



Libraries and Learning Services

University of Auckland Research Repository, ResearchSpace

Version

This is the Accepted Manuscript version. This version is defined in the NISO recommended practice RP-8-2008 <http://www.niso.org/publications/rp/>

Suggested Reference

Pududu, M. L., & de Villiers, C. (2016). Earnings management through loss Avoidance: Does South Africa have a good story to tell?. *South African Journal of Economics and Management Sciences*, 19(1), 18-34. doi: [10.17159/2222-3436/2016/v19n1a2](https://doi.org/10.17159/2222-3436/2016/v19n1a2)

Copyright

Items in ResearchSpace are protected by copyright, with all rights reserved, unless otherwise indicated. Previously published items are made available in accordance with the copyright policy of the publisher.

This is an open-access article distributed under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) Licence.

For more information, see [General copyright](#), [Publisher copyright](#).

EARNINGS MANAGEMENT THROUGH LOSS AVOIDANCE: DOES SOUTH AFRICA HAVE A GOOD STORY TO TELL?

Nolo Pududu, Department of Accounting, University of Pretoria
Charl de Villiers, The University of Auckland, and Department of Accounting, University of Pretoria

ABSTRACT

The purpose of this study is to determine whether South African managers manage earnings to avoid reporting small losses (small earnings decreases). The study covers all companies listed on the Johannesburg Stock Exchange (JSE), from 2003 to 2011. Following Burgstahler and Dichev (1997), cross-sectional distributions of earnings and changes in earnings are examined, these distributions are shown in histograms. Prior research (using data from the United States) has shown that the distribution curve of both the earnings and the change in earnings variable, had noticeably fewer observations (than would normally be expected) just below zero, and a significantly higher number of observations just above zero. This pattern in the distributions suggests that managers manage reported earnings to ensure that earnings do not fall below a specific threshold, being zero or prior year performance. Interestingly, and in contrast to the prior literature, using the Burgstahler and Dichev (1997) research model of analysis, our results show no evidence of earnings management to avoid reporting small losses or small earnings decreases in South Africa. A possible reason for this could be the relatively smaller size of the JSE (compared to stock exchanges in the United States). Additionally, and more importantly, it is possible that investors and analysts in South Africa may be fixated on other performance indicators, such as revenue and headline earnings per share, and not necessarily on earnings (profits). This study serves the purpose of extending the limited research on earnings management in South Africa, which is a developing economy. Furthermore prior research shows an inverse relationship between earnings management and earnings quality. Therefore, the results of this study may be useful to both users of financial reports, and regulators, who are concerned with earnings for the purposes of assessing cost of capital, as well as how companies utilise their resources

Keywords: *Earnings quality, Earnings management, Discontinuity of earnings / Change in earnings, Loss / Earnings decrease avoidance*

JEL: M41

INTRODUCTION

Earnings quality has been a subject of notable global interest, primarily because of major corporate failures that transpired in the early 2000s. Accounting scandals at prominent companies such as Enron, WorldCom, and Parmalat, have led to a loss of investor confidence in the integrity of the financial reporting process and the published earnings numbers (Koh, Matsumoto and Rajgopal, 2008).

The literature shows that earnings quality is important to various stakeholders. Earnings play an important role in informing users of financial reports on how a company utilises its resources (Burgstahler and Dichev, 1997a); the literature also presents strong evidence on the value relevance of earnings (Miller and Modigliani, 1961; Ball and Brown, 1968; Beaver, 1968; and Dechow, Sloan and Zha, 2014). Furthermore investors, analysts, creditors and other key lenders use financial information to make critical economic decisions (IASB, 2010) and the research also shows an inverse relationship between earnings quality and cost of capital, the higher the quality of earnings, the lower the cost of capital (Bhattacharya, Ecker, Olsson and Schipper, 2012; Barth, Konchitchki and Landsman, 2013). Regulators, such as the International Accounting Standards Board (IASB) and the South African Institute of Chartered Accountants (SAICA) are also concerned with earnings quality, as financial reports reflect the outcome of, *inter alia*, the standard-setting process (Schipper and Vincent, 2003). Pratt (2000, 750) defines earnings quality as the “extent to which net income reported on the income statement differs from true earnings,” while Schipper and Vincent (2003, 98) define earnings quality as the “extent to which reported earnings faithfully represent Hicksian income [Hicks, 1939].” Both definitions require that quality earnings be unbiased and accurate, in representing the economic activities (and actual earnings) of a company.

Barth, Landsman and Lang (2008) argue that earnings management is one of the major activities that reduce earnings quality, positing an inverse relationship between the level of earnings management and the quality of earnings, the higher the level of earnings management, the lower the quality of earnings. Healy and Wahlen (1999, 368) define earnings management as “management’s use of judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.” This definition encompasses both accruals earnings management (AEM)

and real earnings management (REM), in order to create a misleading favourable impression of the company's financial performance and position. AEM involves managing (manipulating) earnings through the financial reporting process, for example, showing bias in selecting specific accounting policies and estimates (Rossouw, 2010), while REM entails the management (manipulation) of the actual economic activities of an entity (Mey and de Klerk, 2015). A manager may for example process unwarranted fair value adjustments to assets or liabilities in order to boost profits (AEM). Alternatively, a manager may offer excessively lenient credit terms close to year-end, in order to boost sales; such actions may cause the company to raise bad debts (credit losses) in future periods, and this will have a negative effect on expected cash flows. Ultimately, REM and AEM can often lead to corporate fraud when this practice becomes excessive (Lin and Wu, 2014).

Prior research to determine and observe the occurrence of earnings management can be grouped into four (4) broad categories. (1) The first category focuses on the assessment of aggregate accruals (Jones, 1991). (2) The second category of research evaluates specific accruals, such as provision for bad debts (McNichols and Wilson, 1998). (3) The third category observes real earnings management (Graham, Harvey, and Rajgopal, 2005; Roychowdhury, 2006; Xu, Taylor, and Dugan, 2007; and Cohen and Zarowin, 2010). (4) The fourth category analyses cross-sectional distribution properties of earnings (change in earnings) for a large sample of companies (Burgstahler and Dichev, 1997b; Degeorge, Patel and Zeckhauser, 1999; Beatty, Ke and Petroni, 2002; Leuz, Nanda and Wysocki, 2003; Shen and Chih, 2005; Burgstahler and Eames, 2006; and Ebaid, 2012). The first two categories concentrate on AEM, while the third category focuses on REM, however, the fourth category makes no assumption with regards to how earnings are managed, only that the objective is to achieve a specific earnings target. The current available literature on loss avoidance has focused mainly on AEM, however REM has not been completely excluded. Benchmark targeting can just as well be achieved through lenient credit terms, in as much as it can be achieved through fair value adjustments. This study focuses on the fourth category, examining cross-sectional distributions of earnings and change in earnings, in order to detect earnings management in South Africa (SA) by managers of companies listed on the Johannesburg Stock Exchange (JSE).

The literature suggests that companies with increasing earnings patterns have significantly higher price-earnings ratios (Barth, Elliott and Finn, 1999) and enjoy economically significant abnormal returns (Myers, Myers and Skinner, 2007). Kasznik and McNichols (2002) find that

the market rewards companies meeting current period earnings expectations, even after taking into account the impact of future earnings expectations. Additionally, research shows that companies breaking such earnings patterns experience substantially negative abnormal share returns (DeAngelo, DeAngelo and Skinner, 1996; and Barth et al, 1999). Therefore, managers on share-based remuneration schemes have incentives to report profits (loss avoidance), and to report an earnings number greater or equal to the prior year (Pretorius and de Villiers, 2013). Burgstahler and Dichev (1997b) suggest that in an attempt to meet or beat earnings expectations, and therefore avoid negative market reactions, managers will purposefully adjust reported earnings, thereby creating information asymmetries between actual economic performance and reported earnings.

In line with Burgstahler and Dichev (1997b), we base the definition for small losses and small earnings decreases on the findings of Hayn (1995). With reference to the graphical representation (histogram) of cross-sectional distributions of earnings and change in earnings (scaled by the book value of equity), small losses and small earnings decreases are defined as those earnings and change in earnings that fall immediately below the zero interval (small profits and small earnings increases are just above zero). We continue to define earnings management to avoid earnings decreases and losses with reference to the cross-sectional distributions of earnings and change in earnings. For the purposes of loss avoidance, earnings management will be reflected in the form of unusually low frequencies of small losses (the interval just below zero) and unusually high frequencies of small positive earnings (the interval just above zero). While earnings management to avoid earnings decreases is likely to be reflected in the form of unusually low frequencies of small earnings decreases and unusually high frequencies of small earnings increases. For the frequency to be unusual, we expect to observe a discontinuity in the distribution pattern of earnings (change in earnings), with a dip (kink) in the distribution curve in the interval just below zero.

The seminal work of Burgstahler and Dichev (1997b) provides compelling evidence to suggest that the avoidance of earnings decreases and losses is a widespread phenomenon in the United States (US). They found that an estimated 30-40% of non-financial companies with small losses manage earnings to create small profits, and approximately 8-12% of companies with small decreases in earnings adjust earnings to achieve small earnings increases. As evidenced in Figures 1 and 2, the salient feature in the histograms is the discontinuity in the earnings and change in earnings intervals around zero. Not only is there a significant peak in the interval to

the immediate right of zero (small profits or earnings increases), there is also a noticeable break (kink) in the smooth curve in the interval to the immediate left of zero (small losses or earnings decreases). This suggests that the managers of a number of companies that were about to report an earnings number just below zero, Figure 1 (or just below the previous year's number, Figure 2), adjusted earnings to just above these thresholds.

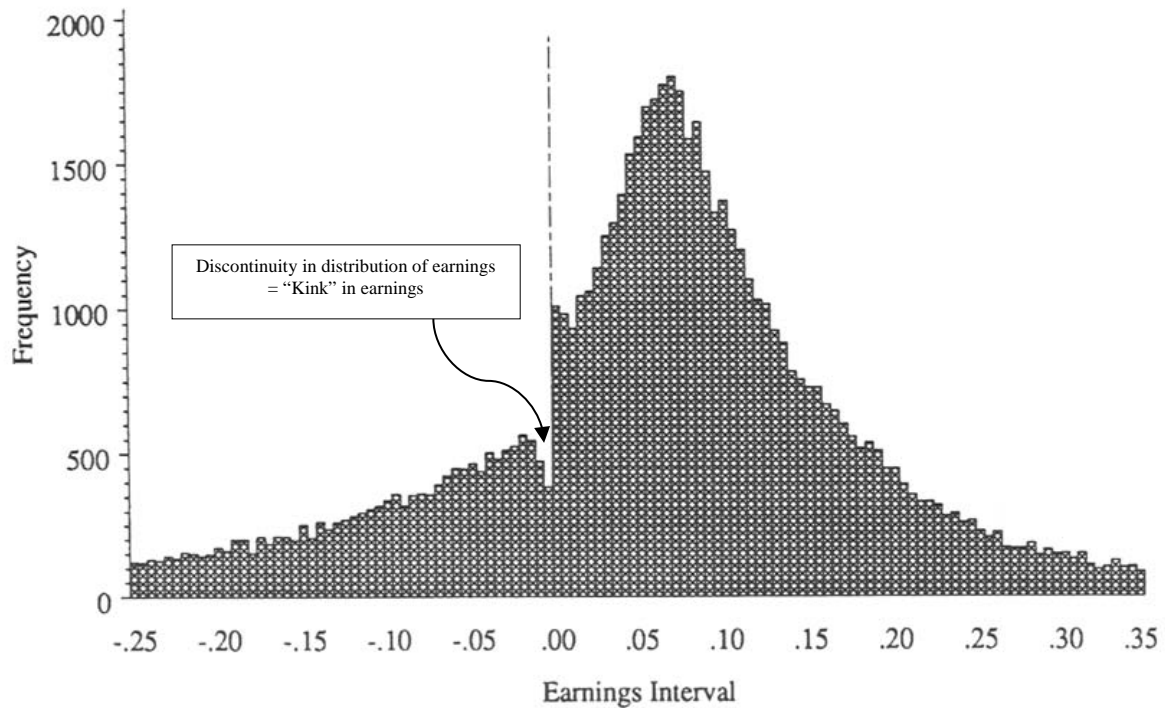


Figure 1 The distribution of earnings of US non-financial companies. Earnings: Annual net income scaled by market value of equity at the beginning of the year, $Earnings_t / MV_{t-1}$. (Graph taken from Burgstahler and Dichev, 1997b.)

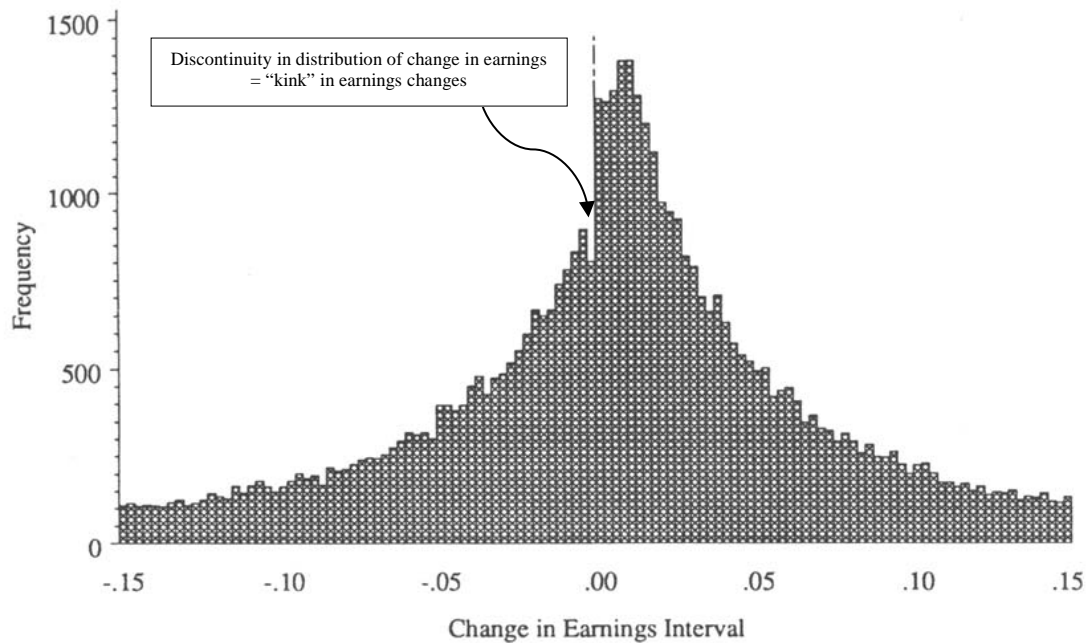


Figure 2 The distribution of change in earnings of US non-financial companies. Change in earnings: Changes in annual net income scaled by market value of equity as at the beginning of the first year, $(Earnings_t - Earnings_{t-1}) / MV_{t-2}$. (Graph taken from Burgstahler and Dichev, 1997b.)

The objective of this study is to address the following question: Do South African managers manage earnings in order to avoid reporting small losses and small decreases in earnings? We examine whether managers of companies listed on the JSE manage earnings to: (1) avoid reporting small losses (small earnings decreases); and (2) target small profits (small earnings increases) in order to sustain recent performance. We present the cross-sectional distributions of earnings and change in earnings, focusing on the distribution properties around zero. The sample covers the period 2003 to 2011 and includes 2,455 firm year observations for earnings and 2,100 firm year observations for change in earnings.

This study contributes to the limited body of literature on the avoidance of earnings decreases and losses in developing economies (Leuz, et al, 2003; Shen and Chih, 2005; and Ebaid, 2012), which play an important role in the resolution of global economic imbalances (Peltonen, Sousa and Vansteenkiste, 2012). Firstly, Shen and Chih (2005) focused on financial services companies, while our study provides an analysis of all JSE companies, as well as a separate analysis of non-financial companies. Secondly, Leuz, et al. (2003) only examined the distribution properties of earnings losses, while this study also incorporates earnings decreases. Examining earnings decreases is just as important, as prior year performance is a common benchmark in assessing management performance. Thirdly, Shen and Chih (2005) and Ebaid (2012) report that their results provide evidence to suggest that there is earnings management

in their sample companies, this inference is based only on the significant peaks they report in the interval to the immediate right of zero. However, both studies overlook the fact that there is no discontinuity (kink) in the interval to the immediate left of zero, which is the key signal of earnings management in this research design. A peak in small positive earnings (change in earnings), on its own, is not sufficient to infer earnings management. This study provides additional insight and understanding into the interpretation of the pattern of the distribution of earnings and change in earnings, providing further guidance in determining the existence of earnings management using the distribution properties of such variables.

The remainder of this paper is set out as follows: Section 2 provides the literature review on earnings management, specifically focusing on earnings management to avoid earnings decreases and losses, as well as a background of the South African environment. The section concludes with the hypothesis statement. The research method is discussed in Section 3 and the results are presented in Section 4. Section 5 provides a broader discussion on the findings, the implications thereof and a conclusion.

2

LITERATURE REVIEW

Prospect theory proposes that humans, by nature, are risk averse, and when confronted with choices, are more likely to choose the alternative that has the least likelihood of placing them in a loss position (Kahneman and Tversky, 1979). In order to determine a loss position a reference point is established, for example, the individual's original state of wealth. This theory implies that individuals would rather sacrifice potential gains, in an effort to maintain their original state of wealth, which in turn becomes the threshold at which success is measured. This demonstrates how important reference points are to humans when making decisions. Consequently, it is natural for external stakeholders such as investors, analysts, banks, and creditors, to utilise thresholds (reference points) as a means of judging and rewarding management performance. The end result is that managers also focus on thresholds such as positive and consistent earnings as well as analyst forecasts, when reporting to said stakeholders (Degeorge et al., 1999).

Although earnings management is hard to detect (Hay, 2015), prior research shows significant decreases in share prices associated with negative earnings surprises (Skinner and Sloan, 2002; Kinney, Burgstahler and Martin, 2002) and a positive market response to companies that meet

or beat analyst earnings forecasts (Bartov, Givoly and Hayn, 2002; Kasznik and McNichols, 2002; and Burgstahler and Eames, 2006). Barth et al. (1999) investigated the value relevance of increasing earnings patterns using the permanent earnings model by Miller and Modigliani (1966) and the accounting-based valuation model by Ohlson (1995). Results from both models provide evidence to suggest that companies with patterns of increasing earnings have considerably better price-earnings ratios. Myers et al. (2007) found that, after controlling for economic performance, companies that reported unusually long sequences of uninterrupted increases in earnings per share (EPS) enjoyed significant abnormal returns for as long as EPS continued to increase, and suffered significant share price decreases when the series was broken. While Kasznik and McNichols (2002) showed companies meeting earnings expectations had significantly higher earnings forecast and realised earnings than companies that did not. This evidence suggests that the market rewards companies that meet current period earnings expectations. They also found evidence to suggest that this premium may be a reflection of investors' perception that companies consistently meeting expectations are less risky than companies that do not.

The earliest finding on the discontinuity of earnings around zero is documented by Hayn (1995), who found a high concentration of earnings observations just above zero, while there were fewer than expected observations just below zero. In line with prospect theory, these findings suggest that when faced with small losses, management is more likely to manipulate earnings upwards in order to report small positive earnings, i.e. earnings just above zero. Burgstahler and Dichev (1997b) examined non-financial companies in the US for the period 1976 to 1994 and observed statistically significant irregularities around zero in the distribution of earnings and change in earnings, suggesting that managers manage earnings to achieve specific earnings thresholds. In line with Burgstahler and Dichev (1997b), Degeorge et al. (1999) developed a model to identify earnings management patterns that produce specific breaks and distortions in the distribution of observed earnings. Their model shows how efforts to exceed thresholds induce a unique blueprint of earnings management. Earnings that fall just below thresholds are managed upward; earnings that are far from thresholds, whether below or above, are trimmed down, making thresholds more achievable in the future. Burgstahler and Eames (2006) provide evidence to suggest that earnings are managed upwards in order to meet or slightly beat analyst forecasts and avoid negative earnings surprises.

Similar patterns of earnings management are noted in financial services companies. Beatty, Ke and Petroni (2002) hypothesised that the management of public banks are under greater pressure to report consistently increasing earnings as opposed to those of private banks. They investigated the credibility of the earnings management explanation by examining the stream of earnings changes and the components of these changes for publicly versus privately held banks. They found that, when compared to private banks; public banks are more likely to use income-increasing discretionary accruals to transform small earnings decreases before discretion, to small increases in reported earnings. They also found that public banks enjoyed longer series' of uninterrupted earnings increases.

Shen and Chih (2005) performed a cross-country study and used four measures to investigate the degree of earnings management in financial services companies, across 48 countries, (including SA and the US). They suggested that banks in SA manage earnings in order to avoid reporting losses and earnings decreases. However there are two concerns with their research design; the sample size from SA is relatively small, and the bin-width used in the histogram is too wide. Both of these factors may significantly affect the results. Shen and Chih (2005) do not address this in their analysis of South African financial services companies. Ebaid (2012) reports results similar to Shen and Chih (2005) for non-financial companies listed on the Egyptian stock exchange. Both studies only report a significant peak in small positive earnings and earnings increases, with no discontinuity in small losses and earnings decreases. Leuz et al. (2003) performed a cross-country earnings management study on 31 countries, which included SA and the US, from 1990 to 1999. They used a small loss avoidance ratio (small profits to small losses) as a proxy for earnings management. They found that the institutional characteristics of SA correlate with higher levels of earnings management when compared to the US. Their results also suggest that there is a greater incidence of earnings discretion through loss avoidance in SA than there is in the US, although, when compared to the total sample, SA and the US exhibited significantly lower levels of earnings management through loss avoidance.

2.1 Criticisms of the earnings management hypothesis

Several studies have criticised the research method and findings of Burgstahler and Dichev (1997b) and Degeorge et al. (1999). McNichols (2000) argued that it was unlikely that the large differences in the narrow intervals around specific earnings thresholds were due to the behaviour of the nondiscretionary component of earnings. Caylor (2010) found that although

income received in advance and accounts receivable are managed in an attempt to avoid negative earnings surprises, there is little evidence that either are managed to avoid reporting earnings decreases or losses. Dechow, Richardson and Tuna (2003) used discretionary accruals as a proxy for earnings management. Their results dispute the hypothesis that the discontinuity of earnings around zero is caused by earnings management through discretionary accruals. However these studies do not consider any other method of earnings management (such REA) that could be used to manage earnings towards benchmarks, and therefore it is impractical to generalise their results to all earnings management scenarios. This study investigates the existence of earnings management to achieve earnings targets, the actual method used by management to manage earnings is not within the scope of this study and is an area for further research.

2.2 South African background

Earnings management occurs when management mislead shareholders for several reasons, usually for their own personal gain. Managers use techniques such as premature recognition of revenue, delays in recognising expenses, and estimates to inflate or deflate profits. These financial practices result in inappropriate decision-making and ultimately, financial loss for shareholders, creditors and in many instances, employees. SA is not without its fair share of corporate scandals, which may have resulted, amongst other things, from some level of earnings management (e.g. LeisureNet, Masterbond and Regal Bank). Therefore there is a need for such earnings management research within a South African context. The Burgstahler and Dichev (1997b) study was performed on US companies for the period 1976 to 1994, however there are several factors that create a need for the research to be replicated in subsequent periods and specifically in SA.

Firstly, the importance of corporate governance and investor protection since the original study was conducted: The research shows conflicting evidence concerning incentives to report positive increasing earnings. Koh et. al. (2008) suggest that the market has become more sceptical of companies that meet or beat earnings expectations, particularly after the accounting scandals that broke in the early 2000s. Gilliam, Heflin and Paterson (2014) show evidence of significantly lower levels of earnings management through loss avoidance after the passage of the Sarbanes-Oxley Act of 2002 (SOX). In the US, SOX aimed to increase investor protection by holding top management individually accountable for financial reports, as well as increasing the independence of external auditors.

SOX was enacted as a result of accounting scandals, while in 1994, the dawn of democracy and the re-emergence of SA into the global market created the need for the King Report on Corporate Governance, King I (in later years replaced by King II in 2002, and King III in 2009). One of the key differences between the King report and SOX is legal enforcement. SOX is a US federal law whereas the King report is a non-legislative code based on principles; however, compliance with King is a JSE listing requirement. Although different, the two documents are fundamentally similar concerning the protection of external stakeholders, management accountability and the independence of the external auditor. Research shows that similar documents such as the 2002 Chinese Code of Corporate Governance for Listed Companies have had a positive effect on curbing earnings management in China (Chen and Zhang, 2014).

The second factor that creates a need for this study, is the financial reporting framework used in SA versus the one used in the US. In 1993, SA began the harmonisation process between South African Statements of Generally Accepted Accounting Practices (GAAP) and IFRS. This process of harmonization was completed in June 2004, when SAICA issued Circular 7/2004 announcing its decision to adopt the text of IFRS without any amendments (SAICA, 2004). Since 1973, the Financial Accounting Standards Board (FASB) have advised and provided input on the development of accounting standards in US GAAP. While the convergence project between US GAAP and IFRS continues, one of the key differences noted between the two frameworks lies in the conceptual approach: US GAAP is rule-based, whereas IFRS is principle-based. Both approaches have their criticisms, the rule-based encourages a checklist approach to financial reporting, therefore, managers may structure transactions in such a way as to enable them to tick the checklist. While the principle-based approach requires a lot more professional judgement in decision-making, leaving management with a lot more discretion in the financial reporting process. Interestingly, the research suggests that countries which apply either IFRS or US GAAP exhibit less earnings management towards targets (Barth, 2008).

Thirdly, Leuz et al. (2003) found that earnings management decreases with strong investor protection, because strong protection limits management from manipulating the financial reporting process. Investor protection decreases the incentive for management to create a false impression about the company's performance. They found that the legal protection of outside investors (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998) was a key determinant of, and had a direct relation to, the quality of financial information communicated by insiders to

outsiders. Although SA has one of the best financial reporting standards, the inhibiting characteristics of a developing economy remain; legal enforcement is not as strong when compared to developed economies such as the US. La Porta et al (1998) scored legal enforcement in SA considerably low, with widespread corruption coming out at the forefront of investor concerns. Dyreng, Hanlon and Maydew (2012) found more foreign earnings management in companies with extensive operations in countries with weak rule of law, than companies with subsidiaries in locations where the rule of law is strong. Therefore, although quality financial reporting standards have been associated with lower levels of earnings management, the enforcement of these standards is still subject to the institutional characteristics in which the country operates, in which case, lower legal enforcement may contra the higher quality financial reporting standards.

Lastly, the JSE is the largest stock exchange in Africa and remains an attractive investment worldwide. However, with approximately 400 companies, the JSE is still relatively small when compared to the larger exchanges in the US, such as the New York Stock Exchange (approximately 8,000 companies) or the Nasdaq (approximately 3,400 companies), where loss avoidance research has already been conducted. The JSE does not have as large an analyst following such as in the US, however, because of its size; it is easier to identify loss companies, and this may have a direct impact on companies' share prices. There could therefore be a greater incentive for JSE listed companies to avoid reporting small losses and target small profits as loss companies are more conspicuous on a smaller stock exchange.

2.3 Hypotheses

The hypotheses, arising from the above discussion, are summarised in this section. Research suggests that there is a negative relationship between quality financial reporting standards and earnings management, however, the legal enforcement in SA reduces the level of investor protection that can be expected for equity security holders in SA. The literature also suggests that there is an incentive for management to report positive increasing earnings, as it is directly associated with the positive market response. When considering the smaller size of SA's stock exchange, reporting earnings losses and decreases may draw unwarranted (negative) attention from investors. The conflicting research leads to the following hypotheses, stated in null form:

H1: Managers of companies listed on the JSE do not manage earnings to report small profits (avoid reporting small losses).

H2: Managers of companies listed on the JSE do not manage earnings to report small earnings increases (avoid reporting small earnings decreases).

3

RESEARCH METHOD

3.1 Research model

Empirical histogram

This study uses an empirical histogram to present a graphical description of the cross-sectional distribution of earnings and change in earnings for JSE listed companies. A histogram is used in statistics to provide graphical representation of the underlying frequency distribution of a set of a continuous variable. In order to construct the histogram, the correct bin width has to be determined as the choice of bin width primarily controls the amount of smoothing inherent in the histogram (Silverman, 1986). In line with Scott (1992), the number of bins is calculated from a suggested bin width h as:

$$h = 2(\text{IQR})n^{-1/3} \quad (1)$$

Where:

IQR is the sample interquartile range of the variable and is equal to $Q_3 - Q_1$.
 n is the number of available observations

The underlying assumption when calculating the bin width is that the data is normally distributed under the null hypothesis of no earnings management.

Durtschi and Easton (2005) list several factors that may be attributable to the discontinuity of earnings and change in earnings documented by Burgstahler and Dichev (1997b): (1) deflation of the earnings metrics; (2) sample selection criteria; and (3) differences between the characteristics of observations to the left of zero and the characteristics of observations to the right of zero. Beaver, McNichols and Nelson (2007) also attribute the discontinuity of earnings to asymmetric effects of negative special items and applicable effective tax rates for profit and loss companies. Beaver et al. (2007) argue that under the null hypothesis of no earnings management, earnings distributions would still exhibit a break at zero due to the asymmetric effects of these earnings components.

This study builds on the work of Burgstahler and Dichev (1997b), whilst taking into account the issues identified in prior research, and examining earnings management by SA listed companies. The deflation of the earnings metrics was identified as an issue as the market value of equity may be based on biased opinions of the market, as a response to a company's earnings. To address this issue, this study uses the book value of equity to scale the earnings metrics for the purposes of comparability of sample companies, instead of the market value of equity. In undocumented results, Burgstahler and Dichev (1997b) calculated their primary results using book value of equity and they obtained qualitatively similar results. Secondly Durtschi and Easton (2005) highlighted the risk that the sample selection criteria may lead to differential inclusion or exclusion of observations to the left of zero versus observations to the right of zero. For the purpose of this study, all the data available on McGregor BFA for companies listed on the JSE for the financial periods 2003 to 2011 were selected, therefore this process excludes selection bias.

The third issue highlighted in prior research is the difference between the characteristics of observations to the left of zero and the characteristics of observations to the right of zero (Beaver et al. 2007, Durtschi and Easton, 2005). Beaver et al. (2007) found that although effective tax rate and negative special items contribute to the discontinuity at zero, neither component caused the observations to shift from small losses to small profits. Therefore, their results cannot exclude the earnings management hypothesis as an explanation for the discontinuity of earnings at zero. This study uses after tax figures for the earnings metric, additionally, the effect of negative special items have not been adjusted for in the earnings metric. The asymmetric effects of these earnings components are identified as possible limitations in the research design, due to the fact that these components may or may not cause bias to the standardised difference.

3.2 Sample and data description

The study includes all companies with financial data available on McGregor BFA for 2002 to 2011. In order to be included in the sample for H₁, the statement of financial position and statement of profit or loss had to be available for at least two consecutive years, for any of the ten years in the period 2002 to 2011. The sample selection process and restrictions for H₁ yield a final sample of 2 455 earnings observations for 355 unique companies. To be included in the sample for H₂, the statement of financial position and statement of profit or loss had to be available for at least three consecutive years for any of the ten years in the period 2002 to 2011.

Therefore the sample selection process and restrictions for H₂ yield a final sample of 2 100 change in earnings observations for 352 unique companies.

Unit of analysis

The unit of analysis for H₁ is the individual annual *earnings* for year *t* (line item 101 as per McGregor BFA, *Profit attributable to Ordinary Shareholders*) scaled by the opening *book value of equity* for year *t* (line item 001 or 007 as per McGregor BFA, *Ordinary Shareholders Interest* or *Ordinary Shareholders Interest After Adjustments*). For the purposes of H₂, the unit of analysis is *change in earnings*, which is the difference between *earnings* for year *t* and year *t-1*, scaled by the opening *book value of equity* for year *t-1*.

4

RESULTS

4.1 Descriptive statistics

Table 1 presents the descriptive statistics for the variables used in Equation (1). Panel A presents the descriptive statistics for the *earnings* variable (earnings scaled by book value of common equity at the beginning of the year). The descriptive statistics for the *change in earnings* variable (change in earnings scaled by the book value of common equity at the beginning of the first year) are presented in Panel B. The total number of observations for the earnings variable is 2,455. Panel A reveals that the mean and median for each of the *earnings* variables are reasonably close to each other and have a comparatively asymmetrical distribution with a positive skew. However, after adjusting for outliers, the skewness for the *earnings* variable is only (-0.064), suggesting that the distribution of *earnings* is relatively symmetrical. Panel B reveals a total sample for the *change in earnings* variable of 2,100 observations. There is a slight difference between the mean and median of each of the *change in earnings* variables, with a relatively positive skew. After adjusting for outliers, the mean and median for the *change in earnings* variable are relatively closer to each other with a moderately positive skew (1.294), suggesting a modest right tail. After adjusting for outliers, the standard deviation for both the *earnings* variable (0.556) and the *change in earnings* variable (0.838) reveal that the distributions are relatively close to the means.

Table 1
Summary of descriptive statistics for scaled values of earnings and change in earnings

Panel A: Scaled earnings					
Variable	<i>N</i>	Mean	Median	Std. Dev.	Skewness
Earnings	2455	0.179	0.170	3.050	9.973
Earnings (excluding outliers)	2424	0.171	0.171	0.556	-0.064
Earnings (excluding financial services)	1911	0.169	0.174	3.176	9.566
Earnings (excluding 2008 and 2009)	1826	0.166	0.180	3.023	9.841
Panel B: Scaled change in earnings					
Variable	<i>N</i>	Mean	Median	Std Dev	Skewness
Change in earnings	2100	0.075	0.036	4.329	3.212
Change in earnings (excluding outliers)	2074	0.054	0.036	0.838	1.294
Change in earnings (excluding financial services)	1635	0.044	0.035	3.721	-13.590
Change in earnings (excluding 2008 and 2009)	1549	0.040	0.044	4.773	2.599

Scaled earnings: $Earnings_t / BV_{t-1}$
Scaled change in earnings: $(Earnings_t - Earnings_{t-1}) / BV_{t-2}$
Earnings_t: Profit attributable to ordinary shareholders (McGregor BFA item # 101) in period *t*
BV_t: Book value of equity at the end of fiscal year *t* (McGregor BFA item # 001 or # 007)

Table 2 (Panel A) reports the descriptive statistics by year of the *earnings* variable. The total number of observations increases relatively smoothly from approximately 200 for 2003 to just over 340 for 2011. The mean and median *earnings* are mostly positive throughout the sample period, with the exception of the mean for 2011. Throughout the sample period, the mean is slightly greater than the median, with the exception of 2003, 2010 and 2011.

Panel B shows the descriptive statistics by year of the *change in earnings* variable. The number of available observations increases steadily from 210 for 2004 to approximately 330 for 2011. The pattern in the mean and median for *change in earnings* is comparatively intermittent, with negative means observed for half of the sample period and only one year with a negative median of -0.008.

Table 2
Descriptive statistics analysed by year for scaled values of earnings and change in earnings

Panel A: Scaled earnings				
Year	<i>N</i>	Mean	Median	Std. dev.
2003	211	0.176	0.190	1.151
2004	221	0.548	0.196	5.827
2005	225	0.362	0.257	2.299
2006	236	0.440	0.272	2.040
2007	255	0.354	0.263	2.109
2008	296	0.311	0.192	2.831
2009	333	0.130	0.116	3.360
2010	334	0.007	0.120	1.211
2011	344	-0.385	0.110	3.785
Total	2455			
Panel B: Scaled change in earnings				
Year	<i>N</i>	Mean	Median	Std. dev.
2004	210	0.641	0.047	8.011
2005	220	-0.134	0.085	6.353
2006	224	-0.323	0.067	5.724
2007	236	0.096	0.075	1.712
2008	255	0.424	0.032	3.578
2009	296	-0.041	-0.008	1.581
2010	326	0.108	0.018	3.683
2011	333	-0.086	0.019	1.046
Total	2100			

Scaled earnings: $Earnings_t / BV_{t-1}$

Scaled change in earnings: $(Earnings_t - Earnings_{t-1}) / BV_{t-2}$

$Earnings_t$: Profit attributable to ordinary shareholders (McGregor BFA item # 101) in period t

BV_t : Book value of equity at the end of fiscal year t (McGregor BFA item # 001 or # 007)

4.2 Findings

A histogram of the *earnings* variable with interval widths of 0.041 for the range -0.61 to +0.61 is presented in Figure 3. The interval widths for all the histograms were calculated using Equation (1) in accordance with Scott (1992). The figure shows a peaked, bell-shaped distribution. A relatively smooth distribution is observed in the interval to the immediate right of zero (0.000, 0.041), *earnings* slightly greater than zero occur only slightly more frequently than would be expected. This is inconsistent with the earnings management hypothesis to achieve small positive profits. In contrast to Burgstahler and Dichev (1997b), *earnings* slightly

less than zero $(-0.041, 0.000)$ do not appear (at least graphically) to occur less frequently than would be expected, given the somewhat smoothness of the remainder of the distribution.

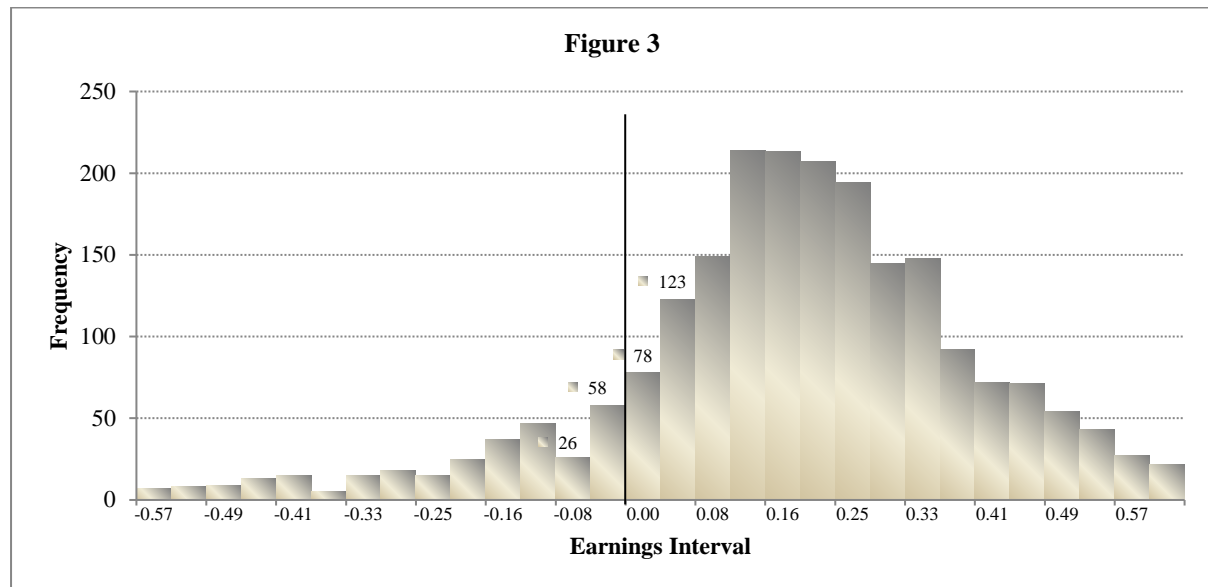


Figure 3 Empirical cross-sectional distributions of annual profit attributable to ordinary shareholders (McGregor BFA #101) scaled by beginning of the year book value of common equity (McGregor BFA #007 or #001), for financial years 2003 to 2011. The distribution interval widths are 0.041 and the solid line marks the location of zero on the horizontal axis. With an interval width of 0.041, the first interval to the right of zero contains all observations in the interval $[0.000, 0.041]$, the interval to the left of zero contains all observations in the interval $[-0.041, 0.000]$. The vertical axis labelled frequency represents the number of observations in each earnings interval.

Figure 4 shows the cross-sectional distribution of *change in earnings* with histogram interval widths of 0.032 for the range -0.48 to +0.48. The histogram in Figure 4 displays a single-peaked bell-curve; however, there is greater irregularity around zero when compared to Figure 3. *Change in earnings* slightly greater than zero $(0.000, 0.032)$ occur more frequently than would be expected, in line with the earnings management hypothesis to beat prior year's performance. However the number of observations in the interval to the immediate left of zero $(-0.032, 0.000)$ do not appear anomalous when compared to the smoothness of the remainder of the distribution, there is disparity between these results and the findings of Burgstahler and Dichev (1997b) for *change in earnings*.

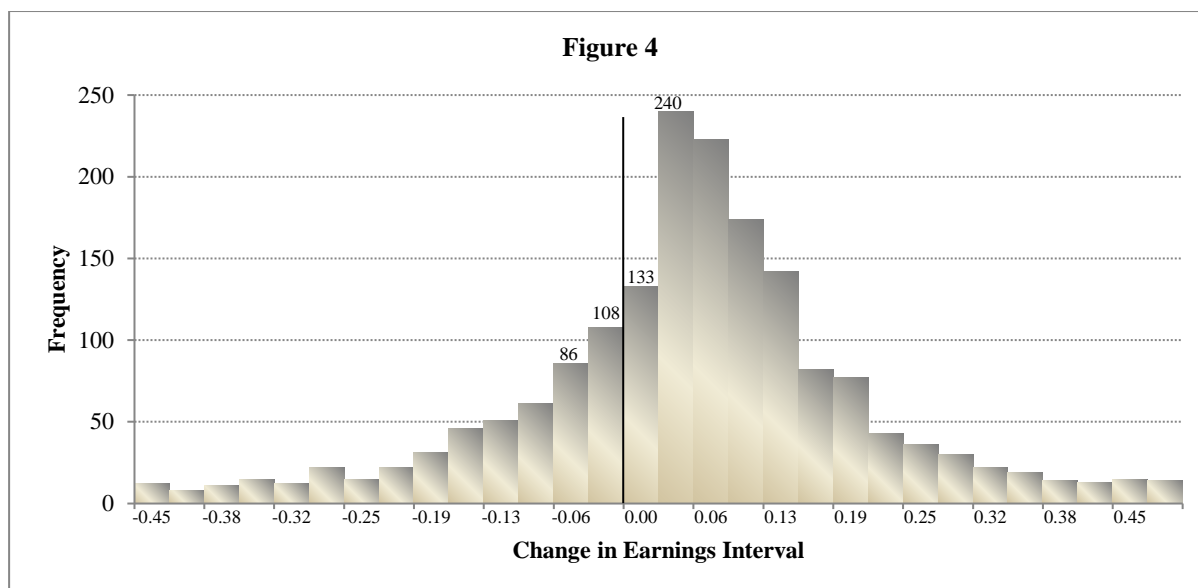


Figure 4 Empirical distributions of changes in annual profit attributable to ordinary shareholders (McGregor BFA #101) scaled by the book value of common equity (McGregor BFA #007 or #001) as at the beginning of the first year, for financial years 2004 to 2011. The distribution interval widths are 0.032 and the solid line marks the location of zero on the horizontal axis. With an interval width of 0.032, the first interval to the right of zero contains all observations in the interval [0.000, 0.032], the interval to the left of zero contains all observations in the interval [-0.032, 0.000]. The vertical axis labelled frequency represents the number of observations in each change in earnings interval.

Exclusion of the financial services industry

Due to the fact that the operating environment of the financial services sector differs from that of other industries, the cross-sectional distribution of *earnings* and *change in earnings* for all companies, excluding the financial services sector, were further analysed. The results in Figure 5 and Figure 6 show that the inclusion of the financial services sector in the initial sample does not influence the results, i.e. the histograms still show a smooth distribution in *earnings* and *change in earnings* at the zero interval.

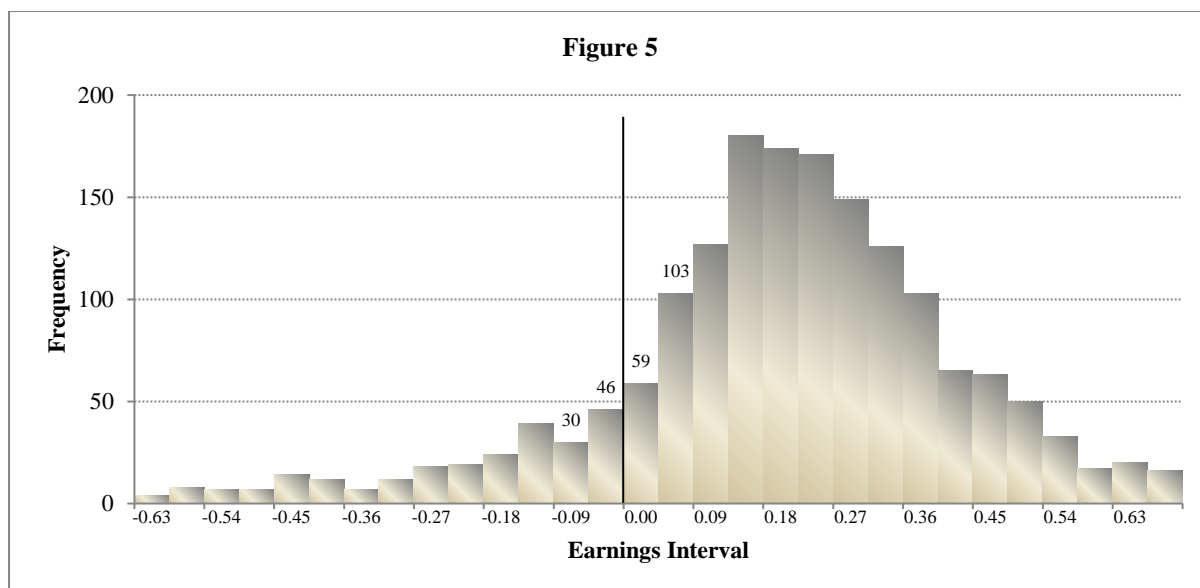


Figure 5 Empirical cross-sectional distributions of annual profit attributable to ordinary shareholders (McGregor BFA #101) scaled by beginning of the year book value of common equity (McGregor BFA #007 or #001), for financial years 2003 to 2011 (excluding companies in the financial services sector). The distribution interval widths are 0.045 and the solid line marks the location of zero on the horizontal axis. With an interval width of 0.045, the first interval to the right of zero contains all observations in the interval [0.000, 0.045], the interval to the left of zero contains all observations in the interval [-0.045, 0.000]. The vertical axis labelled frequency represents the number of observations in each earnings interval.

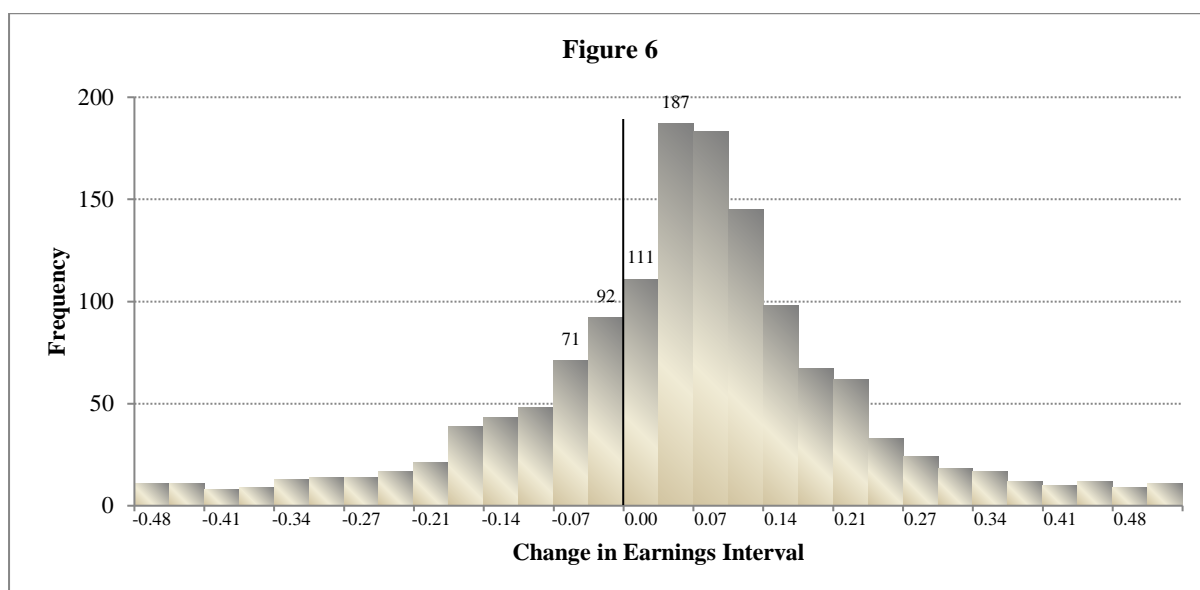


Figure 6 Empirical distributions of changes in annual profit attributable to ordinary shareholders (McGregor BFA #101) scaled by the book value of common equity (McGregor BFA #007 or #001) as at the beginning of the first year, for financial years 2004 to 2011 (excluding companies in the financial services sector). The distribution interval widths are 0.034 and the solid line marks the location of zero on the horizontal axis. With an interval width of 0.034, the first interval to the right of zero contains all observations in the interval [0.000, 0.034], the interval to the left of zero contains all observations in the interval [-0.034, 0.000]. The vertical axis labelled frequency represents the number of observations in each change in earnings interval.

Exclusion of the global financial crisis period

To provide rigor to the analysis, we excluded observations for financial years ending 2008 and 2009 (global financial crisis period) from the sample, as it may have been more acceptable in those years to report losses. Figure 7 and Figure 8 present the histograms for earnings and change in earnings respectively, after excluding the financial crisis period. Figure 7 reveals an emphasis in the discontinuity of earnings around zero in comparison to Figure 3, however, these results are no sufficient to infer earnings management. The distribution pattern in Figure 8 is relatively similar to Figure 4.

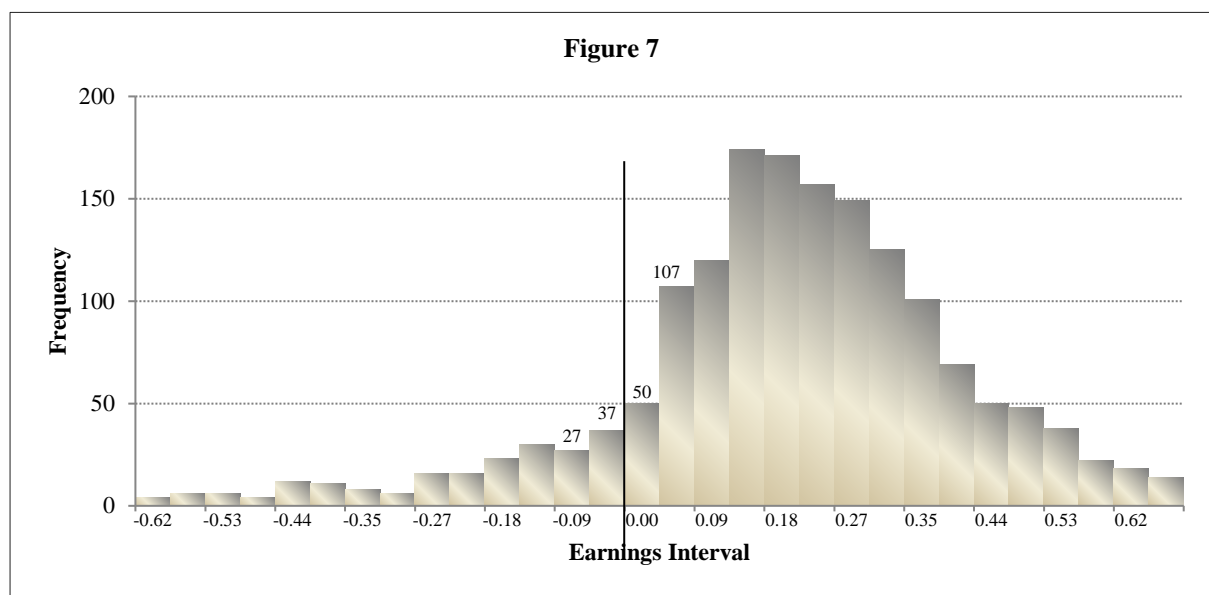


Figure 7 Empirical distributions of annual profit attributable to ordinary shareholders (McGregor BFA #101), excluding observations for financial years ending 2008 and 2009 (global financial crisis years), scaled by beginning of the year book value of common equity (McGregor BFA #007 or #001). The distribution intervals widths are 0.044 and the location of zero on the horizontal axis is marked by the solid line. With an interval width of 0.044, the first interval to the right of zero contains all observations in the interval $[0.000, 0.044]$, the interval to the left of zero contains all observations in the interval $[-0.044, 0.000]$. The vertical axis labelled frequency represents the number of observations in each earnings interval.

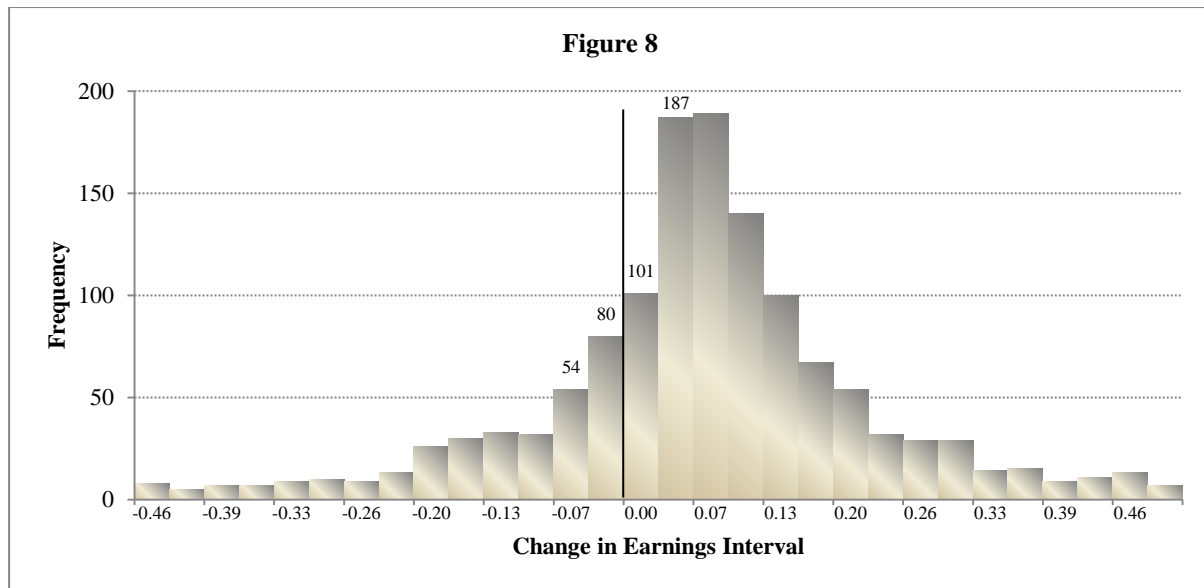


Figure 8 Empirical distributions of changes in annual profit attributable to ordinary shareholders (McGregor BFA #101), excluding observations for financial years ending 2008 and 2009 (global financial crisis years), scaled by the book value of common equity (McGregor BFA #007 or #001) as at the beginning of the first year. The distribution interval widths are 0.033 and the location of zero on the horizontal axis is marked by the solid line. With an interval width of 0.033, the first interval to the right of zero contains all observations in the interval [0.000, 0.033], the interval to the left of zero contains all observations in the interval [-0.033, 0.000]. The vertical axis labelled frequency represents the number of observations in each change in earnings interval.

5

CONCLUSION

The purpose of this study was to determine whether companies listed on the JSE report earnings that have been managed upwards, in order to avoid reporting earnings decreases and losses. The graphical presentations show that the earnings and changes in earnings of companies listed on the JSE are not abnormally distributed. The histograms further confirm that the distribution of the earnings is more consistent with the natural pattern expected for profit-orientated companies. Furthermore in contrast to Burgstahler and Dichev (1997b), the results did not reveal a discontinuity in the earnings, and change in earnings, for the interval to the immediate left of zero. The significantly smaller size of the JSE may be a possible reason for this; with a much lower investor following, there is less fixation on earnings. It is however possible that analysts and investors in SA particular attention to other performance indicators such as revenue, headline earnings per share (which is regulatory disclosure requirement unique to SA). The difference may also be attributable to the crucial strides that have been made globally in corporate governance consciousness since the dawn of the major accounting scandals (Alleyne et al., 2014). Lastly, within the research design, the *earnings* and *change in earnings* variables have not been adjusted for the asymmetric effects of negative special items and

applicable effective tax rates for profit and loss companies, due to data constraints. These may possibly, though not significantly, affect the curve in the distribution of earnings and change in earnings (Beaver et al., 2007) and is a possible limitation of this study.

Earnings management generally converts losses into profits (or vice versa), triggers bonuses, or crosses performance thresholds for other covenants, and this should be important to regulators (Sun and Rath, 2010). The results of this study are useful to the JSE and other regulatory bodies involved in the development and monitoring of policy such as the SAICA and the IASB, who are key-decision makers in the standard-setting process. Secondly, the results of this study are useful to shareholders, investors and creditors, as they are the primary carriers of financial risk when compared to other stakeholders (IASB, 2010). It would be useful to extend this study to smaller companies, not listed on the JSE, which are key drivers of the South African economy. Such companies are generally in the initial growth stages, and have different incentives and challenges than those of larger listed companies. Furthermore this study does not address various earnings management techniques in a South African context; future research would be useful in exploring this area.

The results of this study suggest that the discontinuity in earnings distributions may not necessarily be prevalent in SA. The results pose a question regarding the value relevance of accounting information in South Africa's financial systems, as managers may not necessarily be fixated on earnings figures. The results also echo the arguments of Ball, Kothari and Robin (2000), who suggest that the role of accounting information is limited in countries with low investor protection. The results also pose a question concerning the research design testing for earnings management by analysing cross-sectional distribution properties of earnings. Guttman, Kadan and Kandel (2006) found that discontinuities in the distribution of earnings may emerge endogenously, driven by forces that are less obvious than share-based payments. This suggests that a true (absence of earnings management) distribution of earnings will not necessarily be identical and normal for all economic environments, and therefore, the process of identifying earnings management could be different for the respective environments. Therefore, we suggest future research into the distribution properties of earnings and change in earnings in South Africa and other developing markets, specifically examining the location, size and probability of the discontinuity in the distribution of reported earnings.

References

- Alleyne, P., Weekes-Marshall, D., & Broome, T. 2014. Accountants' perceptions of corporate governance in public limited liability companies in an emerging economy: Evidence from Barbados. *Meditari Accountancy Research*, 22(2), pp. 186-210.
- Ball, R. & Brown, P. 1968. An empirical evaluation of accounting numbers. *Journal of Accounting Research*, Autumn, pp. 159-178.
- Ball, R., Kothari, S.P. & Robin, A. 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics*, 29(1), pp. 1-51.
- Barth, M.E., Elliot, J. & Finn, M. 1999. Market rewards associated with patterns of increasing earnings. *Journal of Accounting Research*, 37(2), pp. 387-413.
- Barth, M.E. Konchitchki, Y. & Landsman, W.R. 2013. Cost of capital and earnings transparency. *Journal of Accounting and Economics*, 55, pp. 206-224.
- Barth, M.E., Landsman, W.R. & Lang H.L. 2008. International accounting standards and accounting quality. *Journal of Accounting Research*, 46(3), pp. 467-498.
- Bartov, E., Givoly, D. & Hayn, C. 2002. The Rewards to Meeting or Beating Earnings Expectations. *Journal of Accounting and Economics*, 33, pp. 173-204.
- Beatty, A.L., Ke, B. & Petroni, K.R. 2002. Earnings management to avoid earnings declines across publicly and privately held banks. *The Accounting Review*, 77(3), pp. 547-570.
- Beaver, W.H. 1968. The information content of annual earnings announcements. *Empirical research in accounting: selected studies*, pp. 67-92.
- Beaver, W.H., McNichols, M.F. & Nelson, K.K. 2007. An alternative interpretation of the discontinuity in earnings distributions. *Review of Accounting Studies*, 12(4), pp. 525-556.
- Bhattacharya, N., Ecker, F., Olsson, P.M. & Schipper, K. 2012. Direct and mediated associations among earnings quality, information asymmetry, and the cost of equity. *The Accounting Review*, 87(2), pp. 449-482.
- Burgstahler, D & Dichev, I. 1997a. Earnings, Adaptation and Equity Value. *The Accounting Review*, 72(2), pp. 187-215.
- Burgstahler, D & Dichev, I. 1997b. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, 24, pp. 99-126.
- Burgstahler, D & Eames, M. 2006. Management of earnings and analysts' forecasts to achieve Zero and small positive earnings surprises. *Journal of Business Finance and Accounting*, 33(5) & (6), pp. 633-652.
- Caylor, M.L. 2010. Strategic revenue recognition to achieve earnings benchmarks. *Journal of Accounting and Public Policy*, 29(1), pp. 82-95.
- Chen, J.J. & Zhang, H. 2014. The impact of the Corporate Governance code on earnings management – Evidence from Chinese Listed Companies. *European Financial Management*, 20(3), pp. 596-632.
- Cohen, D.A. & Zarowin, P. 2010. Accruals-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics*, 50, pp. 2-19.

- DeAngelo, H., DeAngelo, L. & Skinner, D.J. 1996. Reversal of fortune: Dividend signaling and the disappearance of sustained earnings growth. *Journal of Financial Economics*, 40, pp. 341-371.
- Dechow, P.M., Richardson, S.A. & Tuna, I. 2003. Why are earnings kinky? An examination of the earnings management explanation. *Review of Accounting Studies*, 8, pp. 355-384.
- Dechow, P.M., Sloan, R.G. & Zha, J. 2014. Stock prices and earnings: A history of research. *Annual Review of Financial Economics*, 6, pp. 343-363.
- DeGeorge, F., Patel, J. & Zeckhauser, R. 1999. Earnings management to exceed thresholds. *The Journal of Business*, 72(1), pp. 1-33.
- Durtschi, C. & Easton, P. 2005. Earnings management? The shapes of the frequency distributions of earnings metrics are not evidence ipso facto. *Journal of Accounting Research*, 43(4), pp. 557-592.
- Dyreng, S.D., Hanlon, M. & Maydew E.L. 2012. Where do firms manage earnings? *Review of Accounting Studies*, 17(3), pp. 649-687.
- Ebaid, I.E. 2012. Earnings management to meet or beat earnings thresholds: Evidence from the emerging capital market of Egypt. *African Journal of Economic and Management Studies*. 3(2), pp. 240-257.
- Gilliam, T.A., Heflin, F. & Paterson, J.S. 2014. Evidence that the zero-earnings discontinuity has disappeared. *Journal of Accounting and Economics*, <http://dx.doi.org/10.1016/j.jacceco.2014.07.001>.
- Graham, J.R., Harvey, R. & Rajgopal, S. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40, pp. 3-73.
- Guttman, I. Kadan, O. & Kandel, E. 2006. A rational expectations theory of kinks in financial reporting. *The Accounting Review*, 81(4), pp. 811-848.
- Hay, D. 2015. The Frontiers of Auditing Research. *Meditari Accountancy Research*, 23(2), pp. 158 – 174.
- Hayn, C. 1995. The information content of losses. *Journal of Accounting and Economics*, 20, pp. 125-153.
- Healy, P.M. & Wahlen, J.M. 1999. A review of the earnings management literature and its implications for standard setting, *Accounting Horizons*, 13(4), pp. 365-383.
- Hicks, J. 1939. Value and capital. *Oxford, U.K. University Press*.
- International Accounting Standards Board (IASB). 2010. *The Conceptual Framework for Financial Reporting*. International Financial Reporting Standards.
- Jones, J.J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research*, 29, pp. 193-228.
- Kahneman, D. & Tversky, A. 1979. Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), pp. 263-292.
- Kasznik, R. & McNichols, M.F. 2002. Does meeting earnings expectations matter? Evidence from analyst forecast revisions and share prices. *Journal of Accounting Research*, 40(3), pp. 727-759.
- Kinney, W., Burgstahler, D. & Martin, R. 2002. Earnings surprise “materiality” as measured by stock returns. *Journal of Accounting Research*, 40(5), pp. 1297–1329.

- Koh, K., Matsumoto, D.A. & Rajgopal, S. 2008. Meeting or beating analyst expectations in the post-scandal world: Changes in stock market rewards and managerial actions. *Contemporary Accounting Research*, 25(4), pp. 1067-1098.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. 1998. Law and finance. *Journal of Political Economy*, 106, pp. 1113-1155.
- Leuz, C., Nanda, D. & Wysocki, P.D. 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, 69, pp. 505-527.
- Lin, F. & Wu, S. 2014. Comparison of cosmetic earnings management for the developed markets and emerging markets: Some empirical evidence from the United States and Taiwan. *Economic Modelling*, 36, pp. 466-473.
- McNichols, M.F. 2000. Research design issues in earnings management studies. *Journal of Accounting and Public Policy*, 19, pp. 313-345.
- McNichols, M. & Wilson P. 1988. Evidence of earnings management from provision for bad debts. *Journal of Accounting Research*, 26(Supplement), pp. 1-31.
- Mey, E., & de Klerk, M. 2015. Association between having a CA (SA) as CEO and accruals quality. *Meditari Accountancy Research*, 23(3), pp. 276-295.
- Miller, M.H. & Modigliani, F. 1961. Dividend policy, growth, and the valuation of shares. *The Journal of Business*, 34(4), pp. 411-433.
- Myers, J.N., Myers, L.A. & Skinner, D.J. 2007. Earnings momentum and earnings management. *Journal of Accounting, Auditing and Finance*, 22, pp. 249-284.
- Ohlson, J.A. 1995. Earnings, book values and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), pp. 661-687.
- Peltonen, T.A., Sousa, R.M. & Vansteenkiste, I.S. 2012. Wealth effects in emerging market economies. *International Review of Economics and Finance*, 24, pp. 155-166.
- Pratt, J. 2000. *Financial Accounting in an Economic Context*. 4th edition. Cincinnati, OH: South-Western College Publishing.
- Pretorius, D. & de Villiers, C. 2013. The effect of share-based payments on earnings per share of South African listed companies. *Meditari Accountancy Research*, 21(2), pp. 178-190.
- Rossouw, J. 2010. Empirical results of the accounting policies chosen by South African listed companies. *Meditari Accountancy Research*, 18(2), pp. 38-56.
- Roychowdhury, S. 2006. Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42, pp. 335-370.
- SAICA. 2004. *Circular 7/2004*. [Online] Available from: <https://www.saica.co.za/documents/Circ7.pdf> [Accessed: 2013-06-27].
- Schipper, K. & Vincent, L. 2003. Earnings quality. *Accounting Horizons*, 17, pp. 97-110.
- Scott, D.W. 1992. *Multivariate density estimation: theory, practice and visualization*. New York: Wiley.
- Shen, C. & Chih, H. 2005. Investor protection, prospect theory and earnings management: An international comparison of the banking industry. *Journal of Banking & Finance*, 29, pp. 2675-2697.

- Silverman, B.W. 1986. *Density estimation for statistics and data Analysis*. London: Chapman & Hall.
- Skinner, D.J. & Sloan, R.G. 2002. Earnings surprises, growth expectations, and stock returns or Don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies*, 7(2-3), pp. 289-312.
- Sun, L. & Rath, S. 2010. Earnings management research: A review of Contemporary Research Methods. *Global Review of Accounting and Finance*, 1(1) pp. 121-135.
- Xu, R.Z., Taylor, G.K. & Dugan, M.T. 2007. Review of real earnings management literature. *Journal of Accounting Literature*, 26, pp. 195-228.