their quality, using the guidelines of the IIRC Framework to rate report quality. The research will cover the period 2012 to 2017. This is the period that a vast majority of JSE listed companies produced integrated reports after it became a listing requirement in 2011. Share returns will be used as proxy for company financial performance.

Previous studies that investigated the association between integrated reports and company financial performance used narrow data sets which were limited to three years. This research will use a much wider data set spanning across the years 2012 to 2017 and a more robust methodology to test for association between integrated reports and company financial performance will be employed.

1.6 Research Expectations

It is expected that JSE listed companies, which are the target of this research, will have different quality integrated reports, measured in terms of their compliance with the IIRC Framework. This is as a consequence of the discretion that is afforded to JSE listed companies with regards to compiling integrated reports. Compilation of integrated reports is governed by the “apply or explain” principle, which allows for flexibility on how these reports are compiled.

Previous studies conducted on the association between integrated reports and company financial performance, found that companies that produced higher-quality integrated reports outperformed those that produced lower-quality integrated reports. It is thus expected, in accordance with these previous studies, that by using a different methodology, companies that produced higher-quality integrated reports will outperform those that produced lower-quality integrated reports. While previous studies used regression techniques to test for association, this research will utilise a much more enhanced methodology and longer time-series data to test, in a much more reliable approach, for association between integrated reports and company financial performance.

2. Literature Review

2.1 Purpose of Company Annual Reports

According to Healy and Palepu (2001), company communication serves a critical purpose to facilitate or influence the interaction between companies and investors. Companies, particularly publicly listed ones, communicate with investors and other stakeholders by generating their respective annual reports. This communication is crucial to develop the interactions between companies and investors.

Companies need capital to grow, which is generally sourced from investors. Since publicly listed companies have a large investor base spanning across different countries, their annual reports are the most fundamental medium for communication. Thus, existing and potential investors rely upon company annual reports to formulate investment decisions, hold management accountable, monitor company performance and to discourage inappropriate management behaviour (Barth, Konchitchki, & Landman, 2013; Beyer, Cohen, Lys & Walther, 2010; Bonaime, 2015; Ertugrul, Lei, Qiu, & Wan, 2017; Healy & Palepu, 2001; Lawrence, 2013; Zhou et al., 2017).

According to Healy and Palepu (2001) and Zhou et al. (2017), one of the difficulties faced in any economy is the efficient allocation of financial resources from investors to companies. There are certain mechanisms and tools employed by investors to differentiate between a viable set of opportunities and the unviable ones. The availability of annual reports solve this problem by providing relevant information to investors through regular company disclosures. Thus, company annual reports play a critical role in facilitating transactions between companies and investors and also support economic activity by providing regular and relevant information to existing and potential investors.

Company annual reports contain critical financial information which relates to the financial performance of the company. According to Beyer et al. (2010) and Lawrence (2013), this financial information is used by investors to review their investment's returns and to also assess future financial prospects of the company. Investors invest to earn a return on their capital, thus, annual reports provide financial information

required by investors to determine their returns on capital and to make decisions whether to continue investing or liquidate their investments.

This view is supported by Lawrence (2013), who found that individual investors, other than institutional investors such as pension funds, also use financial information provided in the annual reports to decide upon their investment decisions. This dispels the view that individual investors tend to rely on market analysts' reports to make such decisions (Lawrence, 2013). Thus, it is not only large institutional investors who use company annual reports, individual investors also use them for their respective investment decisions.

It is also mentioned from literature that companies use annual reports to communicate to investors when aiming to raise capital. Therefore, it can be concluded that there are economic benefits to companies in producing annual reports and disclosing relevant information to investors. According to Beyer et al. (2010), voluntary company disclosure has more economic benefits than mandatory disclosure. This is supported by Lawrence (2013) who concluded that the number of individual investors is higher in companies that voluntarily provide high-quality information in their reports.

Within the South African context, all companies listed on the JSE are required to issue company annual reports within three-months from the end of their financial year (JSE, n.d.). According to the JSE (n.d.), the company annual report must be prepared in congruence with the acceptable reporting standards and must show the performance of the company along with its future prospects.

According to South African legislation, the governing law that regulates the reporting of companies is the "Companies Act No. 71 of 2008 (the Company Act), including amendments imposed by the Companies Amendment Act, 2011 (the Amendment Act), and the Companies Regulations, 2011, (the Regulations)" (PWC, 2011). According to PWC (2011), the Company Act requires companies to compile and release an annual report within six months from the end of the company's financial year, a slightly longer period than required by the JSE. The company annual report must include financial statements and any other relevant financial information (PWC, 2011).

The discussions above highlight the importance of company annual reports, their intended purpose and their critical role in the facilitation of communication and transactions between companies and investors and also in enhancing the incurred economic benefits.

2.2 Limitations of Company Annual Reports

Certain limitations have been identified by the scholars in the context of annual reports. A number of scholars have criticised company annual reports, arguing that these reports focus solely on financial information which mostly provides historical performance, without presenting a consolidated picture of the company (Bernardi & Stark, 2016; Beck, Dumay, & Frost, 2017; Cohen et al., 2012; Lee & Yeo, 2016). Cohen et al. (2012) further asserted that since conventional company annual reports present the historical performance of the company, they do not link the value of the company's assets with their future potential. Thus, this significantly limit the role of annual reports by not presenting a holistic overview of the company.

As a result of these shortcomings of company annual reports, there have been increasing pressure on companies to improve the level of information contained in their annual reports. Bernardi and Stark (2016) mentioned that there has been requests for improving the reporting and provision of additional information which would be relevant when assessing the performance of the company and its future prospects. Therefore, considering the shortcomings of conventional company annual reports, which focus mostly on historical financial information, the question then arises as to which other additional information will be relevant to investors (Cohen et al., 2012).

2.3 Reporting of Non-financial Information

There have been extensive studies by scholars that demonstrated the importance of additional non-financial information required by investors. The reporting of non-financial information, on top of the reporting of financial information, provides incremental value to the reporting company as the non-financial information is

perceived to be valuable by investors (Beck et al., 2017; Cohen et al., 2012; Dhaliwal et al., 2012; Ferguson & Pundrich, 2015). This is confirmed by Ferguson and Pundrich (2015), who argued that the reporting of non-financial information leads to economic benefits.

If the disclosure of non-financial information in company reporting is indeed incrementally valuable, which non-financial information is then valuable to investors? In addressing this question, the literature reviewed revealed that reporting of corporate social responsibility information has a positive association with company financial performance. According to Dhaliwal et al. (2012), companies that have a decent record of corporate social responsibility, achieve better reception from investors and also attract lower cost of equity capital. This is owing to corporate social responsibility information being perceived by investors as valuable. Information such as climate change, employees' well-being, community engagement and environmental management practices constitute the information provided within the realm of corporate social responsibility that has the potential to impact company valuations (Dhaliwal et al., 2014).

Gao, Dong, Ni and Fu (2016) found that companies that produce higher-quality corporate social responsibility reports, are rewarded by investors in the form of better pricing on interest-bearing loans, wider exposure by market analysts and higher share returns. However, the findings of their study revealed that such economic benefits are associated with companies with excellent corporate social responsibility performance than those with poor or average performance. Likewise, according to Cheng, Ioannou and Serafeim (2014), the economic rewards from investors can be attributed to good corporate social responsibility performance rather than just mere disclosure.

These findings by Gao et al. (2016) suggested that the inclusion of corporate social responsibility in the annual company reports provide valuable information to investors, and thus, is deemed as useful by investors. Likewise, Cheng, Ioannou et al. (2014) also argued that companies that disclose their corporate social responsibility programs have easier access to funding which allows them to invest in strategic projects that result in higher share performance. Consequently, the disclosure of

corporate social responsibility information is perceived by both companies and investors as resulting in economic benefits.

The study conducted by de Villiers and Marques (2016) confirmed this view when they found that companies that reported more corporate social responsibility information outperformed those that reported less corporate social responsibility information. In the same study, de Villiers and Marques (2016) further posited that this outcome was more prominent in states with sophisticated levels of “democracy, government effectiveness, regulatory quality and press freedom”. This meant that the disclosure of non-financial information, such as corporate social responsibility information, matters more to investors in countries that espouses these characteristics (de Villiers and Marques, 2016).

It is clear from the literature that the reporting of corporate social responsibility information by companies matters to investors and results in economic benefits for the disclosing companies. While the literature reviewed above focussed mainly on corporate social responsibility information, Cohen et al. (2012), found that the reporting of other non-financial information such as “market shares, customer satisfaction, quality rankings, employee satisfaction, turnover and innovation” has been growing and is perceived positively by investors.

Therefore, the scholars from the literature reviewed have demonstrated that the reporting of non-financial information by companies in the form of corporate social responsibility is valuable to investors and that the companies disclosing such information accrued economic benefits from the capital markets. However, the term corporate social responsibility, is broad and it may be useful to understand which corporate social responsibility information is perceived as more valuable by investors. To address this question, extensive literature review was conducted within this field to understand the various aspects of corporate social responsibility that are considered valuable by investors and are related to company financial performance.

According to Qiu et al. (2016), the number of companies reporting environmental and social metrics have been increasing over the past few decades. This implied that company management believed that the disclosure of non-financial information,

specifically environmental and social information, is important for the long-term sustainability of companies. In their study, Qiu et al. (2016) found that companies with a good history of profitability seem to have increased their level of reporting of social parameters. Though the study was unable to ascertain the increase in economic benefits as a result of enhanced levels of social disclosures, they found that profitable companies find it critical to increase their level of communication with investors, by increasing the level of reporting on social parameters.

The studies by Adams, Potter, Singh and York (2016) and Qui et al. (2016) found that increased levels of social disclosures were associated with company financial performance, in terms of increased company valuations. These findings suggested that investors find such reporting to be relevant in assessing future economic prospects of companies. However, Qui et al. (2016) failed to establish a relationship between the reporting of environmental metrics and the economic benefits gained by companies. This contradicted the findings of other scholars who found that the reporting of environmental metrics were associated with company financial performance, with regards to share price performance (Bernardi & Stark, 2016; Clarkson, Fang, Li, & Richardson, 2013; Matsumura, Prakash, & Vera-Munoz, 2014).

Clarkson et al. (2013) stated that companies use the reporting of environmental metrics to appeal to investors who resonate with environmental issues, and to differentiate themselves from companies with poor environmental performance. Bernardi and Stark (2016) found that enhanced environmental reporting improves the accuracy of analysts' forecasts, which can result in better financial performance for the disclosing company. These findings from the literature support the contention that the inclusion of non-financial information in the reporting regime of companies is valuable to investors and will result in economic benefits for companies.

Matsumura et al. (2014) found that over the past few years, investors' interest in the issues of climate change has been increasing. As an increasing number of investors become concerned with environmental issues, such as carbon emissions, it is argued that companies that improve the reporting of their performance around these metrics will be rewarded by investors (Matsumura et al., 2014). This type of non-financial information has been increasing in importance as many investors perceive such

information to be relevant. Consequently, by including non-financial information, such as environmental metrics in their annual reports, companies will derive economic benefits, as investors find this information to be valuable and necessary for assessing future financial prospects of companies.

However, it should be noted that this reporting of non-financial information, such as environmental, social and governance metrics, has been done by companies for many years (Beck et al., 2017; Brown & Dillard, 2014; de Villiers et al., 2014; Dumay et al., 2016; Higgins, et al., 2014; Stubbs & Higgins, 2014). According to de Villiers et al. (2014), companies have been reporting this type of non-financial information in their conventional company annual reports. However, over time, the reporting of this information was transferred to separate, independent company reports (de Villiers et al., 2014).

This trend however, has not been perceived as optimally useful to investors. The shortcomings of separate, independent company reports are considered to include lack of connection between these reports and company performance, strategy, and its potential for future value creation (Adams et al., 2016; Beck et al., 2017; Bernardi & Stark, 2016; de Villiers et al., 2014; Lee & Yeo, 2016; Lodhia, 2015; Maniora, 2017; Melloni et al., 2017; Zhou et al., 2017).

Even though most scholars found that there is value in the inclusion of non-financial information, together with financial information as part of the company's annual reports, Zhou et al. (2017) argued that if the non-financial information and financial information is not reported in an integrated manner, the value to investors is limited. It will be difficult for investors to analyse the non-financial and financial information when it is reported in separate reports that are not linked to each other or to company performance (Zhou et al., 2017).

Thus, these shortcomings required to be addressed. Towards this end, there was a need to find a reporting solution that would allow companies to report financial and non-financial information in a manner that is connected to each other and to company performance (Cheng, Green, Conradie, Konishi, & Romi, 2014).

The reporting solution that emerged to address these shortcomings was referred to as integrated reporting (de Villiers et al., 2014; Dumay et al., 2016; Lee & Yeo, 2016; Melloni et al., 2017). The practice of integrated reporting emerged to consolidate the disclosure of financial and non-financial information in a single report that connects this information to each other and to company value creation (de Villiers et al., 2014). Higgins et al. (2014), Stubbs and Higgins (2014), alluded that integrated reporting goes beyond the combination of financial and non-financial data into a consolidated report, it also creates a new international reporting regime that enhances the disclosure of how companies use their operating environment to create value over time.

2.4 Background to Integrated Reporting

Melloni et al., (2017) concurred with the view that the main objective of integrated reporting is to consolidate the reporting of all information into a single report that presents the company's value creation ability. The practice of integrated reporting was formally institutionalised in 2010 when the Prince's Accounting for Sustainability Project (A4S) and the Global Reporting Initiative (GRI) founded the International Integrated Reporting Council (IIRC) that was tasked with the development of an internationally acceptable Integrated Reporting Framework (Framework) that will guide the compilation of integrated reports produced by companies (Baboukardos & Rimmel, 2016; Flower, 2015).

The IIRC is a coalition of various international accounting and auditing organisations, stock exchange regulators, senior executives of multi-national companies and members of the A4S and GRI (Flower, 2015). The fundamental aim of establishing the IIRC was to develop the Framework that will contain standards and guidelines on how information can be combined into a single report by companies, which is known as integrated report. It was expected that the integrated report will be more valuable to investors than separate reports that present financial and non-financial information in a disjointed manner.

The IIRC developed and released the Framework in December 2013 that contained the principles to guide the compilation of integrated reports by companies

(Baboukardos & Rimmel, 2016). With the release of the Framework, it was expected that companies will adopt the integrated reporting practice and start producing annual reports in the manner recommended by the Framework.

The reporting of information by companies in an integrated manner was projected to expand the quality of information to investors which will result in economic benefits for companies. According to the IIRC (2013), integrated reporting primary aim is to “improve the quality of information available to providers of financial capital to enable a more efficient and productive allocation of capital” (p. 2). As such, the purpose of integrated reporting is to expand the quality of information given by companies to investors. Hence, the compilation of integrated reports by companies is targeted at investors and is aimed at consolidating information in a value-relevant manner than the current practice of conventional annual reports or separate financial and non-financial reports.

As alluded by the IIRC (2013), integrated reports would address the shortcomings of reporting financial and non-financial information in separate reports that are not connected to each other and to company performance. Integrated reports will be able to address these shortcomings, as they will enhance the reporting function of companies and act as critical vehicles of disclosing how a company, within its operating environment, creates wealth for investors (Adams et al., 2016; Baboukardos & Rimmel, 2016; de Villiers et al., 2014; Lodhia, 2015; Melloni et al., 2017; Reuter & Messner, 2015; Stubbs & Higgins, 2014).

The IIRC (2013), defines an integrated report as follows, “an integrated report is a concise communication about how an organisation’s strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term” (p. 7). It is clear from the definition that the IIRC intends to address the shortcomings of conventional company annual reports by advocating for concise integrated reports, as compared to long and bulky conventional annual reports.

To achieve this, the Framework developed by IIRC contains “guiding principles” and “content elements” that seek to guide companies in the compilation of integrated reports (IIRC, 2013).

The Framework, with its guiding principles and content elements, is meant to be a guide for the compilation of integrated reports as it is based on principles rather than a strict code. The IIRC (2013) stated that:

This Framework is principles-based. The intent of the principles-based approach is to strike an appropriate balance between flexibility and prescription that recognises the wide variation in individual circumstances of different organisations while enabling a sufficient degree of comparability across organisations to meet relevant information needs. (p. 7)

It can be deduced from literature that while companies are encouraged to compile integrated reports, as guided by the Framework, companies have some leeway in terms of scope and quality. According to Maniora (2017), Lee and Yeo (2016) and Zhou et al. (2017), it is acknowledged that companies which compile integrated reports have to practice discretion in terms of deciding which matters are critical in the context of their operating environment that should be included in their integrated reports.

The Framework is not rigid in nature but provides specific guidelines to compile integrated reports in the form of the seven guiding principles and eight content elements that give companies some leeway in terms of what they report (Reuter & Messner, 2015). According to Baboukardos and Rimmel (2016), the structure of the integrated report is not important, but rather the content and quality of information provided. It is expected that companies that adopt the integrated reporting format will use their own judgment, guided by the principles and content elements, in compiling integrated reports. It is believed that integrated reports compiled on the basis of the Framework, will address the shortcomings of conventional annual reports (Barth et al., 2017).

2.5 Integrated Reporting in South Africa

South Africa is the first country to take the initiative to decree the introduction of integrated reporting by JSE listed companies. Driven by the corporate governance principles under the auspices of the King Code of Corporate Governance (King III), South Africa mandated JSE listed companies to incorporate integrated reporting in March 2010 (Baboukardos & Rimmel, 2016; Barth et al., 2017; Bernardi & Stark, 2016; de Villiers et al., 2014; Lee & Yeo, 2016; Melloni et al., 2017; Zhou et al., 2017).

South Africa took the initial steps towards integrated reporting in 1994 when the first King code of corporate governance was issued, that encouraged companies to incorporate the disclosure of non-financial information and the practice of social, ethical and environmental principles (Ackers & Eccles, 2015). Over the years, the King code developed into the current version, known as King III. According to Ackers and Eccles (2015), King III is a deliberate effort to encourage South African companies to increase their level of accountability to various stakeholders by reporting both financial and non-financial information. With the release of King III codes in 2009, companies were required to report in an integrated manner, their financial and sustainability performance (Baboukardos & Rimmel, 2016).

Following the release of King III codes in 2010, the JSE required all companies listed on its exchange, to conform to the King III code, which resulted in companies listed on the JSE having to produce integrated reports. However, as mentioned by Ackers and Eccles (2015), even though King III reporting requirements are compulsory for JSE listed companies, the application of the code is on an “apply or explain” basis.

To guide companies into the compilation of integrated reports, the Integrated Reporting Committee of South Africa (IRCSA) was formed (Barth et al., 2017). The IRCSA issued a framework that contained integrated reporting guidelines to assist JSE listed companies in compiling integrated reports. After the release of the IRCSA’s framework in 2010, Bernardi and Stark (2016) mentioned that all JSE listed companies, with financial years ending on February 28, 2011, were required to produce integrated reports. However, it should be noted that the compilation of integrated reports will be done on an “apply or explain” basis, which provides

companies leeway in terms of deciding which information will be included in integrated reports (Bernardi & Stark, 2016).

As a consequence of this principle, the integrated reports of JSE listed companies differed in terms of their scope and quality. Therefore, the reports will be perceived differently by investors in terms of their quality and value. After the release of the IIRC Framework in December 2013, JSE listed companies changed from using the IRCSA's framework and adopted the Framework developed by IIRC as a guide for producing integrated reports (Barth et al., 2017).

2.6 Integrated Reporting and Company Financial Performance

As evidenced by the literature reviewed, a number of scholars concluded that the reporting of financial and non-financial information result in economic benefits for companies. The literature further revealed that the type of non-financial information that investors find most valuable includes environmental, social and governance metrics. With the emergence of the integrated reporting practice, it can be concluded that the economic benefits of reporting company results, are higher when financial and non-financial results are reported in an integrated manner that is linked to company strategy.

Consequently, on the basis of the literature review conducted, it can be expected that there will be an association between integrated reporting and company financial performance. That is because investors are expected to reward companies that compile high-quality integrated reports as opposed to companies that compile low-quality integrated reports. Since integrated reporting is a new practice within the corporate disclosure field, there are limited studies conducted by scholars which examined the value and utility of integrated reports to investors.

In a recent study of JSE listed companies, Bernardi and Stark (2016) investigated the effects of integrated reports on analysts' forecast accuracy. They hypothesised that since integrated reports are meant to connect financial and non-financial information, the link between non-financial information and the precision of analysts' forecast, will increase after the introduction of integrated reporting. In their study, Bernardi and

Stark (2016) used environmental, social and governance (ESG) reporting levels as proxy for non-financial information. They found that there is evidence of an increased link between ESG reporting levels and the precision of analysts' forecast post the introduction of integrated reporting by the JSE. Based on these results, Bernardi and Stark (2016) concluded that the practice of producing integrated reports provides relevant and valuable information to investors, which can result in improved financial performance.

Similarly, the study conducted by Baboukardos and Rimmel (2016), investigated whether the importance of accounting information increased post the introduction of integrated reporting by the JSE. They used earnings and book value of equity as proxies for accounting information tested in their study. They found that there is an interaction between financial and non-financial information as an outcome of linking them in an integrated manner in a single report. They also concluded that there is an improvement in the importance of accounting metrics, such as earnings, post the introduction of integrated reporting. As such, they argued that the linking of accounting metrics with non-financial information, improves the quality of information given to investors as evidenced by the increase in the importance of earnings.

However, they also found that there was a decrease in the importance of equity book value. This decrease in the importance of equity book value can be explained by the possibility that investors may have discounted "unbooked" environmental liabilities from the book value of equity reported in the financial statements. Baboukardos and Rimmel (2016) argued that this possibility is consistent with the objectives of integrated reporting, as investors could have found reliable information about the "unbooked" environmental liabilities from integrated reports, further supporting the importance of integrated reports in linking financial and non-financial information.

Therefore, based on these results, Baboukardos and Rimmel (2016) concluded that the practice of producing integrated reports provides relevant and valuable information to investors. Furthermore, they concluded that financial and non-financial information interacts in line with the objectives of producing a single report that discloses financial and non-financial information in an integrated manner.

The studies by Baboukardos and Rimmel (2016) and Bernardi and Stark (2016), were aimed at investigating the impact of integrated reporting on the quality of information provided to investors, with the intention that if the quality of information is improved, then integrated reporting can result in improvements in company financial performance. This improvement could accrue as a result of investors improving their forecasting accuracy and their understanding of company's strategy.

Whereas the studies by Baboukardos and Rimmel (2016) and Bernardi and Stark (2016) investigated the impact of producing integrated reports, other scholars investigated the difference in the quality of integrated reports produced by JSE listed companies and their association with company financial performance (Barth et al., 2017; Lee & Yeo, 2016; Zhou et al., 2017).

Lee and Yeo (2016) investigated the association between the difference in the quality of integrated reports produced by JSE listed companies between the period 2010 to 2013, and company financial performance. As stated in the literature reviewed, although it is obligatory for JSE listed companies to produce integrated reports, the compilation of integrated reports is done on an "apply or explain" principle ((Dumay et al., 2016; Flower, 2015; Lee & Yeo, 2016; Zhou et al., 2017). It is therefore expected that the scope and quality of integrated reports will differ between companies.

In their study, Lee and Yeo (2016) measured the quality of integrated reports based on their degree of compliance with the IIRC Framework. Towards this end, Lee and Yeo (2016) constructed a self-rating scorecard to measure the degree of compliance of integrated reports with the Framework. Therefore, in their study, Lee and Yeo (2016) investigated whether the differences in the quality of integrated reports influenced company financial performance.

Lee and Yeo (2016) used Tobin's Q as a proxy for company financial performance. They hypothesised that since integrated reports are meant to improve the quality of information to investors, then there should be a positive association between integrated reporting and company valuations as measured by Tobin's Q. Using their self-constructed rating scorecard, integrated reports of a sample of JSE listed companies were rated in terms of their degree of compliance with the Framework.

They found that companies with higher-quality integrated reports outperformed those with lower-quality integrated reports. Consequently, they concluded that there is a positive association between integrated reports and company financial performance, which confirms the view that integrated reports improve the quality of information to investors.

In another recent study, Zhou et al. (2017) investigated whether integrated reporting improves the quality of information to investors by testing for association between integrated reports and company financial performance. They used analysts' forecasting mistakes, cost of equity capital and market returns as proxies for company financial performance. Similarly to Lee and Yeo (2016) study, they measured the quality of integrated reports based on their degree of compliance with the Framework. They also constructed a self-rating scorecard to measure the degree of compliance of integrated reports with the Framework.

They also found that companies that produced higher-quality integrated reports performed better than those with lower-quality integrated reports. As such, they concluded that there is a positive association between integrated reports and company financial performance, thus confirming the view that integrated reports improves the quality of information provided to investors.

Barth et al. (2017) investigated the association between the quality of integrated reports of JSE listed companies between the period 2011 to 2014 and company financial performance. To measure the quality of integrated reports, Barth et al. (2017) constructed a self-rating scorecard to determine integrated reports scores, but combined this with scores obtained from EY South Africa's annual surveys of integrated reports. As proxy for company financial performance, they used Tobin'Q, cost of capital and projected future cash flows to test for association between the differences in the quality of integrated reports and company financial performance.

They found that there is a positive association between higher-quality integrated reports and company financial performance as measured by company valuation. They also found that there is a positive association between higher-quality integrated

reports and projected future cash flows. These findings also support the view that integrated reports enhance the quality of information provided to investors. They further concluded that integrated reporting improves the efficiency of management in making decisions as advocated by IIRC (2013).

2.7 Theory - Integrated Reporting and Financial Performance

It is expected that the scope and quality of integrated reports will differ between companies. As a consequence of the “apply or explain” principle, companies have discretion in terms of what they choose to disclose, which results in different levels of alignment between integrated reports and the Framework. This then leads one to question whether, will companies that produce higher-quality integrated reports gain economic benefits over companies that produce lower-quality integrated reports. Voluntary disclosure theory may provide a theoretical answer to this question.

According to Guidry and Patten (2012), voluntary disclosure theory has its roots in financial accounting and is used by companies to provide relevant information to investors to gain economic benefits. According to Healy and Palepu (2001), company management have an information advantage over investors, which leads to information asymmetry. Voluntary disclosure theory provides the theoretical base for the efforts taken by management to reduce information asymmetry. Balakrishnan, Billings, Kelly and Ljungqvist (2014) mentioned that company management may use voluntary disclosure to provide more information than is required by company regulations, prompted by the explicit aim of minimising information asymmetry between them and investors.

Several studies conducted by scholars support a positive association between voluntary disclosure and company financial performance (Allee & DeAngelis, 2015; Balakrishnan et al., 2014; Cheynel, 2013; Healy & Palepu, 2001; Zhou et al., 2017). According to Cheynel (2013), there are economic benefits, in the form of lower financing costs, that accrue to companies that voluntarily disclose extra information, than companies that disclose less information. This finding is supported by Balakrishnan et al. (2014) who found that voluntary disclosure results in economic

benefits in terms of enhanced company valuations. This suggest that investors reward companies that provide extra information.

Balakrishnan et al. (2014) also used voluntary disclosure theory to suggest that company management can influence market valuations of their company shares through voluntary disclosure. This view was confirmed by Allee and DeAngelis (2015) who stated that company management can influence investors' views of their companies through improved disclosure. Zhou et al. (2017) concluded that voluntary disclosure explains the difference in the quality of integrated reports between the sample companies in their study.

Thus, the findings from literature confirm the proposition that voluntary disclosure theory provides the theoretical base for the differences in the quality of integrated reports. It is postulated that some of the JSE listed companies, in an effort to reduce information asymmetry, will expend extra resources to produce integrated reports that are more compliant with the Framework. This will improve the quality of their integrated reports and the reliability of information provided to investors, which will result in economic benefits. Therefore, by voluntarily producing higher-quality integrated reports, management may seek to influence share price valuations of their companies which can positively alter investor's perceptions about the value of their company's shares, thus stimulating investor's appetite.

It is therefore argued that voluntary disclosure theory provides the theoretical base to explain the association between integrated reports and company financial performance. It is thus expected that higher-quality integrated reports, as a direct result of voluntary disclosure of extra information, will reduce information asymmetry to investors, which will concomitantly result in improved financial performance in terms of share price valuations.

3. Research Hypotheses

3.1 Overview

This research seeks to investigate whether company financial performance is influenced by the quality of integrated reports that are produced by JSE listed companies. The literature reviewed indicated that there is an interaction between integrated reporting and company financial performance. Various studies have postulated that the inclusion of non-financial information in company annual reports, such as environmental, social and governance (ESG) information, enhanced company financial performance in terms of share price valuations.

Scholars also found that companies that produced higher-quality integrated reports, using the Framework as measure of quality, outperformed those companies that produced lower-quality integrated reports. Integrated reports combine financial and non-financial information in an integrated manner, in a single report, which explains to investors how the company creates value. As a result, integrated reports are believed to be beneficial to investors as they improve the quality of information provided to investors and lead to more efficient investment decisions.

It was also revealed from literature that although integrated reporting is compulsory for JSE listed companies, companies have flexibility in terms of deciding what they choose to disclose in their integrated reports. Contrary to the reporting of financial statements, which are governed by strict accounting standards, integrated reporting is done on an “apply or explain” basis. Furthermore, the format and content of integrated reports is guided by the IIRC Framework, which provides guidelines rather than strict rules, on how to compile integrated reports. In terms of the Framework, the decision on what to include in integrated reports is guided by the eight content elements. Consequently, it is expected that companies will produce integrated reports that will differ in terms of their scope and quality.

It is thus probable that there will be an association between the differences in the quality of integrated reports and company financial performance, as investors are expected to respond differently to quality variations of integrated reports.

Using the rating scorecard to allocate integrated report scores, an investigation will be conducted to test for association between integrated reporting scores and company financial performance. The following research hypothesis is thus proposed:

3.2 Hypothesis 1

H_0 : There is no association between the differences in the quality of integrated reports and company financial performance.

H_1 : There is an association between the differences in the quality of integrated reports and company financial performance.

The purpose of the hypothesis is to test for an association between the integrated reports scores and share returns of the sample companies over the research period.

4. Research Methodology

4.1 Introduction

The aim of the research was to investigate whether there is an association between the differences in the quality of integrated reports produced by JSE listed companies and company financial performance. It is not the aim of this research to prove causality between integrated reports and company financial performance. From the literature reviewed, it was revealed that integrated reports will be seen as valuable by investors and that the quality of integrated reports will differ between companies. This research therefore, aimed to investigate whether there is empirical evidence to support the view that investors reward companies that produce higher-quality integrated reports as compared to companies that produce lower-quality integrated reports.

4.2 Research Design

The research philosophy adopted for this study can be described as “pragmatic”, since, even though it conforms towards the “positivism” philosophy, there is an element of interaction between the researcher and the data collected. Saunders and Lewis (2012) described a pragmatic philosophy as a research philosophy that is guided by what the research seeks to achieve. In order to meet the research objectives, both the objective data (share prices) and subjective data (integrated report scores) had to be used. Therefore, the research philosophy adopted fits the description of a “pragmatic” research philosophy.

The research approach was deductive in that general theory was reviewed and a hypothesis was generated on the basis of the findings of the literature reviewed. The research method used in this study was quantitative and secondary data was used to examine the association between integrated reports and company financial performance. The study was quasi-experimental as it combined longitudinal data with cross-sectional analysis and used repeated portfolio re-construction to measure the extent of association between variables (Taljaard, Ward & Muller, 2015).

4.3 Population

Integrated reporting became compulsory for companies listed on the JSE as from the financial year beginning 1st March 2010. As such, companies began releasing mandatory integrated reports as from the financial year ending 28 February 2011. Because integrated reporting is mandatory for JSE listed companies, this provides a good setting for this research as the mandatory requirement removes any self-selection bias by companies which may arise if integrated reporting was voluntary. However, since integrated reports are compiled on an “apply or explain” principle, there is an element of voluntary disclosure within the integrated reports. But, this will only affect the quality of integrated reports, which is the subject of this research, and not the number of companies producing integrated reports.

Therefore, the population for this research study was described as all the companies listed on the Johannesburg Stock Exchange, All Share Index, from 2012 to 2017, which consists of about 160 companies. Although there are about 400 companies listed on the JSE, the population for this research is defined as the companies listed on the JSE All Share Index. This represents about 99% of the market capitalisation of all listed companies JSE (Trading Economics, 2017). The companies that are not included on the JSE All Share Index are “considered too small and too illiquid for most institutional investors” (Muller & Ward, 2013, p. 3).

The study period of the years 2012 to 2017 was selected based on the first year that JSE listed companies began producing mandatory integrated reports. The list of companies that were listed during this period was sourced from the JSE.

4.4 Unit of Analysis

The unit of analysis was the daily cumulative share returns of the selected and ranked portfolios using the integrated reports’ scores for ranking. The analysis was done by visually interpreting the plotted cumulative share returns from the graphical time series. The relative differences between the cumulative share returns of the selected portfolios were analysed.

4.5 Sampling Method

Saunders and Lewis (2012) describe a sample as “a subgroup of the whole population” (p. 132). The population for this study was described as all companies listed on the JSE All Share Index between the years 2012 to 2017. There are about 160 companies listed on the JSE All Share Index. However, there was no longitudinal secondary data of integrated reports’ scores of companies listed on the JSE All Share Index. The integrated reports had to be manually rated in order to determine rating scores that were used in the analysis. However, owing to the impracticality and time constraints of rating integrated reports of companies listed on the JSE, a representative sample was selected from the population.

The sampling method used can be described as non-probability, purposive sampling. In purposive sampling approach, the sample is chosen based on a specific criteria that will allow the research objectives to be achieved (Ritchie, Lewis, Nicholls & Ormston, 2013; Saunders & Lewis, 2012).

In order to select the sample from the defined population, the JSE listed companies were ranked and listed in terms of their market capitalisation as at June 30, 2011. The date is based on the period that a vast number of JSE listed companies started producing integrated reports. The list of JSE listed companies and their market capitalisation was obtained from the JSE database. A similar list was also downloaded from the Thompson Reuters database; both the lists were analysed to ensure that no company was missed by the researcher.

As explained above, purposive sampling technique was adopted to select a representative sample of the defined population. The selection criteria chosen by the researcher for the purposes of this research was market capitalisation. This criteria was chosen as market capitalisation is generally correlated with the volume and value of shares traded on any particular period on the JSE. The companies with high market capitalisation tend to be traded more regularly, and are thus more liquid, than companies with low market capitalisation.

Companies that are considered liquid as a result of the frequency and volume of their shares that are traded regularly, are considered to be a better sample of what this research seeks to achieve. As the research objectives are to investigate the association between the quality of integrated reports and company financial performance, in terms of share price returns, the best sample of companies to choose are those companies that produce integrated reports and also have regular trading of their shares by a large number of investors.

After ranking and listing JSE listed companies by market capitalisation, a sample of the top 40 companies by market capitalisation was chosen. The top 40 companies by market capitalisation represent about 85% of the market capitalisation of the JSE All Share Index. It is thus considered that the sample of the top 40 companies on the JSE is a representative sample of the defined population for this research.

Once the sample was selected, which consisted of the top 40 companies, the next step was to obtain the series of integrated reports for each company for the reporting periods of 2011 to 2017. As there is no database for integrated reports for JSE listed companies, all the integrated reports for each of the 40 companies in the sample, had to be manually sourced from the companies. As most companies store their historical integrated reports on their websites, most of the reports were downloaded from company websites. There was only one company that did not have its historical integrated reports on its website and was thus contacted by email to request the copies of its historical integrated reports. The company sent the researcher an online link to access its integrated reports.

Although the sampling technique employed resulted in a sample of 40 companies by market capitalisation being selected for this research, some of the companies in the sample did not produce integrated reports. As this research seeks to investigate the association between integrated reports and company financial performance, the sample is required to consist of companies that produce integrated reports. As a result, the companies that did not produce integrated reports were excluded from the sample. For the duration of the research study, a total of 45 companies were included in the sample at one period or another.

The excluded companies that did not produce integrated reports, are not useful for the purposes of this research. The reason that these companies did not produce integrated reports was that their primary listings are not on the JSE, and are therefore, not mandated to produce integrated reports. Most of these companies have their primary listings on the London Stock Exchange which does not require companies to produce integrated reports.

Their exclusion in the sample does not affect the integrity of this research, as this research is based on the mandatory requirement of the JSE listed companies to produce integrated reports. Companies that are not mandated to produce integrated reports were not the target of this research. This research was premised on the mandatory requirement to produce integrated reports as this eliminates the self-selection bias.

There was a consideration to include these companies in the sample and rate their annual reports as a substitute for integrated reports. There were alternative views from literature that posited that even though some companies do not produce integrated reports, they nevertheless include a significant amount of non-financial information in their conventional annual reports. This non-financial information may be similar or close to being similar to the non-financial information included in integrated reports. While this view has merit, it was however, deemed that this non-financial information is not disclosed in an integrated manner.

Furthermore, conventional annual reports do not disclose how the various aspects of the company's structure are connected to each other and to company strategy. As such, most of these annual reports are not compiled in accordance with the IIRC Framework and were mostly not intended to be compliant with the Framework. Therefore, rating these conventional annual reports using the Framework, would have resulted in low ratings, which would have inadvertently skewed the results of this research. It is against this background that companies that did not produce integrated reports were excluded from the sample.

The aim of this research was to investigate the association of the differences in quality of integrated reports and company financial performance, for the JSE listed

companies that are mandated to produce integrated reports. Even though it is mandatory for JSE listed companies to produce integrated reports, companies have flexibility on the scope and quality of their integrated reports. The compilation of integrated reports is guided by the content elements of the IIRC Framework and is done on an “apply or explain” basis. Therefore, it was expected that JSE listed companies will produce integrated reports of varying quality. The aim of this research is to test whether the companies that expend more resources in order to produce high-quality integrated reports are rewarded by investors for doing so.

The companies in the sample represented most of the sectors of the JSE, which meant that the research was not affected by any sector or industry specific dynamics. This further validates that the sample can be considered as representative of the defined population. Thus, on the basis of the employed sampling technique, the sample used in this research covered a wide range of industry sectors of the JSE All Share Index as mentioned below.

Table 1: JSE sectors

Sample Sector Description
Clothing Retailers
Banks
Broadcasting & Entertainment
Diversified Industrials
Diversified REIT's
Food Products
Food Retailers
Furnishings
Healthcare
Investment Services
Life Insurance
Mining
Mobile Telecommunication
Paper
Pharmaceuticals
Retailers
Specialty Chemicals
Specialty Finance
Specialty Investments

4.6 Data Gathering Process

For the purposes of this research, two types of longitudinal, secondary information were required, being the integrated reports' rating scores and share price returns of the JSE listed companies. The share price return information for each of the JSE listed companies was sourced from the database of Muller and Ward (2013). Since this research employed the Muller and Ward (2013) style engine analysis, the share price returns data is already available on the style engine database and thus, it was not necessary to collect the share price returns data from any other sources.

For the integrated reports' rating scores, a self-constructed rating scorecard was used. In order to measure the quality of integrated reports, the degree of compliance of integrated reports with the Framework had to be established. This was achieved by rating the degree to which integrated reports are compliant with the content elements of the Framework. A high degree of compliance indicated high-quality integrated reports and a low degree of compliance indicated low-quality integrated reports.

Since there was no widely acceptable database of rating scores of integrated reports of JSE listed companies, a self-constructed integrated report scorecard was used. A content analysis of the integrated reports was conducted to evaluate their degree of compliance with the content elements of the Framework. Each analysed integrated report was then given a score based on the scorecard.

For this purpose, a self-constructed scorecard was developed rather than using external ratings providers of integrated reports. According to Leo and Yeo (2016), there is a higher reliability that self-constructed scorecards captured what they sought to capture as compared to external data providers. Furthermore, ratings conducted by external data providers could possibly exclude some of the sample companies for this research, which may have resulted in missing data. However, there are limitations with self-constructed scorecards such as the subjective judgment of the researcher, which may introduce bias. This limitation is nonetheless considered low as the

researcher used the content elements of the Framework as a guide to rate integrated reports.

To rate the reports, each integrated report was analysed to measure the extent to which it satisfies the content elements. In the scorecard, each component of the content elements can have a score of zero to three. A score of zero signify that the content element and its components were not reported in the integrated report being analysed, and a score of three signify that the content element and its components are adequately reported in the integrated report.

The integrated reports' rating was a composite of the raw scores allocated to each component of the content elements. There are 23 components in the scorecard. Each integrated report was analysed to measure its degree of alignment with these 23 components. The aggregate score that can be achieved ranged from zero to 69. A score of zero would mean that none of the content elements and their components were reported in the integrated report, that is, the report is not an integrated report as defined by IIRC and is not compliant with the guidelines of the Framework. A score of 69 would mean that the report is fully compliant with the Framework and would be deemed a high-quality integrated report.

4.7 Analysis Approach

4.7.1 Overview

The objective of the research was to determine whether there is an association between integrated reports and company financial performance. The association was tested by examining whether companies that produced high-quality integrated reports outperformed those that produced low-quality integrated reports. The quality of integrated reports was based on their degree of compliance with the content elements of the Framework. As such, integrated reports of the sample companies were content analysed to determine their degree of compliance with the Framework. Integrated reports with a high degree of compliancy were deemed to be of high quality whereas integrated reports with a low degree of compliancy were deemed to be of low quality.

Using the rating scorecard, integrated reports were then given scores based on their rating. Once the scores have been given for all integrated reports of the sample companies, the association between these scores and company financial performance was investigated. To test for association, two types of analyses were done for this research and are described below.

4.7.2 Association between integrated report scores and total share returns

In this analysis, total share returns were used as proxy for company financial performance. The analysis was done using the investment style engine methodology as described by Muller and Ward (2013). The style engine was created on Microsoft Excel and it uses data stored in a Microsoft Access Database. The share price data of the sample companies was obtained from the Muller and Ward (2013) style engine database. To determine total share returns, dividends paid were included in the analysis. According to Muller and Ward (2013), dividends should be included in determining returns as they contribute to total returns that investors receive.

The style engine was designed to allow for various parameters to be selected to construct a portfolio of companies over a defined period of time. As such, each of the sample company's integrated report scores were used to rank the sample companies in descending order. Following the ranking, five equally weighted portfolios of roughly the same number of companies were constructed.

The returns of each of the five portfolios were calculated on a daily basis, starting from a base of 1 and accumulated over a three-month period. At the end of each quarter, the cumulative returns of each portfolio were maintained. Prior to the beginning of the following quarter, the portfolios were re-constructed using new integrated report scores corresponding to that quarter as well as to adjust for different companies entering or exiting the sample. The integrated report scores were updated periodically when new integrated reports were published and when different companies entered or exited the sample. The composition of the sample changed intermittently over the research period due to variations in market capitalisation of the JSE top 40 companies. As such, the composition of the five portfolios would also change following changes in the sample.

The transaction costs associated with re-constructing the portfolios every quarter were not included in the analysis. Muller and Ward (2013) argued that transaction costs associated with portfolio re-creation would be inconsequential for this analysis. This process was repeated every quarter until the last day of the research period wherein the total cumulative returns of each portfolio were recorded. This method of analysis mitigates against the effects of a single company on portfolio returns, as each re-constructed portfolio included companies ranked based on integrated report scores for that period (Taljaard, Ward, & Muller, 2015).

Other studies that conducted similar research to investigate the association between the differences in the quality of integrated reports and company financial performance, employed regression analysis techniques to test for correlation between integrated reports' scores and average annual market returns (Barth et al., 2017; Lee & Yeo, 2016). According to Muller and Ward (2013), using average returns is "methodologically weak compared to cumulative returns" (p. 4). The style engine analysis approach, which compares cumulative returns of each portfolio over the research period, provides an improved alternative to the methods used in other studies. Mehta and Ward (2017) concurred that the style engine analysis is more robust as it negates company-specific share movements and calculates returns over multiple years.

4.7.3 Association between integrated report scores and cumulative abnormal returns

To enhance the robustness of this research, a second analysis was conducted employing the investment style engine as described above, but using cumulative abnormal returns as proxy for company financial performance. It is prudent to carefully select a suitable standard for determining long-term abnormal returns as this can easily result in flawed returns (Ward & Muller, 2010). For this research, the standard employed in the style engine was based on the "control portfolio model" as described by Ward and Muller (2010).

In this model, the return of each JSE listed share was calculated using the equation shown below (Ward & Muller, 2010).

$$E(R_{it}) = \alpha_{i,t} + \beta_{i,1}SGN_t + \beta_{i,2}SGR_t + \beta_{i,3}SVN_t + \beta_{i,4}SVR_t + \beta_{i,5}MGN_t + \beta_{i,6}MGR_t + \beta_{i,7}MVN_t + \beta_{i,8}MVR_t + \beta_{i,9}LGN_t + \beta_{i,10}LGR_t + \beta_{i,11}LVN_t + \beta_{i,12}LVR_t \quad (1)$$

Where: $E(R_{it})$ = the expected return on share i on day t ;

$\alpha_{i,t}$ = the alpha intercept of share i on day t ;

$\beta_{i,1} \dots \beta_{i,12}$ = the beta coefficients on each control portfolio return;

$SGN_t \dots SGR_t$ = the log-function share price returns on each of the twelve control portfolios on day t .

Daily abnormal returns were thus determined using equation 2 below.

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

Where: AR_{it} = the abnormal return of share i in period t ;

$E(R_{it})$ = the expected share price return of share i in period t ;

R_{it} = actual return of share i in period t .

For this analysis, two portfolios were constructed. The first portfolio was constructed using the top five highest integrated report scores and the second portfolio was constructed using the bottom lowest integrated report scores. The analysis to test for association is the same as described above in section 4.7.2. Abnormal returns, as determined using equation 2 above, were the analysed to ascertain if they were influenced by integrated report scores.

4.8 Limitations

The limitations to be noted for this research included the following:

- There is lack of reliable and available secondary data on integrated reports rating scores for JSE listed companies. While some of the big auditing firms in South Africa conduct annual ratings of integrated reports and publish their ratings, this data has many limitations. Firstly, the ratings awarded by these auditing firms to integrated reports differs, with each auditing firm producing different ratings for the same report. Secondly, all the integrated reports' ratings are published at the same time, on a date chosen by the auditing firm, which ignores the different reporting periods of each JSE listed company. Thus, the ratings are published at the same time, irrespective of company specific year-ends, which makes it difficult to correlate the integrated reports' ratings and share price returns. Lastly, while these auditing firms use the IIRC Framework as a guide to rate integrated reports, a number of JSE listed companies that do not produce integrated reports were included in their ratings.

Consequently, due to the non-availability of reliable secondary data on integrated reports' rating scores, the rating of integrated reports had to be done manually by the researcher. As the manual rating of integrated reports is an arduous and time consuming task, the sample had to be reduced to 40 companies, as compared to a population of about 160 companies listed on the JSE All Share Index. The sample was further reduced to exclude companies that did not produce integrated reports. This resulted in a small sample that was finally used in this research.

- The rating of integrated reports was based on the researcher's subjective judgment of the quality of integrated reports. The analysis, evaluation and rating was based on the researcher's perception which can be influenced by personal bias. However, this was mitigated by using a standardised rating scorecard which was designed using the content elements of the IIRC Framework.
- There is no consistent view among investors about what constitutes a quality integrated report. As such, different investors will have different viewpoints about

the usefulness and value of information contained in integrated reports. However, as the IIRC Framework was developed on the basis of the inputs that were received from a large investor network, the Framework is considered to represent the views of a majority of investors about the type of non-financial information that should be included in integrated reports.

5. Results

Descriptive statistics were initially used to provide an analysis of the sample and their integrated reports scores. This was followed by a test for association between integrated reports and company financial performance, using Muller and Ward (2013) investment style engine. Five portfolios were constructed, based on integrated reports scores, from high to low, to test for association.

This was then followed by another analyses based on constructing two portfolios, with the first portfolio consisting of the top five companies based on integrated reports scores and the second portfolio consisting of the bottom five companies. The result were analysed using style engine coupled with a bootstrap method to determine significance. The results are presented herein, starting with descriptive statistics.

5.1 Sample Description

As stated in section 4.5 of this report, for the duration of the research study, a total of 45 companies were included in the sample at one period or another. The JSE listed companies that were included in the sample, based on the criteria that they produced integrated reports, are shown in Table 5 below. The list of companies that were included in the sample is shown in Table 5 below.

Table 2: List of sample companies

Name	2012	2013	2014	2015	2016	2017
ABSA	•	•				
African Rainbow Minerals	•	•	•			
Anglo American Platinum			•	•	•	
AngloGold Ashanti		•	•	•	•	•
Aspen			•	•	•	•
Assore	•	•	•			
Barclays Africa Group			•	•	•	•
BidCorp					•	•
Bidvest	•	•	•	•	•	•

Brait				•	•	
Capitec				•	•	•
Discovery		•	•	•	•	•
Exxaro	•	•	•			
First Rand	•	•	•	•	•	•
Fortress Income Fund				•	•	•
Gold Fields	•	•			•	•
Growthpoint	•	•	•	•	•	•
Harmony Gold	•					
Impala Platinum	•	•	•		•	•
Imperial	•	•	•	•		
Investec	•	•	•	•	•	•
Kumba	•	•	•	•		
Life Healthcare			•	•		•
Massmart	•	•				
Mediclinic	•	•	•	•	•	
Mondi	•	•	•	•	•	•
Mr Price	•		•	•	•	•
MTN	•	•	•	•	•	•
Naspers	•	•	•	•	•	•
Nedbank	•	•	•	•	•	•
Netcare			•	•	•	•
Rand Merchant Insurance				•	•	
Redefine				•	•	•
Remgro	•	•	•	•	•	•
RMB Holdings	•	•	•	•	•	•
Sanlam	•	•	•	•	•	•
Sappi	•	•	•	•	•	•
Sasol	•	•	•	•	•	•
Shoprite	•	•	•	•	•	•
Standard Bank	•	•	•	•	•	•
Steinhoff	•	•	•	•	•	
Tiger Brands	•	•	•	•	•	•
Truworths	•	•				•
Vodacom	•	•	•	•	•	•
Woolworths	•	•	•	•	•	•

5.2 Data Validity

Data validity was assessed using the guidelines provided by Saunders and Lewis (2012), as shown in Table 6 below.

Table 3: Data validity

Factor	Remarks
Subject selection	Companies that were included in the sample were selected based on the population of JSE listed companies. The sample was selected using market capitalisation as a criteria, which removed any biases.
History	There were no notable, significant events that occurred during the research period that may have affected research findings.
Testing	Share price data and integrated reports were obtained from reliable secondary sources, which included company websites with regards to integrated reports. The data collection process was not affected by the companies assessed in the sample.
Mortality	The research did not suffer any loss of subjects during the research period.
Ambiguity about causal direction	The research did not aim to prove causality but to test for association between two variables, integrated reports' scores and share price returns.

Therefore, based on the factors as described above, it is considered that the research findings were valid and were not affected by any outside factors.

5.3 Data Reliability

Data reliability was assessed using the guidelines provided by Saunders and Lewis (2012), as shown in Table 7 below.

Table 4: Data reliability

Factors	Remarks
Subject error	There was no subject error as data was collected from the same period using the same sources to obtain data for all the companies in the sample.
Subject bias	Data was obtained from reliable secondary sources which eliminated any subject's bias.
Observer error	There was no observer error as the data was obtained from secondary sources, using the Muller and Ward (2013) database for share prices and company websites for integrated reports.
Observer bias	The rating of integrated reports may be affected by the researcher's subjective judgement, which may have introduced some observer bias. However, this risk was mitigated by the use of the content elements of the IIRC Framework to rate integrated reports. The Framework, while it's not prescriptive and is based on discretion, assist in significantly reducing the risk of different researchers allocating ratings scores which may differ widely.

It is therefore considered that the reliability of the research findings were intact and were not significantly affected by any of the factors mentioned above.

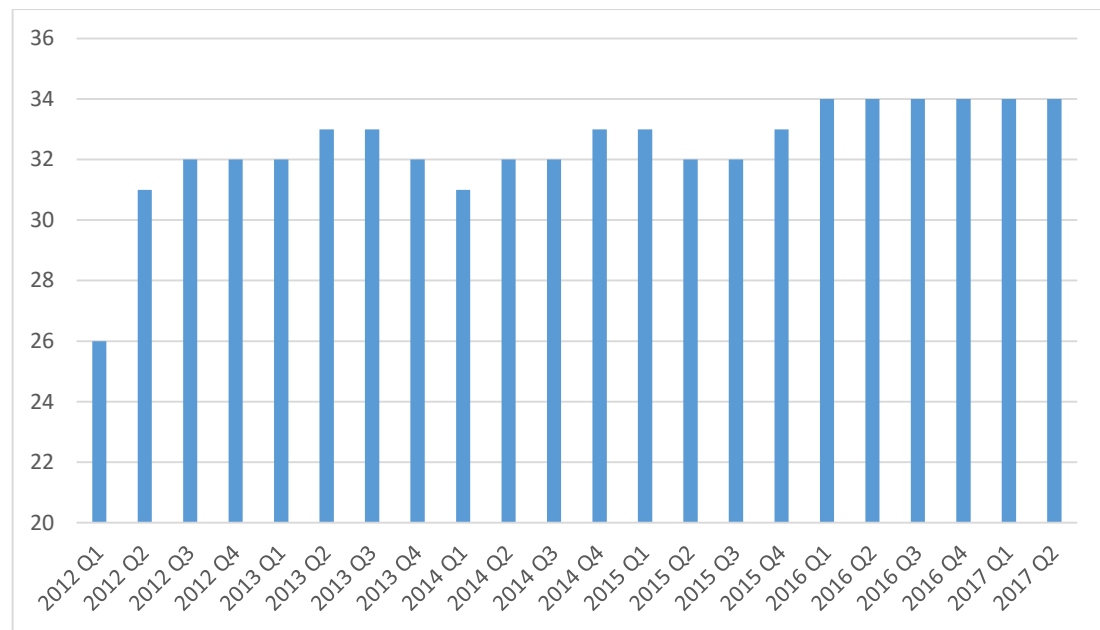
5.4 Descriptive Statistics

5.4.1 Number of companies per quarter

Figure 1 below presents the number of companies per quarter, from 2012 to 2017, which were included in the sample. The number of sample companies that produced integrated reports during the research period increased steadily from 26 companies per quarter in 2012 to 34 companies per quarter in 2017.

Figure 1 indicates that more JSE listed companies started producing integrated reports, after they were made compulsory from 2011, as evidenced by the increase in the sample companies from 2012 to 2017.

Figure 1: Number of companies



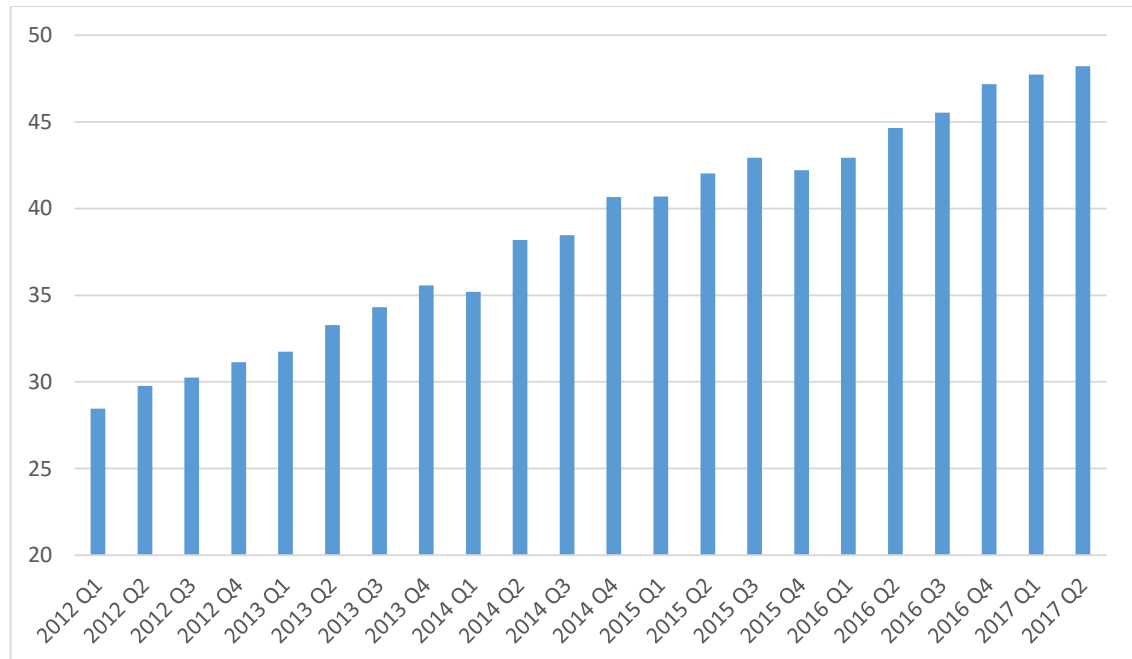
5.4.2 Average integrated reports' scores per quarter

Each integrated report produced by the sample companies, was rated using the content elements of the Framework. Based on the rating scorecard, the minimum score that each integrated report can obtain is zero and the maximum score is 69. A score of zero will basically mean that none of the content elements of the Framework

are disclosed in the integrated report. This would suggest that the report is not an integrated report as defined by the IIRC.

High integrated report scores indicate a high-quality integrated report and low scores indicate a low-quality integrated reports. Each sample company's integrated reports scores are recorded in the corresponding quarter during the research period, based on the date that the integrated reports were published. The rating scores were then kept constant for that year, until the publication of the next set of integrated reports. Figure 2 below shows the average scores per quarter of all the integrated reports that were rated during that quarter. The average integrated reports' scores increased from 28 in 2012 to 48 in 2017. The increase in average integrated reports' scores indicates that the quality of integrated reports has been increasing since integrated reporting was made compulsory by the JSE. This shows that as companies became more familiar with the guidelines of the IIRC Framework of compiling integrated reports, the compliance of integrated reports to the Framework improved.

Figure 2: Average scores

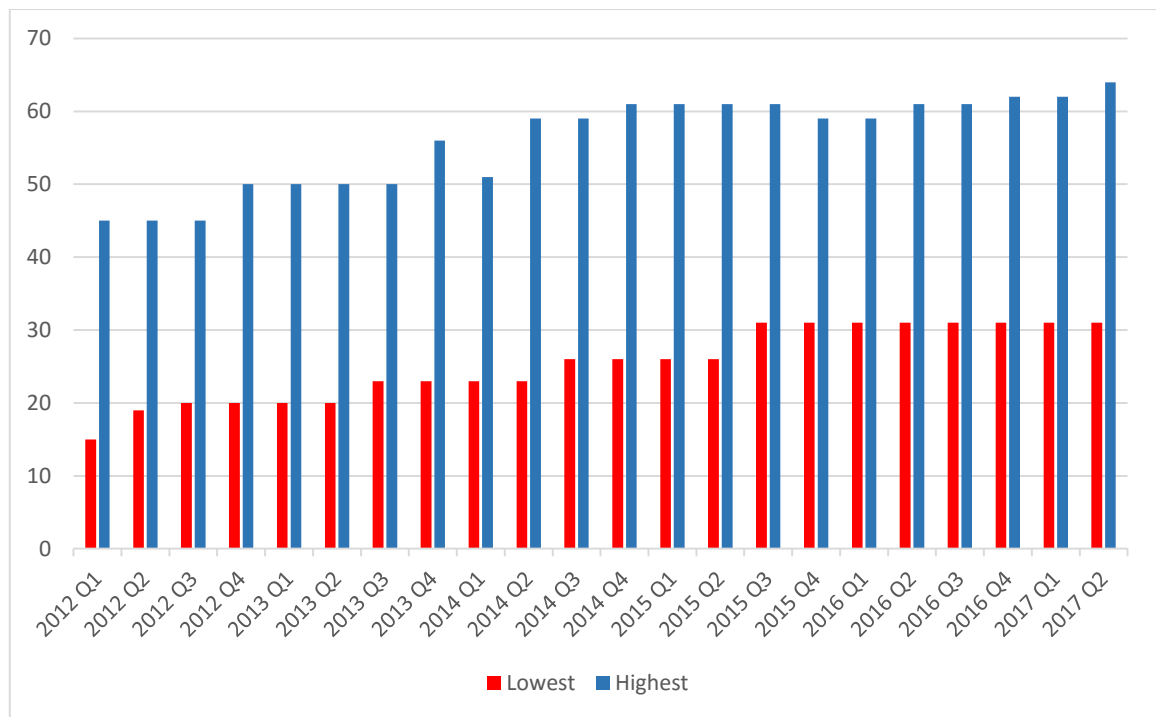


5.4.3 Lowest and highest integrated reports' scores per quarter

Figure 3 below shows the lowest and the highest integrated reports' scores per quarter. It can be seen on Figure 3, that the lowest score in 2012 was 15 while the highest scores was 45. Five years later, in 2017, the lowest score increased to 31 and the highest score increased to 62.

While average scores improved from 28 in 2012 to 48 in 2017, it can be seen from Figure 3 that the lowest scores remained constant from 2015 Q3 until the end of the research period. This indicates that sample companies which produced integrated reports with these low scores, did not improve the quality of their integrated reports during this period.

Figure 3: Lowest and highest scores



It can also be seen from Figure 3 that the gap between the lowest scores and highest scores seems to remain constant over the research period. This supports the view that companies have discretion on the scope and content of their integrated reports, thus resulting in the differences in the quality of reports produced.

Figure 4 shows that there is improvement in the quality of integrated reports over the research period, as evidenced by the upward slopes of the line graphs. It also shows that the gap between integrated report scores is not narrowing, further confirming the differences in quality as a consequence of discretion afforded to companies.

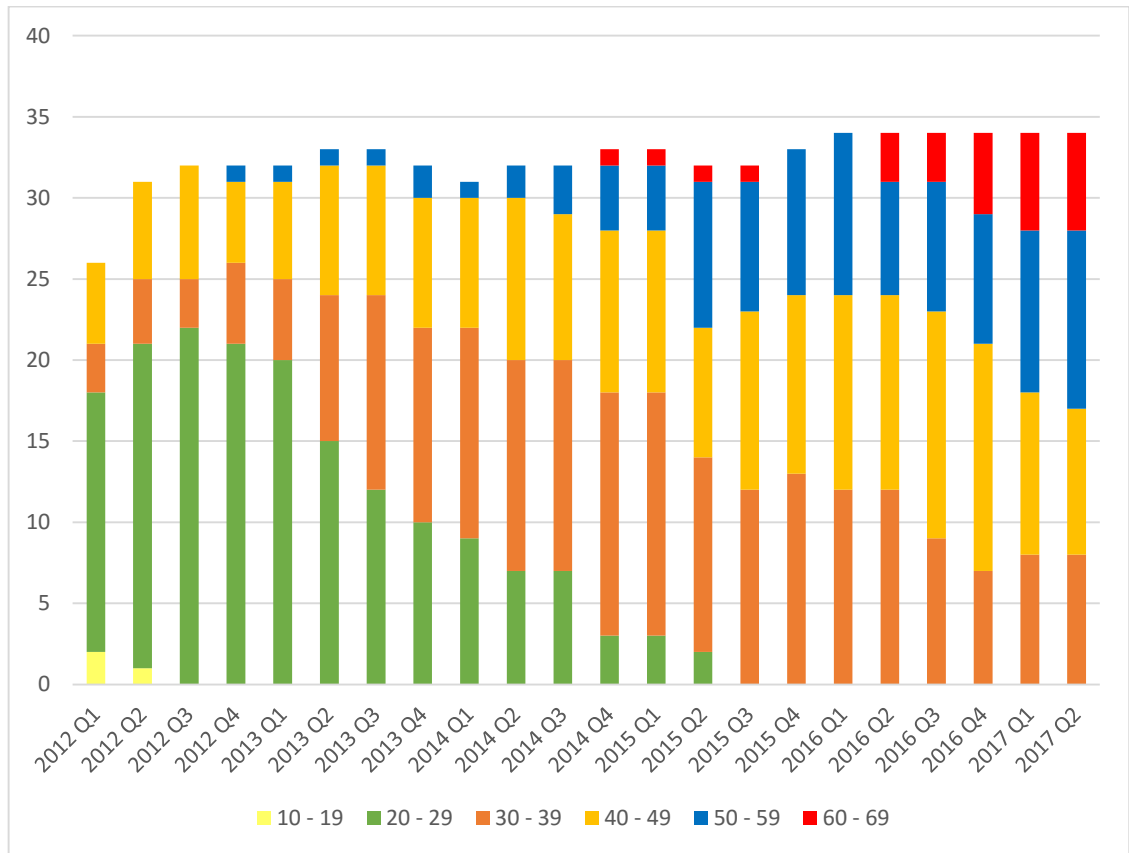
Figure 4: Integrated reports' score analysis



5.4.4 Number of companies per category of integrated reports' scores

Figure 5 below shows the number of sample companies per category of integrated reports' scores. For this analysis, the integrated reports' scores were grouped into six categories from category 10 - 19, followed by category 20 - 29 until the last category 60 - 69. It can be seen from Figure 5 that the number of sample companies producing integrated reports in the lower categories has been decreasing, while the number of sample companies in the higher categories has been increasing. This reveals that the quality of integrated reports has been improving over the research period.

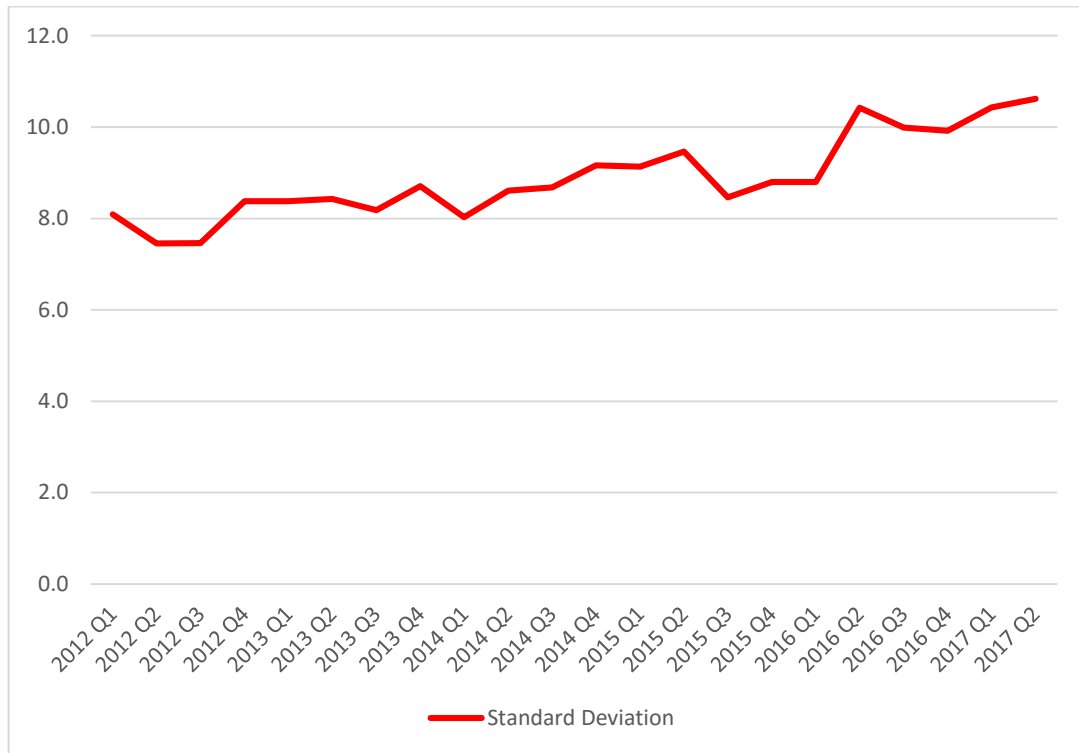
Figure 5: Companies per category



5.4.5 Sample standard deviation of integrated reports' scores

Figure 6 shows the sample standard deviation of integrated reports' scores. The standard deviation is increasing over the research period, which indicates that quality differences between integrated reports is widening.

Figure 6: Standard deviation



5.5 Integrated reports and company financial performance

The results of the basic descriptive statistics as presented in section 5.4 above show that the quality of integrated reports has been increasing during the research period and that the number of companies producing higher-quality integrated reports has also been increasing. Descriptive statistics also revealed that there were differences in the quality of integrated reports produced by sample companies and that differences in the quality of integrated reports increased over the research period.

The objective of this research was to determine whether there is an association between the differences in the quality of integrated reports and company financial performance. Therefore, in order to test for the association between the differences in the quality of integrated reports and company financial performance, the following research hypothesis was developed.

5.5.1 Hypothesis

H_0 : There is no association between the differences in the quality of integrated reports and company financial performance.

H_1 : There is an association between the differences in the quality of integrated reports and company financial performance.

The Muller and Ward (2013) investment style engine was used to test for the association between the differences in the quality of integrated reports and company financial performance, using share returns as proxy for company financial performance.

5.5.2 Five portfolio investment style engine analysis

In conducting this analysis to test for association between the differences in the quality of integrated reports and company financial performance, five equally weighted portfolios of roughly the same number of companies were formed using integrated report scores for ranking. For example, the first portfolio consisted of companies that had the highest integrated report scores, followed by companies with the second highest integrated report scores until the fifth portfolio that consisted of companies that had the lowest integrated report scores.

At the beginning of each quarter, the portfolios were re-formulated using the new integrated report scores corresponding to that quarter, as well as to adjust for new companies entering or exiting the sample. Portfolios formed were named IRscore one to IRscore five. IRscore one consisted of companies that had the highest integrated report scores, followed by IRscore two that consisted of companies with the second highest integrated report scores until IRscore five that consisted of companies that had the lowest integrated report scores.

Figure 7 below shows the results of the graphical time series of the cumulative share returns of the five portfolios that were formed using integrated report scores. To enhance the robustness of this analysis, the testing was extended to start from the

year 2000. To cater for the extension, portfolios from year 2000 to 2012 were constructed using the earliest available integrated reports' scores, which were the 2012 scores. This means that the portfolios did not change from 2000 until 2012, as they were based on the 2012 integrated reports' scores. Extending the analysis to start from 2000 has the added advantage of testing for association before and after the mandatory introduction of integrated reports by the JSE. The results of this analysis are shown in Figure 10 below.

Based on the results, all five portfolios performed better than the JSE All Share Index (J203T). This occurred possibly due to the fact that the constructed portfolios were equally balanced as compared to the JSE All Share Index, which is a weighted index based on market capitalisation. Therefore, the index will be influenced by company size. There is also survivorship bias inherent in the constructed portfolios which may also influence the results as a consequence of regularly re-constructing the portfolios.

Interestingly, the performance of the portfolios against one another, as can be seen from Figure 7, reveal that there is no clear trend or persistence linear performance between the portfolios. Of particular interest is the performance of portfolio IRscore five, which contained companies with the lowest integrated reports' scores. This portfolio outperformed all the other portfolios. It is thus clear that the performance of all five portfolios against one another is random with no linear pattern. This random performance is evident from 2000 to 2012, when portfolios remained the same as integrated reports' scores were kept constant, and post 2012, when portfolios were re-constructed to account for new integrated report scores and sample changes.

These results therefore, indicate that there is no association between the differences in the quality of integrated reports and company financial performance.

Figure 7: Graphical time series - CAGR

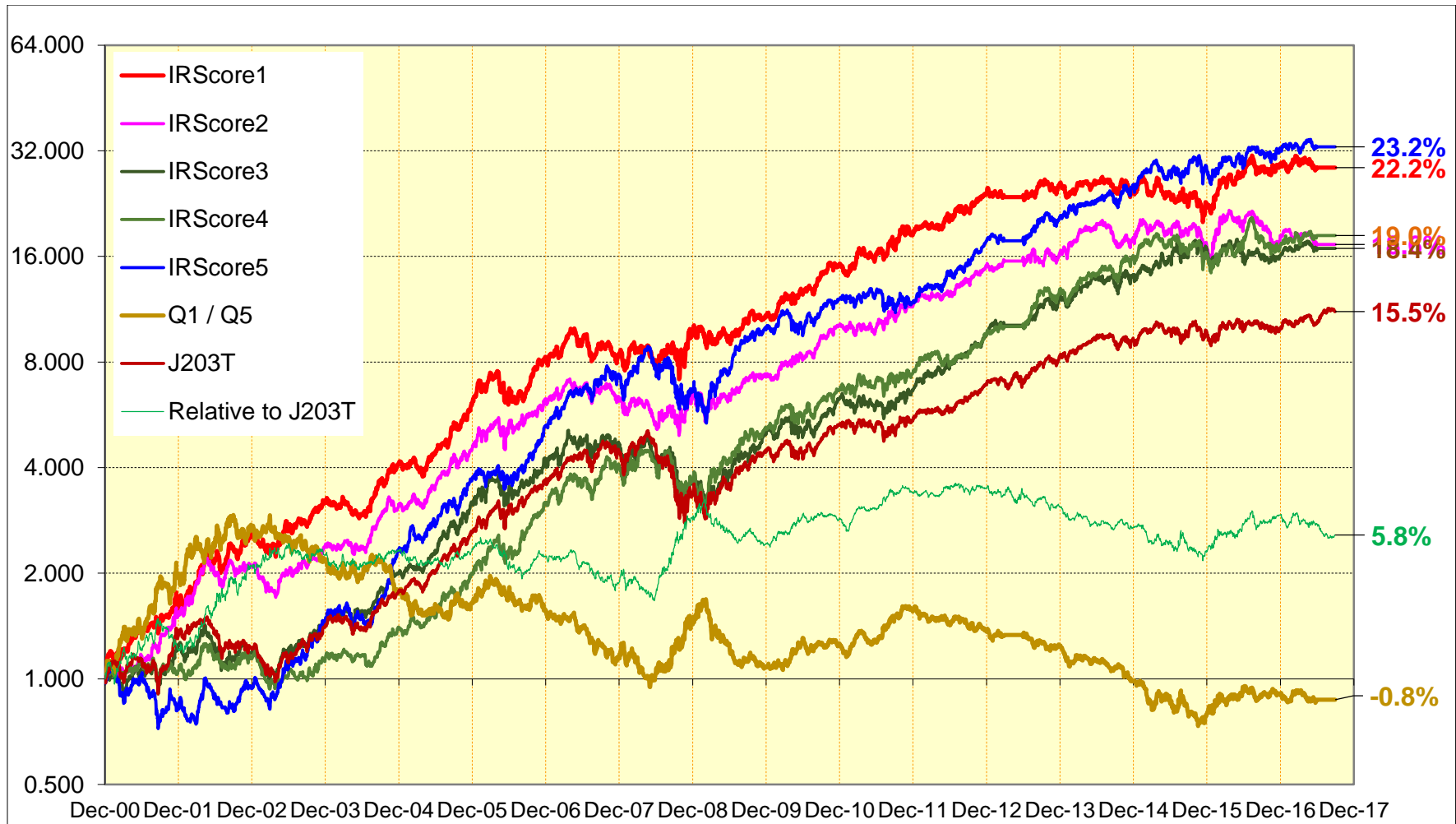
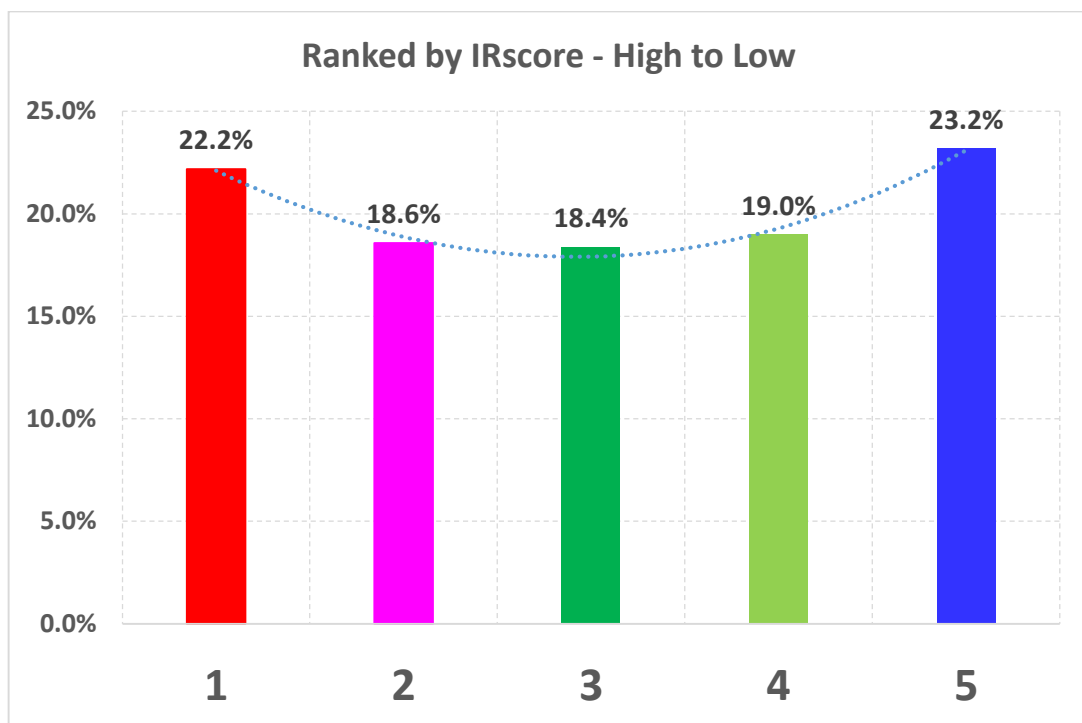


Figure 8 below presents the compound annual growth rates (CAGR) of the respective portfolios in a graphical format. As can be seen from Figure 8, the CAGR of the portfolios are not linear, as would be expected if there was association between integrated reports' scores and company financial performance. As stated above, portfolio five, which was constructed using the lowest integrated reports' scores, marginally outperformed all the other portfolios. The graphical presentation as shown in Figure 8, confirms that there is no association between the differences in the quality of integrated reports and company financial performance.

Figure 8: CAGR of the portfolios



5.5.3 Two portfolio analysis

An additional analysis was done to further interrogate the results presented above and to assess the significance of the differences in portfolio performance. For this analysis, two portfolios were constructed using the top five highest integrated report scores and the bottom five lowest integrated report scores. Thus, there were five companies in each of the two portfolios.

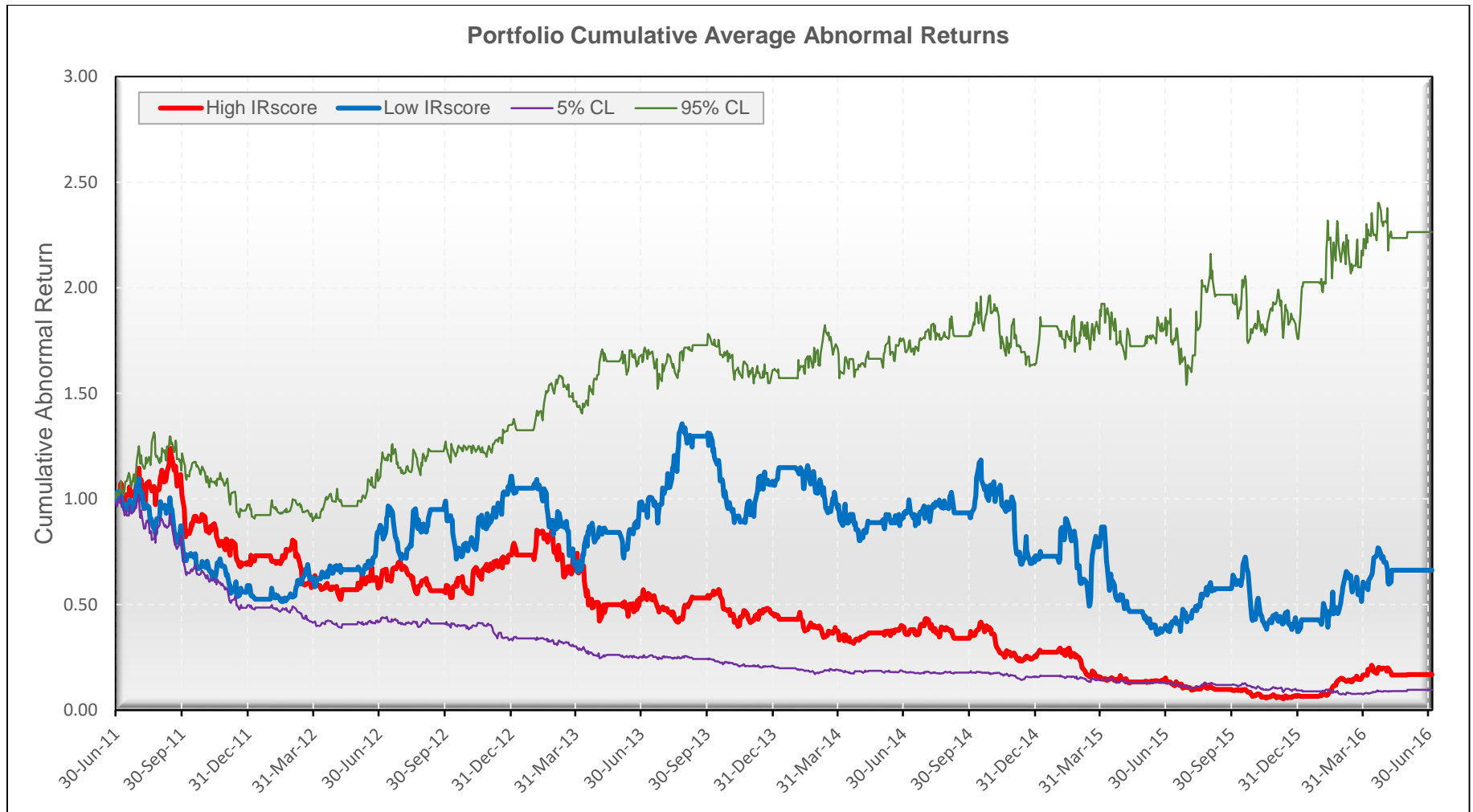
The results in Figure 9 below show the cumulated average abnormal returns (CAARs) of each portfolio, including the 95% and 5% confidence limits. These limits were determined using a Monte Carlo bootstrapping technique. The bootstrap confidence limits were established by creating random integrated reports' scores for all the companies in the sample over the research period. Portfolios were then constructed using these random integrated reports' scores for ranking. This procedure was repeated 400 times in order to produce random portfolios. The abnormal returns of these random portfolios were collated in Excel and from this bootstrap distribution of returns, the 95% and 5% confidence limits were established.

The CAARs are considered to be significant if their plotted line on the graph crosses the 95% or the 5% confidence limits created using the bootstrapping technique. According to Ward and Muller (2010), using the randomised bootstrapping technique to test for significance is appropriate for this study as it does not assume a normal distribution of CAARs.

The results from this analysis show an inverse association between integrated report scores and CAARs. This is evidenced by the portfolio constructed using the lowest bottom five integrated report scores (Low IRscore) outperforming the portfolio constructed using the highest top five integrated report scores (High IRscore). The High IRscore portfolio performed better than the Low IRscore portfolio for the first nine months, and then proceeded to underperformed for the rest of the research period. Furthermore, the CAARs in the High IRscore portfolio were significant from about March 2015 to about February 2016.

As can be seen, the CAARs of both portfolios display a downward trend which indicate a negative association between integrated reports scores and CAARs. However, the Low IRscore portfolio seems to be less sensitive to integrated report scores than the High IRscore portfolio. Nonetheless, both portfolios are underperforming as is evidenced by the downward slopes of both graphs over the research period. Therefore, from these results, there is no convincing evidence to suggest that there is a positive association between the differences in the quality of integrated reports and company financial performance.

Figure 9: Graphical time series - CAARs



6. Discussion of Results

The objective of this research was to investigate whether there was an association between the differences in the quality of integrated reports and company financial performance. The proxy used for integrated reports quality was the integrated reports scores derived from the rating of integrated reports using the IIRC Framework as a rating guideline. The association between the differences in the quality of integrated reports and company financial performance, was investigated using Muller and Ward (2013) graphical time series approach. The essence of this methodology is constructing share portfolios using integrated reports scores and analysing the performance of portfolio returns over time.

In this chapter, the results of the analysis conducted are discussed and will be related to both the literature reviewed and developed hypothesis. The discussion of results starts with descriptive statistics followed by the discussion of the graphical time series results.

6.1 Basic Descriptive Statistics

6.1.1 Number of companies producing integrated reports

For this research, the sample was selected based on market capitalisation of JSE listed companies. This criteria resulted in the top 40 JSE listed companies being included in the sample. While the JSE has about 160 companies in the All Share Index, which was considered as the population for this research, the top 40 companies by market capitalisation constitute about 85% of the JSE All Share Index. As such, the selected sample was considered a fair representation of the population.

The research period covered the years 2012 to 2017. This period was chosen based on the mandatory requirement that companies listed on JSE must produce integrated reports. The mandatory requirement was introduced on March 1, 2010, meaning that the first set of integrated reports were produced as from the middle of 2011, following the respective financial year-ends of JSE listed companies. From the sample, the number of integrated reports that were available in the beginning of 2012, the start of

the research period, were 26 and this increased to 34 by the end of the research period. This increase is attributed to the mandatory requirement for JSE listed companies to produce integrated reports, which provides a good backdrop for this research as it eliminates self-selection bias. This view is supported by Baboukardos and Rimmel (2016), Bernandi and Stark (2016) and Zhou et al. (2017) who stated that the JSE mandatory requirement reduces self-selection bias typically found in research involving voluntary disclosure and financial performance.

6.1.2 Integrated report quality

Since integrated reporting is a relatively new concept in the field of corporate disclosure, the quality of the initial integrated reports produced at the start of mandatory reporting, was much lower than current reports. At the beginning, companies were unsure as to which extra information needed to be included in integrated reports. Over time and with the guidance of the International Integrated Reporting Council (IIRC) and its Framework, the quality of integrated reports improved. Figure 6 in section 5.4.2 of this report, shows the improvement in the average score of integrated reports of the sample companies. The average score increased from 28 in 2012 to 48 in 2017.

The improvement in the quality of integrated reports indicates that companies have put in efforts and resources to produce integrated reports that are more compliant with the Framework. This may mean that companies perceive that producing integrated reports that are more compliant with the Framework will result in economic benefits. Alternatively, companies may be producing integrated reports that are more compliant with the Framework due to external pressures. According to Stubbs and Higgins (2014), it is not clear why companies adopt integrated reporting. The mandatory requirement by JSE explains the mere existence of integrated reports, but does not fully explain their degree of compliance with the Framework.

As shown by the increase in the average scores of integrated reports, it is therefore notable that the overall quality of integrated reports produced by the sample companies has been improving over the research period. This is evidenced by the results in Figure 3 that shown that all companies have been improving the quality of

their integrated reports. As can be seen from Figure 3, there are no integrated reports that had a rating of 30 or lower as from the third quarter of 2015. Furthermore, the number of reports that achieved ratings of 50 and higher, substantially increased from the middle of 2015 until the end of the research period.

This improvement in the quality of integrated reports can be explained by the findings of the literature reviewed. It has been argued by a number of scholars that the reporting of both financial and non-financial information is seen as valuable to investors (Beck et al., 2017; Cohen et al., 2012; Dhaliwal, Radhakrishnan et al., 2012; Ferguson & Pundrich, 2015). As the purpose of integrated reporting is to provide, in an integrated manner, financial and non-financial information to investors, it can be deduced that the improvement in quality of integrated reports is an outcome of company's endeavours of improving the quality of information to investors.

It is particularly important to also take into account that the sample companies are the largest top 40 JSE listed companies by market capitalisation. These are well-established, profitable, innovative and well-managed companies in South Africa with a good track record of financial performance. They are the major contributors to the economy of the country and employ a substantial number of people. As such, it is assumed that these companies recognise the importance of compilation good quality integrated reports. It is thus not surprising that the sample companies have dedicated resources towards improving the quality of their integrated reports.

It is against this background that the quality of integrated reports was the subject of this research. The next section discusses the differences in the quality of integrated reports produced by the sample companies.

6.1.3 Differences in quality of integrated reports

As it was expected, there are differences in the quality of integrated reports produced by sample companies during the research period. This can be seen from the differences in integrated reports scores as evidenced by the results of the descriptive statistics. Descriptive statistics revealed that there is a sizeable difference between

the lowest scores and the highest scores and that this difference remained fairly constant over the research period.

The results of the sample standard deviation of integrated reports scores revealed an interesting trend. The standard deviation is increasing, from eight in 2012 to 10.6 in 2017. This suggests that the differences in the quality of integrated reports produced by the sample companies is increasing over the research period. This may be counter-intuitive as the largest companies in South Africa would have been expected to put in efforts to improve the quality of their integrated reports, thus resulting in a narrowing gap between quality differences. If the purpose of producing integrated reports is to provide valuable and useful information to investors, it was expected that the largest companies on the JSE will be champions of good quality integrated reports.

The differences in the quality of integrated reports of the sample companies, and the fact that this difference is increasing, as shown by the increasing standard deviation, confirms the findings of the literature review. The literature reviewed revealed that although it is compulsory for JSE listed companies to produce integrated reports, due to the “apply or explain” principle, companies have flexibility in deciding what to include in their integrated reports (Baboukardos & Rimmel, 2016; Bernandi & Stark, 2016; Lee & Yeo, 2016; Maniora, 2017; Reuter & Messner, 2015; Zhou et al., 2017).

These results from basic descriptive statistics show that companies exercise their discretion when compiling integrated reports. Even though all the sample companies used the IIRC Framework as a guide for compiling their integrated reports, it is clear that each company exercised its discretion in terms of deciding how much information to include in their integrated reports. As stated by Reuter and Messner (2015), the Framework is not strict but provides guidelines to compile integrated reports which gives companies leeway in terms of what to report.

6.2 Association of Integrated Reports and Company Financial Performance

The objective of this research was to investigate whether there was an association between the differences in the quality of integrated reports and company financial performance. In order to meet the research objectives, the association between the differences in the quality of integrated reports and company financial performance was investigated using Muller and Ward (2013) investment style engine. The hypothesis as developed from literature reviewed was as followed:

H₀: There is no association between the differences in the quality of integrated reports and company financial performance.

H₁: There is an association between the differences in the quality of integrated reports and company financial performance.

The investigation format was based on testing integrated reports scores and share returns as measured by compound annual growth rates (CAGR) and cumulative average abnormal returns (CAAR). The results were plotted and presented on a graphical time series chart.

6.2.1 Integrated report scores and CAGR

In this investigation, five portfolios were constructed based on integrated report scores from high to low. The performance of the portfolios relative to each other and relative to the overall JSE market (J203T) was plotted and presented on the graphical time series chart. From these results, it is evident that there is no clear or persistence linear performance between the portfolios. As shown in Figure 7, portfolio five (IRscore 5), which was constructed based on the lowest integrated report scores, performed better than portfolio one (IRscore 1), which was constructed based on the highest integrated report scores. Portfolio five (IRscore 5) produced CAGR of 23.2% while portfolio one (IRscore 1) produced CAGR of 22.2%.

There is also no distinguishable linear performance between portfolios two, three and four which produced CAGRs of 18.6%, 18.4% and 19% respectively, except that all

three underperformed portfolios one and five. All five portfolios performed better than the market (J203T), which produced CAGR of 15.5%.

Basically, the results indicate that the performance of all five portfolios relative to each other is random and does not follow any specific trend. In order to confirm association between integrated reports scores and CAGR, the performance of the portfolios should follow their linear ranking, from high to low, as constructed using integrated report scores. Consequently, the results indicate that there is no association between integrated reports scores and CAGR. Therefore, the null hypothesis that there is no association between the differences in the quality of integrated reports and company financial performance is not rejected.

6.2.2 Integrated report scores and CAAR

For this analysis, two portfolios were constructed using integrated report scores. The first portfolio (High IRscore) was constructed using the top five highest integrated reports' scores and the second portfolio (Low IRscore) was constructed using the bottom five lowest scores. There were thus five companies in each portfolio. The style engine analysis showed that both portfolios resulted in negative cumulative average abnormal returns (CAARs).

Counter-intuitively, the Low IRscore portfolio outperformed the High IRscore portfolio. This may suggest an inverse association between integrated reports scores and CAARs. While the Low IRscore portfolio performed better than the High IRscore, both portfolios are nonetheless, returning diminishing CAARs over the research period. Even though these results were not statistically significant, except during a short period between March 2015 and February 2016 for the High IRscore portfolio, there is no evidence to reject the null hypothesis.

These results suggests that an investment style that is based on integrated reports' scores will underperform the market over the long-term. As such, selecting an investment portfolio based on integrated reports' scores, whether high or low scores, will not produce long-term superior returns to the market.

Therefore, based on these results, it cannot be concluded that there is an association between the differences in the quality of integrated reports and company financial performance.

6.2.3 Analysis of results

These results, from both the analysis conducted, contradict the findings from the literature reviewed. While the practice of integrated reporting is recent in the field of company disclosure, with limited studies conducted by scholars so far, the findings from these empirical studies showed a positive association between integrated reporting and company financial performance (Barth et al., 2017; Lee & Yeo, 2016; Zhou et al., 2017). The findings from these empirical studies indicated that the companies that produced higher-quality integrated reports outperformed those that produced lower-quality integrated reports.

According to Barth et al. (2017), companies that produced higher-quality integrated reports gained economic benefits from improved share returns. They attributed this to the ability of investors to predict company cash flows more accurately and thereby increasing investor's appetite to make investment decisions. They further claimed that companies that produced higher-quality integrated reports were able to make more effective internal managerial decisions which consequently translated to better profitability. However, the results of this research showed that companies which produced lower quality integrated reports, (as measured by lower integrated report scores), outperformed those that produced higher-quality integrated reports. This is counter to Barth's et al. (2017) findings.

Similarly, the study conducted by Lee and Yeo (2016) found that companies with higher-quality integrated reports outperformed those with lower-quality integrated reports. According to them, higher-quality integrated reports improved the information environment to investors, thus enabling investors to make better investment decisions. Their argument is similar to Barth et al. (2017) in that they attributed performance of companies that produced higher-quality integrated to improved information flow to investors. Lee and Yeo (2016) further stated that their findings were more pronounced in complex companies.

From this study, it is not clear how higher-quality integrated reports results in better share price returns. Lee and yeo (2016) cited improved information flow as the main reason for improved share returns. However, this research produced contrary results, showing that companies with lower-quality integrated reports outperformed those that produced higher-quality integrated reports. It should be considered that the argument of improved information flow to investors applies to all companies that produced integrated reports. The rationale for integrated reporting, as found from literature reviewed, is to expand information quality given to investors. This is realised by linking financial and non-financial information to company strategy, in a manner that shows value creation.

Thus, the integrated reporting regime shows progress over the conventional company annual reporting regime which was confirmed by Barth et al. (2017) and Lee and Yeo (2016) who found that the introduction of integrated reporting, improved information flow to investors. This was also confirmed by Baboukardos and Rimmel (2016) and Bernardi and Stark (2016) who also found that the quality and value of information to investors improved after the introduction of integrated reporting.

However, it is not exactly clear from these studies how the differences in the quality of integrated reports result in company financial performance. Barth et al. (2017) argued that, as a consequence of integrated thinking, the decisions made by company management are more effective which then leads to improved financial performance. They concluded that the compilation of higher-quality integrated reports persuaded management to be more effective in terms of strategy formulation and capital allocation. This then resulted in competitive advantage and better profitability.

Interestingly, Zhou et al. (2017) in their findings, alluded that the cost of equity capital was a contributory factor for the improved performance of companies that produced higher-quality integrated reports. They argued that due to the improved content and quality of information in these reports, investors were more amenable to accepting lower returns as a consequent of lower investment risks. This view is consistent with the benefits of the reduction in information asymmetry between companies and investors. Thus, it is not surprising that Zhou at el. (2017) found that companies that

provided extra information through higher-quality integrated reports, benefitted from improved investor appetite and lower cost of equity capital.

Nevertheless, the results of this research, appears to suggest that investors do not necessarily reward companies for producing higher-quality integrated reports. This may further suggest that the differences in the content or quality of integrated reports is not considered to be significant by investors. It worth considering that the advent of integrated reports did not replace other company reporting channels and are not the only medium that companies use to communicate with investors. This view is supported by Garcia-Sanchez and Noguera-Gamez (2017) who stated that integrated reports do not replace other reporting channels that are aimed at specific audiences. Lee and Yeo (2016) also stated that it is probable that integrated reports may contain information that is available in other disclosure platforms. This means that investors may not regard information contained in integrated reports as materially different to information available from other company sources.

The results from this research challenge the stated objective of integrated reports, which is to provide valuable information, in an integrated manner, to investors. It was anticipated that integrated reports will reduce the information gap between companies and investors. While the content and quality of information contained in integrated reports has been increasing, it appears that investors do not differentiate between higher-quality integrated reports and lower-quality integrated reports.

In the final analysis, it appears that the endeavour to produce integrated reports that are more compliant with the IIRC Framework, may not lead to financial performance. Thus, companies that have spent resources in order to produce higher-quality integrated reports, have not been rewarded by investors, contradicting the view from literature that there is an association between increased disclosure and company financial performance.

It is possible that investors use or acquire information from other sources. According to Rensburg and Botha (2014), many investors still rely on conventional annual financial statements and quarterly reports to acquire the necessary information which is used to formulate investment decisions. They argued that only a few investors

would regard integrated reports as their main source of information. Consequently, this suggests that by the time integrated reports are available, most investors would have used other media to access information. Unless integrated reports become the only source of information, Rensburg and Botha (2014) argued that they are likely to be viewed by investors as just an additional source information already available elsewhere.

7. Conclusion

7.1 Principal Findings

The aim of this research was to investigate if there is association between integrated reports and company financial performance. It was motivated by a need to find evidence to support the intended benefits of integrated reports, which were touted to be the future of company reporting (Zhou et al., 2017). There was evidence from the literature reviewed that increasingly, integrated reporting is becoming a norm in company reporting. The results indicate that a growing number of companies have embraced integrated reporting and are starting to link information disclosed with company strategy.

Integrated reporting is not just about reporting financial and non-financial information in a consolidated report, it is about showing how a company exploits its operating environment to create value over time (Stubbs & Higgins, 2014). Companies need to create value in order to remain sustainable and to continue to contribute towards economic growth and employment. It is thus important that companies can competently communicate their value creation ability to attract investments to support growth and sustainability. Consequently, integrated reports were intended to provide a means of communication between companies and investors, which will result in economic benefits for companies (Baboukardos & Rimmel, 2016; Bernardi & Stark, 2016; Lee & Yeo, 2016; Zhou et al., 2017).

This research used a sample of JSE listed companies and their corresponding share returns data over the period 2012 to 2017 to investigate the economic benefits of integrated reporting. The methodology employed Muller and Ward (2013) investment style engine to construct equally-weighted portfolios of shares using integrated report scores. This is first study that used the style engine methodology to investigate the association of integrated report and company financial performance. Following this methodology, portfolio returns were determined and plotted on time series graphs to visually indicate the performance of portfolios relative to each other (Taljaard, Ward & Muller, 2015). Two set of graphs were plotted in order to analyse the performance of the constructed portfolios.

The first analysis involved the construction of five portfolios, using integrated report scores from high to low. The results from this analysis found that there is no association between integrated reports and company financial performance. Interestingly, the portfolio constructed using the lowest integrated report scores outperformed all the other portfolios, achieving CAGR of 23.2%, whereas the portfolio constructed using the highest integrated report scores achieved a CAGR of 22.2%. Based on these results, there is no clear or linear performance found between the portfolios. These results contradicted the view that integrated reports lead to improved share returns.

The second analysis involved the construction of two portfolios, using the top five integrated report scores and the bottom five lowest scores. Likewise, this analysis found that there is no association between integrated reporting and company financial performance. Unexpectedly, the portfolio constructed using the bottom five scores outperformed the portfolio constructed using the top five scores in terms of cumulative average abnormal returns. However, both portfolios showed diminishing cumulative abnormal returns thus further contradicting the view that integrated reports are associated with share returns.

The results therefore indicate producing high-quality integrated report, as measured by the degree of compliance to the Framework, is not rewarded by investors more than low-quality integrated reports. These findings imply that the introduction of integrated reports is not seen as valuable by investors. It is crucial that company management takes cognisance of these findings when compiling integrated reports in order to avoid misplaced expectations. While integrated reports have improved the reporting of financial and non-financial information, this improved level of disclosure will not necessarily result in superior share price returns.

These results of this research contradicts the findings from literature, particularly the findings of the empirical studies conducted by Barth et al. (2017) and Lee and Yeo (2016). Investigating the underlying reasons for this was beyond the objectives of this research and can be an area of future research. Nevertheless, it is possible that companies pursued the generation of higher-quality integrated reports in order to legitimise their lacklustre performance. This perception is also supported by Haji and

Anifowose (2016) who argued that some companies produce integrated reports with the purpose of gaining legitimacy. While this claim was not tested in this research, it is interesting to note that companies with the top five highest scores, showed diminishing cumulative abnormal returns over the research period.

7.2 Research Limitations

The following research limitations are highlighted:

- The unavailability of a universally acceptable and reliable integrated report score database. As a consequence, integrated reports had to be manually rated by the researcher, which was an arduous and a time consuming task. To cope with the demands of manually rating integrated reports and to meet submission deadlines, the sample was reduced. Even though the sample was a decent representative of JSE listed companies, this research would have been richer if the entire population of the JSE all share index was used, which currently consist of about 160 companies.
- To a certain extent, the rating of integrated reports had an element of subjectivity and may have been influenced by the researcher bias. However, the guidelines of the Framework as represented by the eight content elements assisted in limiting this bias and provided a measure of objectivity in the rating.
- The research did not investigate as to which specific information in the integrated reports that investors would consider as more valuable. While the Framework provides the content elements as an indication of valuable information, it would be interesting to ascertain whether investors regard all the content elements as equally valuable. This might explain to a certain extent the results of this research which sort of indicated an inverse association between integrated reports and company financial performance.
- The limited research period may have influenced the research results. To enhance the validity of the results, it may be advantageous to conduct this research over a much longer time period.

7.3 Suggestions for Future Research

Due to the findings of literature review and existing empirical studies, though limited in number, it will important that this area of integrated reports and its purported association to company financial performance, is rigorously investigated. Toward this end, the following suggestions are made:

- The research should be conducted using a larger sample, possibly, using the entire population of companies listed under the JSE all share index.
- It will be beneficial to conduct this research over an extended time horizon to mitigate against the influence of a time period on the results. Had this research been conducted during a different time period, the results could have been different. Therefore, it is suggested that future research be done when there has been a sufficiently long time horizon.
- It will be beneficial to investigate the opinions of investors with regards to the information contained in integrated reports. Future research might involve a qualitative study of investigating whether investors deem integrated reports to be incrementally valuable and to also ascertain as which information that investors would consider to be more valuable.

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