



University of Pretoria

# **Share Price Reaction to Financial Mail's “Top Companies” Announcements**

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## ABSTRACT

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Responsible Investment considers environmental, social and corporate governance criteria. These criteria, as an investment strategy, aim to have a positive impact on society as well as maximize financial returns. The concept of Responsible Investment is becoming more prominent and important to investors, both internationally and locally, with evidence from the negative reaction of share prices to recent events such as the BP oil spill.

The Johannesburg Stock Exchange, in collaboration with FTSE4Good, has developed Responsible Investment criteria. The aim of the criteria is to ensure global alignment, with regards to environmental criteria, and also ensure local relevance, with criteria that deals with issues such as black economic empowerment, skills development and HIV/Aids.

This research examines the share price behaviour of companies that are recommended by analysts as 'Top Companies' on the basis of their compliance to set Responsible Investment criteria, with specific reference to the annual 'Top 20 Companies' as recommended by the Financial Mail magazine.

Using event study methodology, the short- and long-term behaviour is studied for the 140 companies mentioned in the list from 2003 up until 2009. Positive, significant abnormal returns of around 2% are observed in the first 10 days following the announcement for the companies mentioned in the list for the first time. No positive abnormal returns are however observed for longer-term holding periods of up to 200 days following the announcement.

The result suggests that the Financial Mail analysts' annual recommendation is of value only to low transaction cost, short-term traders. Longer-term investors, who buy the recommended shares, generally receive returns similar to the market rate of return.

## DECLARATION

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

Derek Esterhuysen

November 2010

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## 1. INTRODUCTION TO THE RESEARCH PROBLEM

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The “efficient” market, according to Fama (1965), is a market where prices, at every point in time, represent the best estimates of intrinsic value. The ‘Efficient Market Hypothesis’ (EMH) therefore implies that investors cannot consistently achieve excess returns on over- or under-valued shares, as financial markets are cognisant on the available information.

The suggestion that the Johannesburg Stock Exchange (JSE) is informationally efficient to published information has been studied widely within the financial arenas in South Africa. The core question of interest, to both researchers and investors alike, is whether published information can guide investors when trading shares in an active investment strategy, in order to earn excess returns and “beat the market”.

Published information, usually in the form of analysts’ recommendations, is found either from their reports directly or via other media such as magazines and newspapers (possibly even through rumours and hearsay).

If the JSE is informationally efficient then investors would not be able to spot the mispriced shares and, in fact, many studies have shown that investors cannot beat the market. These studies show that better results can be obtained through low-cost, well-diversified, index-linked passive buy-and-hold strategies in comparison with active investment strategies (Thompson and Ward, 1995). Based on these findings, the recommendations within published information should not result in excess returns for an active investment strategy - and therefore has no value.

In contradiction to the above argument some studies have shown the JSE to be reasonably inefficient (Ward and Muller, 2008; Bhana, 1995; Page and Way, 1992), suggesting that very few investors act on the recommendations or information in publications, and that there may be opportunities for investors or traders to earn excess returns based on these recommendations.

Studies testing the EMH have focused mainly on announcements of either financial analysis (Klerck and Maritz, 1997), or alternatively non-financial evaluation. In spite of many studies testing the efficiency of the market, whether based on announcements of financial or non-financial evaluation, it has not been studied how informationally efficient the JSE is when announcing a combined financial and non-financial evaluation.

A combined or “Responsible Investment” announcement refers to an announcement that includes criteria such as moral, environmental, social and corporate governance considerations; together with conventional financial analysis (Viviers, Bosch, Smit and Buijs, 2008).

‘Financial Mail’ magazine is a weekly financial publication aimed at business decision-makers and its primary function is to analyse the week's top business stories. It publishes a list of companies annually that meet specific Responsible Investment (RI) criteria and the magazine ranks them according to their performance within this criteria.

The first set of criteria is the traditional quantitative analysis that considers the Return on Equity (ROE), internal rate of return (IRR) and compound growth in earnings per share (EPS). These criteria account for 40% of the total score. Because the aim is to use the past as a guide to, rather than a determinant of, the future, the second set of criteria, which represents the remaining 60% of the total score, is based on a largely qualitative assessment of how “investable” a company is (Williams, 2009).

The total score is therefore a combination of traditional financial and non-financial criteria which includes:

- how the company is managed;
- its corporate governance procedures and culture;
- its black empowerment status;
- the quality of communication with shareholders and stakeholders;
- the prospects for growth in the sector (or sectors) in which the company operates;
- contextual issues such as regulatory uncertainties and tax regimes; and, crucially,
- whether the share is reasonably liquid and offers value that the ‘herd’ may have missed. (Williams, 2009).

The aim of the research is to test the efficiency of the JSE when making Responsible Investment announcements, and not just either qualitative (non-financial) or quantitative (financial) analysis. If the JSE is found to be inefficient then newly published information, which relates to Responsible Investment announcements, will, most certainly, be used by traders and investors to obtain abnormal returns.

In this report, it will be investigated whether the ‘Top Companies’ announcement in the Financial Mail during the period 2003 to 2009 positively impacted share price performance (measured as Returns) around the publication date, as well as in the long-term. The ‘null’ hypotheses state that no short- or long-term abnormal returns exist.

This research can be distinguished from other studies as it not only tests the short-term market reaction to either financial or non-financial information, but also to a combination of information that is referred to as ‘Responsible Investment recommendations’. It also examines the long-term performance of share prices of the recommended companies and the returns to investors that follow these recommendations.

This report is set out as follows:

- Chapter 2 describes the relevant theory base by way of a literature review;
- Chapter 3 sets out the research hypothesis;
- Chapter 4 explains the research methodology that was applied;
- Chapter 5 presents the results of the research undertaken;
- Chapter 6 discusses the results, and
- Chapter 7 presents the conclusion.

## 2. RELEVANT THEORY BASE

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### *2.1 Theory of efficient markets*

The “efficient” market, according to Fama (1965), is a market where prices at every point in time, represent best estimates of intrinsic value. In essence the ‘Efficient Market Hypothesis’ (EMH) affirms that returns, in excess of the average market returns, cannot be achieved consistently as the market uses return and risk information efficiently to instantly adjust share prices.

Fama (1969) refined the EMH, stating that the theory of efficient markets has empirical content which is based on assumptions that the conditions of market equilibrium can be stated in terms of expected returns. He describes that this assumption forms the basis of the efficient markets model and that the empirical work can be divided into three categories:

- Strong form EMH;
- Semi-strong form EMH, and
- Weak form EMH.

Strong-form efficiency is concerned with whether investors or groups have monopolistic access to any information relevant for price formation (Fama, 1969).

For this form it is evident that the price will accurately reflect all private and public

information and that there would be no excess returns in the long-term. Strong-form efficiency would be impossible if private information could be protected from the public by some or other means like for example legal protection.

Semi-strong form efficiency refers to information that is made available to the public, and where the price of shares is adjusted rapidly and without bias. Again this efficiency hypothesise that excess returns cannot be maintained in the market (Fama, 1969).

Weak form efficiency indicates that share prices will adjust randomly with new information and not with information that is contained in the historical price time series. The “Random Walk” and “Martingale” models are the two main models which express weak form efficiency, in terms of the opportunity for speculators to earn abnormal returns.

The “Random Walk” typifies a price series where all subsequent price adjustments from the initial price are unpredictable. The logic is that if the flow of information is unimpeded, and information is immediately reflected in stock prices, then tomorrow’s price change will reflect only tomorrow’s news and will be independent of the price changes today (Malkiel, 2003).



An efficient market necessitates a Martingale condition meaning that information in the past price of a share is fully and perpetually reflected in the price of that share (Samuelson, 1973). For this reason charting for trends is useless in revealing additional information.

Contested by critics and within literature, evidence has been for and against the validity of the EMH. Malkiel (2005) wrote that in his 30-year reflection of the EMH he found that professional investment managers did not outperform their index benchmarks, and further he has provided evidence that by-and-large market prices do seem to reflect all available information.

The strong-form EMH has extensive evidence for and against it, (although generally not supportive), and often raises the question of whether insider trading can earn excess returns (Jiang and Zaman, 2009).

The semi-strong form EMH is generally supported by the share price data, as the prices reacts to news quickly (Keown and Pinkerton, 1981).

For the weak form EMH, Murphy (1986) argues that there is insignificant statistical evidence of any abnormal returns when applying technical analysis.

## *2.2 The EMH and The Johannesburg Stock Exchange*

Thompson and Ward (1995) documented a comprehensive review of accumulated empirical evidence on the efficiency of the Johannesburg Stock Exchange (JSE), on studies between 1974 and 1993, and concluded that the evidence is at best mixed, particularly regarding weak and semi-strong form efficiency. They did, however, argue that the JSE is operationally efficient and that it would be reasonable to expect that as statistical techniques become more sophisticated and powerful, some systematic inefficiencies will be uncovered, even in a relatively efficient market.

There are studies, following the above review, which suggest the JSE to be inefficient. Bhana (1995) found that market inefficiency (associated with over-reaction to company-specific earnings announcements) suggested that investors could outperform the market by following an appropriate investment strategy. In ensuing studies, Bhana (1997) investigated the rational response to dividend announcements from companies listed on the JSE, together with the effect of industrial strikes on the value of shares listed on the JSE. All these studies concluded that, in violation of the EMH, the market over-reacts when these type of financial or quantitative announcements are made. The degree varies. In a study on the influence of economic news events on share market activity in South Africa,

Henn and Smit (1997) found that news events resulted in 0.006% to 4% movement in share prices of shares traded on the JSE and that there are clear indications of seasonality in the number of South African economic news items per month. In a study conducted on the influence of political news events on share market activity, van der Merwe and Smit (1997) found South African political news events explain 1% to 23% of movement in prices of shares traded on the JSE. An explanation for the difference in influence on price movement between economic and political news events could be the result of economic trends and because results are obviously more predictable than political news events.

Different 'types' of media announcements influence the way in which the share prices react. Bhana (1998, 1999, 2002, 2003) tested share price reaction on JSE-listed companies with various types of announcements:

- special dividend announcements;
- public news regarding potential take-overs;
- announcements of equity financing;
- announcements of overseas listing by companies listed on the JSE;
- layoff announcements, and
- key executive dismissal announcements.

All the studies suggest abnormal share returns:

**Positively** for

- special dividend announcements;
- take-over announcements;
- overseas listing announcements, and
- announcements of key executive dismissals

**Negatively** for

- layoff announcements and
- additional equity share issues announcements.

In more recent studies the EMH has been tested using management buyout announcements (Bhana, 2005) and Black Economic Empowerment announcements (Ward and Muller, 2010). In all these cases the effect on shareholder returns were measured, and in all cases it was found, that the JSE is informationally inefficient. The findings here were consistent with the findings of Mlambo and Biekpe (2007), who tested the EMH using evidence from ten African stock markets.

From the literature review it would appear that although initially found to be **operationally efficient**, recent studies have found the JSE to be **reasonably inefficient** with information.

The JSE has attempted to become more informationally efficient by evolving from a traditional floor-based equities trading market to a modern securities exchange, providing fully-electronic trading and other associated technologies (Johannesburg Stock Exchange, 2010).

### *2.3 Responsible Investment announcements and the JSE*

Responsible Investment (RI) in South Africa is still a relatively new idea for many investors, however according to Viviers, Bosch, Smit and Buijs (2008) empirical evidence suggests that RI in developed economies is gradually becoming a mainstream consideration. RI, which is also referred to as Social Responsible Investing (SRI), refers to an investment strategy that balances financial and social objectives (Herring, Firer and Viviers, 2009).

The social objectives comprise three main considerations namely:

- Environmental;
- Social, and
- Corporate governance (ESG).

An additional consideration in South Africa is how RI can promote Broad Based Black Economic Empowerment (BBBEE) initiatives.

Many countries have adopted RI and developed their own indices that incorporate RI principles such as the FTSE4GOOD, the Dow Jones Sustainability indices and the South African FTSE/JSE Socially Responsible Investment (SRI) Index.

Viviers, Bosch, Smit and Buijs (2008) state that there are three prominent RI strategies: Screening, Shareholder activism and Caused-based investing.

### **Screening**

Here the investor includes or excludes shares according to his or her perceptions of the company. When an investor holds a share in a company it suggests that that investor approves of the way in which the company conducts its business. The screening method is subjective and may limit the diversification of the investor's portfolio.

### **Shareholder activism**

Here shareholders engage with management boards on ESG considerations. It implies however that the shareholder or investor should have a significant amount of shares to effectively engage with the board.

### **Cause-based investing**

Here investors support particular causes by investing in that company. The downfall of this strategy is that cause-based investments might not yield returns equal to market rates.

Herring, Firer and Viviers (2009) identified **three** key challenges facing RI:

1. There is a lack of understanding the concept as there is no definition of RI.
2. There is a growing body of evidence suggesting that the risk adjusted performance of RI funds are on par with conventional funds, challenging the negative perceptions of investors.
3. A skills shortage, and lack of retention of skills, challenges the sector as most RI investments are considered long-term in nature.

Financial Mail magazine (FM) is a weekly financial publication for business decision makers analysing the week's top business stories. It bases an investment recommendation of twenty companies annually by a screening RI strategy, and ranks the companies according to performance using combined financial and ESG criteria.

The first set of criteria is the traditional quantitative analysis that considers the Return on Equity (ROE), internal rate of return (IRR) and compound growth in earnings per share (EPS). These criteria account for 40% of the total score.

Because the aim is to use the past as a guide to, rather than a determinant of, the future, the second set of criteria, which represents the remaining 60% of the total score, is based on a largely qualitative assessment of how "investable" a company is (Williams, 2009).



The total score is therefore a combination of financial and social criteria. The social criteria includes:

- how the company is managed;
- its corporate governance procedures and culture;
- its black empowerment status;
- the quality of communication with shareholders and stakeholders;
- the prospects for growth in the sector (or sectors) in which the company operates;
- contextual issues such as regulatory uncertainties and tax regimes; and, crucially,
- whether the share is reasonably liquid and offers value that the ‘herd’ may have missed (Williams, 2009).

No known research exists in South Africa that investigates the semi-strong form efficiency of the market, where an announcement is made on a Responsible Investment recommendation.

## *2.4 Event study methodology*

The semi-strong form efficient market hypothesis suggests that when information is made available to the public, the price of shares is adjusted rapidly and without bias. Using the standard event study methodology developed by Fama, Fisher, Jensen and Roll (1969) it can be determined whether there is a price adjustment associated with new information, such as an unanticipated event.

McWilliams and Siegel (1997) indicate that event study methodology has become popular because it does not rely on analysing accounting-based measures of profit (which have been criticised as not reflecting the true performance of firms). The authors also assert that the event study framework provides a true measure of the financial impact of an event only if a set of assumptions are valid and the research design is properly executed. The assumptions are: firstly, that markets are efficient; secondly, that the event was unanticipated; and thirdly that there were no confounding effects during the event window.

McWilliams and Siegel (1997) further illustrate how event study is implemented using 10 steps. Steps one to five focus on defining and isolating the event. Step six refers to the measurement of the price adjustment and steps seven to ten are essentially the statistical testing of the price adjustment for significance.

Price adjustments are measured as significant, abnormal or excess returns. Abnormal return can be measured in the short-term or long-term where the abnormal return or “residual” represents the share price return after subtracting the expected return of that share. While the exact definition of long-term is arbitrary, it generally applies to event windows of 1 year or more (Khotari and Warner, 2006)

The Capital Asset Pricing Model (CAPM) has most frequently been used to calculate expected returns. The CAPM has been criticised widely over the last two decades with arguments that a single factor beta model provided little explanation for the cross-section of expected share returns.

Fama and French (1996) built a three-factor returns-generating model which they claimed explained the expected returns of shares across the market more accurately than a single parameter CAPM. The model assumes that the expected return on a portfolio, in excess of the risk-free rate, is explained by the sensitivity of its return to three factors:

- the excess return on a broad market;
- the difference between the return on a portfolio of small stocks and the return on a portfolio of large stocks, and

- the difference between the return on a portfolio of high-book-to-market stocks and the return on a portfolio of low-book-to-market stocks.

More recently Ward and Muller (2008) also referred to the inadequacy of a market or single parameter CAPM as a benchmark which abnormal returns are estimated against. The authors indicate that this is due to the inability of the CAPM to account for expected returns on the basis of company size, growth versus value and (in the South African context), a further consideration of 'resource' versus 'non-resource' shares.

Mordant and Muller (2003) illustrates how researchers have constructed control portfolios in order to remove the impact of market effects. They state that control portfolios are built from of all shares in the market and divided into groups based on the market anomaly to be filtered out.

In their study they created eight factor mimicking 'control portfolios' of shares representing the cross sectional factors of size (large or small), growth/value and resources/non-resources. Following Mordant and Muller (2003) and Mutooni and Muller (2007), Ward and Muller (2008) constructed a 12 parameter "style" model to estimate benchmark returns by including a medium range in the size factor.

After placing shares into one of the twelve control portfolios it is possible to calculate the alpha and beta coefficients of each share against each of the control portfolios. This can then be used to measure the expected return of each share as well as the abnormal returns. The average abnormal returns across the sample can then be used for the event analysis.

In their study, Ward and Muller (2008) used both the control portfolio approach to estimate abnormal returns as well as the CAPM single beta model, as a test for robustness.

### 3. RESEARCH HYPOTHESES

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Some semi-strong form inefficiencies have been observed in the JSE over the last few years. From the literature review, it would be plausible to assume that the JSE would be reasonably inefficient with announcements (in the Financial Mail) regarding 'Top Companies' and their attractiveness as Responsible Investment opportunities.

To measure semi-strong form efficiency in the JSE, abnormal returns and cumulative abnormal returns will be measured around announcement dates as well as the days following announcement dates.

The following research hypotheses have been formulated to test whether abnormal returns can be achieved for shareholders and if the semi-strong form efficient market hypothesis holds true for the JSE.

***Hypothesis 1:***

The null hypothesis suggests that shareholders earn no cumulative abnormal returns around the announcement date implying the announcement did not lead to any change in the share price.

The alternative hypothesis suggests that the shareholders earn significant positive cumulative abnormal returns around the announcement dates.

$$H_0: ACAR_{AD} = 0$$

$$H_a: ACAR_{AD} > 0$$

Here,  $ACAR_{AD}$  represents the average cumulative abnormal returns around the publication date.

### ***Hypothesis 2:***

The null hypothesis suggests that shareholders earn no cumulative abnormal returns over the longer term following the announcement dates implying the announcement did not lead to any change in the share price.

The alternative hypothesis suggests that the shareholders earn significant positive cumulative abnormal returns over the longer term following the announcement dates.

$$H_0: ACAR_{LT} = 0$$

$$H_a: ACAR_{LT} > 0$$

Here,  $ACAR_{LT}$  represents the average cumulative abnormal returns of the shares in the long-term.

Hypothesis 1 and 2 will be tested at the 5% error margin using two-tailed t-tests.



## 4. RESEARCH METHODOLOGY

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### *4.1 Unit of analysis*

The unit of analysis will be a company listed in the Financial Mail's (FM) Top 20 Companies List between 2003 and 2009.

### *4.2 Population of relevance*

The population of relevance will consist of all shares listed on the JSE over the period 1 January 2003 to 31 December 2009 that were considered by FM to be evaluated for the 'Top Companies' list.

Two main criteria are used for including companies in the FM evaluation (Williams, 2009). Their first criterion is that the company should have a market capitalisation of at least R 1 billion, so that the investors can be confident that an operation is sustainable and has critical mass. Their second criterion is a constant track record of internal rate of return and compound growth in earnings per share over the previous five years.

From this population a score is derived where 40% of the score is based on historical financial performance and the remaining 60% based on a qualitative assessment of how attractive a company is to invest in (Williams, 2009).

### ***4.3 Sampling method and size***

Three samples were determined for the study.

1. The 'Full list' refers to complete lists of the 'Top 20 Companies' published in the FM between the period 2003 and 2009. This sample contains 140 observations.
2. The 'new entries' list comprise all companies that were published in the list for the first time. This sample contained 83 observations.
3. The 'repeated entries' list comprise all companies that featured more than once in the list since 2003. This sample contained 57 observations.

#### ***4.4 Data collection process***

The 'Top Companies' list was collected for each year from 1993 to 2009 from the FM's 'Top Companies' website. The list is also available in the printed copies of FM's 'Top Companies' annual publication.

For the analysis of the abnormal returns, daily share price data was collected, for each of the companies mentioned in the list, from the McGregor's BFA internet database from 20 days prior to the announcement to 200 days following the announcement. For the estimation of the betas of the shares compared to the all share (J203) index return, five years daily share return data, prior to the announcement, was used for each of the shares.

#### ***4.5 Data analysis method***

The share price reaction to the positive mentions of companies in FM's 'Top Companies' list are tested utilising the standard event study methodology developed by Fama, Fisher, Jensen and Roll (1969).

Following Ward and Muller (2008) both the control portfolio model and CAPM are used in this event study to estimate abnormal returns.

The event date for the purpose of this study is regarded as the day on which the 'Top Companies' section of the FM is published. This date is denoted as " $t_0$ ".

The impact of the announcement was measured in daily returns on shares for each of the recommended companies over a period of 221 days, from the publishing date  $t_0$  backward for 20 days to  $t_{-20}$  and from the publishing date forwards for 200 days to  $t_{200}$ .

Two window periods will be used to examine the performance of the companies recommended by FM:

1.  $t_{-10}$  to  $t_{10}$  to measure reaction related to the publication, and
2.  $t_{-20}$  to  $t_{200}$  for the longer-term.

The daily share price return for each share was calculated in terms of Formula 1.

$$R_{it} = \ln [P_{it} / P_{it-1}] \quad (1)$$

where:

$R_{it}$  = the rate of return on share  $i$  on day  $t$ , and

$P_{it}$  = the price of share  $i$  at the end of day  $t$ .

For the CAPM, the abnormal return for share  $i$  on day  $t$ ,  $AR_{it}$ , is estimated as:

$$AR_{it} = R_{it} - \alpha_i - \beta_i R_{mt} \quad (2)$$

where:

$\alpha_i$  and  $\beta_i$  = the estimates for the market model parameters for share  $i$ , and

$R_{mt}$  = the return on the JSE all share index (ASI) equally weighted index

for day  $t$ .

For the control portfolio model the abnormal return for share  $i$  on day  $t$ ,  $AR_{it}$ , is estimated as the sum of the sensitivity of share  $i$  to the returns on twelve control portfolios as described by Ward and Muller (2008). The twelve control portfolios model classifies companies using three factors:

- 'resource' or 'non-resource' company,
- value or growth company and
- small, medium or large size of company.

Using the control portfolio model the abnormal return for share  $i$  on day  $t$ ,  $AR_{it}$ , is estimated as:

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

where:

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

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

$SGN_t \dots LVR_t$  are the log-function share price returns on each of the twelve control portfolios set out in Table 1 on day  $t$ .

**Table 1: Control Portfolios**

Control Portfolio	Resource or non-resource company	Value or growth company	Company size
SGN	Non-resource	Growth	Small
SGR	Resource	Growth	Small
SVN	Non-resource	Value	Small
SVR	Resource	Value	Small
MGN	Non-resource	Growth	Medium
MGR	Resource	Growth	Medium
MVN	Non-resource	Value	Medium
MVR	Resource	Value	Medium
LGN	Non-resource	Growth	Large
LGR	Resource	Growth	Large
LVN	Non-resource	Value	Large
LVR	Resource	Value	Large

To test the performance on a specific date the average abnormal return,  $AAR_t$ , is calculated as:

$$AAR_t = \frac{1}{n} \sum_{i=1}^n AR_{it} \quad (4)$$

where:

$AAR_t$  = the average abnormal return for all shares on day t, and

n = the number of companies.

To test the performance of a share for each event window, the abnormal returns were accumulated to obtain the Cumulative abnormal return (CAR).

$$CAR_i = \sum_{t=-d}^d AR_{it} \quad (5)$$

where:

$CAR_i$  = the cumulative abnormal returns for share  $i$  for the period from  $t = -d$  to  $t = d$ .

Once all the cumulative abnormal returns (CARs) for the full sample were calculated, the average cumulative abnormal return (ACAR) was calculated as the simple average CAR of the selections in the sample.

$$ACAR = \frac{1}{n} \sum_{i=-d}^d CAR_i \quad (6)$$

where:

$ACAR$  = the average cumulative abnormal return for all shares in the sample for the period from  $t = -d$  to  $t = d$ , and

$n$  = the number of companies



Having calculated the ACAR, a two tailed t-test was performed at the 5% error level to determine whether the ACAR was significantly different from zero around the publication date (Hypothesis 1). In addition to the t-test, a boot-strapping process was used to test the significance of 10 day ACARs.

Secondly, a two-tailed t-test was performed at the 5% error level to determine whether the ACAR was significantly different from zero for the long-term event window (Hypothesis 2).

For cross-sectional analysis the sample was split into two groups based on whether the company was a new entrant to the list or whether it was a repeat entry.

Statistical inference for all AARs and ACARs were made to measure if the abnormal returns are significantly different from zero.

#### *4.6 Data integrity*

From the sample selection process, some data integrity issues arose:

- Companies that were de-listed during the event period were excluded from the analysis.
- Shares with a return in excess of +30% (or -30%) were investigated. It was found that shares were overvalued and had been restated at specific dates causing negative returns of more than 30%. As these events were not related to the study, the shares were excluded for the purpose of calculating abnormal returns.
- Companies with missing data were excluded from the analysis.

The Companies, excluded from the analysis, is shown in Appendix 1.

#### **4.7 Research limitations**

The following research limitations have been identified:

- Responsible Investment is an aggregate measure and incorrect expected returns can be calculated due to the aggregation over different dimensions that have confounding effects (Galema, Plantinga and Scholtens, 2008).
- This study focussed on the 20 companies that are listed in the Financial Mail's 'Top Companies' list which may not be representative of all the companies listed on the JSE.
- The study considered a relatively small sample.
- Small companies with a market capitalisation of less than R1 billion were excluded from the Financial Mail' analysis. This may not be representative of the performance of all companies in South Africa.
- The study is done on shares from 1993 onwards and therefore does not take into account all time periods.

## 5. RESULTS

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### *5.1 Description of the sample*

The sample consisted of companies out of all the companies listed on the JSE during the calendar years 2003 to 2009 that met certain criteria. As companies can be drawn more than once (in consecutive years), the sum of all companies listed on the JSE during this time considered was around 3200. All the companies that made up the sample had to adhere to the particular criteria described in Paragraph 4.2. These criteria can broadly be classified into two categories: (1) companies must be listed on the stock exchange with a market capitalisation of at least R1 billion and (2) have a financial track record of more than five years.

From all the companies considered, only 1056 of the companies (including repeat companies) met these criteria.

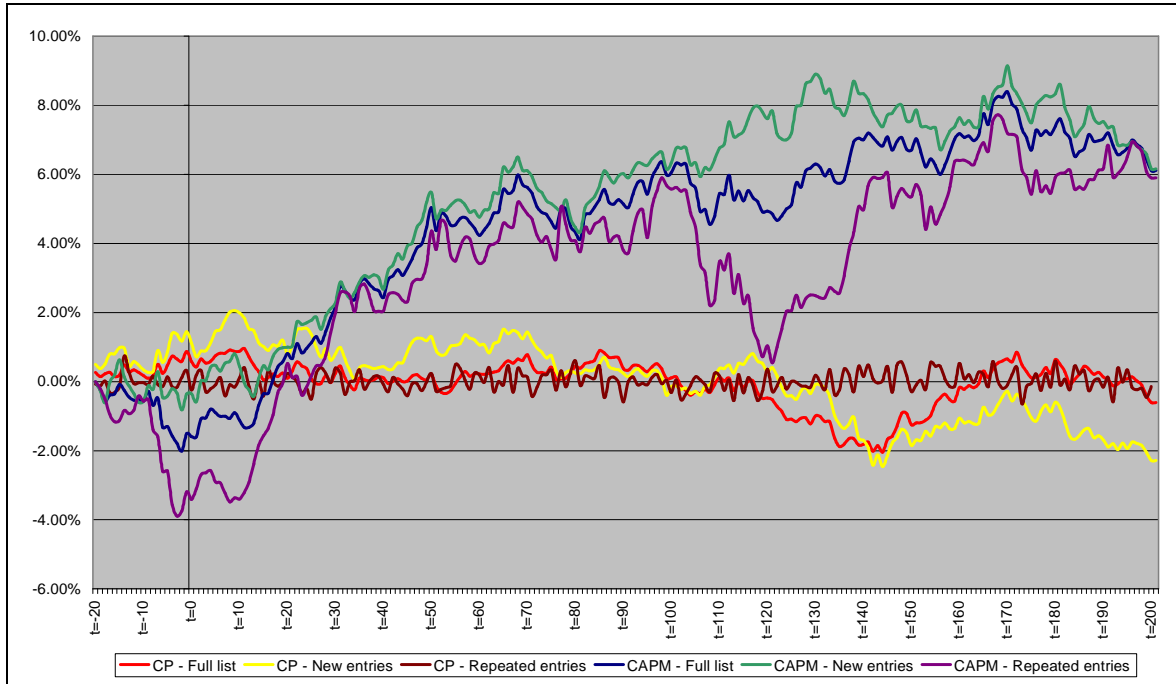
From this population 20 companies were selected annually, over the seven years, for the top 20 list resulting in a total sample of 140 companies (including duplicates). A summary of the sample is presented in Table 2.

**Table 2: Summary of the Top 20 companies list included in this study**

<b>Population size</b>	1056
<b>Sample Size</b>	140
<b>Number of companies in list by year</b>	140
2003	20
2004	20
2005	20
2006	20
2007	20
2008	20
2009	20
<b>JSE Sectors</b>	
Number of different sectors on the JSE	9
Number of different sub-sectors on the JSE	45
Frequency of number sectors	140
Basic Materials	38
Consumer Goods	7
Consumer Services	32
Financials	17
Health Care	7
Industrials	23
Oil and Gas	3
Technology	3
Telecommunications	10
<b>Number of companies repeatedly in list</b>	57
7 times	1
6 times	1
5 times	0
4 times	3
3 times	9
2 times	19
<b>New entries / Repeated entries / Total - in list</b>	
2003	20 / 0 / 20
2004	13 / 7 / 20
2005	10 / 10 / 20
2006	12 / 8 / 20
2007	12 / 8 / 20
2008	4 / 16 / 20
2009	12 / 8 / 20
<b>Totals</b>	83 / 57 / 140

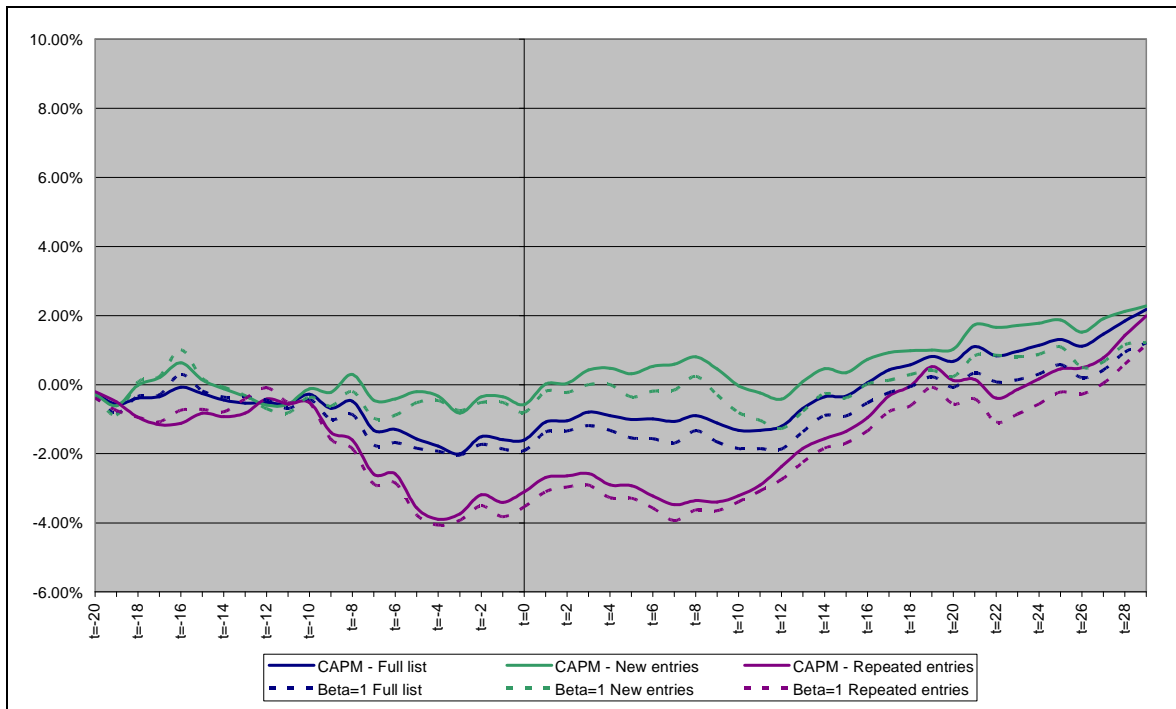
## 5.2 CAPM vs. Control Portfolio Model

As mentioned in paragraphs 2.4 and 4.5, both the CAPM and Control Portfolio Model (CP) were used to calculate ARs. The ACARs, calculated from the ARs, for the two models are shown in Figure 1.



**Figure 1: ACARs for CAPM and Control Portfolio Model**

To test the robustness of the beta coefficients used in the CAPM, the beta of each share was set to one, as represented by the market as a whole (i.e a 'market model' versus the CAPM). The difference between the CAPM, where the betas are determined through regression, and the Market Model, where the betas are equal to one, is shown in figure 2 for the period  $t_{-20}$  to  $t_{+30}$ .



**Figure 2: ACARs for initial CAPM and CAPM where Beta = 1**

From figure 2 it can be observed that there is no substantial difference between the CAPM and Market Model results. From figure one however, a significant, positive trend in the AR's is observable post the event date. Since this trend in the data is not evident in the Control Portfolio (CP) based ARs, it was clear that the CAPM is biased, and does not fully account for style related returns in the AR generating process. For this reason it was decided to use only the CP model's ARs, for further analysis, as it represents the ACARs more accurately.

## ***5.3 Share price performance***

### **5.3.1 Average Abnormal Returns (AARs)**

Although Hypothesis 1 and 2 are formulated to test ACARs over the different event windows, an appreciation of the AARs for both event windows is useful in understanding the results related to the Hypotheses.

The AARs were calculated, as per paragraph 4.5 above. The results are presented for both 21-day and 221-day event windows.

Table 3 shows the Average Abnormal Returns in detail for each day of the 21-day event window. The window commences on  $d_{-10}$ , which is 10 days before the announcement date, with the announcement date being reflected as  $D_0$ . The event window ends on  $D_{+10}$ , which is 10 days after the announcement date (or event date).



**Table 3: Average Abnormal Returns for the 21-day event window [-10,+10]**

Day	Full sample (n=121)			New entries (n=72)			Repeated entries (n=49)		
	AAR	Median AR	t-stat	AAR	Median AR	t-stat	AAR	Median AR	t-stat
D-10	-0.10%	-0.02%	-0.605	-0.15%	-0.15%	-0.630	-0.03%	0.25%	-0.143
D-9	-0.07%	-0.13%	-0.519	-0.07%	-0.16%	-0.360	-0.08%	-0.06%	-0.379
D-8	0.08%	0.01%	0.443	0.02%	0.00%	0.110	0.15%	0.23%	0.541
D-7	0.33%	0.20%	1.291	0.60%	0.23%	1.493	-0.08%	0.07%	-0.442
D-6	-0.26%	-0.29%	-1.359	-0.34%	-0.34%	-1.196	-0.14%	-0.18%	-0.640
D-5	0.23%	0.25%	1.281	0.30%	0.22%	1.117	0.13%	0.31%	0.621
D-4	0.26%	0.25%	1.538	<b>0.54% **</b>	0.33%	2.401	-0.15%	-0.10%	-0.618
D-3	-0.08%	-0.07%	-0.474	-0.03%	0.04%	-0.138	-0.16%	-0.31%	-0.590
D-2	-0.07%	0.11%	-0.426	-0.20%	0.02%	-0.873	0.12%	0.29%	0.599
D-1	0.29%	0.02%	1.641	0.27%	0.04%	1.118	0.32%	-0.03%	1.238
D0	<b>-0.29% **</b>	-0.19%	-1.985	-0.32%	-0.16%	-1.504	-0.24%	-0.27%	-1.354
D+1	-0.16%	-0.07%	-0.966	<b>-0.39% *</b>	-0.19%	-1.904	0.19%	0.12%	0.743
D+2	<b>0.23% *</b>	0.09%	1.700	0.16%	0.09%	0.938	0.32%	0.09%	1.509
D+3	-0.11%	-0.25%	-0.575	0.01%	-0.28%	0.040	-0.29%	-0.22%	-1.007
D+4	0.06%	-0.18%	0.374	0.24%	0.19%	1.372	-0.21%	-0.42%	-0.794
D+5	0.15%	0.15%	0.965	0.32%	0.29%	1.432	-0.10%	0.09%	-0.500
D+6	0.08%	0.16%	0.471	0.05%	0.14%	0.232	0.12%	0.18%	0.458
D+7	-0.01%	-0.11%	-0.042	<b>0.27% *</b>	-0.01%	1.732	<b>-0.41% *</b>	-0.27%	-1.717
D+8	0.10%	0.05%	0.674	0.23%	0.11%	1.226	-0.10%	-0.10%	-0.460
D+9	-0.04%	-0.07%	-0.276	0.04%	-0.03%	0.214	-0.16%	-0.38%	-0.804
D+10	0.01%	-0.11%	0.035	-0.06%	-0.14%	-0.312	0.11%	-0.10%	0.514

\* Statistically significant at the 10% level

\*\* Statistically significant at the 5% level

\*\*\* Statistically significant at the 1% level

Table 4 summarises the AARs for the 21-day event window. The average of the 10 daily Average Abnormal Returns following the event is compared to the 10 days preceding the announcement.

**Table 4: Summary of the AARs for the event window [-10,+10]**

	Full list	New entries	Repeated entries
Mean [-10,-1]	0.060%	0.095%	0.008%
Mean [0,+10]	0.001%	0.049%	-0.071%
Std Dev	1.667%	1.696%	1.599%
T-test	-0.392	-0.230	-0.347
T-critical	1.980	1.994	2.012
H <sub>0</sub> : $\mu=0$ (5%)	Fail to reject	Fail to reject	Fail to reject

Figures 3, 5 and 7 represents the 221-day AAR charts for the ‘full’-, ‘new entries’- and ‘repeated entries’ list. Figures 4, 6 and 8 show the t-test charts against the critical t-test values.

The values above and below the critical t-test values indicate where the ‘null’ hypothesis (stating that the daily AAR equals zero), would be rejected.

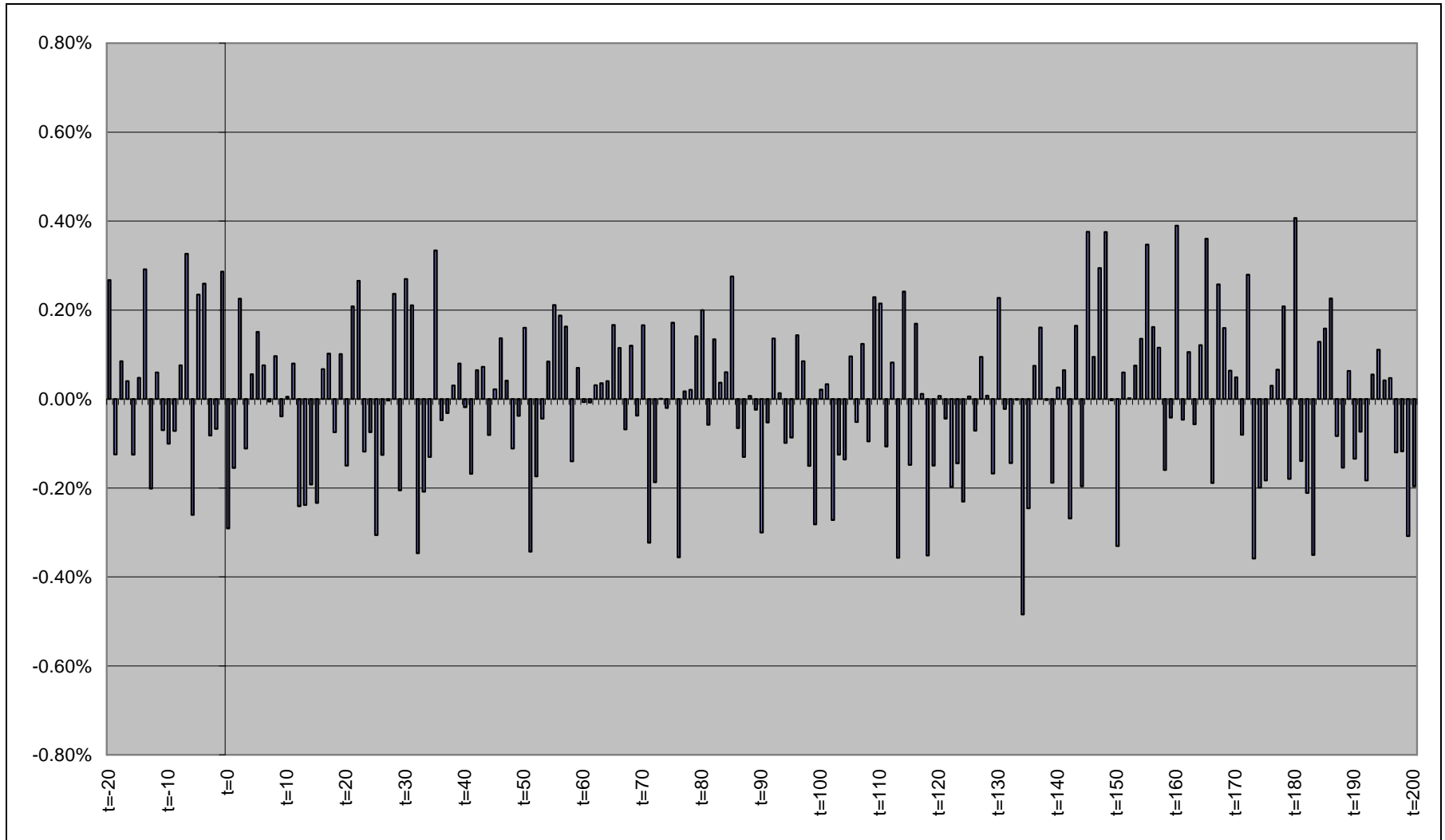


Figure 3: Average Abnormal Returns for the full list [-20, +200]

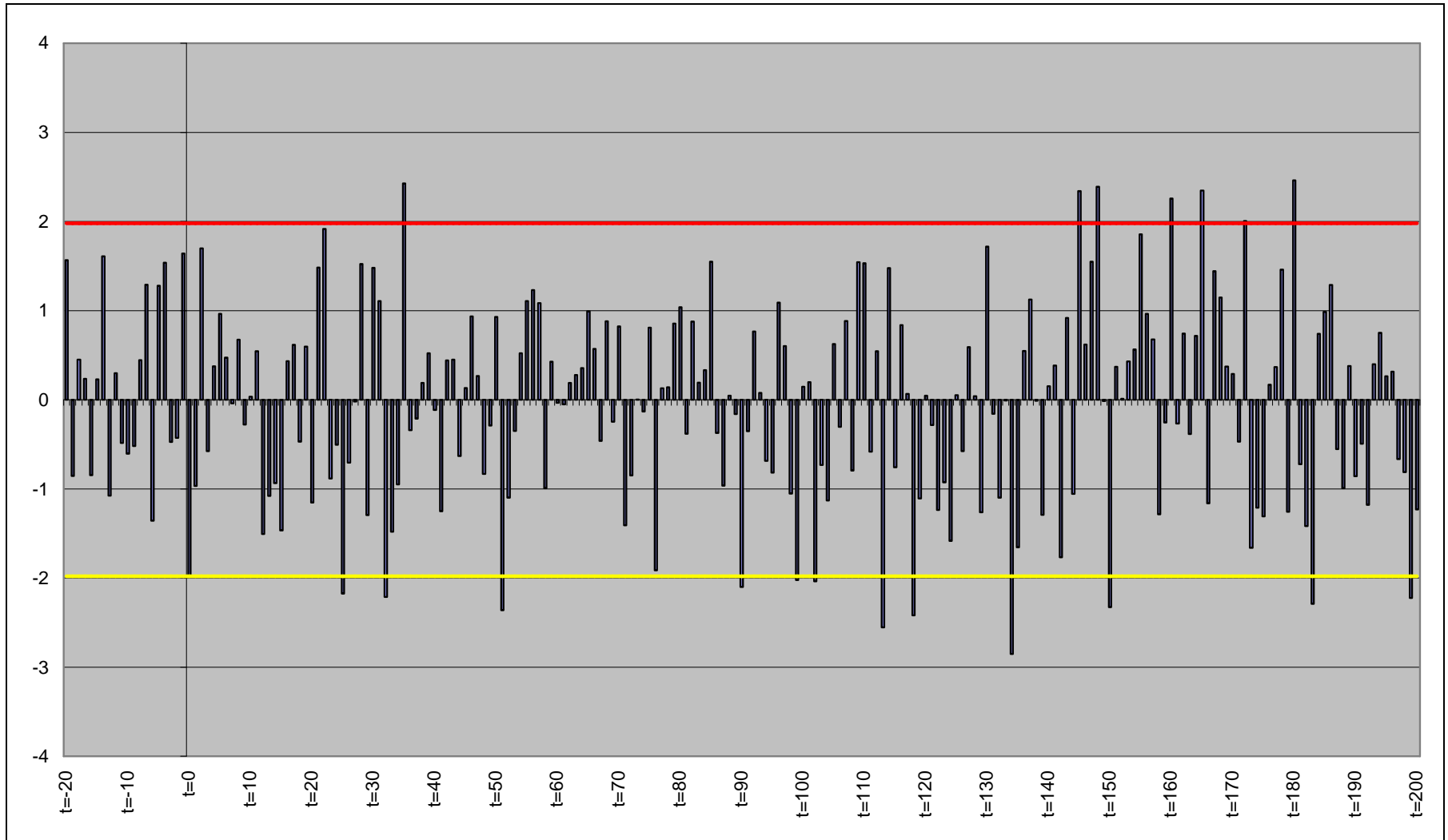


Figure 4: T-test of daily AARs for the full list [-20, +200]

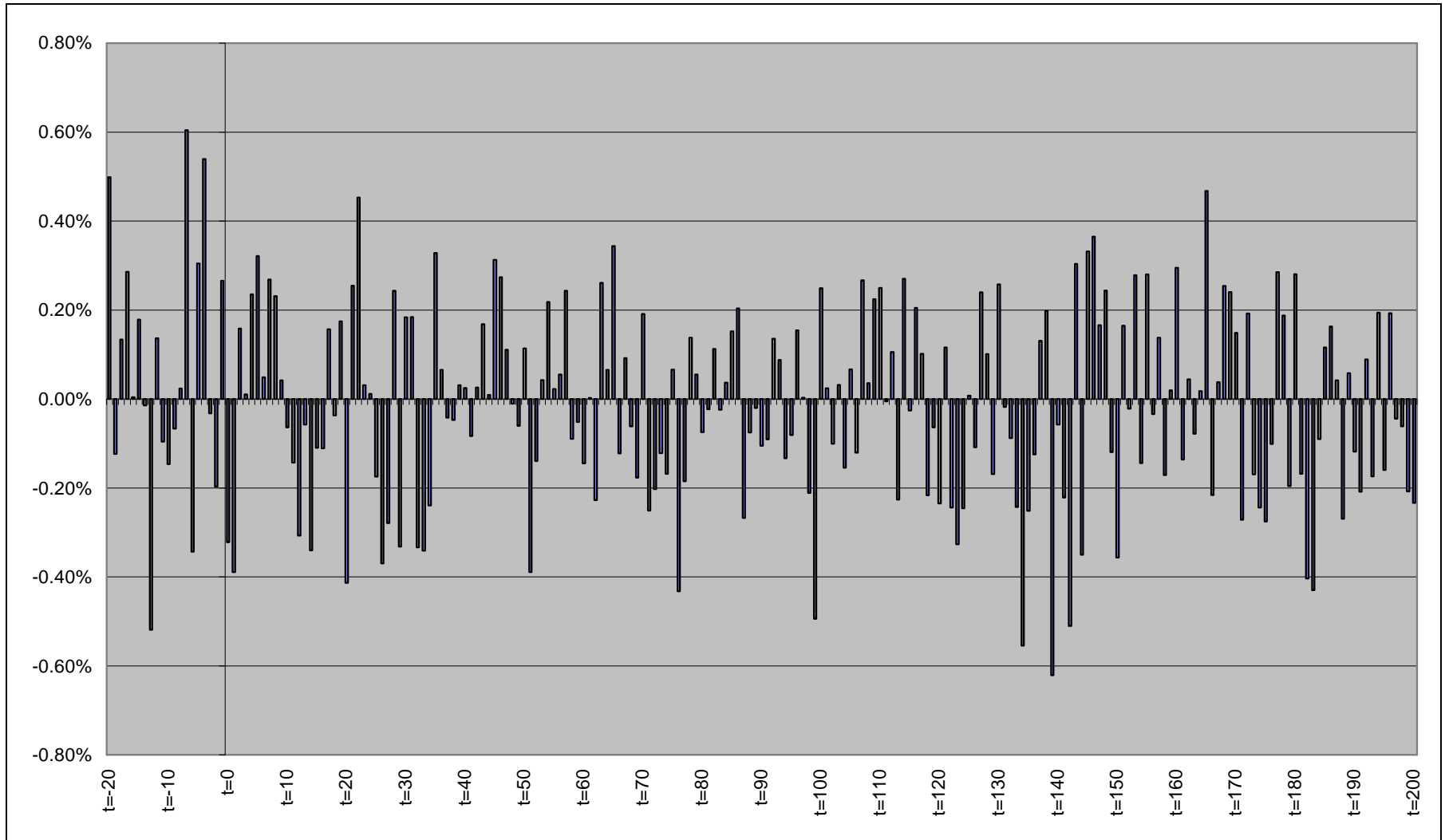


Figure 5: Average Abnormal Returns for the 'new entries' list [-20, +200]

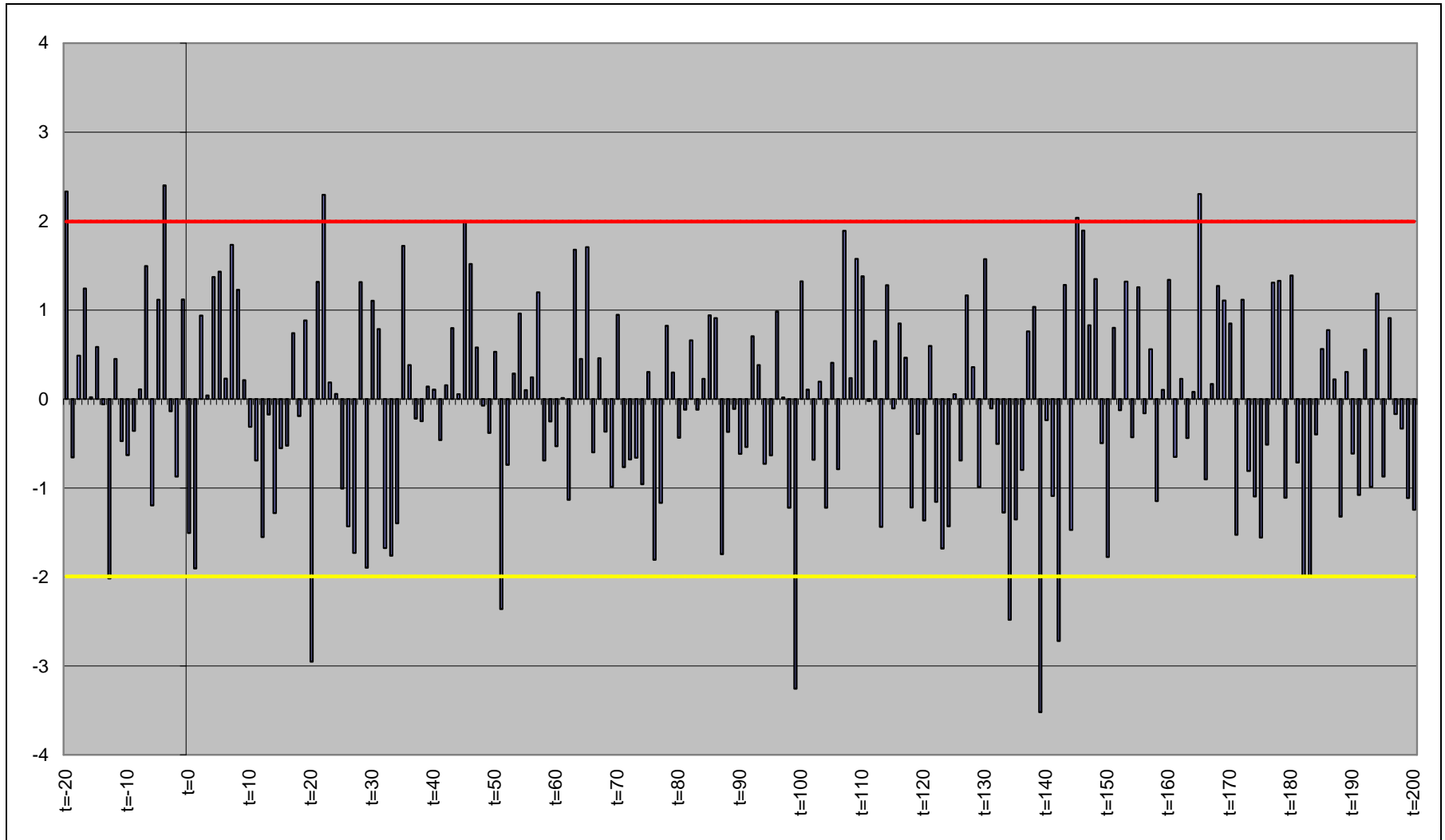


Figure 6: T-test of daily AARs for the 'new entries' list [-20, +200]

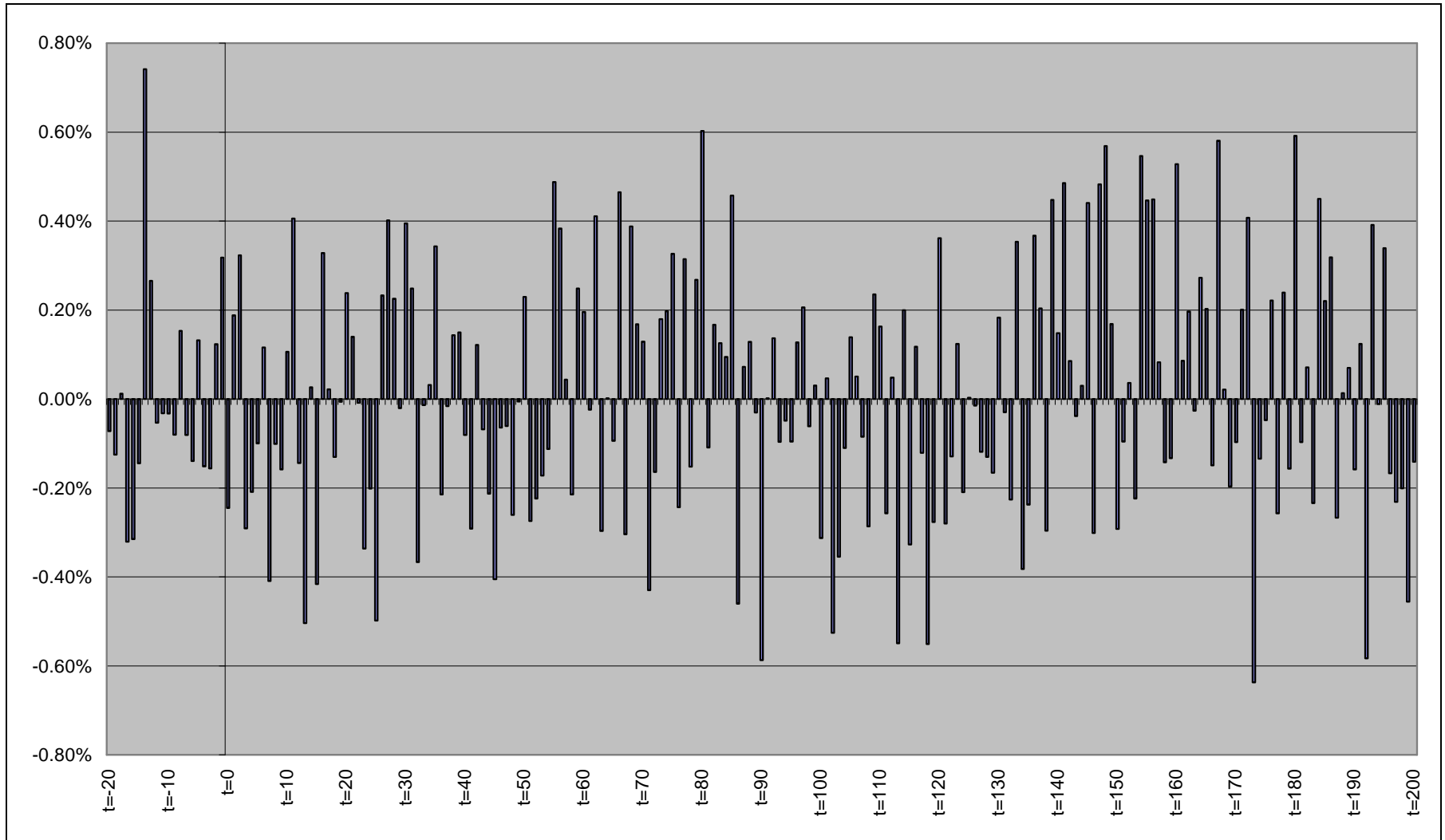


Figure 7: Average Abnormal Returns for the 'repeated entries' list [-20, +200]

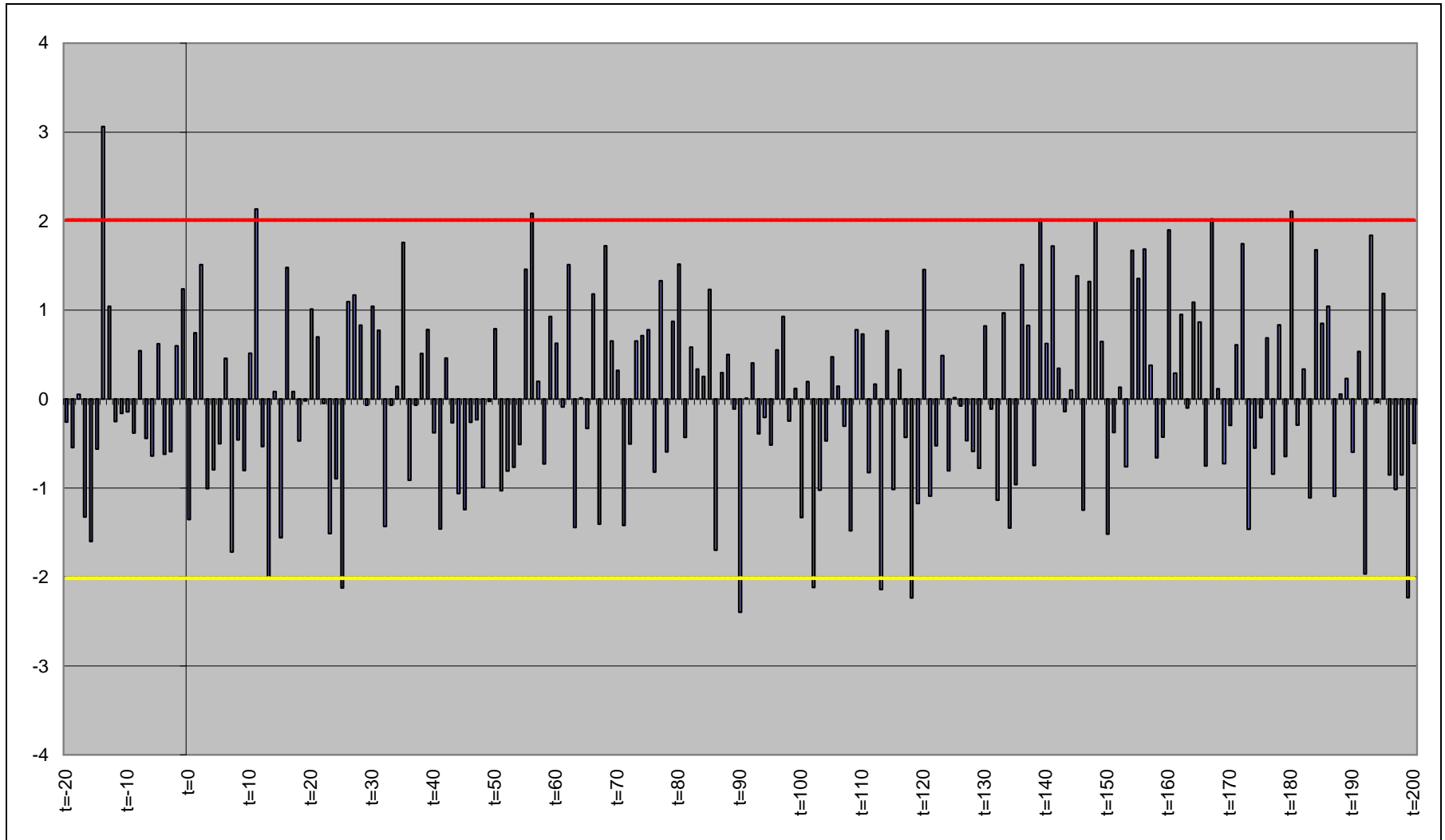


Figure 8: T-test of daily AARs for the 'repeated entries' list [-20, +200]



Figures 3, 5 and 7, the graphs of the abnormal returns, depict daily average abnormal returns between:

- -0.48% and 0.41% for the full list;
- -0.62% and 0.60% for the new entries, and
- -0.64% and 0.74% for the repeat entries.

These figures represent the peak positive and negative daily average abnormal returns for the sample groups. Most of the daily abnormal returns lie in the -0.6% to 0.6% range, with no recognisable patterns or significance.

For the [-20,200] event window, the significant AARs, at the 5% level, are presented in Tables 5, 6 and 7. From the 221-day event window, the numbers of significant AARs are:

- 20 (9%) for the full list;
- 13 (6%) for the 'new entries' list, and
- 14 (6%) for the 'repeated entries' list.

**Table 5: Statistically significant AARs for the full list [-20, +200]**

Day	Daily AAR	t-stat	critical t value	H <sub>0</sub> : μ=0
t= 0	-0.29%	-1.985	1.980	reject
t= 25	-0.31%	-2.176	1.980	reject
t= 32	-0.35%	-2.211	1.980	reject
t= 35	0.33%	2.428	1.980	reject
t= 51	-0.34%	-2.360	1.980	reject
t= 90	-0.30%	-2.101	1.980	reject
t= 99	-0.28%	-2.023	1.980	reject
t= 102	-0.27%	-2.037	1.980	reject
t= 113	-0.36%	-2.553	1.980	reject
t= 118	-0.35%	-2.419	1.980	reject
t= 134	-0.48%	-2.852	1.980	reject
t= 145	0.38%	2.341	1.980	reject
t= 148	0.38%	2.392	1.980	reject
t= 150	-0.33%	-2.326	1.980	reject
t= 160	0.39%	2.259	1.980	reject
t= 165	0.36%	2.348	1.980	reject
t= 172	0.28%	2.006	1.980	reject
t= 180	0.41%	2.461	1.980	reject
t= 183	-0.35%	-2.290	1.980	reject
t= 199	-0.31%	-2.225	1.980	reject

**Table 6: Statistically significant AARs for the 'new entries' list [-20, +200]**

Day	Daily AAR	t-stat	critical t value	H <sub>0</sub> : μ=0
t= -20	0.50%	2.333	1.994	reject
t= -13	-0.52%	-2.016	1.994	reject
t= -4	0.54%	2.401	1.994	reject
t= 20	-0.41%	-2.953	1.994	reject
t= 22	0.45%	2.295	1.994	reject
t= 51	-0.39%	-2.359	1.994	reject
t= 99	-0.49%	-3.256	1.994	reject
t= 134	-0.55%	-2.484	1.994	reject
t= 139	-0.62%	-3.520	1.994	reject
t= 142	-0.51%	-2.720	1.994	reject
t= 145	0.33%	2.037	1.994	reject
t= 165	0.47%	2.302	1.994	reject
t= 183	-0.43%	-2.006	1.994	reject

**Table 7: Statistically significant AARs for the ‘repeated entries’ list [-20, +200]**

Day	Daily AAR	t-stat	critical t value	H <sub>0</sub> : μ=0
t= -14	0.74%	3.061	2.012	reject
t= 11	0.41%	2.136	2.012	reject
t= 13	-0.50%	-2.015	2.012	reject
t= 25	-0.50%	-2.122	2.012	reject
t= 56	0.38%	2.087	2.012	reject
t= 90	-0.59%	-2.395	2.012	reject
t= 102	-0.53%	-2.117	2.012	reject
t= 113	-0.55%	-2.142	2.012	reject
t= 118	-0.55%	-2.233	2.012	reject
t= 139	0.45%	2.019	2.012	reject
t= 148	0.57%	2.015	2.012	reject
t= 167	0.58%	2.023	2.012	reject
t= 180	0.59%	2.111	2.012	reject
t= 199	-0.46%	-2.230	2.012	reject

Table 8 summarises the AARs for the complete 221-day event window. The average of the 200 daily Average Abnormal Returns following the event is compared to the 20 days preceding the announcement.

**Table 8: Summary of the AARs for the event window [-20,+200]**

	Full list	New entries	Repeated entries
Mean [-20,-1]	0.044%	0.072%	0.002%
Mean [0,+200]	-0.007%	-0.018%	0.009%
Std Dev	1.741%	1.645%	1.845%
T-test	-0.321	-0.466	0.027
T-critical	1.980	1.994	2.012
H <sub>0</sub> : μ=0 (5%)	Fail to reject	Fail to reject	Fail to reject

### 5.3.2 Average Cumulative Abnormal Returns (ACARs)

In this section the ACARs will be presented, again for both the 21-day and 221-day event windows. To examine the Cumulative Abnormal Returns (CARs) over the event windows, the daily AARs were accumulated for each of the three samples. Once the CARs were calculated for each of the shares in each of the samples, the averages of the daily CARs (ACARs) were calculated.

Figure 9 suggests that, for the majority of the 21-day event window following the announcement, positive Average Cumulative Abnormal Returns (ACARs) accrue to the shareholders of companies listed in the ‘Top Companies’ list.

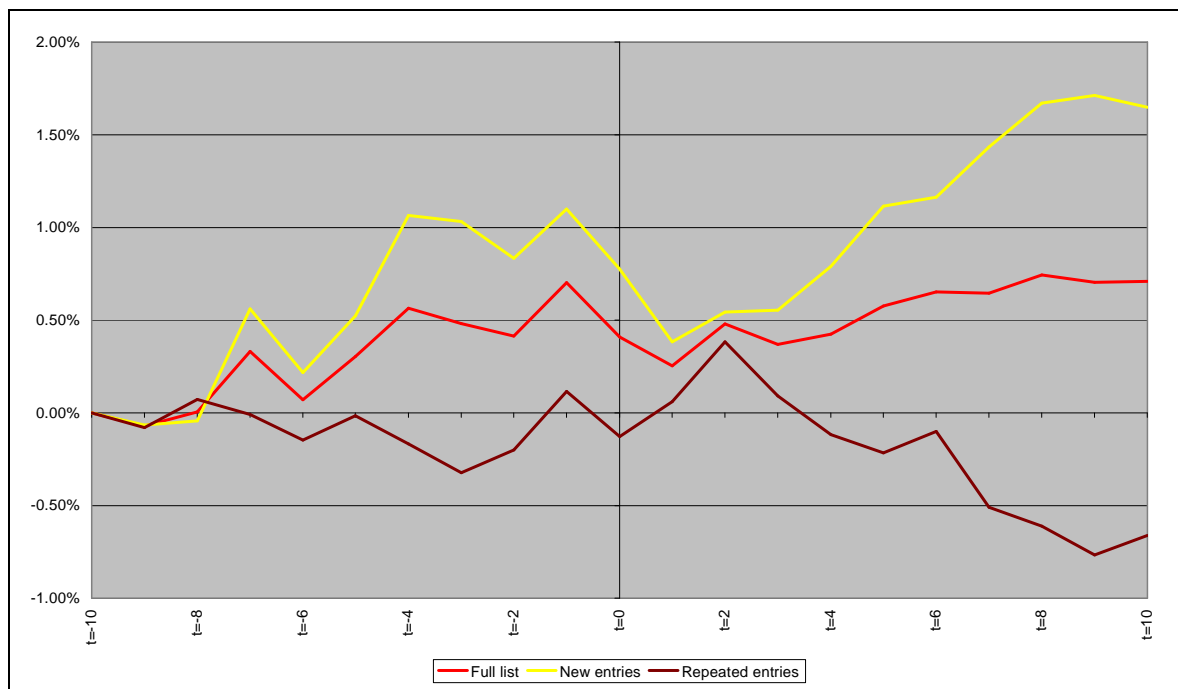


Figure 9: Average Cumulative Abnormal Returns [-10, +10]

The ACARs **peak value** and **value on the last day** of the event window, 10 days after the announcement, are:

- **0.74%** (8 days after the announcement) and **0.71%** respectively for the full list;
- **1.71%** (9 days after the announcement) and **1.65%** respectively for the 'new entries' list, and
- **0.38%** (2 days after the announcement) and **-0.66%** respectively for the 'repeated entries' list.

In addition to the commonly used t-test, a boot-strapping process was used to test ACARs for significance. This method of significance testing is superior to the t-test in that no assumption is made of normality. The Boot-strap distributions were constructed for 10 day ACARs, against which the 10 day ACARs in the event period was tested for significance (Ward and Muller, 2010).

Table 9 indicates the statistical significance of the ACARs, and points out that only the 'new entries' list's ACARs were significant on the last day of the event window. The 'full'- and 'repeated entries' lists' ACARs were insignificant on the last day of the event window.

**Table 9: Statistically significant ACARs for the event window [-10, +10]**

	Full list	New entries	Repeated entries
10 day ACAR on $t_{10}$	0.30%	0.87%	-0.53%
T-test	0.648	1.559	-0.680
T-critical (5%)	1.980	1.994	-2.012
$H_0: \mu=0$ (5%)	Fail to reject	Fail to reject	Fail to reject
Bootstrap upper bound	0.83%	0.83%	-1.06%
$H_0: \mu=0$ (5%)	Fail to reject	<b>Reject</b>	Fail to reject

Figure 10 shows the ACARs for the 221-day event window. In contradiction to Figure 9, this figure suggests that, for the majority of the event window, negative ACARs accrue to the shareholders. The ACARs **peak value** and **value on the last day** of the event window, 200 days after the announcement, are:

- **0.96%** (11 days after the announcement) and **-0.61%** respectively for the full list;
- **2.05%** (9 days after the announcement) and **-2.28%** respectively for the 'new entries' list, and
- **0.60%** (80 days after the announcement) and **-0.14%** respectively for the 'repeated entries' list.

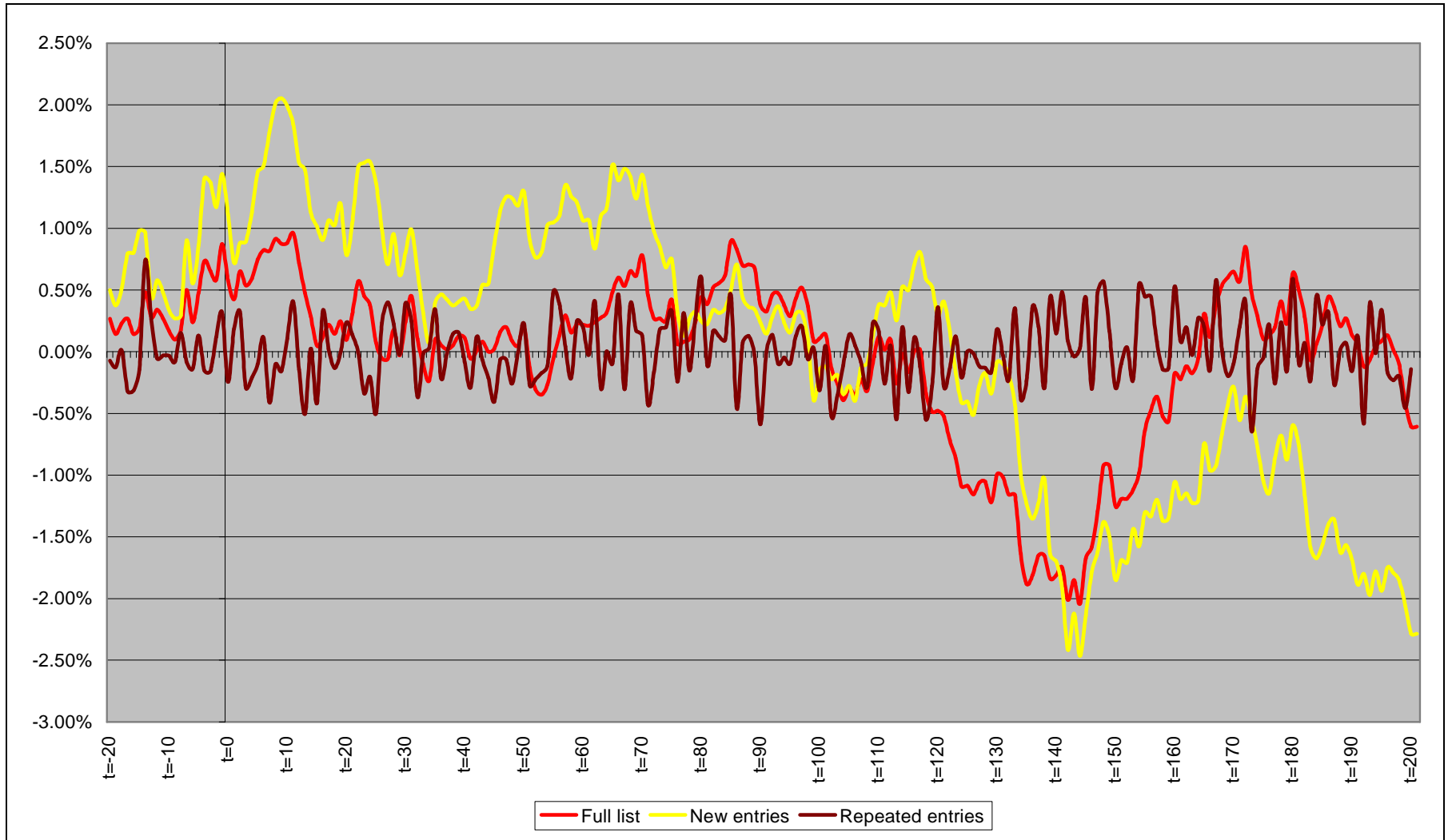


Figure 10: Average Cumulative Abnormal Returns [-20, +200]

Over the duration of the 221-day event window, the ‘new entries’ list initially performed better when compared to the other lists. In the first nine days following the announcement, the ‘new entries’ list’s ACAR reached 2.05%. From this point it started to decline, with no pattern, to a low of -2.46% on day 144. The list’s ACAR ended on -2.28% on the last day of the event window, 200 days after the announcement.

The ‘repeat entries’ list achieved different ACARs compared to the ‘new entries’ list. The movements were erratic and never more than 0.74% from the market. The ACAR ended on -0.14% on the last day of the event window, 200 days after the announcement.

Figures 11, 12 and 13 indicate the days with statistically significant ACARs, however, none of the lists’ ACARs were significant on the last day of the 221-day event window (at the 5% level).



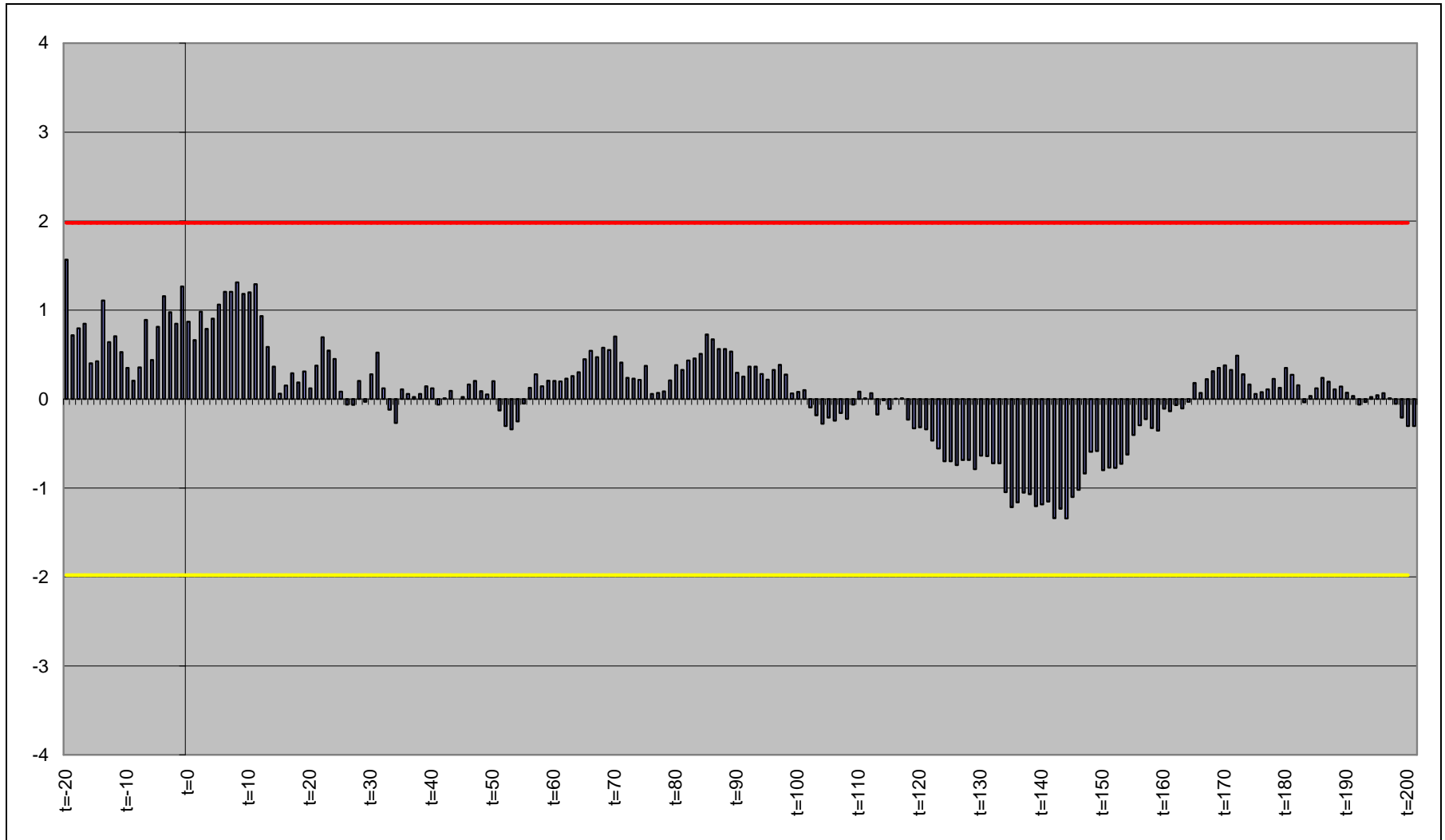


Figure 11: T-test of daily ACARs for the full list [-20, +200]

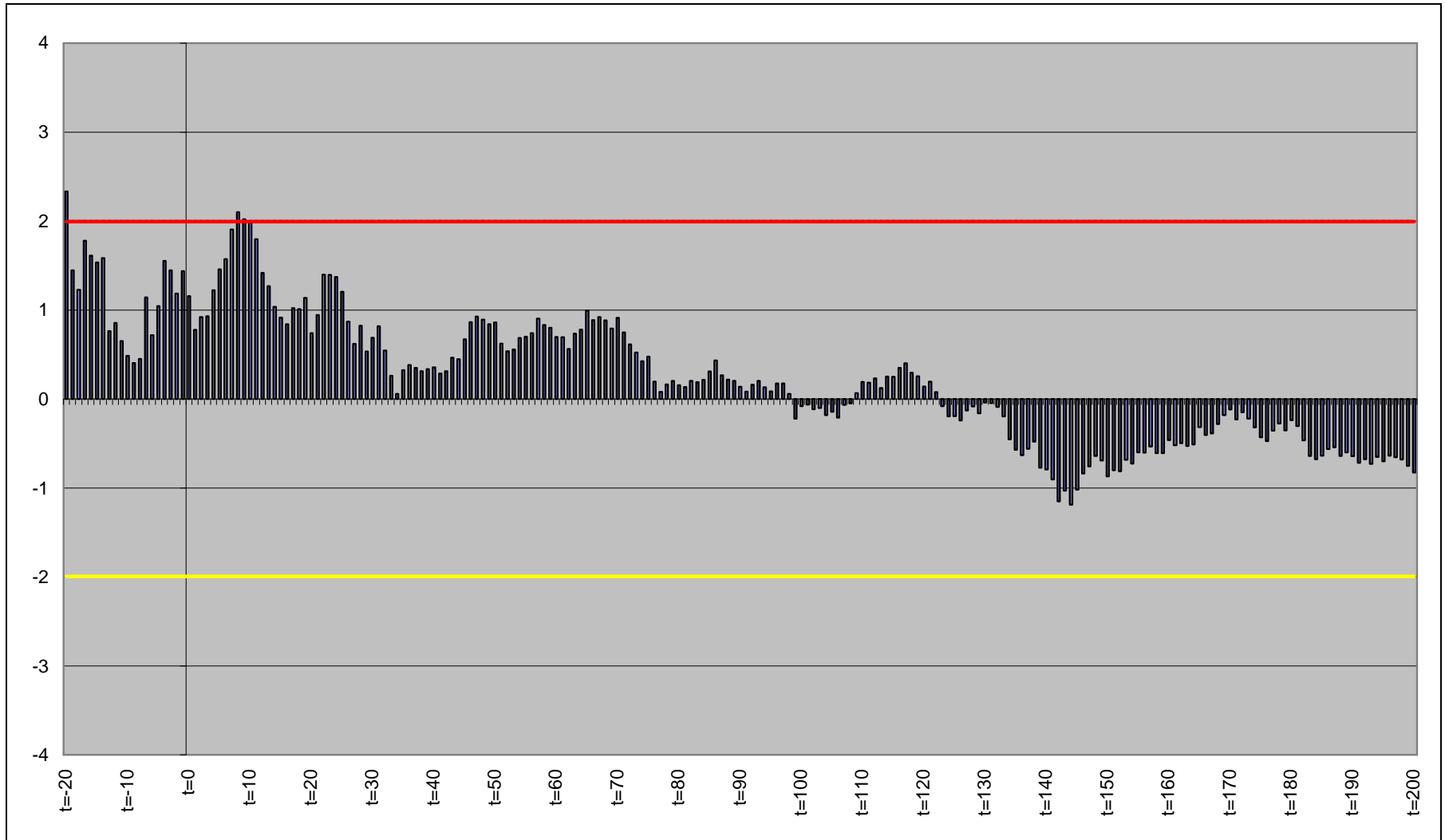


Figure 12: T-test of daily ACARs for the 'new entries' list [-20, +200]

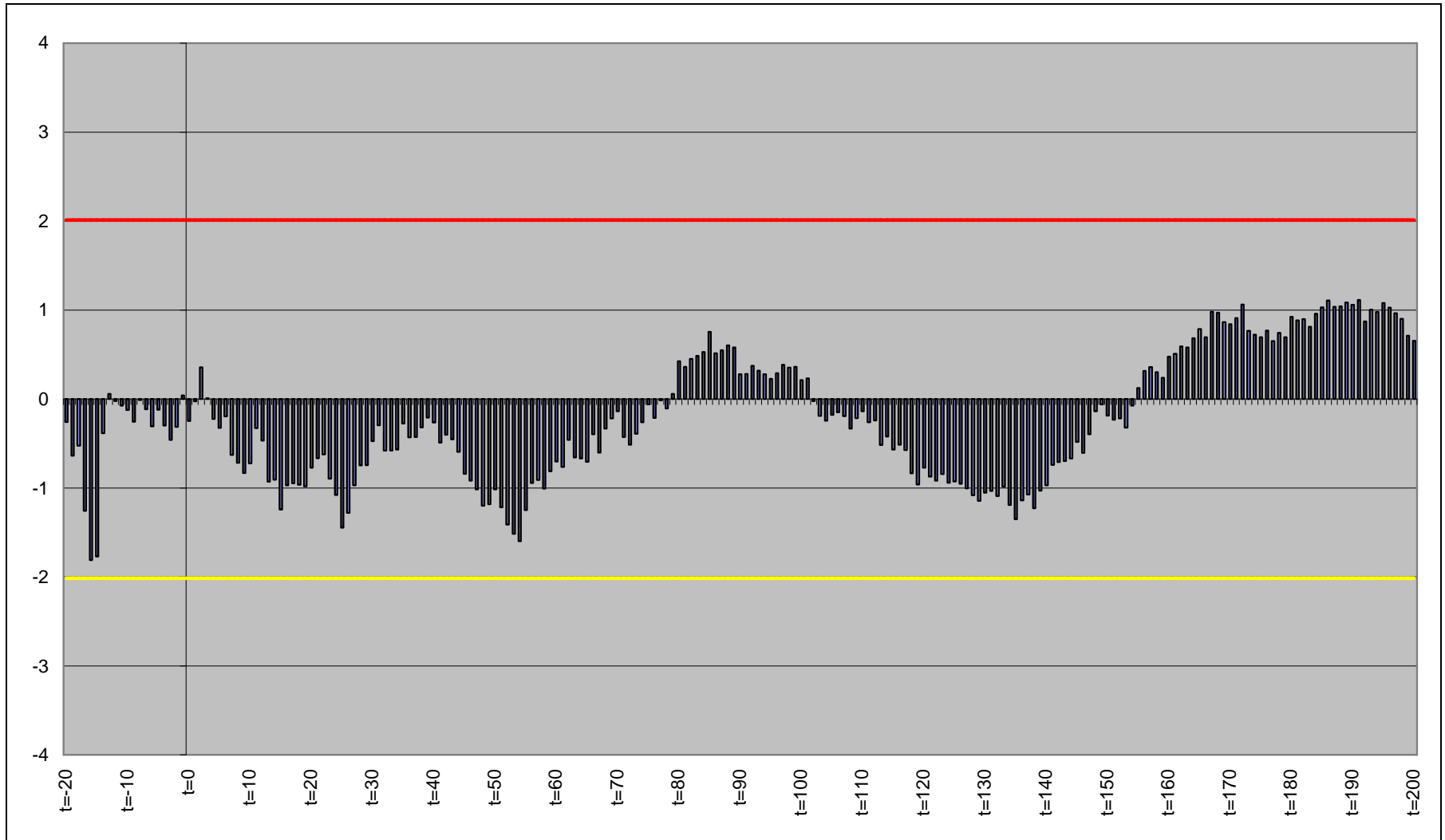


Figure 13: T-test of daily ACARs for the 'repeated entries' list [-20, +200]

Table 10 contains the details of those statistically significant ACAR losses and gains.

**Table 10: Statistically significant ACARs for the event window [-20,+200]**

	Full list	New entries	Repeated entries
ACAR	-0.61%	-2.28%	-0.14%
T-test	-0.304	-0.826	1.393
T-critical (5%)	1.980	1.994	2.012
Number of significant ACAR days	0	2	0
H <sub>0</sub> : $\mu=0$ (5%)	Fail to reject	Fail to reject	Fail to reject
T-critical (10%)	1.658	1.667	1.678
Number of significant ACAR days	0	7	2
H <sub>0</sub> : $\mu=0$	Fail to reject	Fail to reject	Fail to reject

From the 221-day event window, the number of significant ACARs is:

- 0 (0%) for the full list;
- 2 (1%) for the ‘new entries’ list, and
- 0 (0%) for the ‘repeated entries’ list.

For the hypothesis test of the ACARs, only the t-test value on the last day of the event window ( $t=200$ ) is evaluated, and in all cases, the t-test results were insignificant.

## 6. DISCUSSION OF RESULTS

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### *6.1 Average Abnormal Returns (AARs)*

The main aim of this research is to test ACARs for the two event windows. It is however useful to analyse the AARs for both event windows to help understand the results from the evaluation of the ACARs better.

It is concluded that, for the 21-day event window, there were:

- two days with significant AARs for the full list  
(-0.29% on  $D_0$  and 0.23% on  $D_{+2}$ );
- three days with significant AARs for the 'new entries' list  
(0.54% on  $D_{-4}$ , -0.39% on  $D_{+1}$  and 0.27% on  $D_{+7}$ ), and
- one day with a significant AAR for the 'repeated entries' list  
(-0.41% on  $D_{+7}$ ).

From the above list of six days, only two days were significant at the 5% level. The other four days were only significant at the 10% level.

For all three samples, the average AARs for the 10 days before the event are not significantly different from zero. Also, for all three cases, the average AARs are negative following the event date, and, are all statistically insignificant at both the 5% and 10% confidence intervals.

It is concluded that, for the 221-day event window, days with significant AARs, at the 5% level, numbered:

- 20 (9%) for the full list;
- 13 (6%) for the 'new entries' list, and
- 14 (6%) for the 'repeated entries' list.

For the full- and 'new entries' list the average AARs are negative following the event date. Again the average AARs for the three samples are all statistically insignificant at both the 5% and 10% confidence intervals.

Although the average AARs for the two event windows are not significantly different from zero, accumulation of the AARs may, in the long run, result in a net positive or negative ACAR for each of the samples. The significance of this is discussed in paragraph 6.2.

## ***6.2 Average Cumulative Abnormal Returns (ACARs)***

The trends from the average cumulative abnormal returns (ACARs) were in line with the AAR results. The AARs, although insignificant, yielded net positive ACARs over the 21-day event window and net negative ACARs over the 221-day event window.

For the 10 day ACARs evaluated in the 21 day event window, a significant positive ACAR of 0.87% was found for the 'new entries' list on day  $t_{10}$ . This is higher than the full list peak of 0.71% and 'repeated entries' list of -0.66%.

For the 221 day event window, the study found the peak ACAR of 2.05%, 9 trading days after the publication date, in the 'new entries' list. This is higher than the peak of 0.96%, 11 days after the publication date, for the full list and 0.60%, 80 days after the publication date, for the 'repeated entries' list. From this it can be derived that the 'new entries' list performs better than the 'repeated entries' list in the 10 days of trading following the announcement. For the full 200 trading days following the publication date, the 'new entries' list performed worse, with an ACAR of -2.28%, compared to the 'repeated entries' list's ACAR of -0.14%.

It is concluded that:

**For the 21-day event window, 10 day ACARs were**

**Insignificant for**

- the full- and 'repeated entries' lists.

**Significantly positive for**

- the 'new entries' list.

**For the 221-day event window, ACARs were**

**Insignificant for**

- all three samples at both the 5% and 10% confidence intervals.

***6.3 Difference between the ACARs of 'new entries' and 'repeat entries'***

In their study, on whether a great company can be a great investment, Anderson and Smith (2006) tested the 'classic mistake' of confusing great companies with great investments. Their initial presumption, that a company's well-known virtues are already factored into the price of the company's shares, was proven incorrect, clearly contradicting the EMH.



This study found similar results, in that the ‘new entries’ list outperformed the market by a statistically significant margin in the short term, which contradicts the EMH in the semi-strong form.

The findings of this study also indicate that the ‘new entries’ list performed better, peaking at 1.71%, than the ‘repeated entries’ list, peaking at 0.38%, in the short-term event window. However, in the long-term event window, the ‘new entries list performed worse, although insignificantly, when compared with the ‘repeated entries’ list.

There is no compelling explanation why the ‘new entries’ list outperformed the ‘repeated entries’ list. Perhaps an explanation could be that the intangibles or virtues of the companies, which are mentioned in the ‘Top Companies’ list, eventually start to reflect in the balance sheets of those companies. Once reflected in the balance sheet, it will be less likely for investors to beat the market by acquiring shares on the publication date.

## 6.4 Hypothesis testing of the ACARs

### Hypothesis 1 was tested:

$$H_0: ACAR_{AD} = 0$$

$$H_a: ACAR_{AD} > 0$$

Here,  $ACAR_{AD}$  represents the average cumulative abnormal returns, on the share price, for the 10 days after the publication of the 'Top Companies' lists.

Based on the results in Figures 9 and Table 9, and the discussion in paragraphs 5.3.2 and 6.2, the null hypothesis is **rejected for the 'new entries' list**.

### Hypothesis 2 was tested:

$$H_0: ACAR_{LT} = 0$$

$$H_a: ACAR_{LT} > 0$$

Here,  $ACAR_{LT}$  represents the average cumulative abnormal returns, on the share price, for the 200 days after the publication of the 'Top Companies' lists.

Based on the results in Figures 10 to 13 and Table 10, and the discussion in paragraphs 5.3.2 and 6.2, the null hypothesis cannot be rejected.

### *6.5 Conclusion on share performance*

The hypotheses tests answer the research questions of this study: Abnormal returns can be achieved, in the weeks following the ‘Top Companies’ publication, on share prices of companies mentioned in the list of recommendations for the first time (new entries).

Semi-strong form efficiency refers to where information is made available to the public, and where the price of shares is adjusted rapidly and without bias. The presence of abnormal returns in the case of this study, two weeks after the publication, therefore contradicts the EMH.

## 7. CONCLUSION

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The results of this study on the market reaction to the publication of positive secondary information in the 'Top Companies' issue of Financial Mail Magazine, indicate significant, positive excess (abnormal) returns on the first 10 trading days subsequent to the publication date, for companies mentioned in the list for the first time.

Similar to the findings of Mathur and Waheed (1995), who tested stock price reaction to securities recommended in Business Week's "Inside Wall Street", the excess returns on the days following the publication are sufficiently large enough to indicate that institutional and large traders would gain positive, excess returns, net of transaction costs, if they were to purchase the newly mentioned shares on the publication date and sell them 10 trading days later.

Again, as with the findings of Mathur and Waheed (1995), the long-term performance appears to indicate that investors who paid attention to the analysts' recommendations, and purchased the shares of newly mentioned companies in the list, but persisted in maintaining the shares in their portfolios beyond the 10 trading days subsequent to the publication date, would have experienced excess

negative returns, albeit insignificantly, for the holding period of up to 200 trading days after the publication date.

Two methodologies were used in this study namely the CAPM and the Control Portfolio model. It was found that, when the values of the betas for all the shares in the CAPM obtained by a five year regression was changed to one, the expected returns of the shares remained similar to what they were originally. This indicated that there was no substantial difference between the CAPM and Market Model results. The positive trend in the AR's, observed post the event date in both the CAPM and Market Model results, and which was not evident in the Control Portfolio (CP) based ARs, indicated that the CAPM is biased, and does not fully account for style related returns in the AR generating process. For this reason it was decided to use only the CP model's ARs, for further analysis, as it represented the ACARs more accurately.

While extensive research has been completed internationally, little research has been actualised in South Africa relating to the performance of Responsible Investments on the Johannesburg Stock Exchange. Further studies in this field, which can focus specifically on the South African market where financial and non-financial (Environmental, Social, Corporate Governance and Black Economic

Empowerment) factors are jointly used in recommendations, will add to the current body of knowledge.

Studies, testing the share price reaction to Responsible Investment announcements, could be enhanced if the measure of Responsible Investment could be better quantified. Currently the measure of Responsible Investment is mainly subjective. By quantifying Responsible Investment, if at all possible, the results may improve and make the findings more relevant and useful.

Investigating other sources, where Responsible Investment information is disseminated, could provide for a more robust outcome when compared to this study, as the Financial Mail magazine only has limited readership. Using media that has a larger reach, including electronic media, newspapers and SENSE may indicate the effect on share prices more pronounced.

Future research on this topic could compare the impact that each one of the criteria (apart from the financial criteria) used in measuring Responsible Investments, has on the share price performance. Findings from such a study could suggest for which of the criteria, whether environmental, social, corporate governance or black economic empowerment shareholder value is most sensitive to.

Future research could also consider measuring economic performance of companies after adopting Responsible Investment principles. This could indicate how management of these companies apply these principles, whether enforced upon them or adopted out of free will, in improving the performance of the companies they manage. A reverse finding would suggest that the share price inaccurately reflects the economic performance, or future earnings, which in itself is a contradiction to the EMH.

Lastly, in spite of the debate whether Responsible Investment announcements are:

- indicators, to institutional or large traders, of speculative opportunities due to the significantly positive short term ACARs; or
- indicators, to long term investors, although there are no significant long-term positive ACARs, of investments that consider the moral, social and environmental aspects of doing business, or
- indicators of how companies meet the legal requirements of Government,

determining the exact impact it has on shareholder value remains an ongoing pursuit. And by pursuing value, do we, as shareholders, act responsibly when ensuring maximum economic profit in the short term so that the greater society can benefit from this, or do we, as shareholders, operate in such a way that our

companies are seen to be responsible in the eyes of society, even if it is seemed to be at the expense of economic profit in the long term?



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## 9. APPENDIX

### 1. Companies excluded from the study due to data integrity issues

Year	Companies excluded	Code	Publication date
2003	Delta Electrical	DTA	27-Jun-03
	Chemserve	CHE	27-Jun-03
2004	Mvelaphanda	MVL	25-Jun-04
	Iscor		25-Jun-04
	Aplitec	APL	25-Jun-04
	Afrox Health	AHH	25-Jun-04
	Massmart	MSM	25-Jun-04
2006	Scharrig Mining		30-Jun-06
2007	Aquarius platinum ltd	AQP	29-Jun-07
	Highveld Steel	HVL	29-Jun-07
	Scharrig Mining		29-Jun-07
	Atlas	ATS	29-Jun-07
	Mittal	ACL	29-Jun-07
	Edcon	ECO	29-Jun-07
2008	Highveld Steel	HVL	27-Jun-08
	Sentula	SNU	27-Jun-08
	York timber holdings	YRK	27-Jun-08
2009	York timber holdings	YRK	26-Jun-09
	Highveld Steel	HVL	26-Jun-09