Impact of Sovereign Credit Downgrades on Stock Market Returns across Industries: Evidence from the JSE

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Impact of Sovereign Credit Downgrades on Stock Market Returns across Industries: Evidence from the JSE

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Abstract

This paper examines the effects of sovereign credit downgrades on the JSE. Credit rating announcements are said to provide new private information about a country, which is tradeable, affecting investment decisions and feeding through to stock returns. Past studies focus on how downgrades affect the overall market, we take this a step further and evaluate how the effect of a particular downgrade differs across industries, using a short-horizon event study methodology. Our results suggest no statistically significant impact on the JSE as a whole. However, a closer analysis suggests the impact is not uniform across industries. Sovereign credit downgrades have a more adverse impact on cyclical industries such as the banking, technology and retail sectors, while other more defensive industries such as the consumer goods, consumer services and mining sectors reacted positively. The counteracting reactions may effectively cancel each other out on balance, making it seem as if there is no effect on the JSE when in fact there is.

Keywords: Stock returns, Credit Ratings, Sovereign Downgrades, JSE

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1. Introduction

Sovereign credit ratings have become an increasingly important factor in investment decisions, as they appear to play a vital role in terms of information signalling to issuers, individual investors, foreign institutional investors, and even policymakers within financial markets (Ng and Ariff, 2019). Although there is extensive research on the macroeconomic effects of sovereign credit ratings, there is limited and mixed evidence on the extent to which sovereign downgrades affect stock market performance. Changes in sovereign rating, may, through their effects on the private sector, exert influence on investors’ decision to invest or disinvest in stocks (Lee et al., 2013). This is particularly pertinent in the context of developing countries where investors tend to be very cautious and may rely heavily on these ratings, due to the presence of large informational asymmetries and a lack of transparency (Odera, 2012). Therefore, credit rating announcements may unveil new private information about a country, which is tradeable, affecting investment decisions and thus feeding through to stock returns (Reinhart, 2002).

This paper investigates the impact of sovereign credit downgrades on stock market performance, using a short-horizon event study framework, with specific reference to the Johannesburg Stock Exchange (JSE). To draw conclusions as to the effects on overall stock returns on the JSE, all of Standard and Poor’s (S&P) and Moody’s downgrades of South Africa’s foreign and local denominated debt since 1994 will be investigated, which means that 7 downgrades in total will be accounted for. 3 rating agencies are highly regarded, namely S&P, Moody’s and Fitch. However, Moody’s and S&P, are often referred to as the big two, and they control 80% of the market for credit ratings collectively, with each having an individual market share of roughly 40%. (Hill, 2003; Mutize, 2019). Their specific importance is highlighted by the fact that one of the worst-case scenarios for South Africa's government debt in the future, i.e. removal from the most important group of bond indices, the Citigroup World Government Bond Index, is only reliant on both Moody’s and S&P’s downgrading South Africa’s local currency debt to junk status (Goko, 2019). At the time of writing, this has already happened in
terms of S&P's ratings, with Moody's still yet to rate South Africa at sub-investment grade. The result of this would be that all major investment funds tracking the index would have to sell-off South African bonds. This is the rationale behind looking specifically at their downgrades, as they have the potential to have the most significant implications for the market.

While, some studies looking at the impacts on financial markets suggest that sovereign downgrades do in fact have a negative impact on stock returns (for example Kaminsky and Shmukler, 2002; Hillier et al., 2004; Martell, 2005; Fatnassi et al., 2014), others find no significant effects (Michaelides, 2015; Mutize and Gossel, 2018). In addition, there is reason to believe that the impacts may differ across countries depending on the level of development. Most of the existing studies focus on developed countries, and the few that look at developing economies (for example Kaminsky and Shmukler, 2002 and Mutize and Gossel, 2018) tend to look at a panel of African countries which may overgeneralize the effect and ignore potential country-specific issues. This is especially relevant from an African context where economies vary widely in terms of financial market development, market liquidity, and political stability among other factors. Therefore, it is important to examine the relationship from a country-specific perspective and thus provide more applicable insight to both investors and policymakers.

Another key differential of this paper from the existing literature is that it extends the analysis to examine the extent to which the reaction to downgrade announcements differs across industries, an element that has not been covered in past studies. There is a possibility that the effect may differ across industries as industries vary widely in terms of structure, degree of export orientation, level of dependence on imports, and size among other factors. An understanding of the direction and extent of reaction across industries may provide more valuable insights, in that it allows us to ascertain which industries perform specifically well, and which are faced with the most adverse effects. The findings in this regard can effectively serve to guide investment decisions towards stocks within certain industries in the face of a potential downgrade. There is also the possibility that the overall market effects may be clouded by counterbalancing reactions across industries, as some may react positively while others may react negatively to the downgrade, which may ultimately cancel each other out. This is an aspect which has not been adequately addressed in the literature to date, to the best of my knowledge, and as such, this is one of the biggest contributions made by this paper.
This will once again take the form of a short-horizon event study, this time honing on the initial junk status announcement made by S&P on the 3rd of April 2017. The reason for the selection of this downgrade specifically is due to it being the first downgrade of South Africa's sovereign debt to junk status on behalf of any of the major rating agencies. As argued by Michaelides et al. (2015) the first downgrade should hold the most informational content for the market, given that subsequent downgrades soon thereafter are based on the same information. Thus, the rationale is that using this downgrade will pertinently affect our results. This event study component will be achieved by making use of the representative indices available on the JSE for selected industries and benchmarking their performance against the JSE All Share Index.

Based on our analysis we find no effect resulting from sovereign downgrades when we look at the overall market. However, upon closer inspection, in the form of the industry-specific event study component focusing on the downgrade on the 3rd of April 2017, we find that the downgrade did impact the JSE, just not uniformly across sectors. Our initial suspicion of positive and negative reactions among certain industries was confirmed. As such the results suggest that these reactions in opposing directions effectively cancel each other out when factored into the market return, making it seem like there is no effect on the JSE when there is. This is a particularly important contribution to the literature, which has not yet effectively been considered in the research to date. It suggests that previous studies finding no effect did not look closely enough. It also suggests that those findings suggesting a negative reaction could potentially be explained by the overall negative reaction in industries adversely affected by the downgrade outweighing the positive reactions in other more defensive industries when factored into the market return. This is the key finding of the paper and it warrants further exploration in future research.

The rest of the paper is structured as follows; Section 2 consists of a review of the relevant literature. In section 3, the data and methodology used in this paper are explained. Preliminary data analysis will make up our 4th Section, consisting of descriptive statistics and graphical analysis. In Section 5, the results are presented, and the major findings of the paper communicated. Finally, section 6 is on conclusions of this paper, along with a few recommendations for further research.
2. **Overview on Sovereign Credit Ratings**

There are 3 major rating agencies, being S&P, Moody's, and Fitch. Cantor and Packer (1996) argue that, although sovereign credit ratings incorporate a wide range of macroeconomic variables, six factors seem to play a more important role, namely: per capita income, default history, inflation, external debt, level of economic development, and economic growth. These factors which are observable account for 90% of Standard and Poor's and Moody's issued sovereign ratings (Cantor and Packer, 1996). However, aside from these observable characteristics, it is generally stated by the agencies that a range of qualitative factors are also considered and the judgement of the agencies themselves play a role in rating decisions, ultimately representing unobservable factors (Gaillard, 2009).

Although denoted slightly differently, the ratings from the various agencies are relatively similar. The highest possible rating is AAA (or Aaa in Moody's case) and is known as Prime Investment Grade. While the lowest is D or DDD, representing the situation in which an economy is in default, with no real prospects of pulling themselves out. The most important distinction is found in the split between investment-grade and junk. A downgrade from BBB-to BB+ perpetrated by S&P or Fitch represents a downgrade into junk status, or sub-investment grade, whereas for Moody’s this would take the form of a downgrade from Baa3 to Ba1. This was the case with our downgrade of interest with regards to our industry-specific event study component, or more specifically the downgrade of the South African economy on the 3rd of April 2017. Many investors have a mandate to invest in only investment-grade securities, and this explains the pertinence of such a development and its potential to result in the reweighting of international investors who hold South African stocks’ portfolios (Mugobo and Mutize, 2016).

3. **Literature Review**

One of the key explanations of the credit rating transmission mechanism to financial markets hinges on the presence of informational asymmetries. Ravi and Hong (2014) expand on this and explain that financial instrument issuers and finance professionals often have access to better information that is more relevant than those investing in them. Thus, the role of Credit Rating Agencies can be thought of in this light, in that they are able to balance these informational asymmetries through the provision of new relevant information to investors.
about a borrower (Listoken and Taibleson, 2010). As such sovereign credit downgrades, through their correction of information imbalances, can result in a wider perception of increased riskiness within the downgraded market. The rationale is that when a country is faced with a downgrade, it inherently becomes riskier, and this is reflected in higher interest rates or required yields and also a higher cost of capital (Chen et al. 2013). It is argued that downgrades increase a country’s risk premium, causing investors to stall their investment until new information is brought to light (Chen et al. 2013). In the same vein, downgrades are said to cause a flight-to-quality effect where investors reweight their portfolios and move their funds away to what they deem to be safer assets (Chen et al. 2013). This effect was confirmed by Gande and Parsley (2004), in their examination of the response of equity mutual fund flows in 85 countries from 1996-2002. They found that downgrades are associated with significant outflows of capital away from the downgraded country, confirming the reasoning behind this proposed effect (Gande and Parsley, 2004).

Another key element which is argued to have a role to play in this regard is the concept of sovereign credit ceilings. For a long time, ratings agencies held the policy that ratings of private companies could not exceed that of the sovereign nation in which it resides (Almeida et al., 2017). Although the rating agencies are generally moving away from this policy, it is still highly uncommon for companies to have ratings that pierce the sovereign credit ceiling (Standard & Poor’s Rating Services, 2013). Almeida et al. (2017) find that through this mechanism sovereign credit downgrades can severely impact financial markets, specifically through the adverse effects on “bound” firms, or those already operating at the national sovereign rating level. Bound firms are faced with reduced investment and credit market participation, while they are also associated with significantly higher increases in corporate bond yields, which is symptomatic of their heightened cost of borrowing as a result of the downgrade’s impact on their corporate ratings (Almeida et al., 2017). Thus, Almeida et al. (2017) conclude that sovereign downgrades do matter over and above their effects on macroeconomic fundamentals and that their adverse effects on the corporate sector are a key causal factor with regards to their impact on financial markets.

Moving on to the empirical evidence with regards to the effects of sovereign downgrades on financial markets, a wide range of the literature can be divided into two major strands; studies that look at the effects on bond markets and those that look at stock markets. With regards to bond markets, Cantor and Packer (1996) made use of a variety of cross-sectional analyses to
evaluate the determinants ratings issued by Moody’s and Standard & Poor’s and their impacts on financial markets using a sample of 35 sovereigns. Their findings suggest that announcements regarding changes in the agencies credit rating opinions significantly impact bond yields in the expected direction (Cantor and Packer, 1996). However, they also establish that the announcement effect on bond spreads is much more pronounced when the downgrade referred to already below investment grade, or newly “junk” rated issuers (Cantor and Packer, 1996). The argument is that investors have difficulty determining risk within speculative-grade economies and thus rely more on ratings (Cantor and Packer, 1996). This provides insights into the intensity of the impacts of sovereign rating changes, suggesting that the effects could be more significant in terms of the downgrade on the 3rd of April 2017.

Reisen and von Maltzan (1999) made use of event study methodology two-way Granger causality tests and found that there is a significant impact on bond spreads that results from imminent upgrades, as well as actual downgrades in spite of strong anticipation effects. However, the sample was restricted solely to the US and may not apply to an emerging economy. A South African perspective was introduced by Slabbert (2017) who set out to evaluate the likely effects of a downgrade of the South African economy to speculative status. To do this, a sample of countries that all initially had investment-grade status but were then downgraded to speculative status was chosen. The findings surprisingly suggest that sovereign downgrades may not have a profound effect on bond spreads under the stated conditions, however, there was significant evidence of heightened volatility around those spreads (Slabbert, 2017). As such, there seems to be some disagreement on the effects that would be incurred by the downgrade of South Africa to speculative-grade, or "junk status". Most of the literature suggests that there is a statistically significant negative effect, however, when the sample was controlled to at least partially emulate the conditions South Africa would be experiencing, the results were contradictory. It is possible that the same may be true with regards to the stock market, and this will be investigated further in the paragraphs to follow.

The literature assessing the impacts of sovereign rating downgrades with specific reference to the stock markets and stock returns of affected countries themselves are growing concerning the developed context, however, the literature regarding emerging or developing economies is still relatively sparse in comparison. Just as was the case for the literature regarding bond spreads, the literature does not provide a clear picture as a result of the presence of conflicting
results. There were contradictions both in the developed context, and more importantly for the purposes of this study, the developing context as well.

The idea that sovereign credit ratings significantly impact stock returns is echoed within various studies with regards to developed economies. For instance, Fatnassi et al. (2014) carried out an analysis making use of a combination of panel regressions and short-run event study methodology on the impacts of international rating announcements with specific reference to the markets of Portugal, Italy, Greece and Spain for the period 2008-2012. Their findings were in line with expectations, in that sovereign credit ratings changes were found to impact stock market returns, while also confirming the stylised fact that the strongest market reactions were found to be associated with own country and foreign country downgrades (Fatnassi et al., 2014). Hillier et al. (2004) corroborated this point, arguing that only downgrades are associated with a wealth of impacts on equity markets, and they offered a differential finding in that they suggest that only downgrades on the behalf of Standard & Poor’s and Fitch were associated with significant market falls Martell (2005) took this limitation one step further, in arguing that investors solely react to ratings on behalf Standard & Poor’s, while the other key findings were confirmed. There are however studies that provide conflicting evidence. For instance, Michaelides et al. (2015) used an event study methodology using the MSCI World Index as a benchmark and found no evidence of Abnormal Returns in financial markets after sovereign credit ratings, rather finding evidence of credit rating information leakage before the announcement. They ultimately conclude that the information content of a sovereign credit rating announcement is too weak to contemporaneously influence financial market prices (Michaelides et al., 2015).

Kaminsky and Shmukler (2002) present one of the few studies that take a developing country-specific sample, using a combination of panel regressions and event study methodology to examine the impacts of an array of sovereign rating changes on 16 emerging markets, excluding South Africa, for the period 1990 to 2000. They concluded that sovereign rating changes significantly affect both bond and stock markets, with domestic downgrades resulting in a 1 percentage point decrease in average stock returns (Kaminsky and Shmukler, 2002). However, there seems to be disagreement in the context of developing countries as well. Mutize and Gossel (2018) made use a sample of 24 African countries including South Africa, using a short-run event study to evaluate the dynamic effects of ratings changes as this paper will seek to do, followed by a GARCH model analysis to investigate volatility clustering around the
event which is beyond the scope of this research (Mutize and Gossel, 2018). They found that financial markets do not significantly react to sovereign credit rating announcements (Mutize and Gossel, 2018). They suggest that the relationship between sovereign credit ratings and security yields in African markets is very weak, maybe because these markets are already perceived to be risky (Mutize and Gossel, 2018). This insight could prove particularly valuable should the findings of our research suggest no significant reaction in response to downgrades, as was found by Mutize and Gossel (2018), as it provides a potential explanation of why this may be the case. Nevertheless, the fact remains that the conclusions drawn within the paper lead to more conflicting evidence for both bond and stock markets.

3.1 Data

This paper uses daily returns on a series of indices that are listed on the JSE, collected from Bloomberg, for a period January 2010- December 2017, which encapsulates all S&P and Moody’s downgrades since 1994. Downgrades in this context are defined as any decreases in South Africa’s local and/or foreign currency debt rating of one notch or more by any of the two agencies. For this purpose, consecutive letter grades for South Africa by either agency are examined to identify downward movements.

The indices collected can be broken down into two key categories. The first category refers to the two composite indices, each of which will be used as the benchmark in one of the two models within our analysis. For testing the effects of the downgrade on the JSE as a whole, we require a composite benchmark to represent the market return, for this purpose we use the World MSCI Emerging Markets Index. The World MSCI Index represents the world benchmark return for emerging markets, and South Africa currently accounts for a fair share of the index, at roughly 5.89% (MSCI, 2019). For the sectoral analysis component, the benchmark is the JSE All Share Index. The second set of indices consist of various industry representative indices listed on the JSE. For the purposes of this research, upgrades and outlooks have been omitted, given that the focus is specifically on what downgrades could mean for financial markets, due to the impending possibility of further downgrades of the South African economy in the near future. However, analysis including upgrades and/or outlooks would make for an interesting extension to this research in the future, subject to the availability of some more recent upgrades of South Africa’s foreign debt.
3.2 Methodology

To analyse the dynamic effects of the downgrade on stock returns within South Africa, a short-run event study methodology is employed. The methodology was initially introduced by Fama et al. (1969), in what is now known as a landmark paper. They introduced this methodology to examine security price behaviour around events, such as an earnings announcement, for example, making use of the market model to calculate Abnormal Returns (Fama, et al., 1969). The event study has become the standard method for looking at security price reactions to events and announcements (Binder, 1998). The methodology is in accordance with various studies within the literature (for example Kaminsky and Shmukler, 2002; Hillier et al., 2004; Michaelides et al., 2015). The short horizon methodology used to evaluate industry-specific effects has not been a feature of the literature. However, the same approach was followed by Abuzayed (2013) who looked at the market reaction, across a range of industries in Qatar, to the announcement that they will be hosting the 2022 FIFA World Cup. Indices were used to represent the various industries, and their returns were benchmarked against a composite stock market index, which is effectively the same process as that which will be undertaken within this paper.

For both components of our research the following steps will be followed:

1. Define the estimation window, event date and event window
2. Obtain estimates used in the calculation of expected returns using the market model
3. Calculate Abnormal Returns using expected returns
4. Calculate CARs, AARs and CAARs
5. Test the CAARs for significance and draw conclusions

3.2.1 Event Date, Event Window and Estimation Window

i. Event Date

The event dates will be the specific dates of the downgrade announcements regarding each downgrade of interest. There are 7 credit rating events used within the first component of the study, comprising all downgrades by Moody’s and S&P since 1994, identified based on the criteria established in Section 3.1. For the industry-specific component, only one event date is relevant, being the S&P junk status announcement on the 3rd of April 2017.
ii. Estimation Window

The estimation window refers to the period before the event window, which is used to calculate expected returns on our securities based on the market model. The estimation window and event windows must not overlap in order to ensure that estimates are not coloured by the idiosyncrasies of our event period. We follow Hillier et al. (2004) in using a window period of 120 days that runs until 10 days before our longest event window. There is no set standard in this regard, but an estimation window that is too short may affect the preciseness of our estimators (Ng and Ariff, 2019).

iii. Event Window

The event window is the period in terms of trading days that begins directly prior to our selected event date and runs until directly after the event. It is usually set as a period consisting of the same number of days before and after the event. For instance, Hillier et al. (2004) used a window period of 10 days before their event, the event date and 10 days after. Michaelides (2015) uses a period of 20 days before and after. There is no norm in terms of the correct number of days to use for short-horizon study, however long-run event studies, of more than one year, have shown to produce results that have little statistical power due to a wide range of issues beyond our scope (Brav, 2000) This paper will present results for two window periods, being 5 and 10 days before and after the event respectively.

3.2.2. Estimation of Expected Returns

Expected returns for our various indices are found using the intercept and slope estimates drawn from the following simple OLS regression:

\[ R_{it} = \alpha_i + \beta_i R_{wt} + \epsilon_{it} \] (1)

Where \( R_{it} \) represents the return on our security that we are evaluating, in the first component the JSE All Share Index, in the second our sectoral indices. \( \alpha_i \) is the intercept term from the regression. \( \beta_i \) represents the coefficient estimate on \( W_t \), which is our market or benchmark index, the World MSCI Emerging Index in the overall case and the JSE All Share Index in the sector-specific case. The \( \alpha_i \) and \( \beta_i \) estimates are pulled out and used in the calculation of our Abnormal Returns.
3.2.3. Abnormal Returns (ARs)

Abnormal Returns are calculated based on the single index model:

\[ AR_{it} = R_{it} - a_t - \beta_t R_{wt} \]  \hspace{1cm} (2)

Where \( R_{it} \) denotes the daily returns on the JSE All Share Index for the first component of the study. \( RW_t \) denotes the daily returns on the composite index, in the first case this refers to the World MSCI Emerging Index for each day of our event windows.

In terms of the sectoral analysis component, the same procedure was followed individually for each industry’s representative index with a few slight differences. The same model was used, however, \( R_{it} \) now denotes daily returns on each of our sectoral indices and the composite index against which normal performance will be benchmarked, \( RW_t \), will take the form of the JSE All Share Index. This will be a suitable benchmark for all industries on the exchange.

3.2.4. Cumulative Abnormal Returns (CARs), Average Abnormal Returns (AARs) and Cumulative Average Abnormal (CAARs)

i. Cumulative Abnormal Returns (CARs)

\[ CAR_t[t_1, t_2] = AR_{i1t} + \cdots + AR_{it2} \]  \hspace{1cm} (3)

ii. Average Abnormal Returns (AARs)

\[ AAR_t = \frac{1}{N} \times \sum_{t=1}^{N} AR_{it} \]  \hspace{1cm} (4)

Where \( N \) refers to the number of events, thus 7 for the overall stock market effects and 1 for the industry-specific effect component.

iii. Cumulative Average Abnormal Return (CAAR)
\[ CAAR[t_1, t_2] = \sum_{t=t_1}^{t_2} AAR_t \] (5)

3.2.5. Testing CAAR for Significance

The Test Statistic for our CAAR is defined as follows

\[ Z = \sqrt{N} \frac{CAAR[t_1, t_2]}{s} \sim N(0,1) \] (6)

Where \( s \) is an estimator for \( \sigma \) and is calculated according to:

\[ s = \frac{1}{\sqrt{N-1}} \sum_{i=1}^{N} (CAR_i[t_1, t_2] - CAAR[t_1, t_2])^2 \] (7)

The reported test statistic accounts for event induced variation, as it uses an estimate of cross-sectional variation of ARs in the testing period (Michaelides et al., 2015). It does not account for the cross-sectional correlation between ARs, however, this is more of an issue in longer horizon event studies and can be thought of as relatively irrelevant in short-horizon studies that are not clustered in event time (Kothari and Warner, 2004).
4.1. Data Analysis

Table 1: Industry-Specific Descriptive Statistics

<table>
<thead>
<tr>
<th>Industry</th>
<th>Mean</th>
<th>Standard Errors</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile</td>
<td>-0.44%</td>
<td>1.71%</td>
<td>-0.31</td>
<td>3.18</td>
</tr>
<tr>
<td>Banking</td>
<td>-0.38%</td>
<td>1.92%</td>
<td>-0.98</td>
<td>4.49</td>
</tr>
<tr>
<td>Beverage</td>
<td>-0.15%</td>
<td>0.80%</td>
<td>-0.33</td>
<td>1.97</td>
</tr>
<tr>
<td>Chemical</td>
<td>0.31%</td>
<td>1.45%</td>
<td>1.04</td>
<td>4.19</td>
</tr>
<tr>
<td>Construction and Materials</td>
<td>-0.59%</td>
<td>0.88%</td>
<td>-0.77</td>
<td>3.11</td>
</tr>
<tr>
<td>Consumer Goods</td>
<td>0.02%</td>
<td>1.02%</td>
<td>1.10</td>
<td>4.83</td>
</tr>
<tr>
<td>Consumer Services</td>
<td>0.30%</td>
<td>0.70%</td>
<td>0.71</td>
<td>3.43</td>
</tr>
<tr>
<td>Electronics and Electrical Equipment</td>
<td>-0.48%</td>
<td>0.86%</td>
<td>0.03</td>
<td>2.83</td>
</tr>
<tr>
<td>Food &amp; Drug Retailers</td>
<td>-0.03%</td>
<td>0.98%</td>
<td>0.13</td>
<td>1.72</td>
</tr>
<tr>
<td>General Financial</td>
<td>-0.09%</td>
<td>1.02%</td>
<td>-1.42</td>
<td>5.42</td>
</tr>
<tr>
<td>General Retailers</td>
<td>-0.12%</td>
<td>1.98%</td>
<td>-0.08</td>
<td>2.42</td>
</tr>
<tr>
<td>Healthcare</td>
<td>-0.18%</td>
<td>1.02%</td>
<td>-1.14</td>
<td>4.39</td>
</tr>
<tr>
<td>Healthcare Equipment &amp; Service</td>
<td>-0.39%</td>
<td>1.77%</td>
<td>-1.06</td>
<td>3.40</td>
</tr>
<tr>
<td>Household Goods</td>
<td>0.15%</td>
<td>1.16%</td>
<td>1.34</td>
<td>5.88</td>
</tr>
<tr>
<td>Industrial</td>
<td>-0.12%</td>
<td>1.06%</td>
<td>-0.45</td>
<td>3.39</td>
</tr>
<tr>
<td>Industrial Transportation</td>
<td>-0.56%</td>
<td>1.19%</td>
<td>-0.66</td>
<td>2.66</td>
</tr>
<tr>
<td>Life Insurance</td>
<td>-0.25%</td>
<td>1.00%</td>
<td>-1.39</td>
<td>5.04</td>
</tr>
<tr>
<td>Listed Property</td>
<td>-0.16%</td>
<td>0.68%</td>
<td>-0.10</td>
<td>2.67</td>
</tr>
<tr>
<td>Media</td>
<td>0.52%</td>
<td>1.01%</td>
<td>0.53</td>
<td>3.48</td>
</tr>
<tr>
<td>Mining</td>
<td>-0.02%</td>
<td>1.43%</td>
<td>-0.11</td>
<td>4.78</td>
</tr>
<tr>
<td>Mobile Telecoms</td>
<td>-0.37%</td>
<td>0.98%</td>
<td>0.07</td>
<td>2.91</td>
</tr>
<tr>
<td>Non-life Insurance</td>
<td>-0.49%</td>
<td>1.25%</td>
<td>-0.53</td>
<td>3.57</td>
</tr>
<tr>
<td>Pharmaceuticals &amp; Biotech</td>
<td>0.08%</td>
<td>0.65%</td>
<td>0.40</td>
<td>3.08</td>
</tr>
<tr>
<td>Resources</td>
<td>0.09%</td>
<td>1.16%</td>
<td>-0.09</td>
<td>3.86</td>
</tr>
<tr>
<td>Telecoms</td>
<td>-0.35%</td>
<td>0.91%</td>
<td>0.03</td>
<td>3.62</td>
</tr>
<tr>
<td>Technology</td>
<td>-0.58%</td>
<td>1.34%</td>
<td>0.10</td>
<td>3.47</td>
</tr>
<tr>
<td>Travel &amp; Leisure</td>
<td>-0.10%</td>
<td>1.20%</td>
<td>0.55</td>
<td>2.09</td>
</tr>
</tbody>
</table>

Source: Own Calculations

The above table shows the Average ARs for each industry that has been included in our analysis, they have been averaged across the event period with reference to a 21-day window- i.e. 10 days before the event date, the event date, and the 10 days that follow. We observe a few industries with positive Excess Returns, signifying that they benefited from the downgrade. Among these industries are the Consumer Goods, Chemicals, Consumer Services, Media, Household Goods, Pharmaceuticals & Biotech and the Resources sectors. The potential reasoning behind this could be that these industries are seen to be defensive, meaning that they perform better than other more cyclical stocks in the face of economic decline and recessions. Thus, if this is the case, investors would see them as good investment prospects in light of the
downgrade, and this increased demand for the stocks would drive returns upwards. The reasoning behind each sector’s defensiveness likely varies, however, the overall suggestion of defensiveness remains.

The skewness shows which direction the tails of the distribution of ARs for each industry are biased towards. We see that the Chemical, Household Goods, Consumer Services and Consumer Goods have ARs which are particularly positively skewed, while the Banking, General Financial, Life Insurance, Healthcare and Healthcare Equipment & Service sectors’ ARs are particularly negatively skewed. This may translate to these industries showing significant reactions in the direction they are skewed towards when we look at our results. The industries showing positive skewness would be preferable for investment in light of the downgrade. In terms of kurtosis, this refers to the size of the tails with reference to the distribution of ARs for each industry. High kurtosis means that ARs very far above or below the mean occur very frequently. The kurtosis of a normally distributed variable is 3. Industries with particularly high kurtosis include the Banking, Chemical, Consumer Goods, General Financial, Healthcare, Household Goods, Life Insurance and Mining sectors. These sectors are more likely to show extreme ARs resulting from the downgrade in either direction, the skewness is likely a good indication of in which direction these outliers are present.

4.2. Graphical Analysis
The above graph illustrates the Cumulative Average Abnormal Returns (CAARs) on the JSE All Share Index relative to the world MSCI Index across each day in the window period. The reason for using the CAARs is that they show how the overall sum of ARs averaged across our 7 downgrades for each event window day progresses, which gives us a clear picture of the direction of Average Excess Returns from day-to-day. When the graph trends downwards, this means that for those particular days in the window, the AARs are negative, whereas the inverse is true when there is an upward trend.

Surprisingly, the graph showcases the prevalence of positive AARs for various parts of the event window, most notably from around day -1 to day 7, as evidenced by the largely positive trend of the graph in this period. However, after the 7th window period day, we see a massive decline, suggesting that ARs averaged across the seven downgrades are particularly large and negative at this stage. Day 10 falls below the reference line which represents a return of 0%. Thus, we can infer that the overall impact of downgrades could be negative for the [-10, 10] event window, given that the graph depicts the cumulative effect. This would suggest that for a 21-day window, our conclusions may be in line with those in the literature that argue that sovereign credit downgrades adversely affect stock returns (Kaminsky and Shmukler, 2002; Hillier et al., 2004; Martell, 2005; Fatnassi, et al., 2014). However, it must be noted that this is
only suggestive of the direction of the CAARs, the result has not yet proven to be significant and its robustness will be investigated in the Results section. If significant, this could be down to the provision of new negative information which corrects information asymmetries within the market and negatively affects investor’s incentives to hold stocks on the JSE and/or possibly the adverse effects of a lowered sovereign debt ceiling on bound firms within the industries. However, for a window of [-5, 5], the graph suggests that we are likely to see CAARs that are positive.

What we could be seeing here is the interplay between various industries that react positively and those react negatively counterbalancing one another in either direction. Thus, when the slope is positive (negative), industries reacting positively (negatively) may be having more of an effect reflected in the market return. The robustness of any of the conclusions is not yet clear, we thus turn to our results section, where our true conclusions can be drawn.

5. Results and Discussion

5.1. Overall Stock Market

Table 2: Short-horizon -Benchmarked against the World MSCI Emerging Index

<table>
<thead>
<tr>
<th></th>
<th>CAAR [-5,5]</th>
<th>p-value</th>
<th>CAAR [-10,10]</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSE All Share Index</td>
<td>0.52%</td>
<td>(0.6481)</td>
<td>-0.12%</td>
<td>(0.9189)</td>
</tr>
</tbody>
</table>

*** p-value < .01, ** p-value < .05, * p-value < .1; p-values in parenthesis

The above tables show the results from a short horizon event study, which looked the 7 downgrades of South Africa's local and/or foreign currency-denominated sovereign debt since 1994 on behalf of S&P and Moody's. CAARs have been displayed, as they allow us to ascertain the total effect of our downgrades throughout each window period, which will allow conclusions to be drawn with regards to the overall impacts, or lack thereof.

The results suggest that sovereign downgrades on behalf of Moody’s and S&P do not significantly affect overall stock returns on the JSE, as evidenced by the particularly high p-values associated with each set of CAARs. This finding is in stark contrast with many of those listed within the literature review (Kaminsky and Shmukler, 2002; Hillier et al., 2004; Martell, 2005; Fatnassi, et al., 2014). However, findings in support of our results were reported by both Michaelides (2015) as and Mutize and Gossel (2018). The conclusions drawn by Mutize and Gossel (2018) are particularly interesting, as they provide a potential reason for the lack of
impact resulting from sovereign downgrades with specific reference to the South African context. In their study based on 24 African countries including South Africa, they cite the fact many African countries are generally already perceived to be risky by investors leading credit rating announcements to impart less useful information onto the market, as a potential causal factor for the weak relationship between sovereign downgrades and stock returns in Africa (Mutize and Gossel, 2018). Our findings are in line with this explanation, and as such we conclude that there is insufficient evidence to argue that credit downgrades affect South Africa’s financial markets in the short-term.

Something worth considering though is that downgrades may still actually have an impact. However, this impact may not be uniform across industries, some industries may have reacted positively, others negatively. The counteracting reactions on balance could cancel each other out when factored into the market return, ultimately giving the impression of no overall effect, even though there was one. This possibility will be explored further in the following section.

5.2. Industry Comparison

Table 3: Results from Industry Specific Event Study Component

<table>
<thead>
<tr>
<th>Industry</th>
<th>CAAR [-5,5]</th>
<th>p-value</th>
<th>CAAR [-10,10]</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile</td>
<td>-5.07%</td>
<td>(0.4987)</td>
<td>-11.11%</td>
<td>(0.3003)</td>
</tr>
<tr>
<td>Banking</td>
<td>-16.27%***</td>
<td>(0.0001)</td>
<td>-8.57%</td>
<td>(0.1505)</td>
</tr>
<tr>
<td>Beverage</td>
<td>-4.06%</td>
<td>(0.2751)</td>
<td>-2.59%</td>
<td>(0.6264)</td>
</tr>
<tr>
<td>Chemical</td>
<td>10.05%**</td>
<td>(0.0129)</td>
<td>4.58%</td>
<td>(0.4275)</td>
</tr>
<tr>
<td>Construction &amp; Materials</td>
<td>-7.33%*</td>
<td>(0.0980)</td>
<td>-10.59%*</td>
<td>(0.0945)</td>
</tr>
<tr>
<td>Consumer Goods</td>
<td>5.30%*</td>
<td>(0.0835)</td>
<td>0.79%</td>
<td>(0.8576)</td>
</tr>
<tr>
<td>Consumer Services</td>
<td>0.41%</td>
<td>(0.8789)</td>
<td>7.24%*</td>
<td>(0.0624)</td>
</tr>
<tr>
<td>Electronics and Electrical Equipment</td>
<td>-6.42%***</td>
<td>(0.0314)</td>
<td>-9.83%**</td>
<td>(0.0212)</td>
</tr>
<tr>
<td>Food &amp; Drug Retail</td>
<td>-5.79%**</td>
<td>(0.0484)</td>
<td>0.51%</td>
<td>(0.9031)</td>
</tr>
<tr>
<td>General Financial</td>
<td>-6.48%***</td>
<td>(0.0036)</td>
<td>-2.05%</td>
<td>(0.5197)</td>
</tr>
<tr>
<td>General Retailers</td>
<td>-15.82%***</td>
<td>(0.0003)</td>
<td>-1.48%</td>
<td>(0.8136)</td>
</tr>
<tr>
<td>Healthcare</td>
<td>-3.81%</td>
<td>(0.1965)</td>
<td>-3.18%</td>
<td>(0.4519)</td>
</tr>
<tr>
<td>Healthcare Equipment &amp; Services</td>
<td>-10.24%***</td>
<td>(0.0025)</td>
<td>-8.06%*</td>
<td>(0.0967)</td>
</tr>
<tr>
<td>Household Goods</td>
<td>5.09%</td>
<td>(0.4245)</td>
<td>2.64%</td>
<td>(0.7723)</td>
</tr>
</tbody>
</table>
Table 3 above shows the results from a short horizon event study, using representative indices from the JSE for each of the listed sectors to identify the presence of ARs across various industries. We observe the most evidence of ARs when considering an 11-day event window, i.e. a window of 5 days before the event, the event day itself and the 5 days that follow. We see that the downgrade did effect returns in various industries and that our suspicion of these returns being positive for some sectors and negative for others is confirmed by the results.

The highest level of significance is observed within the Banking, General Retail, General Financial, Industrial, Healthcare Equipment & Services, Listed Property, Life Insurance and Industrial Transportation sectors, with each of the listed sectors showing evidence of negative ARs at the 1% level. Interestingly though, only the Industrial Transportation and Healthcare Equipment & Services continue to show evidence of ARs when we increase the size of the event window to 21 days, producing results that are significant at the 5% and 10% levels respectively. The effects dissipate thereafter. The fact that the Banking, General Retail, and Industrial sectors show no evidence for longer window periods suggests that the effects of the downgrade are factored in relatively quickly within these sectors. Of all the industries returning results significant at the 1% level, the most adverse effects, as evidenced by the largest negative

<table>
<thead>
<tr>
<th>Sector</th>
<th>AR (11 days)</th>
<th>p-value</th>
<th>AR (21 days)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>-8.10%***</td>
<td>(0.0015)</td>
<td>-5.31%</td>
<td>(0.1451)</td>
</tr>
<tr>
<td>Industrial Transportation</td>
<td>-10.45%***</td>
<td>(0.0086)</td>
<td>-12.11%**</td>
<td>(0.0333)</td>
</tr>
<tr>
<td>Life Insurance</td>
<td>-7.85%***</td>
<td>(0.0017)</td>
<td>-4.60%</td>
<td>(0.1973)</td>
</tr>
<tr>
<td>Listed Property</td>
<td>-7.42%***</td>
<td>(0.0050)</td>
<td>-4.01%</td>
<td>(0.2885)</td>
</tr>
<tr>
<td>Media</td>
<td>6.05%</td>
<td>(0.1478)</td>
<td>11.75%**</td>
<td>(0.0494)</td>
</tr>
<tr>
<td>Mining</td>
<td>8.37%*</td>
<td>(0.0761)</td>
<td>-2.79%</td>
<td>(0.6795)</td>
</tr>
<tr>
<td>Mobile Telecoms</td>
<td>-5.40%</td>
<td>(0.1912)</td>
<td>-6.40%</td>
<td>(0.2782)</td>
</tr>
<tr>
<td>Non-life Insurance</td>
<td>-8.51%*</td>
<td>(0.0512)</td>
<td>-10.82%*</td>
<td>(0.0830)</td>
</tr>
<tr>
<td>Pharmaceuticals and Biotech</td>
<td>3.64%</td>
<td>(0.4390)</td>
<td>2.63%</td>
<td>(0.6956)</td>
</tr>
<tr>
<td>Resources</td>
<td>8.56%***</td>
<td>(0.0159)</td>
<td>-0.14%</td>
<td>(0.9781)</td>
</tr>
<tr>
<td>Technology</td>
<td>-4.17%</td>
<td>(0.3874)</td>
<td>-15.01%**</td>
<td>(0.0296)</td>
</tr>
<tr>
<td>Telecoms</td>
<td>-5.36%</td>
<td>(0.1788)</td>
<td>-6.16%</td>
<td>(0.2799)</td>
</tr>
<tr>
<td>Travel and Leisure</td>
<td>-7.07%**</td>
<td>(0.0135)</td>
<td>-3.07%</td>
<td>(0.4526)</td>
</tr>
</tbody>
</table>

*** p-value < .01, ** p-value <.05, * p-value <.; p-values in parenthesis
CAARs, are present in the banking and retail sectors, however, the other industries are also faced with largely negative CAARs.

The effects on the Banking sector are expected, given that S&P also downgraded South Africa’s banks to non-investment grade, such that they fall in line with the country’s sovereign rating, and banks were reported to have been hit particularly hard at the time (Mohr and Odendaal, 2017). The effects on the Retail sector also make sense, given its high domestic exposure and the fact that it relies highly on imports- which would lead to adverse effects in light of the prospect of a weakening Rand associated with the downgrade (Steyn, 2015). These two aforementioned industries can be thought of as the most sensitive to credit downgrades based on our results. The sensitivity in the case of Life Insurers, Listed Property and Industrial Transportation also makes sense. Standard & Poor’s Rating Services (2013) identified these sectors as highly sensitive to country risk; the Life Insurance industry due to its heavy reliance on the pace of wealth accumulation in South Africa and given that companies in this sector often hold a high proportion of domestic government debt. Whereas the Industrial Transportation sector is highly exposed to economic conditions, and also potential changes in regulation (Standard & Poor’s Rating Services, 2013). Lastly, Real Estate sector companies have cash flows and volumes that are highly sensitive to economic cycles, which would intuitively translate to sensitivity to credit downgrades as well (Standard & Poor’s Rating Services, 2013).

Also, of interest are the sectors which show evidence at the 5% level within the first window, which can still be considered sufficiently convincing in proving the presence of an impact within this time frame. Sectors that fall under this category include the Chemical, Electronics & Electrical Equipment, Food & Drug Retail, Travel & Leisure, and the Resources sector. Once again increasing the window period reduces the number of cases in which we obtain significant results with only the Electronics & Electrical Equipment Sector showing continued evidence for the 21-day window. We observe statistically significant evidence of negative ARs within the Electronics & Electrical Equipment, Food & Drug Retail and the Travel & Leisure sectors. This makes sense particularly in terms of the Travel & Leisure and Electronics & Electrical Equipment sector, given that these sectors can be thought of as constituents of discretionary spending, which is relatively sensitive to swings in domestic demand and can be inhibited in the case of poor economic performance (Standard & Poor’s Rating Services, 2013). The Food and Drugs Retail sector results are surprising, given that Food & Drugs are more in
line with the idea of Consumer Staples, which are usually associated with good performance during economic downturns (MSCI 2014). However, this may reflect investors’ perception of heavy reliance on imports in this sector, which would lead to detrimental effects on potential profits in the future, based on a weakening Rand associated with the downgrade (Mohr and Odendaal, 2017).

The presence of a significant positive effect within a few sectors is particularly interesting and suggests that the downgrade actually benefited returns for some of the industries within our sample. For an 11-day window, we observe evidence of a positive impact within the Chemicals and Resources industries, both significant at the 5% level, as well as within the Mining and Consumer Goods industries, significant at the 10% level, which is a less robust result. For some sectors this could ultimately be down to investors valuing them highly due to the heavy focus on exports, specifically the Mining and Resources sectors, as the negative implications of the downgrade for the Rand may have positive implications for South African exporters given that a weak Rand supports export revenues and income from foreign investments (Mohr and Odendaal, 2017). The Chemical sector’s reaction is the most puzzling, given that it is usually thought of as at least moderately sensitive to economic conditions (Standard & Poor’s Rating Services, 2013). Thus, its reaction stands in contrast to expectations, the reason for this is not clear and evidence presented in extensions to this research should seek to clarify whether extenuating circumstances were at play within this time. The effects within these industries seemed to subside relatively quickly, with no evidence of any ARs for longer windows. The reaction within the Consumer Goods sector will be discussed when we look at the Consumer Services sector a few paragraphs down the line.

The last set of industries that show evidence of impacts resulting from the downgrade for the [-5, 5] window is those that show evidence at the 10% level. This evidence can be considered to be relatively weak, however, it is evidence, nonetheless. Conclusions drawn in this regard may warrant further tests for robustness in future research. Among these sectors are the Mining and Consumer Goods sectors, which have already been discussed in the previous paragraph, as well as the Non-life Insurance and Construction & Materials sectors. The latter two sectors show weak evidence of negative effects, with fairly large CAARs. This evidence continues into the 21-day window, while the CAARs also grow in stature in the larger time frame, suggesting that the negative impacts are factored into returns relatively slowly in comparison with other sectors. The Non-life Insurance sector was listed as moderately sensitive by
Standard & Poor’s Rating Services (2013) which seems partially be in line with our results, while the Construction sector was listed as highly sensitive due to its vulnerability to the economic cycle.

The Technology, Consumer Services and Media sectors initially show no significant evidence within the 11-day window. In the 21-day window though, the Technology sector shows evidence of very large negative CAARs, significant at the 5% level, suggesting that it is highly sensitive, but the effects take more time to translate into returns. Thus, we can include the Technology sector when we discuss the industries that were most adversely affected by the downgrade. This sector is often thought of as one of the most volatile, it depends heavily on investment, and it is often classed as cyclical as opposed to defensive (MSCI 2014). Whereas the Consumer Services Sector shows weakly significant evidence of a positive effect. The Consumer Services Industry can be thought of as part of the broader category of Consumer Staples, which are a classic example of a defensive industry given their demand is resilient to economic developments and relatively constant (MSCI 2014). The same is true for the Consumer Goods sector. These sectors represent an attractive investment in light of poor economic developments, explaining the evidence of positive ARs that are significant at the 10% level. This is due to the idea that investors would see this as a valuable sector for investments in light of the downgrade, and this increase in demand would drive returns upwards. Given that the significance is weak, this conclusion is not completely robust, however, it is in line with expectations.

The positive effects on the Media sector, significant at the 5% are relatively puzzling, given that it does not intuitively seem to be a defensive sector. A reason for continued strength in this sector even in the face of economic decline put forward by PwC (2017), has been attributed to the still high growth in internet access, as well as the continued high organic growth potential in mobile internet access in particular, which is positively affecting revenues. Thus, investors may still see strong prospects in this industry.

On the other hand, there are sectors which show no effects whatsoever. Among these are the Automobiles, Beverages, Household Goods, Mobile Telecoms, Telecoms, Healthcare, Pharmaceuticals and Biotech industries. The composition of the Automobile industry may explain its resilience. It is generally dominated by large multinational car manufacturers, such as BMW, Volkswagen, and many other big players, who have opened factories here to take
advantage of low-cost structures as well as the market access opened up by South Africa’s trade agreements such as the one with the European Union (Deloitte, 2018). At the same time, it is an industry which places a lot of emphasis on exports to other African countries (Deloitte, 2018). These factors may lessen sensitivity to South Africa’s economic situation. When we think about the Beverages, Healthcare, and Pharmaceuticals industries, they are often classed as defensive industries, given that people often require medication, healthcare and refreshment regardless of whether they are faced with a recession or not (Thune, 2019). This is potentially the reasoning behind their resilience in the face of the downgrade. However, the lack of a positive effect based on their classification as defensive is surprising, since intuitively one would expect defensive industries to be subject to increased demand from investments during economic downturns. This could reflect a lower level of perceived resilience to economic conditions as opposed to other sectors on behalf of investors, resulting in a less pronounced reaction. Another possible explanation could be the effects having been factored in more quickly than in other sectors.

6. Conclusions

This paper set out to examine the impact of sovereign credit downgrades on stock returns within South Africa. The impact is initially examined for the whole market, after which the focus is narrowed down to specific industries. Returns on the JSE All Share Index were used to represent the entire market’s return, while industry returns were estimated through representative indices available on the JSE for each sector.

Based on a short-run event study methodology, we found no significant impact on stock returns for the JSE as a whole. A potential reason for this was first put forward by Mutize and Gossel (2018) within their research, where they highlighted the argument that African markets are often already perceived as risky and as such credit downgrades do not carry significant information content. However, a closer look at each industry category suggests that sovereign downgrades have impacts that differ across industries, as some react positively, others react negatively, while some don’t react at all. This could explain why on overall, they may appear to be no impact, the differential effects may on balance cancel each other out when we look at the overall market return. This gives the illusion of no significant effect on the JSE. However, when we look closer we see that downgrades do contemporaneously affect stock returns, just
not uniformly across the various sectors within the market. This is a relatively new insight and it suggests findings suggesting no effect warrant deeper investigation.

With regards to the specific effects on certain industries, the strongest evidence was reported within the Banking, General Retail, General Financial, Industrial, Healthcare Equipment and Services, Listed Property, Life Insurance and Industrial Transportation sectors, with each of the listed sectors showing evidence of negative ARs at the 1% level. Relatively strong evidence of negative impact was also reported in the Electronics & Electrical Equipment, Travel & Leisure, Technology and Food & Drug Retail Sector. Of the listed sectors, the most adverse outcomes were observed within the Banking, General Retail and Technology sectors. This is for the most part in line with expectations. Various banks were also downgraded on the 3rd of April 2017, and they were reported to be hit particularly hard by the downgrade. The Retail sector’s sensitivity is explainable given its high domestic exposure and the fact that it relies highly on imports- which would lead to adverse effects in light of the prospect of a weakening Rand associated with the downgrade. Finally, the Technology sector is often classed as particularly vulnerable and reliant on investment flows which may be inhibited during a downgrade. Weaker evidence of negative reactions was also listed for the Non-life Insurance and Construction & Materials sectors which were explained to be in the expected direction, but the conclusions are only significant at the 10% level.

The effects are not necessarily negative for some industries, with the Consumer Goods, Consumer Services, Chemicals, Resources, Media and Mining industries all showing significant evidence of positive ARs in the event window surrounding the downgrade. For the most part, evidence was weak, in that the conclusions were only significant at the 10% level, but for the Media and Resources industries, we obtained significance at the 5% level. Explanations for these reactions differed across industries. The Consumer Goods and Consumer Services sectors were identified more broadly as the Consumer Staples sector, which is a classic example of a defensive sector, and as such investors may have shifted funds towards these sectors due to their resilience to economic conditions. The Mining and Resources sectors are export intensive; thus, their revenues could be supported by a weakening Rand which was the case in terms of the downgrade. These factors may have made the two sectors more attractive investment prospects in the face of the downgrade, incentivising investors to move their funds into companies in these industries in light of the downgrade. Investments within these areas were thus likely to face a positive initial shock to returns in the period surrounding
the announcement. The impacts observed within the Media and Chemical sectors were a bit more puzzling and warrant further evaluation in research to come. No effect was observed for the Household Goods, Mobile Telecoms, Telecoms, Healthcare, Pharmaceuticals and Biotech industries.

Further research into the effects of downgrades on industries, incorporating outlooks, upgrades and a wider range of downgrades would be particularly interesting. This would require some more recent upgrades, which for now is a major limiting factor for such a study. However, in future, this would make for a nice extension to the research carried out within this paper. More depth would serve to solidify the conclusions drawn while providing further insights to guide investment decisions in a wider range of scenarios. Additionally, studies evaluating whether downgrades within the South African market have implications for neighbouring countries in terms of spillover effects would be interesting, especially if evaluated through the lens of various industries. The focus of this paper was on the JSE, based on the fact that its purpose is to inform investment decisions with regards to the South African context, and as such this was not a factor explored within this research.
References


Standard & Poor’s Rating Services. (2013). Corporate and government ratings that exceed the sovereign rating, October.
