

The Impact Of Forced Financial Restatements On The Share Prices Of JSE Listed Firms

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ABSTRACT

This study investigates the effect of forced financial restatements on the share prices listed on the Johannesburg Stock Exchange (JSE). An event study methodology is used to examine the share price reaction of 34 firms that forcefully restated their results following a GAAP Monitoring Panel review. The results indicate that the equity of 79.1 per cent of the firms decreased as a result of the restatement. The average standardised abnormal returns for 55.9 per cent of these firms were also found to be negative. The study further finds that the volume of shares traded directly following the announcement increased substantially, especially five days following the announcement. The study makes a contribution to the existing literature in that is the first of its kind to focus on the share price reaction of forced financial restatements on share prices in the South African context.

Keywords: Financial Restatements; Johannesburg Stock Exchange; Share Returns; Event Study

1. INTRODUCTION

The recent turmoil of the global financial crisis has adversely affected financial markets to an extent unprecedented in recent decades. Regulators have had to reassess their role in not only domestic markets, but international markets too and specifically how interrelated markets within the global context have become. Needless to say, Stock exchanges throughout the world have in many cases bore the brunt of this as investors search for safe havens to safeguard their capital. On a macro level, the soundness and credibility of these exchanges are therefore important gauges for increased capital injection to not only the firm involved, but to the growth potential of an economy as a whole. On a micro level, the financial performance of firms listed on these exchanges is heavily dependent on the disclosure of accurate and credible information disseminated through, amongst others, annual reports. With this in mind, this paper investigates the effect of financial restatements on the share returns of firm listed on the Johannesburg Stock Exchange (JSE).

2. BACKGROUND AND RESEARCH OBJECTIVES

Accurate disclosure of information is crucial to ensuring the integrity of a sound corporate and financial environment. The financial crisis of 2007-2009 pays testament to this. Embedded in the crisis was the lack of US banks' mitigation of the inherent risk pertaining to the so-called 'sub-prime' loans. Assumptions were made about the projected growth path of the economy and this was built into the risk faced by the banks being understated. Instead of the risk being mitigated, it was transferred to fellow market participants and became a global crisis that some have estimated to be second only to the Great Depression of 1929 (Claessens, Dell'Ariccia, Igan & Laeven 2010). Notwithstanding the concerns surrounding corporate governance and the necessary regulatory oversight, an important lesson to learn from the financial crisis is that the disclosure of information to the market is crucially important as market participants are able to react in ways that are potentially devastating to market stability (Bardos, Golec & Harding 2011:1918).

Further to this, the unexpected events of the highly publicised corporate failures¹ resulted in capital markets around the world experiencing a loss of investor confidence (Rezaee 2004:107). For many of these firms, financial restatements had a devastating effect with equity values plummeting and credit ratings often being reduced to junk status (Agrawal & Chadha 2005). The flow of information, and more importantly accurate information, is therefore crucial to stabilising possible concerns and perceptions that market participants may have. Within this context, the primary objective of this study is to examine the short-term share price reaction to forced financial restatements resulting from the work of the GAAP Monitoring Panel (GMP). A two stage event study methodology is used to examine these objectives. To the knowledge of the authors, no study has focused on the market reaction of share price movements based on forced financial restatement announcements in the South African context.

3. LITERATURE REVIEW

3.1. The Johannesburg Stock Exchange

Since its modest beginnings, the JSE has evolved to one of the top twenty largest equity exchanges in the world with a market capitalisation of R6,119 trillion at the end of 2010 (World Federation of Exchanges 2010). The JSE performs well in global terms. For example, in the World Economic Forum's (WEF) annual 'Global Competitiveness Report' of 2011/12, the JSE was ranked first globally in 2010 and 2011 for regulation and supervision (World Economic Forum 2011:486). In addition, the WEF ranked the JSE fourth with regards to the ease to raise money by issuing shares (World Economic Forum 2011:482). Given further that the interests of minority shareholders being protected by the legal system ranked third and that the auditing and reporting standards *vis-à-vis* firm financial performance ranked first in 2011 (World Economic Forum 2011:407,409), these results suggest that the operating and regulatory environment that listed firms operate within in South Africa is comparable with the best in the world.

For a period of approximately 60 years since its inception in 1886, the JSE was self-regulated with the first legislation the Stock Exchanges Control Act (SECA) enacted in 1947. Supporting the notion of self-regulation, the SECA mandated the JSE to be self regulating and required that the JSE prepare and maintain its own listing requirements (JSE Limited 2010b). In addition to SECA, the JSE is also regulated by the Financial Markets Control Act of 1989, the Custody and Administration of Securities Act of 1992, and the Insider Trading Act of 1998. The closing of the open outcry trading floor and the introduction of the centralised, automated trading system known as the Johannesburg Equities Trading (JET) system on 7 June 1996 contributed towards the value of shares traded during 1996 reaching a new record of R117,4 billion and new capital to the amount of R28,4 billion being raised (JSE Limited 2010b). The JSE in collaboration with South Africa's four largest commercial banks established the electronic settlement system, STRATE, and the process to dematerialise and electronically settle securities listed on the JSE on a rolling, contractual and guaranteed basis was initiated during 1996. On 13 May 2002 the JET system gave way to the JSE Stock Exchange Trading System (SETS), a trading system implemented in conjunction with the London Stock Exchange (JSE Limited 2010b).

These technological advances contributed to the JSE being ranked amongst the top twenty largest global securities exchanges in terms of market capitalisation (JSE Limited 2010a). With the exception of 2002 and 2008, the JSE market capitalisation has increased annually and at the end of 2010 the exchange reached a record level of R6,119 trillion (see Table I), which at that time equalled approximately 925 billion US\$. This is still relatively small in comparison to the market capitalisation of the largest exchange in the world, the New York Stock Exchange, of approximately 13 trillion US\$ (World Federation of Exchanges 2010). Nevertheless, the JSE is well regulated and competes favourably with leading global exchanges, if not in size, but in regulatory oversight and investor protection.

¹ For example, Adelphia (US), Bristol-Myers Squibb (US), Cendant (USA), ComROAD AG (Germany), Enron (US), Global Crossing (Bermuda), HealthSouth (US), LeisureNet (South Africa), Lernout & Hauspie Speech Products (Belgium), Parmalat (Italy), Qwest Communications (US), Royal Ahold (Netherlands), Sunbeam (US), Tyco (Bermuda), Waste Management (US) and WorldCom (US).

Table I
Summary Of Market Capitalisation And Trading

| Year | Domestic market capitalization (R millions) | Number of listed firms | Total value of shares trading (R millions) | Number of trades in equity shares (in thousands) | Number of shares traded (in millions) |
|------|--|------------------------|---|---|--|
| 2010 | 6,119,662.3 | 397 | 2,478,847.8 | 23,662.3 | 59,473.4 |
| 2009 | 5,883,851.1 | 396 | 2,214,508.5 | 20,845.5 | 68,182.9 |
| 2008 | 4,514,451.6 | 411 | 3,263,065.2 | 17,399.0 | 82,580.6 |
| 2007 | 5,660,149.8 | 411 | 2,977,669.6 | 11,553.8 | 70,787.1 |
| 2006 | 5,014,756.8 | 389 | 2,121,499.6 | 7,953.5 | 74,487.3 |
| 2005 | 3,484,000.6 | 373 | 1,278,689.6 | 5,064.0 | 54,509.7 |
| 2004 | 2,493,100.0 | 389 | 1,031,207.0 | 3,911.5 | 45,438.4 |
| 2003 | 1,123,156.3 | 411 | 752,249.6 | 3,253.9 | 43,052.5 |
| 2002 | 986,774.3 | 451 | 808,752.3 | 3,729.9 | 55,790.4 |
| 2001 | 1,011,700.0 | 532 | 606,137.1 | 4,136.7 | 59,557.0 |

Source: World Federation of Exchanges 2010

3.2. International Financial Reporting Standards and JSE listing requirements addressing financial restatements

Prior to the enactment of the new Companies Act (71 of 2008), South African legislation provided no legal backing for accounting standards and the listed firms were required to comply with International Financial Reporting Standards' (IFRS) in terms of the JSE listing requirements. Issued by the International Accounting Standards Board (IASB) during September 2010, the *Conceptual Framework for Financial Reporting* requires that financial statements faithfully represent the economic circumstances. In terms of paragraph QC12 of the *Conceptual Framework for Financial Reporting* a perfectly faithful representation is considered to be, "...complete, neutral and free from error." (International Accounting Standards Board 2010a:84). The International Accounting Standard (IAS) specifically addressing prior period errors, namely *Accounting Policies, Changes in Accounting Estimates and Errors* (or IAS 8), highlights the fact that errors may arise in respect of the recognition, measurement, presentation or disclosure of elements of financial statements. IAS 8 further states that, "[f]inancial statements do not comply with IFRSs if they contain either material errors or immaterial errors made intentionally to achieve a particular presentation of an entity's financial position, financial performance or cash flows" (International Accounting Standards Board 2010b:A422).

In terms of IAS 8, potential errors discovered in the current period are corrected before the financial statements are authorised. It may however happen that errors are sometimes not discovered until a subsequent period. Where prior period errors are as such identified, IAS 8 requires that, "...an entity shall correct material prior period errors retrospectively in the first set of financial statements authorised for issue after their discovery by: (a) restating the comparative amounts for the prior period(s) presented in which the error occurred; or (b) if the error occurred before the earliest prior period presented, restating the opening balances of assets, liabilities and equity for the earliest prior period presented" (International Accounting Standards Board 2010b:A422). In addition, various provisions of the JSE listing requirements require firms to correct any incomplete or misleading information. In terms of paragraph 8.65 of the listing requirements (JSE Limited 2010c:8-25), "the JSE will be able, in its sole discretion to censure such issuer in accordance with the provisions contained in the listings requirements and instruct such issuer to publish or re-issue any information the JSE deems appropriate."

A listed firm accordingly has an obligation from both an accounting standard and JSE listing requirement perspective to correct prior period errors and provide the necessary disclosure about such restatements. Considering that the correction of prior period errors are likely to affect restating firms' share prices, the reporting entity is accordingly obliged to communicate this information to shareholders and other interested parties through making a security exchange news service (SENS) announcement. The extent of the expected market reaction on share prices forms the focus of this study.

3.3. Financial restatement literature

International evidence reveals that the number and size of firms issuing restated results are increasing each year. The number of restatements in the US for example increased from 92 in 1997 to 225 in 2001 (United States General Accounting Office 2002). The average market capitalisation of restating firms, increased from \$500 million in 1997 to \$2 billion in 2002 (United States General Accounting Office 2002). In a follow up study, the United States General Accounting Office in 2006, found that the number of restatements for the period 2002 through September 2005 had increased by 67 per cent and the market capitalisation of restating firms had decreased by \$36 billion when adjusting for market movements on the days around the initial restatement announcement (United States General Accounting Office 2007). While these restatement data relate to firms listed on the securities exchanges in the US, a similar trend is found in South Africa with an ever increasing number of firms having to restate results due to accounting irregularities and fraud (Saville 2006). This trend is troubling as a financial restatement effectively equates to an admission that previously authorised and audited financial reports contain misrepresentations (Almer, Gramling & Kaplan 2008). While financial restatements substantially erode investors' belief in the trustworthiness and credibility of management (Mercer 2004), they further pose a threat to the entity in that investors' perceptions about the firms past and future performance may be altered (Palmrose & Scholz 2004). Further research examining the average share price reactions to financial restatements found that share prices of restating firms are, on average, negatively affected. The percentage by which share prices change vary between negative six per cent (Dechow, Sloan & Sweeney 1996) and negative nine per cent (Palmrose, Richardson & Scholz 2004). Xu, Jin and Li (2009) ascribe the negative market reaction to an increased risk premium resulting from an increase in information uncertainty and impairment of information quality for restating firms.

Furthermore, prior studies examining financial restatements have researched various aspects including, but not limited to the examination of determinants of the market reaction to restatement announcements (Palmrose *et al.* 2004), the contagion effects of accounting restatements (Gleason, Jenkins & Johnson 2008), the role of board independence in voluntary versus forced restatements (Marciukaityte, Szewczyk & Varma 2009), the long-term reactions to earnings restatements (Xu *et al.* 2009), the role that industry expertise plays in reducing restatements (Chin & Chi 2009), the reputational penalties to managers of firms announcing earnings restatements (Desai, Hogan & Wilkins 2006), the avoidance of reputational damage in financial restatements (Gertsen, van Riel & Berens 2006), and the relationship between restatements and litigation (Palmrose & Scholz 2004). Therefore, although it is acknowledged that various factors may influence the market's reaction to financial restatements, a market reaction is generally expected in response to financial restatement announcements. Within the South African context, financial restatements are expected to result from either the firm and/or its auditors identifying errors and restating results or, alternatively, as a result of an investigation or technical recommendation by the GMP to the JSE listings division.

3.4. The GAAP Monitoring Panel

In an attempt to enhance JSE listed firm compliance with accounting standards, a joint initiative between the South African Institute of Chartered Accountants (SAICA) and the JSE resulted in the establishment of an oversight board known as the GMP during September of 2002 (Accountancy SA 2008). In terms of the GMP charter and JSE listing requirements, the GMP acts in an advisory capacity to the JSE Issuer Services Division in relation to incidents of alleged non-compliance of financial reporting (SAICA 2011b). Following an investigation by the GMP, the Issuer Services Division considers the recommendations and findings of the GMP to decide upon the appropriate action where deemed necessary (SAICA 2011b). Although only investigating matters referred to it by the JSE Issuer Services Division, the GMP has investigated a total of 38 incidents of alleged non-compliance for the period September 2002 until June 2010 (SAICA 2010). In addition to the action taken by the JSE Issuer Services Division following investigations by the GMP, the Issuer Services Division have on occasion advised all listed firms on non-compliance issues such as amongst others, the non-consolidation of share trust schemes by listed firms.

While this study focuses on financial restatements resulting from the investigations or technical recommendation by the GMP, it is noted that the GMP has subsequently been replaced by the Financial Reporting Investigation Panel (FRIP) on 16 February 2011 (SAICA 2011a). In an attempt to further improve compliance with IFRS, firms are now subjected to a proactive review and monitoring process whereby the financial statements of listed firms will in the future be reviewed at least once every five years (SAICA 2011c).

3.5. The Securities Exchange News Service

As share prices incorporate both private and public information (Qi, Goldstein & Wei 2007), the need to keep the market informed with public information cannot be overemphasised enough. In order to facilitate the real time, equal and wide dissemination of relevant firm information to security holders and any other interested parties, the JSE established the Securities Exchange News Service (SENS) (previously known as Stock Exchange News Service) in August 1997 (JSE Limited 2010b). Following the establishment of SENS, the JSE listing requirements were amended to facilitate the release of information, including price sensitive information *via* SENS (JSE Limited 2010b).

Accordingly, price sensitive information is defined in the JSE listings requirements (JSE Limited 2010c:11) as “unpublished information that, if it were made public, would be reasonably likely to have an effect on the price of a listed firm’s securities.” In order to promote the equal distribution of information and to ensure confidentiality prior to announcement, price sensitive information may not be released to a third party within JSE trading hours until published through SENS. Alternatively, price sensitive information cannot be released outside JSE trading hours until such information has been authenticated and arrangements have been made for announcement through SENS prior to the next opening of JSE trading hours (JSE Limited 2010c:3-5). Emphasising the importance of confidentiality with regards to price sensitive information, Section 3.7 of the JSE listing requirements (JSE Limited 2010c:3-6) state that “[p]rice sensitive information required by and provided in confidence to any government department, the South African Reserve Bank, the SRP, the Financial Services Board or any other statutory or regulatory body or authority need not be published, unless there is a breach of confidentiality and the market is made aware of such information, in which event the issuer must immediately announce details of such information.” Should it happen that confidential information be disclosed in an unplanned manner, Section 3.8 of the listing requirements requires that immediate steps be taken for a SENS announcement containing such price sensitive information to be made (JSE Limited 2010c:3-6).

Given that, as discussed above, the listing requirements firstly facilitate the release of price sensitive information through SENS and further emphasise the importance of confidentiality prior to the SENS announcement, this study uses SENS announcements to firstly identify financial restatements resulting from investigations or technical recommendations by the GMP and secondly as the event date.

4. RESEARCH METHODS

4.1. Event study methodology

Event study methodology is frequently used to firstly test whether or not the market efficiently incorporates new information into the share price and secondly, under the maintained hypothesis of market efficiency, examine the impact of some event on the wealth of the firm’s security holders (Binder 1998). While various models have been used in event studies, the market model (which is a standard simple linear regression where the returns for each share are regressed against the returns on a broad index) is widely used to examine the impact of an event on share prices and/or market efficiency (Corhay & Tourani-Rad 1996).

This study, similar to Bremer and Zhang (2007), uses a two-stage event test methodology incorporating the market model to specifically examine the effect of financial restatement announcements on restating firm’s share price movement. This test scales abnormal returns (refer to formula 2 below) with conditional variance and is estimated with a generalised autoregressive conditional heteroskedastic [GARCH (1,1)] component and an event indicator. The GARCH (1,1) component is a general autoregressive conditional heteroskedastic model that accounts for time varying volatility by regressing the last period’s squared return [i.e. just one return] and the last period’s variance (i.e. just one variance) (Harper 2010). This test increases the ability to correctly identify abnormal returns during event periods and is particularly useful for investigating events that have higher levels of event-induced volatility, smaller sample sizes and effect sizes (Bremer & Zhang 2007). This event study methodology is a variation of the event study methodology first introduced by Fama, Fisher, Jensen and Roll (1969) that resulted in a methodological revolution in the fields of accounting, economics and finance research (Binder 1998).

Fama *et al.* (1969) used return data to estimate the parameters of the market model for each share in the sample. Doing so eliminates movements in share prices attributable to market-wide economic or common factors, leaving the portion of the return attributable to firm specific information (which in this case is the announcement of a financial restatement) (Binder 1998). The regression model is estimated for each firm separately and the residuals from the market model for the event month are used as an estimator of the abnormal return for the share during the event month. These residuals are then averaged across firms in the sample and tested for significance using a t-test, which assesses whether or not the means of two groups are *statistically* different from each other (Trochim 2006). Where the financial restatement announcement has no effect, the abnormal return is expected to be zero. Any movement away from zero is accordingly attributed to the restatement announcement.

Further to this, the first stage of the methodology is thus to eliminate market wide or common factors affecting share prices in order to determine the abnormal returns. Distinguishing between the estimation and event periods (refer to diagram I), this study excludes the daily return data during the event period in estimating the parameters of the market model for each share in the sample. Including the event period data to estimate the market model parameters may bias the coefficient estimates as the effects of the event are then included in the estimates (Ball & Brown 1968). This study therefore excludes the event period data to estimate the market model parameters. Such an exclusion has become a standard modification to address this issue (Binder 1998).

Diagram I
The Estimation and Event Timeline

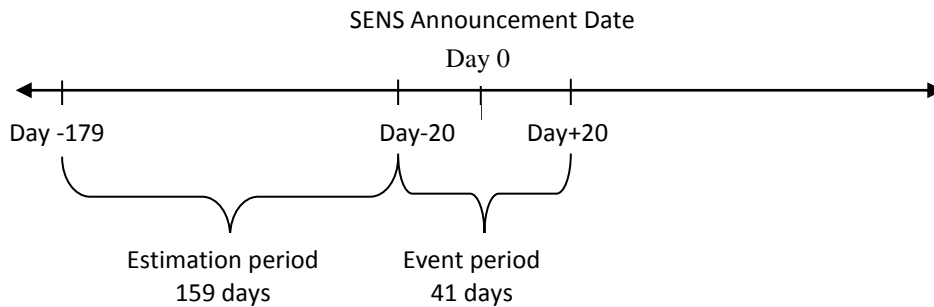


Diagram I indicates that of the 179 days leading up to the SENS announcement date (Day 0), 159 days are included in the estimation period and the 20 days just prior to the SENS announcement date (Day 0) are included in the event period. The event period further includes Day 0 and the 20 days subsequent to Day 0. The estimation period thus includes 159 days and the event period 41 days. In addition to distinguishing between the estimation and event period data to estimate the market model parameters, a GARCH structure of order (1,1) is added to the market model in this study. The GARCH (1,1) structure accounts for time varying volatility change in the estimation period.

The modified market model formula is thus:

$$\begin{aligned}
 R_{it} &= \alpha_i + \beta_i R_{mt} + u_{it} \\
 u_{it} &= \sigma_{it} e_{it} \\
 \sigma_{it}^2 &= \theta_{i0} + \theta_{i1} u_{it-1}^2 + \phi_i \sigma_{it-1}^2
 \end{aligned}
 \tag{1}$$

where R_{it} is the return for share i on day t
 R_{mt} is the return for the all share index on day t
 u_{it} is the residual or non-market return for share i on day t
 $\alpha_i, \beta_i, \theta_{i0}, \theta_{i1}, \phi_i$ are parameters to be estimated
 σ_{it}^2 is the conditional variance

After estimation of the parameters using the modified market model, the second stage entails the calculation of the abnormal returns. The abnormal returns (**AR**) for each day in the event period (day -20 till day +20) are calculated as the difference between the expected share return (\hat{R}_{it}) and the actual share return (R_{it}) for

each share. The expected share return (\widehat{R}_{it}) during the event period is calculated using the modified market model above.

Therefore, the formula for the abnormal returns (AR) is:

$$\widehat{R}_{it} - R_{it} = AR \quad [t = \text{day } -20, \text{ day } 0 \text{ and day } +20] \quad (2)$$

where \widehat{R}_{it} is the expected return on share *i* in period *t*
 R_{it} is the actual return on the share *i* in period *t*
 AR is the abnormal return

Considering that the share return is affected by both the SENS announcement and other firm-specific effects, the abnormal return estimator is likely to result in a larger variance during the event period than in non-event periods and hence event-induced heteroskedasticity is likely (Beaver 1968). To account for heteroskedasticity, Collins and Dent (1984) propose using a least-squares technique while Boehmer, Masumeci and Poulsen (1991) propose standardising the abnormal return estimates by their estimated standard deviation. Corhay and Tourani-Rad (1996) used the GARCH model for the variance of the error term in the return equation.

Considering that event-induced heteroskedasticity is likely and that variations amongst different firms' abnormal returns is possible, this study standardises the abnormal return by an estimate of the conditional variance where the conditional variance is estimated using another GARCH model, but this time which includes the event period. A dummy variable taking a value of one (1) during the event period and a value of zero (0) otherwise is also added to the GARCH structure. This allows for estimation of slow and abrupt changes in the conditional variance during the event period. Scaling the abnormal returns with the conditional variance estimated in this way controls for event induced heteroskedasticity as well as for variance between different firms' abnormal returns (Bremer & Zhang 2007).

Thus, the formula for the standardised abnormal return (SAR) is:

$$SAR_{it} = \frac{AR_{it}}{\sigma_{it}^2} \quad (3)$$

where SAR_{it} is the standardised abnormal return
 AR_{it} is the abnormal return on the share *i* in period *t*
 σ_{it}^2 is the conditional variance estimated using a second GARCH model

The standardised abnormal returns are then averaged per day to produce the average standardised abnormal returns (ASAR) and tested for significance using the standard t-test. In order to examine the effect that forced financial restatement announcements have on restating firm share prices, the standardised abnormal returns are accumulated for each day, averaged across firms, and then tested for significance using the standard t-test. In addition to being averaged per day, the standardised abnormal returns are accumulated for each day, day -20 until day -19, day -20 until day -18, day -20 until day -17 and so on. These cumulative standardised abnormal returns are then averaged across companies to create the average cumulative standardised abnormal return (ACSAR). The ASARs and ACSARs were then tested for significance using the standard t-test.

4.2. Sample of the study

The McGregor BFA database “is the pre-eminent provider of stock market, fundamental research data and news to the financial sector and the corporate market at large” (McGregor BFA, 2010). In order to identify the sample of financial restating firms, the McGregor BFA database is used to search for SENS announcements containing variations of the phrases “GAAP Monitoring Panel”, “GMP”, “restate” and “restatement” for the period

1 September 2002 until 30 October 2010. In addition to using the McGregor BFA database to identify financial restating firms, it was also used to obtain the All-Share-Index and firm specific share prices.

Table II presents the chronological distribution of the 38 SENS announcements of financial restatement resulting from investigations or recommendations by the GMP for the period 1 September 2002 until 30 October 2010. With the exception of 2004, the annual number of financial restatements resulting from work of the GMP included in the sample did not exceed four. Fifteen of the 21 GMP financial restatements during 2004 resulted from a technical recommendation by the GMP to the JSE Listings Division that share incentive scheme trusts be consolidated into the group financial statements in accordance with IFRS's. Firms subsequently issuing a SENS announcement to this effect were also included in the sample. There were no GMP financial restatement SENS announcements during 2009. Table II also provides the number of potential and actual days that shares for the respective firms were traded.

The inclusion of daily returns for thinly traded shares to predict share price reactions to an event may impact on the results found. By examining both the daily trading volume data for exchange traded and Nasdaq stocks, Cowan & Sergeant (1996) conclude that as thinly traded stocks are more likely to be characterised by numerous zero and large non-zero returns, they are more likely to result in non-normal return distributions. This in turn distorts the variance estimates required for the standardised abnormal return test. While Boehmer *et al.* (1991) developed a standardised cross-sectional test to address this issue, Corrado (1989) uses a nonparametric rank test and thus avoids the dependence on normality of return distributions. Cowan & Sergeant (1996), however, find that during the estimation period, the average number of days without shares being traded was approximately 20 days (19.97 days) out of the potential 159 days, representing only 12.6 per cent of the estimation period. Within the event period, the average number of days across all firms without shares being traded was approximately five days representing only 12.5 per cent of the potential trading days in the estimation period. The frequency of non-trading days during the estimation and event periods are accordingly considered acceptable for the purpose of this study. Subsequently, the approach adopted in this study is to exclude firms that have no shares traded for more than 50 per cent of the 200 day period (159 day estimation and 41 day event periods). This resulted in the exclusion of only four (marked with #) of the original 38 SENS announcements of financial restatement as identified in Table II.

Table II
The Sample, Restatements Dates And Trading Summary Of The Estimation And Event Periods

| JSE Ticker | Firm | SENS Date | Shares Traded (in millions) | Estimation Period | Event Period |
|------------|--------------------------------------|-----------|--------------------------------|-----------------------------|------------------------------|
| | | | | Days with no shares traded* | Days with no shares traded** |
| ART | Argent Industrial Ltd. | 22-Oct-02 | 16.48 | 35 | 4 |
| TNT | Tongaat-Hulett Group Ltd. | 22-Nov-02 | 52.05 | 0 | 0 |
| SNT | Santam Ltd. | 17-Mar-03 | 22.32 | 1 | 0 |
| MTO | Mathomo Group Ltd.# | 25-Mar-03 | 64.68 | 115 | 31 |
| PNC | Pinnacle Technology Holdings Ltd.# | 27-Mar-03 | 556.9 | 98 | 25 |
| CDZ | Cadiz Holdings Ltd. | 30-Jul-03 | 356.63 | 31 | 6 |
| WHL | Woolworths Holdings Ltd. | 12-Feb-04 | 14.19 | 0 | 0 |
| MSM | Massmart Holdings Ltd. | 26-Feb-04 | 114.45 | 0 | 0 |
| DTA | Delta Emd Ltd. | 01-Mar-04 | 52.99 | 13 | 2 |
| ADH | Advtech Ltd. | 23-Mar-04 | 189.82 | 9 | 0 |
| BDS | Bridgestone Firestone Maxiprest Ltd. | 31-Mar-04 | 210.93 | 33 | 8 |
| AMA | Amalgamated Appliance Holdings Ltd. | 21-Apr-04 | 106.6 | 10 | 2 |
| JDG | JD Group Ltd. | 18-May-04 | 114.22 | 0 | 0 |
| PGR | Peregrine Holdings Ltd. | 20-May-04 | 41.38 | 16 | 4 |
| MPC | Mr Price Group Ltd. | 26-May-04 | 16.48 | 0 | 0 |
| IMR | Imr Investments Ltd. | 31-May-04 | 29.06 | 72 | 14 |
| ART | Argent Industrial Ltd. | 03-Jun-04 | 40.29 | 0 | 0 |
| SCN | Scharrig Mining Ltd. | 03-Jun-04 | 60.4 | 73 | 31 |
| CSH | CS Computer Services Holdings Ltd. | 14-Jul-04 | 10.27 | 15 | 7 |
| CSB | Cashbuild Ltd. | 21-Jul-04 | 12.8 | 6 | 2 |
| UTR | Unitrans Ltd. | 24-Aug-04 | 300.98 | 23 | 4 |

| | | | | | |
|-----|---|-----------|----------|-----|----|
| MUR | Murray & Roberts Holdings Ltd. | 26-Aug-04 | 129.81 | 0 | 0 |
| PAP | Pangbourne Properties Ltd. | 26-Aug-04 | 396.25 | 1 | 0 |
| MET | Metropolitan Holdings Ltd. | 08-Sep-04 | 1.27 | 0 | 0 |
| NWL | Nu-World Holdings Ltd. | 26-Oct-04 | 12.3 | 28 | 5 |
| IDI | Idion Technology Holdings Ltd. | 14-Dec-04 | 51.15 | 76 | 18 |
| DEC | Decillion Ltd.# | 15-Dec-04 | 36.71 | 94 | 26 |
| ELX | Elexir Technology Holdings Ltd. | 14-Apr-05 | 290.74 | 75 | 17 |
| AST | Ast Group Ltd. | 06-Jul-05 | 28.78 | 0 | 0 |
| LAB | Labat Africa Ltd. | 31-Aug-05 | 1,140.67 | 57 | 26 |
| NTC | Network Healthcare Holdings Ltd. | 11-Nov-05 | 233.61 | 0 | 0 |
| AFR | Afagri Ltd. | 08-Nov-06 | 22.5 | 2 | 0 |
| YBA | Yomhlaba Resources Ltd.# | 27-Jun-07 | 96.25 | 159 | 41 |
| BFS | Blue Financial Services Ltd. | 16-Aug-07 | 16.64 | 0 | 0 |
| AER | Amalgamated Electronic Corporation Ltd. | 26-Nov-07 | 128.8 | 0 | 0 |
| ATR | Africa Cellular Towers Ltd. | 27-May-08 | 54.73 | 1 | 0 |
| BEE | Beget Holdings Ltd. | 04-Jun-10 | 43.77 | 56 | 18 |
| CMO | Chrometco Ltd. | 27-Aug-10 | 9.5 | 46 | 7 |

* Refers to 159 potential trading days in the estimation period.

** Refers to 41 potential trading days in the event period.

Firm excluded from sample due to thin trading.

In order to examine the market reaction in relation to the magnitude of the restatement, the rand value of the restatement and total equity value of restating firms' were obtained from the SENS announcements and/or the annual reports of the respective firms. The annual reports were obtained directly from restating firm websites. Given that the sample includes restating firms varying in size, the rand value of each firm's restatement is standardised as a percentage of the restating firm's total equity prior to restatement. The last column of Table III indicates the rand value of the restatement expressed as a percentage of the total equity prior to the restatement.

5. ANALYSIS OF THE DATA

The abnormal returns during the event period are calculated for each firm by differencing predicted (expected) values, calculated in terms of the modified market model from the actual returns. The abnormal returns are standardised by a conditional variance estimated using a second GARCH model with a dummy variable for the event period and averaged per day to produce average standardised abnormal returns (ASARs). The ASARs and the coefficients for the dummy variable measuring the immediate variance effect of the event at firm level are reflected in Table III.

Table III
Average Standardised Abnormal Return And Dummy Variable Coefficient

| JSE Ticker | N | ASAR | Std Dev | t-value | Pr > t | Dummy Variable Coefficient | Restatement Value as Percentage of Equity |
|------------|----|--------|---------|---------|---------|----------------------------|---|
| ADH | 41 | -0.013 | 0.241 | -0.340 | 0.733 | 0.7024 | -4.7020% |
| AER | 41 | -0.132 | 0.420 | -2.010 | 0.051 | * 0.0185 | -7.4515% |
| AFR | 41 | -0.025 | 0.407 | -0.390 | 0.699 | 1 | 0.0000% |
| AMA | 41 | -0.002 | 0.386 | -0.030 | 0.974 | 0.6265 | -1.9873% |
| ART | 41 | 0.054 | 0.260 | 1.330 | 0.190 | <.0001 | -1.7007% |
| ART | 41 | 0.091 | 0.431 | 1.350 | 0.184 | 0.4927 | -0.1595% |
| AST | 41 | 0.031 | 0.229 | 0.880 | 0.385 | 0.999 | 0.0636% |
| ATR | 41 | -0.053 | 0.181 | -1.870 | 0.069 | * 0.1564 | 0.0000% |
| BDS | 41 | 0.014 | 0.233 | 0.390 | 0.701 | 1 | 0.0000% |
| BEE | 41 | 0.008 | 0.044 | 1.100 | 0.277 | 0.0444 | ** 0.1198% |
| BFS | 41 | -0.036 | 0.250 | -0.910 | 0.366 | 1 | -1.9726% |
| CDZ | 41 | 0.092 | 0.374 | 1.570 | 0.124 | 1 | -1.2226% |
| CMO | 41 | -0.002 | 0.089 | -0.110 | 0.913 | 1 | -16.2889% |
| CSB | 41 | 0.188 | 0.592 | 2.030 | 0.049 | ** 0.2997 | -3.0759% |
| CSH | 41 | 0.016 | 0.103 | 0.990 | 0.327 | 0.2178 | -1.2328% |

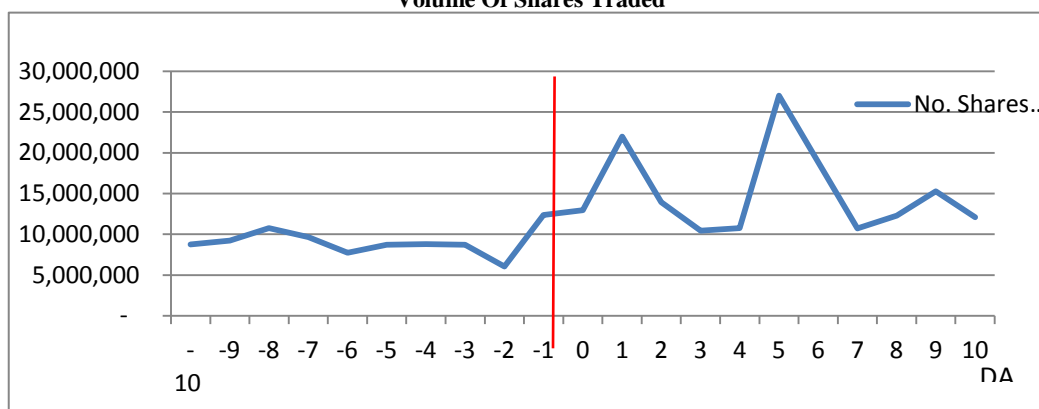
| | | | | | | | | | |
|-----|----|--------|-------|--------|-------|----|--------|----|-----------|
| DTA | 41 | -0.299 | 0.638 | -3.000 | 0.005 | ** | 1 | | -2.3658% |
| ELX | 41 | -0.007 | 0.036 | -1.200 | 0.239 | | 0.0005 | ** | -0.0967% |
| IDI | 41 | 0.010 | 0.208 | 0.300 | 0.770 | | 0.0768 | * | -0.0034% |
| IMR | 41 | 0.007 | 0.115 | 0.390 | 0.701 | | <.0001 | ** | -16.8902% |
| JDG | 41 | -0.102 | 0.738 | -0.880 | 0.383 | | 0.2811 | ** | -0.0013% |
| LAB | 41 | -0.010 | 0.118 | -0.530 | 0.597 | | 0.0002 | | -0.0033% |
| MET | 41 | 0.009 | 0.606 | 0.090 | 0.927 | | 0.3481 | | -8.4055% |
| MPC | 41 | -0.121 | 0.786 | -0.990 | 0.330 | | 1 | | -2.5792% |
| MSM | 41 | -0.027 | 0.626 | -0.270 | 0.786 | | 0.3419 | | -0.3661% |
| MUR | 41 | -0.022 | 0.569 | -0.250 | 0.807 | | 1 | | -4.2271% |
| NTC | 41 | 0.011 | 0.630 | 0.120 | 0.908 | | 0.5016 | | -0.3903% |
| NWL | 41 | 0.087 | 0.461 | 1.200 | 0.235 | | 0.7713 | | -0.2400% |
| PAP | 41 | 0.095 | 0.643 | 0.950 | 0.350 | | <.0001 | ** | 1.9288% |
| PGR | 41 | -0.045 | 0.354 | -0.810 | 0.423 | | 1 | | -10.3905% |
| SCN | 41 | -0.013 | 0.070 | -1.150 | 0.258 | | 1 | | -0.6769% |
| SNT | 41 | 0.096 | 0.668 | 0.920 | 0.365 | | 1 | | 0.0000% |
| TNT | 41 | -0.025 | 0.657 | -0.250 | 0.806 | | 1 | | -1.3221% |
| UTR | 41 | 0.063 | 0.576 | 0.710 | 0.484 | | 0.0787 | * | -3.4247% |
| WHL | 41 | -0.123 | 0.487 | -1.610 | 0.115 | | 1 | | -0.0493% |

*, ** Significant at the 0.1 and 0.05 level respectively

Indicating significant uncertainty in restating firm share prices, the dummy variable coefficient for nine of the 34 firms in the sample was found to be statistically significant at the ten per cent level of significance. Of the 34 firms that had restatements, 27 (79.4 per cent) had a decrease in equity, three (8.8 per cent) had an increase in equity, and four (11.7 per cent) had no effect on equity. In turn, of the 27 firms who had a decrease in equity, 16 (55.9 per cent) had negative ASARs and 11 (44.1 per cent) returned positive ASARs, albeit that only four of the restating firms had statistically significant ASARs. Of the three firms that had an increase in equity, all three had positive ASARs and negative ASARs were found for three (75 per cent) of the four firms where the restatement did not impact on the equity.

By analysing the trading activities in the days leading up to and subsequent to SENS announcements of forced financial restatement, we can gain insight into why restating firms' share prices are negatively or positively affected by such announcements. Examining the volume of shares traded during the event period further enables us to evaluate whether or not investors react to SENS announcements conveying information about forced financial restatements. The number of shares traded for each of the restating firms were accumulated on a daily basis and presented in diagram II below.

Diagram II
Volume Of Shares Traded



Days +1 and +5 illustrate two significant spikes in the volume of shares traded across the 34 firm sample following the financial restatement announcements on day 0. This increased trading activity suggests that SENS

announcements for forced financial restatements appear to induce a degree of uncertainty about the restating firm by market participants. Further to this, the effect that the forced financial restatements have on the respective restating firms' equity value, the ACSARs for four periods are calculated and presented in Table IV. The four time intervals provided are relative to the restatement announcement and are for days 0 and day +1, day 0 until day +5, day 0 until day +10, and day 0 until day +20.

Table IV
Average Cumulative Standardised Abnormal Returns

| Time intervals relative to restatement announcement | ACSAR | Std Dev |
|---|----------|---------|
| Day 0 till Day +1 | -0.0963% | 0.0868 |
| Day 0 till Day +5 | -0.160% | 0.0906 |
| Day 0 till Day +10 | -0.142% | 0.0893 |
| Day 0 till Day +20 | -0.0358% | 0.0854 |

A negative market reaction of -0.0963 per cent is found for time interval from day 0 and day +1. This indicates that the market reacts negatively in the immediate period following the SENS announcements. Further to this, a negative ACSAR of -0.16 per cent for the period day 0 until day +5 supports the evidence of increased volume in share trading five days following the announcement (see diagram III). The ACSAR for the time period 0 till +10 days is still significantly negative (-0.142 per cent) and eventually peters down to -0.0358 per cent in the final time period up till day +20. The negative share price reaction is consistent with the findings of Xu, Jin and Li (2009), Palmrose, Richardson & Scholz (2004), and Dechow *et al.* (1996), albeit that the extent of the reaction in this study is smaller. Given that the aforementioned studies were conducted in the US, the findings from this study may indicate that the dissemination of information by the JSE and the resultant market reaction appears to result in negative returns that are not as large and might be one of the positive results of a well regulated JSE given the number one global ranking it has according to the WEF.

Table V
Market Reaction Relative To The Magnitude Of The Financial Restatement

| | Coefficients | t-value | p-value |
|------------------------------|--------------|----------|----------|
| Intercept | -0.0004 | -0.02296 | 0.981821 |
| ASAR | 0.192433 | 0.564997 | 0.576016 |
| Regression Statistics | | | |
| Multiple R | 0.099384 | | |
| R Square | 0.009877 | | |
| Adjusted R Square | -0.02106 | | |
| Standard Error | 0.086477 | | |
| Observations | 34 | | |

Table V presents the results of regressing the SARs on the standardised size of the restatement. This analysis indicates whether or not the market reaction is significantly associated with the magnitude of the restatement. While the negative intercept is consistent with the literature (see for example Dechow, Sloan & Sweeney 1996 and Palmrose, Richardson & Scholz 2004), the coefficient (0.192433) for the ASAR is not found to be statistically significant ($t=0.564997$). Furthermore, the independent variable (specifically the size of the restatement) only explains 0.9877% of the share price reaction to SENS announcements. This result suggests that while the market generally responds negatively to the financial restatement announcements, the size of the restatements do not impact the market reaction.

6. DISCUSSION AND FUTURE RESEARCH

The purpose of this study was to investigate the share price reaction to forced financial restatements announced *via* SENS. Given that incorrect or misrepresented financial results are potentially trust-destroying and question the credibility of management, investigating the market reaction to restatements provides evidence as to the extent of such forced restatements on the share price of the firm. Needless to say, the results indicate that the SENS announcements decreased the equity of 79.4 per cent of the firms. Of these firms, 55.9 per cent had negative ASARs. Therefore, the results indicate that of the restating firms that had a decrease in equity due to the SENS

announcement, more than half experience significantly negative share price reaction following SENS announcement. Although this is what would be expected, 44.1 per cent of the share prices experienced positive ASARs. This would seem to suggest that the market reaction to the SENS announcement is not only a function of the forced restatement itself, but also the *type* of restatement. Further research should be conducted to verify this assertion.

Furthermore, the volume of shares traded *ex post* the announcement date spiked substantially on days' +1 and +5. Of particular interest is that the ACSAR for the share reactions peaked in the time period up to five days after the announcement, fell slightly for the period up till ten days (albeit still high), and then normalised back to almost zero after about twenty days. Overall, the results indicate that while share prices are generally expected to react negatively to restatement announcements, the negative reaction is restricted to approximately 20 days following the announcement. This alludes to the likely uncertainty that market participants face following a forced financial restatement announcement *via* SENS. Further to this, evidence is provided (see Table V) that suggests that the market is more attuned to whether or not a restatement exists in the first place than the actual size of the restatement. The credibility of 'first-time' financial reporting is therefore found to be extremely important to market participants and may provide evidence supporting feelings of distrust and uncertainty emanating from market participants as suggested by Mercer (2004) and Palmrose & Scholz (2004).

Whilst extracting the data from the SENS announcements, it became clear that the manner in which certain firms articulate the reason behind the misrepresented financial results was in many cases unnecessarily verbose. To the mind of the authors, this creates unnecessary confusion and detracts attention from the extent and magnitude of the restatement itself. Although it is accepted that a thorough explanation for the restatement by the firm is indeed important for dissemination by the market, it is proposed that announcements of specifically financial restatements through SENS be presented in a standardised format that puts the *presentation of information* on par for all firms making the announcement. This will avoid situations where the content of the restatement is unnecessary wordy in an attempt to downplay the seriousness of the restatement. Further to this, it is proposed that a future study should focus on conducting a content analysis on the actual SENS announcements to investigate to what extent firms use 'positive' and/or 'unnecessary' words or explanations to hide a restatement that may be particularly equity-eroding.

Further research should be conducted to investigate whether or not the market reacts more aggressively to a restatement (voluntary and forced) as such, or, alternatively, the size or nature of the restatement. Further to this, it could be investigated what exactly market participants regard as being a substantial restatement. In other words, would market participants react similar to a minor adjustment on, for example, the income statement as compared to a major adjustment on the balance sheet, or is the fact that a restatement on respectively the income statement or balance occurs in the first place, needless to say of the perceived magnitude of it, more likely to induce a significant abnormal return? The findings of this study suggest that the latter appears to be more important as a determinant to possible abnormal returns, or at the very least, the reaction to trading as depicted in the substantial increase in trading volume after the SENS announcement.

CONCLUSION

In this study the share price reaction to SENS announcements of forced financial restatements is examined. A two-stage event study that scales abnormal returns with conditional variance estimated with a GARCH (1,1) component and an event indicator was used to examine the effect that the announcements had on the respective firms' share prices. Although the results indicate that the majority of the market reactions resulted in negative changes to equity, but the size of the decrease in equity is smaller than previous studies conducted predominantly in the US. The study therefore makes an important contribution to the existing literature as it investigates financial restatement announcements on shares listed on a South African Stock exchange.

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