Share price response to open market share repurchase announcements on the JSE Securities Exchange

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

Johannesburg, 2013

ABSTRACT

Research conducted locally and internationally has yielded mixed results on share price reaction to open market share repurchase announcements. This research report examines share price reaction to open market share repurchase announcements for securities listed on the JSE Securities Exchange for the period 01 January 2005 to 31 December 2011. The global financial crisis occurred within this period and cannot be ignored; therefore its impact on share price reaction is also examined.

Historical daily returns for securities that announced open market repurchases and the all share index were collected; and the event study methodology was used to examine the share price reaction and the impact of the global financial crisis on open market share repurchase announcements for securities listed on the JSE Securities Exchange for the period 01 January 2005 to 31 December 2011.

This study found the JSE Securities Exchange to be an efficient capital market in the semi-strong form, with more share repurchase announcements in the pre-financial crisis period than in the financial crisis period. The study analysed 90 open market share repurchase announcements and found positive market reaction to share repurchase announcements; however the study did not find any significant abnormal returns to open market share repurchase announcements.

DECLARATION

I, Nthua P. Motlhala, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Nthua P. Motlhala

Signed at Johannesburg

On the 28th day of February 2014

DEDICATION

To those who watch over me

ACKNOWLEDGEMENTS

I wish to express my gratitude to:

- My supervisor, Douglas Taylor, for his assistance, guidance and input during this research process;

- My wife and children, for your patience and sacrifices, love and inspiration throughout my studies;

- My parents and siblings for a lifetime of love and support and for instilling in me the determination that made this possible;

- My extended family and friends, whom I have neglected, for your patience and understanding during my studies;

- I-Net Bridge and McGregor BFA, for the data stations at the Graduate School of Business, University of the Witwatersrand; and

- Finally, to each individual who has contributed in some manner to the completion of this study; colleagues, lecturers, class mates, staff and co-students of the Wits Business School.

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CHAPTER 1: INTRODUCTION

1.1 Purpose of the study

The purpose of this research is to examine share price behaviour around open market share repurchase announcements for securities listed on the JSE Securities Exchange.

1.2 Context of the study

The Companies Amendment Act 37 of 1999 permitted South African companies to repurchase their issued shares with certain restrictions. South African regulation (Companies Act 1999; JSE Limited Listings Requirements 2010) allows share repurchases for listed shares under a general repurchase and a specific repurchase, where a general repurchase is equivalent to an open market repurchase and a specific repurchase is equivalent to a tender offer. Under a general repurchase a company acquires shares issued by it on the open market then the shares are cancelled as issued shares and restored to authorised shares (Companies Act 1999).

Open market share repurchase involves the distribution of funds to shareholders in exchange for a portion of the company's outstanding equity (Dann 1981). Open market share repurchase is the most popular method for companies to repurchase shares (Bagwell and Shoven 1991; Grullon and Ikenberry 2000; Grullon and Michaely 2002), and market signalling has emerged as the predominant explanation for share repurchases (Dann 1981; Vermaelen 1981; Ikenberry, Lakonishok and Vermaelen 1995; Grullon 2000; Chan, Ikenberry and Lee 2004; Lie 2005; Bhana 2007; Peyer and Vermaelen 2009).

Open market share repurchase announcements attract positive market reaction (Asquith and Mullins 1986; Comment and Jarrell 1991; Singh, Zaman, and Krishnamurti 1994; Ikenberry et al. 1995; McNally 1999; Kahle 2002) because it is assumed that the company management is better informed about the

company's performance and true value (Grullon and Ikenberry 2000; Bhana 2007; Weigand and Baker 2009); therefore management uses repurchases to signal their optimism about the company's prospects to the market (Erwin and Miller 1998; Grullon and Ikenberry 2000; Bhana 2007).

Previous studies on open market share repurchase announcements on the JSE Securities Exchange found the following: Daly (2002) and Blackstock (2006) observed no significant market reaction to open market share repurchase announcements, while Bhana (2007) observed statistically significant abnormal returns. This study aims to determine abnormal share price returns in response to open market share repurchase announcements for securities listed on the JSE Securities Exchange over a seven year period during which share repurchase has increased. Previous studies were conducted when share repurchase was relatively new over relatively shorter periods with fewer samples.

1.3 Problem statement

1.3.1 *Main problem*

Analyse the extent of the impact of open market share repurchase announcements on the share price for securities listed on the JSE Securities Exchange and determine whether that impact is positive.

1.4 Significance of the study

The study contributes to the existing body of research on open market share repurchase for securities listed on the JSE Securities Exchange in the South African market.

The study will provide guidance to:

- Shareholders of companies announcing share repurchase transactions allowing them to make investment decisions based on informed estimates;

- Management of companies that are considering a market repurchase transaction to estimate the funding requirements of the transaction;
- Investors, individual and institutional, who will use the information to make investment decisions; and
- Investment advisers, and corporate and merchant banks to advise on anticipated or expected share price movements.

1.5 Delimitations of the study

The study will be limited to open market share repurchase announcements of ordinary shares traded on the JSE Securities Exchange between 1 January 2005 and 31 December 2011.

The study will be an event study of companies that are listed on the main board of the JSE Securities Exchange between 31 December 2004 and 01 January 2012.

The study will use daily JSE Securities Exchange close-of-day data instead of weekly or monthly data.

The study will analyse the impact of the announcement on the share price. The announcement refers to the intention to repurchase and not the actual repurchase.

The study will exclude companies not listed on the main board of the JSE Securities Exchange.

1.6 Definition of terms

Abnormal Return

The difference between the actual share price return compared to the expected share price return when estimated using a prediction model. Abnormal returns are also called above average returns, excess returns or residuals.

Announcement period

The five day period that begins two days before and ends two days after the repurchase announcement also referred to as the event window.

Average Abnormal Return

The average Abnormal Return.

Alpha (α)

The measure of the abnormal rate of return on a security in excess of what would be predicted by a market equilibrium model, referred to as the risk free rate.

Beta (β)

The measure of sensitivity of a security's return to the market as a whole, referred to as the systematic risk of a security.

Cumulative Abnormal Return (CAR)

The total Abnormal Return over a multiple period time interval surrounding an event in an event study.

Systematic Risk

The risk factors common to the entire economy which cannot be reduced or eliminated by diversification.

1.7 Assumptions

The study makes the following assumptions:

- The number, size and repurchase announcements activity of the companies listed on the JSE Securities Exchange during the period under review will provide a statistically significant sample;
- The information reported by the Stock Exchange News Service (SENS) on the share repurchase announcement is correct;
- The publicly available market information at the time of the share repurchase announcement is correct; and
- The daily JSE Securities Exchange close-of-day data is more appropriate than weekly or monthly data.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter reviews the existing body of literature related to share repurchase. The review focuses on open market share repurchase and places emphasis on the announcement period returns as this is the main research area. Section 2.2 reviews literature on open market repurchase, the types of share repurchase, regulation of share repurchase in South Africa, open market share repurchase signalling, market efficiency and the global financial crisis. Section 2.3 examines share price behaviour surrounding open market share repurchase announcements.

2.2. Background discussion

Open market share repurchase is the most popular method for companies to repurchase shares (Bagwell and Shoven 1991; Grullon and Ikenberry 2000; Grullon and Michaely 2002). Share repurchase involves the distribution of funds to shareholders in exchange for a portion of the company's outstanding equity (Dann 1981). Shareholders can either receive a cash payment in exchange for their shares or an increase in percentage ownership for retaining their shares (Washer 2003). Open market share repurchases are characterised by a firm's gradual acquisition of its shares through a broker, for normal commission fees, over an extended period of several months or years (Bartov 1991).

Under a general share repurchase a company acquires shares issued by it on the open market then the shares are cancelled as issued shares and their status restored to that of authorised shares (Companies Act 1999). A general repurchase is equivalent to an open market repurchase. For the purposes of this study a share repurchase will be deemed to have the same meaning as a share buyback, a stock buyback or a repurchase.

2.2.1 Types of share repurchase

Companies can repurchase their shares on the open market through a privately negotiated transaction or via a tender offer (Masulis 1980; Dann 1981; Vermaelen 1981; Grullon and Ikenberry 2000).

An open market repurchase is when a company purchases its shares at market prices on the open market either directly or through intermediaries. An open market repurchase involves a gradual process of purchasing small quantities from day-to-day on the open market (Vermaelen 1981). Open market repurchases are more frequent than tender offers but are usually of a much smaller magnitude (Dann 1981).

A private purchase, considered the least common method of repurchase, is a privately negotiated transaction where a company purchases its shares by direct negotiation usually from a large shareholder (Dann 1981; Vermaelen 1981).

Tender offers are split into fixed price tenders and Dutch auction tenders. In a fixed price tender a fixed predetermined price is offered at the beginning of the process; whereas with the Dutch auction shareholders are afforded a price range within which to tender their shares and the final price is revealed towards the end of the process (Grullon and Ikenberry 2000).

In a fixed price tender offer the company specifies the number of shares it is offering to purchase, the price at which the shares will be purchased and the period of time the offer is in effect. In addition, the company reserves the right to buy more shares than specified, to purchase the shares pro rata, or to extend the offer beyond the announced expiry date and the offer may be conditional on the minimum number of shares tendered (Dann 1981; Vermaelen 1981; Grullon and Ikenberry 2000). The offer price is typically above the market price (Vermaelen 1981). Tender offers are generally completed within one month of the initial announcement date, whereas open market repurchases frequently occur over several months or even years (Dann 1981).

In a Dutch auction tender the company solicits information from shareholders in order to form a final price. Management starts by announcing a range of prices at which they will accept offers from shareholders. Shareholders who wish to participate respond by telling management the price at which they are willing to part with their shares and the number of shares they are tendering. At the close of the offer period management sorts the offers by price in ascending order, adding the number of shares offered and selects the price at which the cumulative number of shares offered equals the size of the intended repurchase programme (Grullon and Ikenberry 2000). All shareholders who tendered at or below the selected price are included in the repurchase programme and all receive the same price per share, while those who tendered above the selected price are excluded (Grullon and Ikenberry 2000).

2.2.2 Open market share repurchase regulation in South Africa

Share repurchase programmes are formal plans that management presents for approval by the board of directors followed by a public announcement that typically includes the rationale for the repurchase, the number of shares authorised for repurchase and how the repurchase will be funded (Webb 2008).

Share repurchase in South Africa is governed by the Companies Act 61 of 1973, as amended by the Companies Act 37 of 1999, and the JSE Limited Listings Requirements (2010).

The Companies Amendment Act 37 of 1999, which became effective on 01 July 1999, abolished the restrictions for a South African company to buy-back its own shares. The Companies Act 71 of 2008 was promulgated on 09 April 2009 and became effective 01 May 2011; this covers the last eight months of the period under study.

Section 85 of the Company's Act (1999) outlines how a company is authorised to acquire shares issued by it and Section 87 outlines the procedure for the acquisition of certain shares.

According to Section 85 the Company's Act (1999), a company may under certain circumstances acquire shares issued by it, if such acquisition is authorised by its Articles of Association. A company may by special resolution approve the acquisition of shares issued by the company (Companies Act, 1999, s85.1).

The special resolution may be a general approval or a specific approval for a particular acquisition (Companies Act, 1999, s85.2).

Where a company gives a general approval, the approval is valid until the next annual general meeting unless it is varied or revoked by special resolution prior to such annual general meeting (Companies Act, 1999, s85.3).

Payments in any form to acquire shares issued by the company shall not be made if there are reasonable grounds to believe that after the payment, the company would be unable to pay its debts as they become due in the ordinary course of business or the consolidated assets of the company fairly valued would be less than the consolidated liabilities of the company (Companies Act, 1999, s85.4).

If the company acquires par value shares issued by the company, the issued capital shall be decreased by an amount equal to the par value of the shares acquired. If the company acquires no par value shares issued by the company, the stated capital of the class of shares so acquired shall be decreased by an amount derived by multiplying the number of shares of that class so acquired with the amount arrived at by dividing the stated capital contributed by issued shares of that class by the number of issued shares of that class (Companies Act, 1999, s85.5 and s85.6).

If par value shares are acquired at a premium over the par value, the premium may be paid out of reserves, including statutory non-distributable reserves (Companies Act, 1999, s85.7).

Shares acquired by a company under s85 shall be cancelled as issued shares and their status restored to that of authorised shares (Companies Act, 1999, s85.8).

Capital shares of a company may not be acquired under this section if there would no longer be any shares in issue other than convertible or redeemable shares as a result of such acquisition (Companies Act, 1999, s85.9).

Section 87 of the Company's Act (1999) provides the procedure of acquisition of certain shares issued by the company. A company that proposes to acquire its shares is required to deliver or mail a copy of the written offering circular in the prescribed form to each registered shareholder of the company as at the date of the offer in the manner provided in the company's articles for the sending of any notice of a meeting of shareholders, stating the number and class or kind of its issued shares which the company proposes to acquire and specifying the term and reasons for the offer (Companies Act, 1999, s87.1a).

The company is required to lodge a copy of the offering circular with the Registrar within 15 days of the date that it is delivered or mailed to the shareholders of the company (Companies Act, 1999, s87.1b).

The provisions of s87(1) of the Company's Act (1999) shall not apply to the acquisition by a company whose shares are listed on a stock exchange within the Republic, if the company acquires the shares in terms of transaction effected on such stock exchange in accordance with the rules and listing requirements of that exchange (Companies Act, 1999, s87.2b).

A company that acquires its shares shall notify the Registrar within 30 days of the date of the acquisition in the prescribed form of the date, number and class of shares that it has acquired (Companies Act, 1999, s87.5).

The Companies Act 71 of 2008 became effective in May 2011. Section 4 of the Company's Act (2008) outlines the solvency and liquidity test, section 46 outlines how a company is authorised to acquire shares issued by it and section 48 outlines the requirements for the acquisition of shares.

According to section 4 of the Company's Act (2008), a company satisfies the solvency and liquidity test at a particular time if, considering all reasonably foreseeable financial circumstances of the company at that time, the assets of the company as fairly valued equal or exceed the liabilities of the company

(Companies Act, 2008, s4.1a) and it appears that the company will be able to pay its debts as they become due in the ordinary course of business for a period of 12 months after the date on which the test is considered; or in the case of a distribution, 12 months following that distribution (Companies Act, 2008, s4.1b).

For the purposes of solvency and liquidity, any financial information to be considered concerning the company must be based on accounting records and financial statements that are kept in the prescribed manner and form and a fair valuation of the company's assets and liabilities must be considered (Companies Act, 2008, s4.2).

Section 46 outlines how a company is authorised to acquire shares issued by it. A company must not make any proposed distribution unless, the distribution is authorised by the board through resolution or pursuant to an existing legal obligation or court order and it reasonably appears that the company will satisfy the solvency and liquidity test immediately after completing the proposed distribution, in addition the board has acknowledged that it has applied the solvency and liquidity test and reasonably concluded that the company will satisfy the solvency and liquidity test immediately after completing the proposed distribution (Companies Act, 2008, s46.1).

The resolution as adopted must be fully carried out, subject only to section 3 (Companies Act, 2008, s46.2). If the distribution is not completed within 120 business days or after a fresh acknowledgement has been made, the board must reconsider the solvency and liquidity test and the company must not proceed with or continue with any such distribution unless the board adopts a further resolution (Companies Act, 2008, s46.3).

In terms of section 48, a company may acquire its own shares, if the decision to do so satisfies the requirements of section 46 unless if, as a result of that acquisition there would no longer be any shares of the company in issue (Companies Act, 2008, s48.2 and 3).

A stock exchange within the Republic may determine further requirements with which a company whose shares are listed on such exchange shall comply with prior to such company acquiring its own shares (Companies Act, 1999, s87.6).

In addition to the Companies Act, companies listed on the JSE must comply with the JSE listings requirements. The JSE Limited listings requirements (2010) contain the rules and procedures governing all corporate actions and continuing obligations applicable to issuers of securities. General Principles of the listing requirements try to ensure that full, equal and timeous public disclosure is made to all holders of securities and the general public at large regarding the activities of an issuer that are price sensitive and to ensure that all holders of the same class of securities of an issuer are accorded fair and equal treatment in respect of their securities. The listings requirements outline the requirements for a company to repurchase its own securities.

The JSE Limited listings requirements (2010) provide for a general obligation of disclosure in respect of material price sensitive information. With the exception of trading statements, an issuer must, without delay, release an announcement providing details of any developments in such issuer's sphere of activity that are not public knowledge and which may, by virtue of their effects, lead to material movements of the reference price of such issuer's listed securities (JSE, 2010: s3.4a).

An acquisition by a company of its own securities constitutes a repurchase of securities and must be generally approved by security holders giving a renewable mandate which shall be valid until the company's next annual general meeting or for 15 months from the date of resolution, whichever period is shorter (JSE, 2010: s5.67b).

The aggregate repurchase by a company of its own securities shall not exceed 20% of that company's issued share capital of that class in any one financial year (JSE, 2010: s5.68)).

According to section 5.72 of the JSE Limited listings requirements (2010), a company may only make a general repurchase subject to:

a) The repurchase being effected through the order book operated by the JSE trading system and done without any prior understanding or arrangement between the company and the counter party (reported trades are prohibited) (JSE, 2010: s5.72.a);
b) Authorisation being given by the company's articles (JSE, 2010: s5.72.b);
c) Approval by shareholders in terms of a special resolution in an annual general meeting or general meeting, which shall be valid until the next annual general meeting or for 15 months from the date of the resolution, whichever period is shorter (JSE, 2010: s5.72.c);
d) Repurchases may not be made at a price greater than 10% above the weighted average of the market value for the securities for the five business days immediately preceding the date on which the transaction is effected. The JSE should be consulted for a ruling if the applicant's securities have not traded in such five business day period (JSE, 2010: s5.72.d);
e) At any point in time, a company may only appoint one agent to effect any repurchase(s) on the company's behalf (JSE, 2010: s5.72.e); and
f) An issuer may not repurchase securities during a prohibited period as defined unless they have a repurchase programme in place where the dates and quantities of securities to be traded during the relevant period are fixed (not subject to any variation) and full details of the programme have been disclosed in an announcement over SENS prior to the commencement of the prohibited period (JSE, 2010: s5.72.g).

A company seeking a general authority to purchase its own securities must send out a circular to shareholders (JSE, 2010: s11.26), including a notice of annual general/general meeting with the following:

a) Contents of all circulars;
b) General information including directors and management, major shareholders, material change, directors' interests in securities, share capital of the company, responsibility statement and litigation;
c) A statement of the board of directors' intention regarding the utilisation of the authority sought;

d) A statement by the directors indicating that after the repurchase the company will be able to pay its debts in the ordinary course of business, company assets will exceed liabilities, share capital and reserves of the company will be adequate for ordinary business purposes for a period of 12 months after the date of the announcement and working capital will also be adequate for ordinary business purposes for a period of 12 months after the date of the announcement.

The circular and an application for delisting are required to be submitted to and approved by the JSE before approval will be granted for a repurchase of securities (JSE, 2010: s16.32).

2.2.3 Open market share repurchase announcement signalling

Numerous motives such as capital structure optimisation, dividends substitution, information signalling, takeover defence, tax benefit over dividends and temporary cash flows have been provided to explain share repurchases. Signalling has emerged as the predominant explanation for share repurchases (Dann 1981; Vermaelen 1981; Asquith and Mullins 1986; Ofer and Thakor 1987; Constantinides and Grundy 1989; Wansley, Lane, and Sarkar 1989; Hertzel and Jain 1991; Ikenberry, Lakonishok and Vermaelen 1995; Grullon, 2000; Chan, Ikenberry and Lee 2004; Lie 2005; Bhana 2007; Peyer and Vermaelen 2009).

Announcements of open market repurchase programmes attract positive market reaction (Asquith and Mullins 1986; Comment and Jarrell 1991; Singh, Zaman, and Krishnamurti 1994; Ikenberry et al. 1995; McNally 1999; Kahle 2002). New information associated with the stock repurchase announcements is a determinant of stock price behaviour at that time (Dann 1981; Vermaelen 1981). Favourable information about the future prospects of the company is conveyed by repurchase announcements (Hertzel and Jain 1991), hence repurchase announcements are perceived to be good news by the market (Comment and Jarrell 1991; Liu and Ziebart 1997). However, it is important to determine the reasons behind a repurchase before deciding whether a repurchase is a

positive sign (Kahle 2002) and the prime source of information about a firm is the firm itself (Merton 1987).

Managers appear to possess market timing abilities when announcing buyback decisions (Chan, Ikenberry and Lee 2007). It is assumed that company management has better information about the company's performance and the company's true value (Grullon and Ikenberry 2000; Bhana 2007; Weigand and Baker 2009). This information asymmetry can lead to management's knowledge of future profitability not being reflected in the prevailing share price because the market only has access to public information; accordingly manager's signal their optimism about future earnings by participating in actions such as share repurchase programmes (Miller and Rock 1985; Bhana 2007; Weigand and Baker 2009).

The most widely accepted explanation for share repurchases is the signalling hypothesis (Ikenberry et al. 1995; Chan et al. 2004; Lie 2005; Peyer and Vermaelen, 2009). Management uses repurchases to signal their optimism about the company's prospects to the market (Erwin and Miller 1998; Grullon and Ikenberry 2000; Bhana 2007). The signalling hypothesis is motivated by asymmetric information between company management and the market (Ikenberry et al 1995; Barth and Kasznik 1999). According to Grullon and Ikenberry (2000), there are two versions of signalling. The first states that management conveys their optimism about the company's increased future earnings and cash flow to the market. Share repurchase announcements have shown to release information about the company's subsequent earnings performance and market risk levels (Bartov 1991; Dann, Masulis and Meyers 1991) and analysts have been found to revise their earnings per share forecasts upwards after share repurchases announcements (Hertzel and Jain 1991). The second holds that managers are not conveying new information to the market but expressing disagreement at their company's market pricing. Both versions suggest that management views the shares as undervalued (Grullon and Ikenberry 2000). The company is undervalued either because improved future operating performance is not reflected in the share price or the company could be inefficiently priced without implying any future improvement in operating

performance (Wansley, Lane and Sarkar 1989). The repurchase announcement communicates management's view of their share price undervaluation (Dann 1981; Vermaelen, 1981; Wansley, Lane and Sarkar 1989; Stephens and Weisbach 1998; Julio and Ikenberry 2004). Companies are undervalued at the time they announce a repurchase (Ikenberry et al. 1995) and they tend to announce open-market repurchase plans following a decline in their share price (Comment and Jarrell (1991). The announcement of the share repurchase and the repurchase itself are likely to occur when the share price is low regardless of the justification for the share repurchase (Dittmar 2000), because companies have an incentive to repurchase their shares when their equity is likely to be undervalued (Comment and Jarrell (1991). One should note that managers may possess more company-specific information than the market but professional investors probably have more market wide information or a greater processing capability of it (Zhang 2005).

Open market repurchase announcements are good news for the market (Bhana 2007). The market responds positively to repurchase announcements (Ikenberry et al. 1995). The market overreacts to repurchase announcements that are deemed to be good news by the market (Comment and Jarrel 1991; Liu and Ziebart 1997). There is a significant positive relationship between announcement returns and general information asymmetry (Barth and Kasznik (1999).

The implications of the information signalling hypothesis are that repurchase announcements should be accompanied by positive price changes, followed by positive news about profitability or cash flows, immediately followed by positive changes in the market’s expectation about future profitability (Grullon and Michaely 2004). However, share price may not react to news announcements if the market is informationally inefficient, if companies do not make value-relevant announcements, if the announcement brings no surprise because the news provided is anticipated and if insider trading prohibitions do not exist or they are not enforced in the market (Bhattacharya, Daouk, Jorgenson and Kehr 2000).

If companies trade on the knowledge that their shares are undervalued they exhibit timing ability when they repurchase (Barclay and Smith 1988), hence repurchasing companies have superior timing (McNally, Smith and Barnes 2006). However, share prices as a rule adjust to new information and in an efficient market the adjustment is instantaneous and accurate (Obaidullah 1992). In an efficient market the share price is expected to respond to announcements in a fair, complete and unbiased manner (Ikenberry et al. 1995). If the market responds efficiently the new price should fully reflect the true value thus eliminating the motivation to undertake the repurchase (Ikenberry, Lakonishok and Vermaelen 1995), so why would a company choose to repurchase after the share price goes up in response to an open-market repurchase announcement (Isagawa 2002)?

There is uncertainty around the appropriate interpretation of the repurchase announcement regarding completion of the programme as announced (Liu and Ziebart 1997). Open market repurchase plans authorise the repurchase of shares (Stephens and Weisbach 1998; Stonham 2002; Ginglinger and Hamon 2007) and the implementation is left to the discretion of company management (Kim 2007). Open market repurchase announcements are not firm commitments (Ikenberry and Vermaelen 1996; Stephens and Weisbach 1998; Grullon and Ikenberry 2000; Zhang 2005; Kim 2007). They contain a rough estimate of the number of shares to be repurchased and an approximate period covering the planned programme and management is not bound by it (Kim 2007). Open market programmes provide management with an exchange option: considerable flexibility to choose when to repurchase shares or whether to repurchase shares at all whenever they believe the shares are undervalued (Ikenberry and Vermaelen 1996; Stephens and Weisbach 1998; Dittmar 2000; Grullon and Ikenberry 2000). The general assumption that the announcement of a share repurchase programme will result in increased value through a rising share price has sometimes led to firms relying on the ‘signal’ aspect to receive benefit and not following through with implementation (Stonham 2002). Therefore, it might be better to view open market repurchases as a contingent event (Bradford 2008) because companies sometimes announce programmes but do not follow through on their announcement (Stephens and Weisbach

1998; Jagannathan, Stephens and Weisbach 2000). The value of the option to repurchase lies in the extent to which managers can detect valuation errors (Zhang 2005). With open market repurchases, companies typically repurchase shares over an extended period and not all shares are repurchased immediately following the announcement (Fried 2005). This is probably why information conveyed by open market repurchase announcements is ignored and not fully incorporated in the share price (Ikenberry et al. 1995; Bhana 2007).

2.2.4 Market efficiency

The market efficiency hypothesis is a simple statement that share prices fully reflect all available information (Fama 1991). The Efficient Market Hypothesis (EMH) asserts that security prices fully reflect all available information and instantly change to reflect new information. In an “efficient” market the stock prices adjust very rapidly to new information (Fama, Fisher, Jensen and Roll 1969). Market efficiency is a description of how prices in competitive markets respond to new information. Fama (1970) identifies three different types of market efficiency:

Weak form efficiency: where the current share prices fully reflect historical share price movements. This form of efficiency is said to follow the random walk theory;

Semi-strong form efficiency: where the current share prices fully reflect all publicly available information, along with the past price movements of the shares; and

Strong form efficiency: where the current share prices fully reflect all relevant information, both public and private.

The efficient market hypothesis provides for the efficient adjustment of share price by the market in response to the availability of information (Fama, Fisher, Jensen and Roll 1969).

Several studies investigating the efficiency of the JSE yielded varying results. Gilbertson and Roux (1977, 1978) reviewed the evidence for and against the

assumption that the JSE is an efficient capital market and concluded that the JSE is an efficient capital market in, at least, the weak form. Bhana (1997) concludes that the JSE appears to be inefficient in reacting to the announcement of share dividends. Muller (1999) concurs and found the JSE to be efficient in the weak form in the short term and Knight and Affleck-Graves (1983, 1985) also found the JSE to be market information inefficient. Philpott and Firer (1994) suggest the JSE is not an efficient market, although there may well be "pockets of efficiency", which is supported by Strebel (1977, 1978) who also found the JSE market efficiency limited to pockets of efficiency. Pascoe, Ward and MacKenzie (2005) suggest the market is informationally efficient in terms of the economic fundamentals of the business confidence index, while Atkins and Ward (1996) and Bhana (1989) found the JSE to be efficient in the semi-strong form. Firer, Ward and Teeuwisse (1987) found the JSE to be efficient. Bhana (2002) suggests that the share market is efficient in response to adverse market conditions.

With regards to open market share repurchase announcement on the JSE, Daly (2002) found no significant market reaction to the announcement of a share buyback, Blackstock (2006) found market reaction to be statistically insignificant and Bhana (2007) concludes that the JSE appears to be inefficient in reacting to announcements of share repurchases.

2.2.5 The Global Financial Crisis

A financial crisis is a major collapse of the financial system resulting in the inability to provide payment services or to allocate credit to productive investment opportunities (Davis 2003). Financial crises are episodes of financial market volatility marked by significant problems of illiquidity and insolvency among financial market participants and or by official intervention to contain such consequences (Bordo, Eichengreen, Klingebiel, Martinez-Peria, and Rose 2001). The root causes of the most recent global financial crisis are still being debated, therefore this paper will focus on the impact of the financial crisis rather than what caused the crisis.

The height of the global financial crisis was the period between June 2008 and June 2009 (Muller and Ward 2011). While deterioration in most markets started in early to mid-2008, the collapse itself occurred from mid-September, triggered by the collapse of Lehman Brothers through to the end of October (Bartram and Bodnar 2009).

The crisis was transmitted to emerging market economies through the withdrawal of funds by some of the major financial institutions from their subsidiaries located in the emerging economies, the seizing-up of international credit markets and massive loss in asset values on financial markets, reduced economic activity manifested by a sharp contraction in exports, and psychologically these events shook consumers' confidence by undermining business plans and expectations and the rapid rise in unemployment brought insecurity and accompanying fear to consumers (Boorman 2009).

Events on the domestic equity market mirrored those of international markets; the Johannesburg Securities Exchange all share price index decreased sharply by 46% from an all-time high on 22 May 2008, to a significant low on 20 November 2008 (SARB Quarterly Bulletin 2008), as shown in Figure 1.

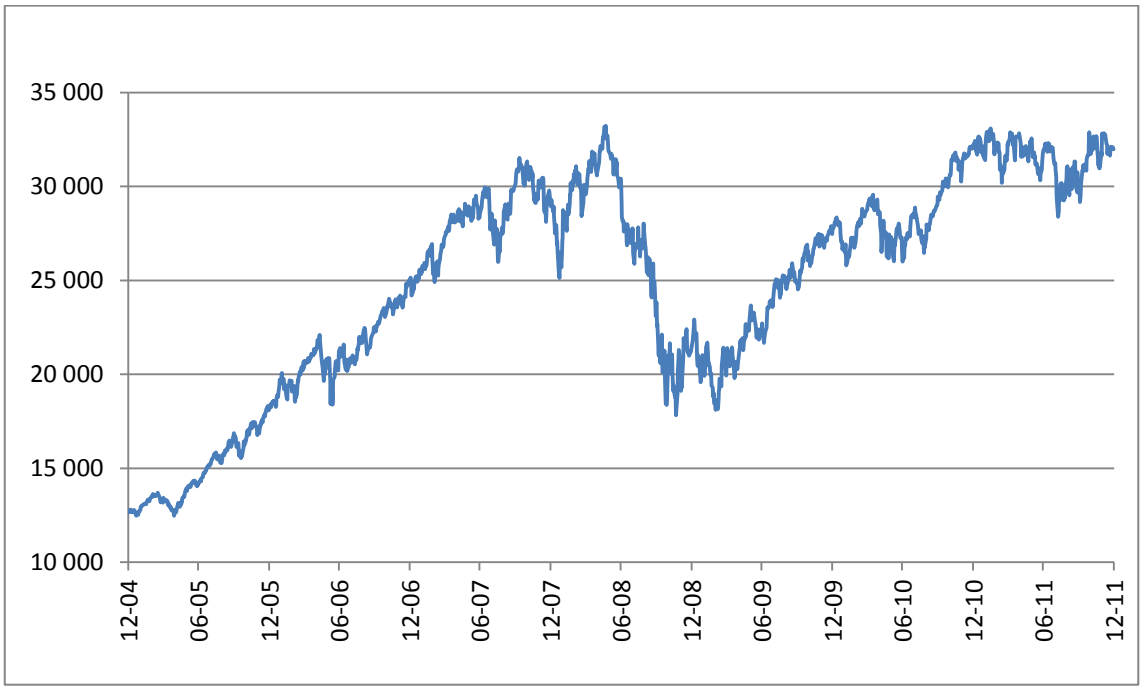

Figure 1: JSE all share index daily closing

2.3. Response to repurchase announcements

The sub-problem is to determine the share price reaction of companies listed on the JSE following a share repurchase announcement.

2.3.1 *Share price response to repurchase announcements*

Previous studies on open market share repurchase announcements observed a significant share price reaction of around 3% (Vermaelen 1981; Comment and Jarrell 1991; Ikenberry et al. 1995; Ziebart 1997). Vermaelen (1981) found an average abnormal return of 3.62% for open market repurchase announcements during the announcement period. Vermaelen (1981) observed market reaction on the day before the announcement (day_{-1}), however this was because the event day (day_0) was the day the repurchase was published in the Wall Street Journal, a day after the announcement was made on the stock exchange. Comment and Jarrell (1991) found an average abnormal share return of 2.3% around the announcement period ($days_{-1}$ to $_1$). Ikenberry et al. (1995) found negative abnormal returns of -3.07% prior to the repurchase announcements ($days_{-20}$ to $_{-3}$), positive abnormal returns of 3.54% around the announcement period ($days_{-2}$ to $_2$) and no abnormal returns following the announcements ($days_3$ to $_{10}$). Liu and Ziebart (1997) observed an abnormal return of 2.9% for the repurchase announcement period ($days_{-2}$ to $_2$).

Studies on open market share repurchases under a general authority on the JSE Securities Exchange observed lower announcement abnormal returns. Daly (2002) reported total average negative returns of -0.31% around the announcement period and concluded that there was no significant market reaction to the announcement of share buybacks under a general authority on the JSE. Blackstock (2006) observed returns of 1.33% around the announcement period ($days_{-1}$ to $_1$) and concluded that the findings were statistically insignificant. Bhana (2007), however, observed statistically significant abnormal returns of 4.38% at the time of the announcement.

2.3.2 *Hypothesis*

There is a significant positive share price reaction to open market repurchase announcements for securities listed on the JSE Securities Exchange regardless of the market conditions.

2.4. Conclusion of Literature Review

Open market share repurchase is the most popular method for companies to repurchase shares. Since 1999 companies listed on the JSE Securities Exchange have been allowed to participate in open market share repurchase provided the repurchase is authorised, the company has the financial means to do so and a public disclosure is made to all holders of securities and the general public. Open market repurchase announcements are seen to convey favourable information about the company and attract positive market reaction due to the assumption that company management is better informed about the company's performance and true value. Accordingly, management is seen as signalling their optimism, hence repurchase announcement is perceived to be good news by the market. Share prices adjust to new information, therefore in an efficient market repurchase announcements should be accompanied by immediate positive price changes provided the announcement was unanticipated. In an efficient market, the share price fully reflects all available information and instantly changes to reflect new information. Evidence suggests that the JSE is a semi-strong form efficient market, therefore a five day window should fully capture the price effects and in addition open market repurchases may not be made at more than 10% of the weighted average market value of the securities for the five business days preceding the transaction therefore the full price adjustment is expected at around the repurchase announcement.

2.4.1 Hypothesis

H_0: There is no significant share price reaction to open market share repurchase announcements on the JSE Securities Exchange.

H_a: There is a positive significant share price reaction to open market share repurchase announcements on the JSE Securities Exchange.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter outlines and explains the methods used to conduct the study. The event study methodology will be discussed followed by a discussion of the population and sample selection process, the data collection process and the data analysis and interpretation.

3.1 Research methodology

The event study methodology is a quantitative method. The event study methodology was developed to measure the effect of an unanticipated event on share prices (McWilliams and Siegel 1997). Event studies focus on the impact of firm-specific events on the price of the affected firms' shares (Brown and Warner 1980). Event studies analyse the share price behaviour around the time of an information announcement or event (Bowman 1983) and assess the extent to which the share price performance was abnormal around the time of the event (Brown and Warner 1980). Crucial to an event study is the length of the event window used, which is determined by the nature of the event being studied (McWilliams and Siegel 1997). McWilliams and Siegel (1997) suggest that the event window should be as short as possible; it should be long enough to capture the significant effect of the event, but short enough to exclude confounding effects. Confounding effects are the effects of other events that may have an impact on the share price during an event window (McWilliams and Siegel 1997). A relatively short event window provides reasonable confidence that an abnormal return is due to the event (McWilliams and Siegel 1997).

The event study methodology makes three assumptions (McWilliams and Siegel 1997). The first assumption is that markets are efficient, implying that share prices incorporate all relevant information that is available to the market. The second assumption is that the event was unanticipated, suggesting an event is announced that the market previously did not have information about and the market gains information from the announcement. The third assumption is that there were no confounding effects during the event window, thus

isolating the effect of the event under study from other events. The third assumption is critical because the method by definition attributes the abnormal return to the event under consideration (McWilliams and Siegel 1997).

The event study method is a powerful tool (McWilliams and Siegel 1997) that has become the standard method of measuring security price reaction to some announcement or event (Binder 1998). Event studies have been used to test whether the market efficiently incorporates information (Fama 1991) and to examine the impact of some event on the wealth of the company's security holders (Binder 1998).

Analysis of share price behaviour up to and concurrent with the event is a study of the information content of the event and analysis of share price behaviour subsequent to the event is a study of market efficiency (Bowman 1983). Information content and market efficiency tests involve five steps (Bowman 1983).

First identify the event of interest. The ability to ascertain the timing of the event is an important point in identifying an event of interest (Bowman 1983). The power of the event study is sensitive to the accuracy and precision with which the event is identified (Brown and Warner 1980), therefore the issue is to define the date on which the market would have received the news (Henderson 1990). This study is an investigation of a type of event which occurs at different calendar times for different companies, therefore bringing these events together into a single sample requires the introduction of the concept of event time. The calendar date of the specific event becomes time zero in event time, then all time periods are described in event time relative to the zero time when the event occurred (Bowman 1983).

Second, model the share price reaction. In order to measure abnormal return, share price performance can only be considered abnormal relative to benchmark normal returns (Brown and Warner 1980). Critical to the procedure is the effectiveness of the model to predict or interpret share price reaction (Bowman 1983). Estimates are derived and used to define the expected or normal returns event window (Henderson 1990).

Third, estimate the excess returns. This requires choosing a method to estimate the abnormal returns and the calculation of residuals for the companies under study (Bowman 1983). Abnormal returns are the mathematical difference between expected returns and the observed returns (Henderson 1990).

Fourth, organise and group the excess returns. After calculating the abnormal returns they are organised and grouped for analysis of the results (Bowman 1983).

The final step in an event study is to analyse and interpret the results (Bowman 1983).

3.2 Research design

The information content of an event is studied by analysing security price behaviour up to and concurrent with the event and market efficiency is studied by analysing security price behaviour subsequent to the event (Bowman 1983). According to Bowman (1983) information content and market efficiency tests in their simplest form involve five steps:

1) Identify the event of interest

The event is identified as the SENS announcement of share repurchase programmes by JSE Securities Exchange listed companies. Relative to the event date are the event window and the estimation window. The event window, from day_{-02} to $day_{02,}$ is the period in which the share price reaction is analysed. The estimation window, from day_{-60} to $day_{-3,}$ is the period prior to the event window which is used to capture common movements of the security or benchmark price when no relevant event occurs.

2) Model the security price reaction

In the absence of news, a security is expected to generate the same returns as the rest of the market during the event window. To evaluate the impact of the observed event on share price, it is required to model normal and abnormal share returns. Normal returns are the expected price movement which would

have occurred if the event did not happen. Normal returns are determined using share price observed during the estimation window.

3) Estimate the excess returns

Abnormal returns are calculated by adjusting the observed returns during the event window with the normal returns estimated from the estimation window. The risk adjusted market model is used to formulate the abnormal return.

4) Organise and group the excess returns

The abnormal returns are cumulated as a group of abnormal returns over the estimation window and the event window. A Cumulative Abnormal Return (CAR) model is used.

5) Analyse the results

Finally, analysis and interpretation of the empirical results is required, and the results are presented to corroborate or abandon the hypothesis formulated. Statistical tests of significance designed for the stated (null) hypothesis are used. The statistical test of significance measures the probability that the event caused the abnormal return (McWilliams and Siegel 1997) and indicates whether the null hypothesis should be rejected or not.

The event study methodology is simple and elegant and functional, and it can be used under less than perfect conditions and still produce reliable results (Henderson 1990). Brown and Warner (1985) recommend the Market Model as well specified and relatively powerful for estimating daily abnormal returns.

3.3 Population and sample

3.3.1 Population

The research population will consist of all shares listed on the JSE Securities Exchange between 31 December 2004 and 01 January 2012.

3.3.2 Sample and sampling method

The sample will consist of all open market share repurchase announcements made through SENS between 31 December 2004 and 01 January 2012.

The shares are limited to ordinary shares listed on the main board of the JSE Securities Exchange.

Only securities from companies with their primary listing on the JSE Securities Exchange will be included in the sample, to ensure that the announcement was publicly released on SENS.

The sample will be restricted to securities that display characteristics of equity i.e. likely to respond only to equity market information.

The sample excludes shares where confounding events were identified. Included in the sample are shares where:

1) No other event was reported in the three days surrounding the repurchase announcement day; and
2) No other share repurchase announcement was made during the 60 days prior to the share repurchase announcement.

3.4 The research instrument

This research will use an event study methodology developed by Brown and Warner (1985) to examine the abnormal returns around the announcement day. The market model is the most common risk adjustment model (Bowman 1983). The approach is based on estimating a market model, then calculating abnormal returns which are assumed to reflect the stock market's reaction to the arrival of new information (McWilliams and Siegel 1997). The model assumes that a security's return can be estimated using the relationship between the individual security's return and the market index return (Brown and Warner 1980); thus calculating abnormal returns by comparing actual share returns to an appropriate benchmark index on the assumption that if the event had not occurred the share would have developed equal to the index (Ikenberry

et al. 1995). An estimation window from day$_{-60}$ to day$_{-3}$ is used to calculate the parameters, α_i and β_i of the following market model:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \mathcal{E}_{it} \quad \ldots (1)$$

Where:

R_{it} is the rate of return for company *i* on day *t*,

R_{mt} is the weighted market rate of return on day *t*,

α_i is the estimated intercept, the risk free rate,

β_i is the estimated market risk of a security, the systematic risk.

$\mathcal{E}_{it}$ is the error term on day *t*; $\mathcal{E}(\mathcal{E}_{it}) = 0$.

The estimated parameters, α_i and β_i, are used to calculate the abnormal returns, $\mathcal{E}_{it}$ from day$_{-2}$ to day$_2$ for each share as follows:

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

Where:

A_{it} is the abnormal return on security *i* on day *t*,

We calculate the following statistics to test the statistical significance of these abnormal returns:

$$AR_t = \frac{1}{N}\sum_{i-1}^{n} A_{it} \quad \ldots (3)$$

Where:

AR_t is the average of abnormal returns of all repurchasing companies on day t;

N is the number of companies.

Abnormal return is expected on the event day but there is a possibility that the announcement effect may be felt on the days surrounding it. As a result the Cumulative Abnormal Return is also calculated to ensure that the full announcement effect is captured.

$$CAR = \sum_{t-D}^{D} AR_t \quad \ldots (4)$$

Where:

CAR is the cumulative average of abnormal returns from day_{-d} to day_d. Abnormal returns are calculated relative to the market index and book-to-market based benchmark.

And to test the null hypothesis that the daily average abnormal returns on event day t are equal to zero, a t-statistic is calculated.

$$t = \frac{AAR_t}{\sigma AAR_t} \quad \ldots (5)$$

Where:

AAR_t is the average abnormal return

$\sigma(AAR_t)$ is the standard deviation of AAR_t over the estimation period.

The t-test determines whether the security's returns are statistically different from zero given their distribution about the average and also indicates whether there is a significant change in share prices due to the share repurchase announcement.

3.5 Procedure for data collection

The data required is the open market share repurchase announcement date, the company daily closing share prices and the JSE All-Share Index (Alsi) daily closing values.

The announcements will be identified by a search on the SENS database. The announcement date of the repurchase transaction and the company name will be recorded.

Historical daily returns for individual shares and the JSE All Share Index will be downloaded from McGregor BFA and I-Net Bridge (Pty).

3.6 Data analysis and interpretation

Data will be analysed using the event study methodology under Section 3.1.

3.7 Limitations of the study

The study will be limited to share repurchase announcements of ordinary shares listed on the JSE Securities Exchange between 31 December 2004 and 01 January 2012.

The study is limited by the size and nature of the companies that are listed on the JSE Securities Exchange for the period under review.

The study is not a test of market efficiency even though the findings may have implications for market efficiency.

3.8 Validity and reliability

The event study methodology used in this research is widely used by academics in similar event period studies to measure share price reaction to market announcements.

3.8.1 External validity

The study aims to replicate other studies in the same research field in foreign countries and South African, therefore the results of the study can generalised to other contexts.

3.8.2 Internal validity

The study will use research techniques that have been applied in previous research in the performance of similar studies.

3.8.3 Reliability

The study will cross reference the data to be used between two reliable sources in addition to other reliability checks.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the research results. Section 4.2 presents the information content of the data collected for the study described in section 3.3. Section 4.3 presents the findings on share price reaction. The chapter is concluded by presenting the hypothesis test findings.

4.2 Data information

A total of 141 open market share repurchase announcements were observed through SENS for the period 01 January 2005 to 31 December 2011, with only 90 announcements with available data included in the final sample. Open market share repurchase announcements observed during this period and exclusions including the reason for the exclusion are presented in Appendix A.

Open market share repurchase announcements excluded from the sample consisted of 2 repurchase announcements by companies not listed on the main board of the JSE Securities Exchange, 9 repurchase announcements by dual-listed companies with their primary listing in a foreign market, 10 repurchase announcements for shares other than ordinary shares, 11 repurchase announcements by companies that were subsequently delisted and 19 repurchase announcements announced within 60 days of the previous repurchase announcement in an overlapping event estimation window.

Open market share repurchase announcements for the period 01 January 2005 to 31 December 2011 peaked in 2006 with 23 announcements and bottomed out in 2009 with 6 announcements, as shown in Figure 2.

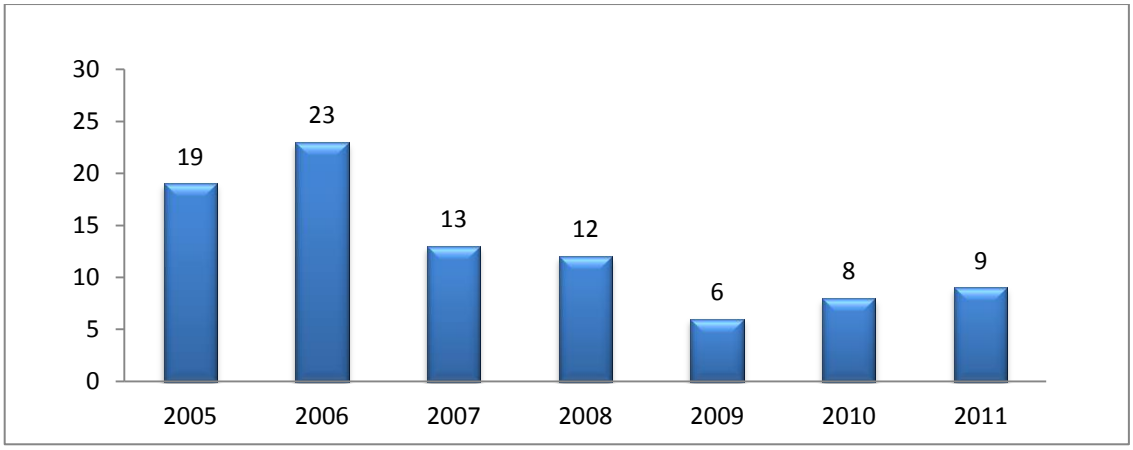

Figure 2: Open market share repurchase announcements per year

Monthly open market share repurchase announcements observed during the period of study are presented in Appendix B.

Total repurchase announcements were made by 45 companies with multiple announcements up to a maximum of five by some companies; these are presented in Appendix C.

This study uses an estimation window from day$_{-60}$ to day$_{-3}$. 19 share repurchase announcements were made within 60 days of the previous repurchase announcement; these were removed from the sample to eliminate possible confounding effects from an announcement made within an overlapping estimation window. The overlapping repurchase announcements that were excluded from the sample to reduce error or bias in the estimation window calculation of expected return are presented per company in Figure 3. Where overlapping occurred, only the first announcement is included in the sample.

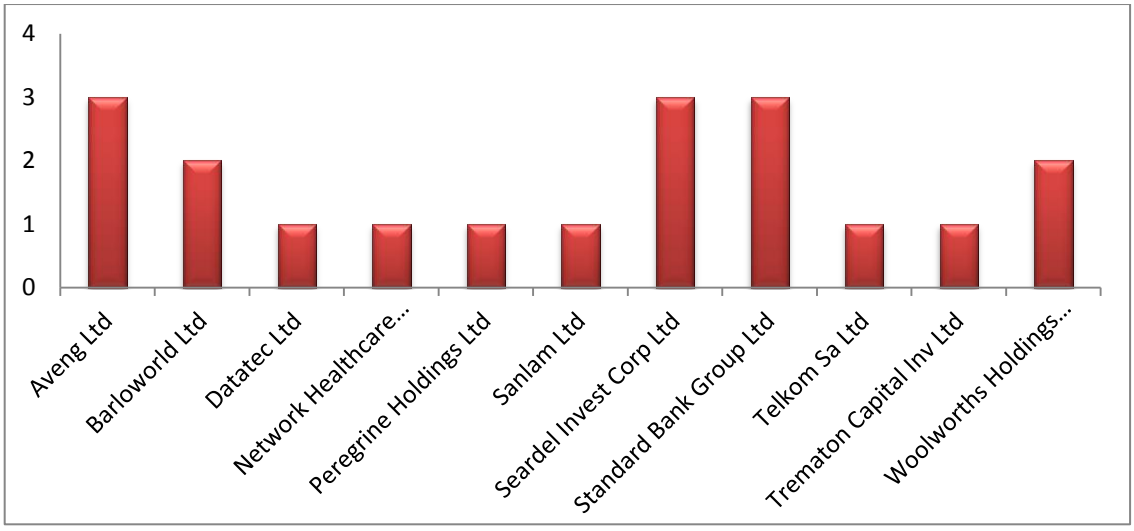

Figure 3: Open market share repurchase announcements made within 60 days of the previous announcement

The global financial crisis falls within the period of this study and its effects are also analysed. Analysis of the pre-financial crisis and the financial crisis period open market share repurchase announcements reveals that more open market share repurchase announcements were made during the 44 month pre-crisis period from January 2005 to August 2008, than announcements made during the 40 month global financial crisis period from September 2008 to December 2011. Open market share repurchase announcements peaked in June 2006 during the pre-financial crisis period and bottomed out in 2009 during the global financial crisis. There were 66 open market share repurchase announcements made in the 44 month period before the global financial crisis, with an average of 1.5 announcements per month; compared to 24 open market share repurchase announcements made in the 40 month global financial crisis period, with an average of 0.6 announcements per month. Pre-financial crisis period repurchase announcements are shown in Figure 4 and financial crisis period share repurchase announcements are shown in Figure 5.

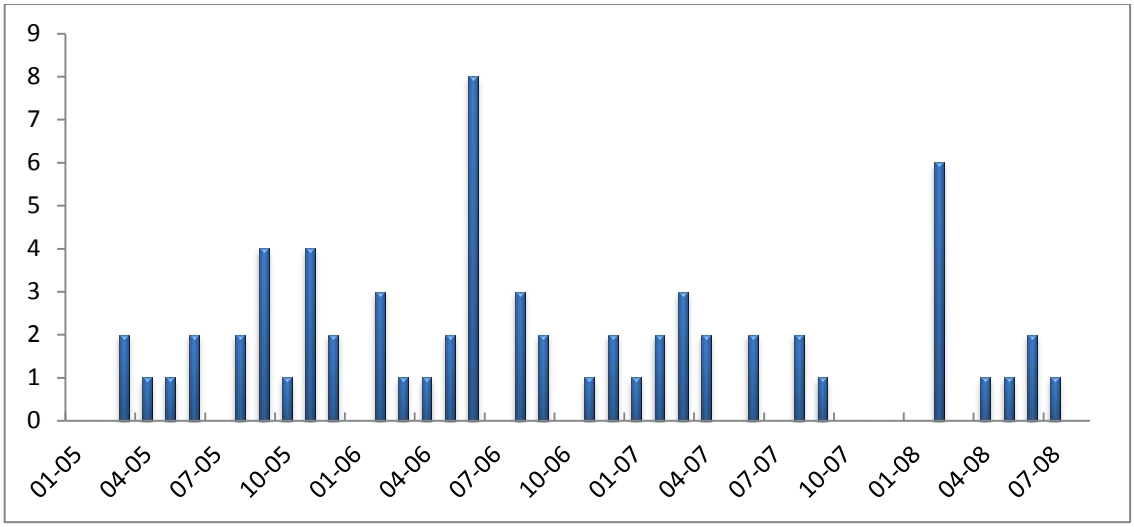

Figure 4: Pre-financial crisis open market share repurchase announcements per month

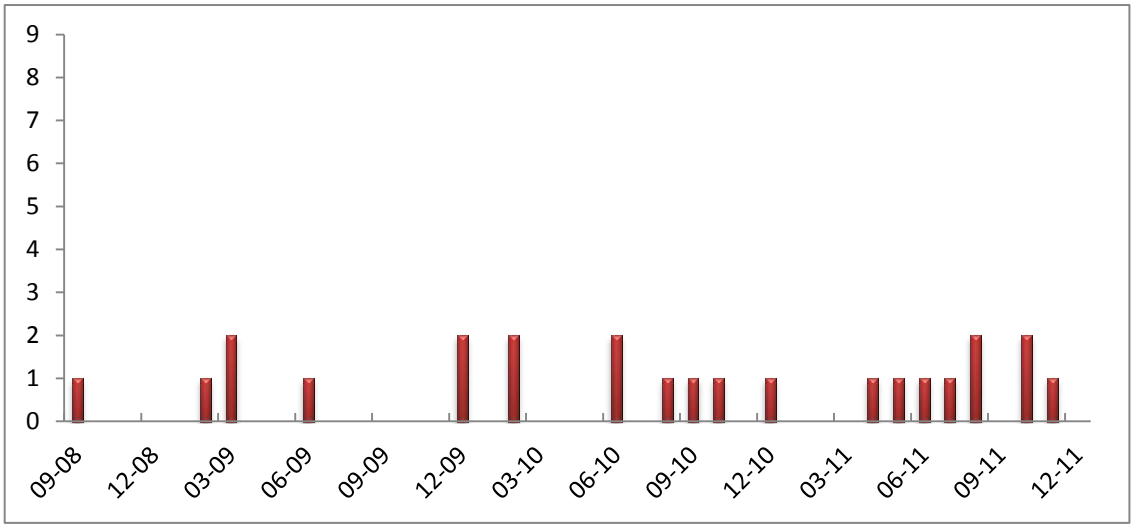

Figure 5: Financial crisis period open market share repurchase announcements per month

4.3 Share price reaction

The sample was tested for daily abnormal returns around share repurchase announcements for the estimation window from day_{-60} to day_{-3} and the event window from day_{-2} to day_{2}. The daily average abnormal returns and the cumulative average abnormal returns for the estimation window from day_{-60} to day_{-3} are presented in Table 1 and Figure 6.

Table 1: Estimation window daily average abnormal returns and cumulative average abnormal returns

Event day	AAR	CAAR	Event day	AAR	CAAR
-60	(0.1306%)	(0.1306%)	-31	0.0563%	1.0242%
-59	0.1505%	0.0199%	-30	(0.2452%)	0.7790%
-58	0.4397%	0.4596%	-29	(0.2364%)	0.5426%
-57	0.0409%	0.5005%	-28	(0.0359%)	0.5067%
-56	0.1241%	0.6246%	-27	0.1172%	0.6240%
-55	0.1884%	0.8131%	-26	0.1334%	0.7574%
-54	0.1001%	0.9131%	-25	0.0407%	0.7981%
-53	(0.0775%)	0.8356%	-24	0.0182%	0.8163%
-52	0.0508%	0.8864%	-23	(0.2074%)	0.6090%
-51	0.1404%	1.0268%	-22	0.2894%	0.8984%
-50	(0.0401%)	0.9867%	-21	(0.1681%)	0.7303%
-49	(0.0117%)	0.9750%	-20	0.1838%	0.9140%
-48	(0.3343%)	0.6407%	-19	(0.0440%)	0.8700%
-47	0.0198%	0.6606%	-18	(0.0389%)	0.8311%
-46	0.1185%	0.7791%	-17	(0.0689%)	0.7622%
-45	0.1815%	0.9607%	-16	(0.2734%)	0.4888%
-44	0.2087%	1.1694%	-15	0.0983%	0.5871%
-43	(0.1145%)	1.0548%	-14	0.0563%	0.6433%
-42	(0.1356%)	0.9192%	-13	0.2790%	0.9223%
-41	(0.0578%)	0.8614%	-12	(0.2184%)	0.7040%
-40	(0.1360%)	0.7254%	-11	(0.1496%)	0.5543%
-39	(0.2683%)	0.4571%	-10	(0.1718%)	0.3825%
-38	0.1573%	0.6144%	-9	0.2099%	0.5924%
-37	0.1700%	0.7844%	-8	(0.3995%)	0.1929%
-36	0.4460%	1.2303%	-7	0.1727%	0.3656%
-35	0.0670%	1.2973%	-6	(0.1091%)	0.2565%
-34	0.0412%	1.3385%	-5	(0.4493%)	(0.1928%)
-33	(0.2939%)	1.0446%	-4	(0.3082%)	(0.5010%)
-32	(0.0767%)	0.9679%	-3	0.5010%	0.0000%

In Figure 6 and each of the charts that follow, the event day is shown as day_0, with negative days representing days prior to the event day and positive days representing days after the event day.

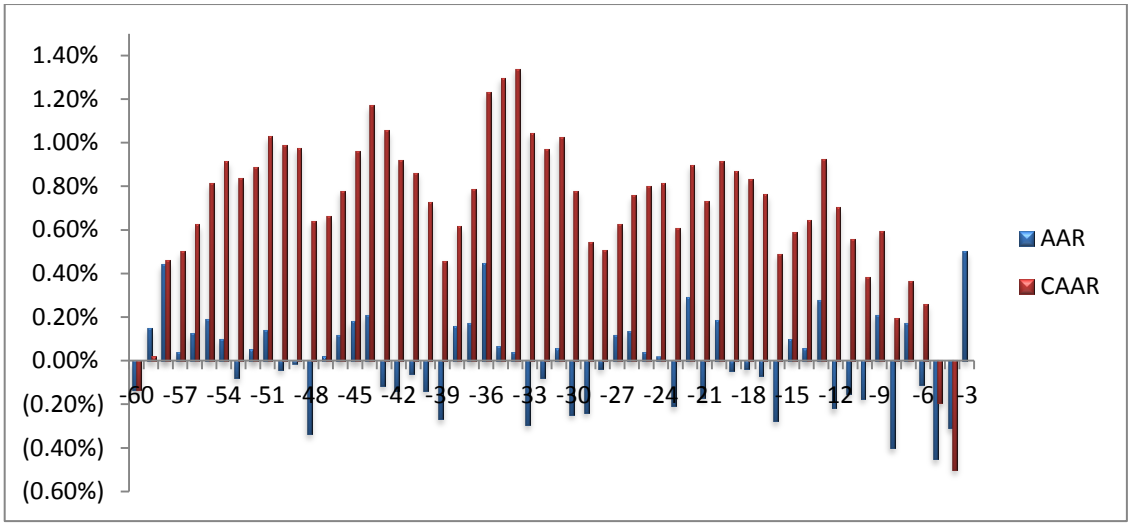

Figure 6: Estimation window daily average abnormal returns and cumulative average abnormal returns

The daily average abnormal returns observed for the estimation window around share repurchase announcements show fluctuating returns with no obvious trend or pattern. Extreme activity is observed closer to the event, with the lowest average abnormal return of -0.45% on day$_{-05}$ and the highest average abnormal return of 0.5% on day$_{-03}$. Daily cumulative average abnormal returns for the estimation period around share repurchase announcements also display high volatility closer to the event day, with the lowest cumulative average abnormal return of -0.5% found on day$_{-04}$, however, the highest cumulative average abnormal return of 1.34% is found on day$_{-34}$. Overall, the average abnormal returns and the cumulative average abnormal returns display a decreasing trend towards the event day.

The daily average abnormal returns and cumulative average abnormal returns for the event window from day$_{-2}$ to day$_{2}$ around open market share repurchase announcements are presented in Table 2 and Figure 7.

Table 2: Event window daily average abnormal returns and cumulative average abnormal returns

Event Day	AAR	CAAR
-2	0.4866%	0.4866%
-1	(0.1795%)	0.3071%
0	(0.0699%)	0.2372%
1	0.0328%	0.2700%
2	0.0505%	0.3205%

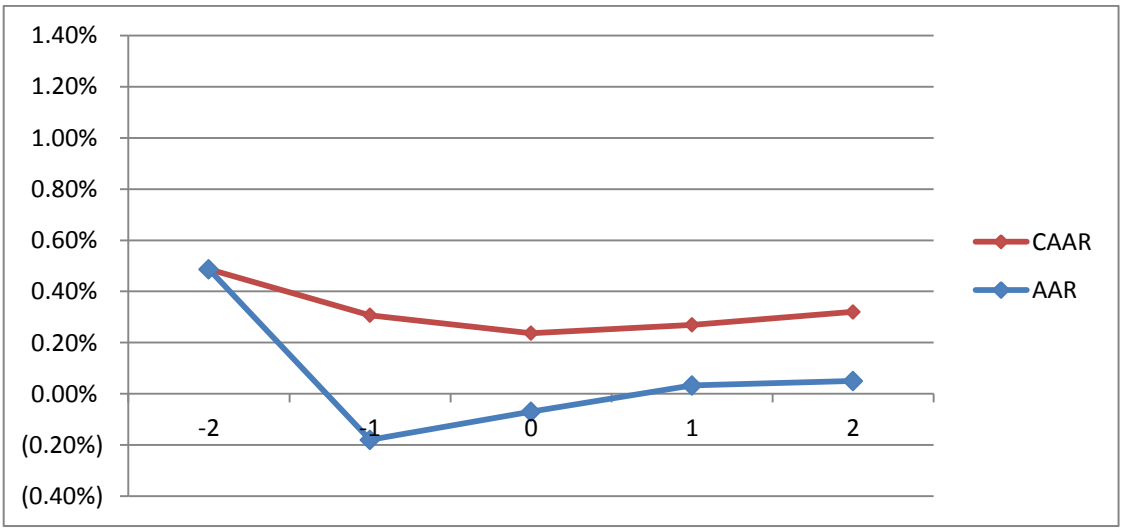

Figure 7: Event window daily average abnormal returns and cumulative average abnormal returns

The daily average abnormal returns observed for the event window around share repurchase announcements decrease from a high of 0.49% on day_{-2} to a low of -0.18% on day_1. Thereafter, abnormal returns increase but still remain negative at -0.07% on day_0, followed by an increase to positive levels of 0.033% on day_1 and increase to 0.05% on day_2. The cumulative average abnormal returns observed for the event window show a decreasing trend from day_{-2} to day_0, followed by an increase from day_0 to day_2. The daily cumulative abnormal returns for the event window remain positive and range from 0.23% to 0.49%.

Further analysis was performed on the pre-financial crisis period and financial crisis period share price response to repurchase announcements. The pre-financial crisis daily average abnormal returns and cumulative average abnormal returns for the event window from day_{-2} to day_2 around open market share repurchase announcements are shown in Table 3 and Figure 8.

Table 3: Pre-financial crisis event window daily average abnormal returns and cumulative average abnormal returns

Event day	AAR	CAAR
-2	0.3243%	0.3243%
-1	(0.3091%)	0.0153%
0	0.0241%	0.0394%
1	(0.0235%)	0.0159%
2	(0.0531%)	(0.0372%)

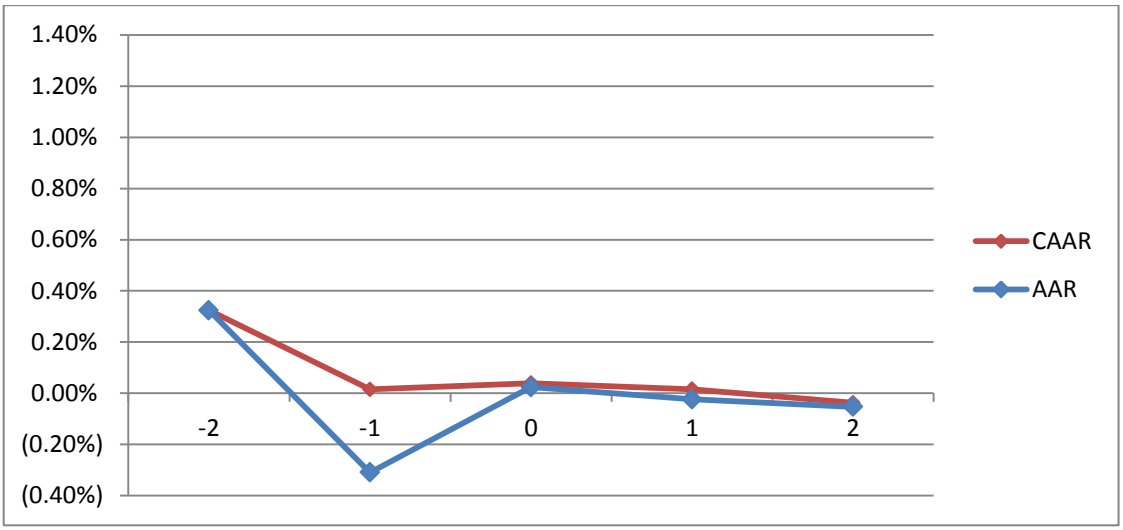

Figure 8: Pre-financial crisis event window daily average abnormal returns and cumulative average abnormal returns

The pre-financial crisis period daily average abnormal returns observed for the event window decrease from a high of 0.32% on day_{-2} to a low of -0.31% on day_1, followed by an increase to 0.24% on day_0, then a decrease to -0.024% on day_1 and further decrease to -0.053% on day_2. The pre-financial crisis period

cumulative average abnormal returns observed for the event window shows a similar pattern, but remains positive only showing a negative result of -0.037% on day_2. The pre-financial crisis daily cumulative abnormal returns for the event window range from 0.32% to -0.037%.

The financial crisis period daily average abnormal returns and the daily cumulative average abnormal returns for the event window from day_{-2} to day_2 around open market share repurchase announcements are shown in Table 4 and Figure 9.

Table 4: Financial crisis event window daily average abnormal returns and cumulative average abnormal returns

Event day	AAR	CAAR
-2	0.9328%	0.9328%
-1	0.1767%	1.1095%
0	(0.3284%)	0.7812%
1	0.1876%	0.9688%
2	0.3353%	1.3041%

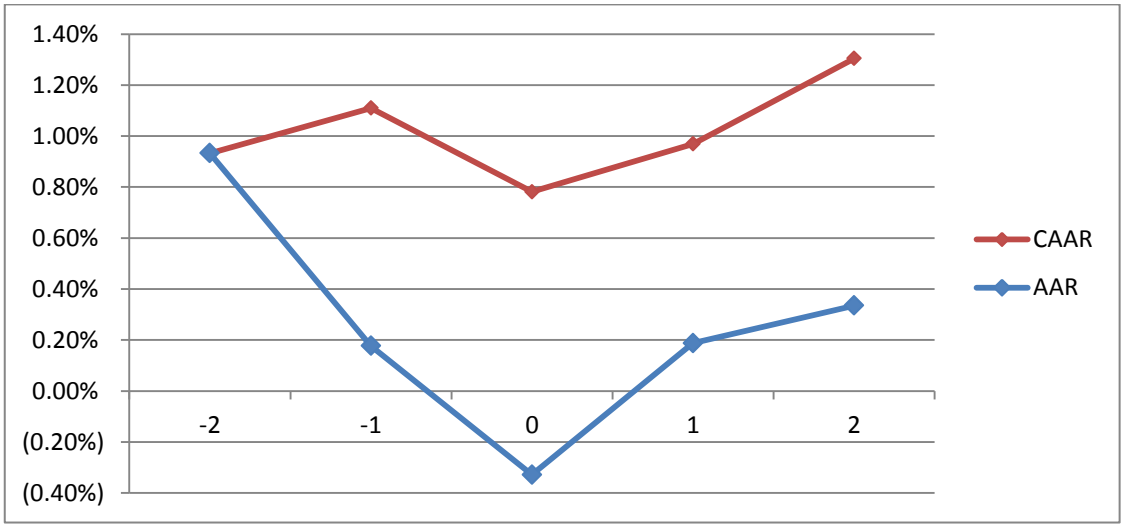

Figure 9: Financial crisis event window daily average abnormal returns and cumulative average abnormal returns

The financial crisis period daily average abnormal returns decrease from a high of 0.93% on day_{-2} to 0.18% on day_1, then to a low of -0.33% on day_0, followed by an increase to 0.19% on day_1, and further decrease to 0.34% on $day_{2.}$ The financial crisis period cumulative average abnormal returns observed for the event window increase from a high of 0.93% on day_{-2} to 1.11% on day_1, decrease on day_0, followed by an increase on day_1, which continues to a high of 1.3% on day_2. The pre-financial crisis daily cumulative abnormal returns for the event window range from 1.3% to 0.78%.

Finally, the t-test was performed on the daily abnormal returns for the event window from day_{-2} to day_2 including the pre-financial crisis period and financial crisis period. The t-statistics are shown in Table 5 and Figure 10.

Table 5: Event window daily average abnormal returns T-statistics

Event day	All data T-statistic	Pre-financial crisis T-statistic	Financial crisis T-statistic
-2	0.2834	0.2182	0.4600
-1	(0.0455)	(0.1089)	0.1260
0	(0.0391)	(0.0229)	(0.0828)
1	0.0103	(0.0359)	0.1355
2	0.0077	(0.0387)	0.1336

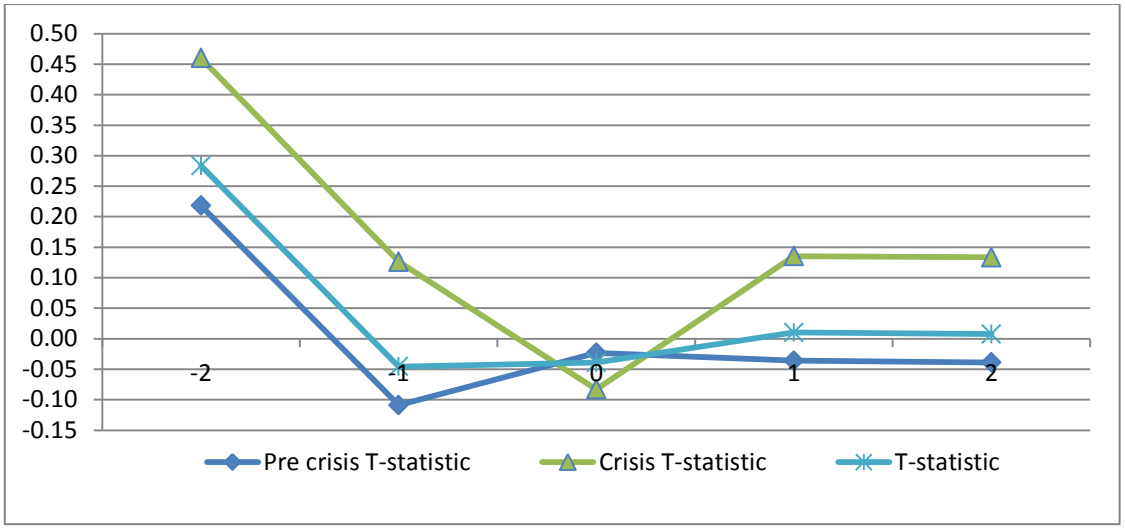

Figure 10: Event window daily average abnormal returns T-statistics

The t-statistic found that the average abnormal returns were not statistically different from zero. The analysis indicates higher volatility in the financial crisis period with the highest average abnormal return of 0.46 observed on day_{-2} during the financial crisis period whilst a lower return of 0.22 is observed for the same day during the pre-financial crisis period, and the lowest average abnormal return of -0.11 is observed on day_{-1} during the pre-financial crisis period with a positive return of 0.13 for the same day during the financial crisis period.

4.4 Summary of the results

The results do not indicate any significant share price reaction to open market share repurchase announcements. The biggest market response across all situations is a decrease in returns observed on day_{-2} to day_1.

The total average abnormal returns and cumulative average abnormal returns around open market share repurchase announcements, together with a split between the pre-financial crisis period and the financial crisis period daily average abnormal returns and cumulative average abnormal returns for the event window from day_{-2} to day_2 are shown in Table 5 and Figure 10.

Table 6: Event window daily average abnormal returns and cumulative average abnormal returns

	All data		Pre-financial crisis		Financial crisis	
Event Day	**AAR**	**CAAR**	**AAR**	**CAAR**	**AAR**	**CAAR**
-2	0.4866%	0.4866%	0.3243%	0.3243%	0.9328%	0.9328%
-1	(0.1795%)	0.3071%	(0.3091%)	0.0153%	0.1767%	1.1095%
0	(0.0699%)	0.2372%	0.0241%	0.0394%	(0.3284%)	0.7812%
1	0.0328%	0.2700%	(0.0235%)	0.0159%	0.1876%	0.9688%
2	0.0505%	0.3205%	(0.0531%)	(0.0372%)	0.3353%	1.3041%

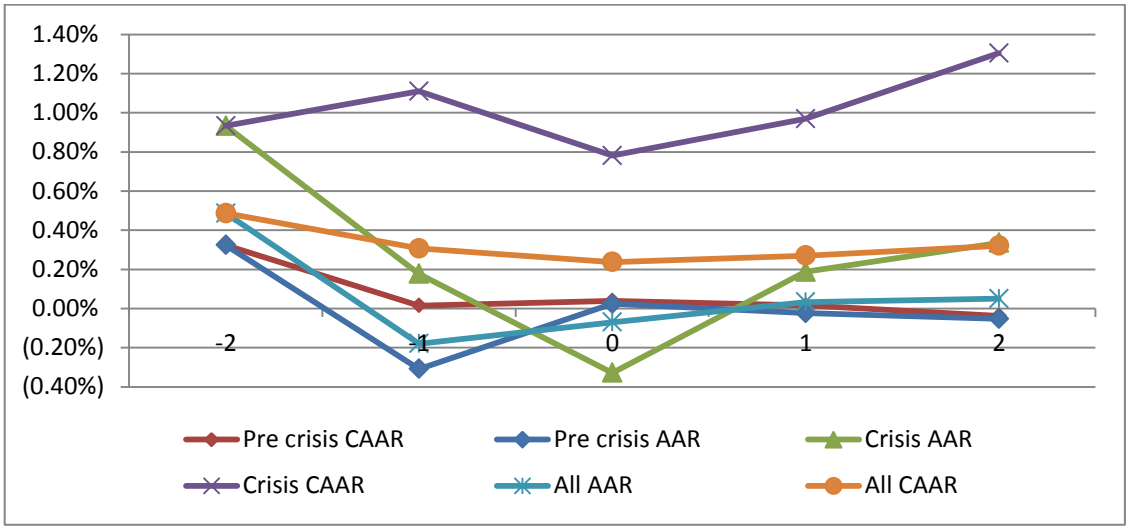

Figure 11: Event window daily average abnormal returns and cumulative average abnormal returns

The analysis indicates higher volatility in the financial crisis period. The highest average abnormal return of 0.93% is observed on day$_{-2}$ during the financial crisis period whilst a lower return of 0.32% is observed for the same day during the pre-financial crisis period. The lowest average abnormal return of -0.33% is observed on day$_0$ during the financial crisis period, with a positive return of 0.024% for the same day during the pre-financial crisis period. Average abnormal returns decline across all economic conditions from day-$_2$ to day-$_1$; financial crisis period returns remain positive at 0.18% compared to -0.31% for

pre-financial crisis returns. Event day, day_0, average abnormal returns remain positive at 0.24% in the pre-crisis period compared to -0.33% in the financial crisis period. Post event average abnormal returns for day_1 decline to a negative -0.026% in the pre-crisis period, compared to an increase to 0.19% in the financial crisis period and average abnormal returns for day_2 see a further decline to a negative -0.053% in the pre-crisis period, compared to an increase to 0.34% in the financial crisis period. Higher cumulative average abnormal returns are observed during the financial crisis period, with a high of 1.3% and a low of 0.78% observed, compared to cumulative average abnormal returns observed during the pre-financial crisis period with a high of 0.32% and a low of -0.04%.

According to the results, the daily average abnormal return drops from its highest level on day_{-2} to its lowest level on day_{-1} consistent with examined literature, however the results indicate a negative daily average abnormal return on the event day day_0, where average abnormal return is negative at -0.069% across all economic conditions. Further analysis shows average abnormal return of 0.024% for the pre-financial crisis period and -0.328% for the financial crisis period, inconsistent with examined literature and most empirical findings where positive abnormal returns are expected around the event day. The results indicate market response to share repurchase announcements on day_1, suggesting a delayed market response to an unanticipated event with no information leakages prior the event, this in support of the signalling theory. The findings are positive though not significant.

4.4.1 Response to repurchase announcements

Overall, the market appears to respond unfavourably to the open market share repurchase announcements, which was unexpected. The daily average abnormal return on day_0 is -0.07%, whilst the 5 day cumulative average abnormal return on day_2 is 0.24%. These results do not indicate any significant share price reaction to open market share repurchase announcements on the JSE Securities Exchange. The market response is positive, though not significant; therefore, there is insufficient evidence to reject the null hypothesis.

In addition, the t-statistic found that average abnormal returns were not statistically different from zero implying that the average abnormal returns are insignificant. Thus, the null hypothesis (H_0), that open market share repurchase announcements by securities listed on the JSE Securities do not result in significant share price reaction around the announcement date is accepted.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

This chapter discusses the research results. Section 5.2 discusses the information content of the data collected for the study and the differences observed in the sample versus expected data on open market share repurchase announcements. Section 5.3 explains the results of the study in comparison to the theories discussed in the literature review.

5.2 Share repurchase announcements

The final data sample consists of 90 open market share repurchase announcements for the period 01 January 2005 to 31 December 2011. As expected, there were more open market share repurchase announcements during the 44 month pre-financial crisis period from January 2005 to August 2008; 66 announcements compared to 24 announcements made during the 40 month period during the financial crisis from September 2008 to December 2011. This study found an average of 1.5 announcements per month in the pre-crisis period compared to 0.6 announcements per month during the financial crisis period. Open market share repurchase announcements peaked in 2006 during the pre-financial crisis. Thereafter announcements appeared to contract somewhat to their lowest in 2009 during the financial crisis period, an episode of financial market volatility marked by significant problems of illiquidity and insolvency among financial market participants. Previous studies on open market share repurchase announcements under a general authority on the JSE Securities Exchange observed the following: Daly (2002) found 88 open market share repurchase announcements by 45 different companies during a short 27 month period of study between 1 July 1999 and 30 September 2001; Blackstock (2006) observed 107 open market share repurchase announcements during a lengthy 67 month period between 1 June 1999 and 31 December 2005; and Bhana (2007) found 117 open market share repurchase announcements during a short 30 month period from October 2000 to March 2003.

5.3 Share price reaction to open market share repurchase announcements

The event study methodology assumes that markets are efficient, the event was unanticipated and that there were no confounding effects during the event window. Empirical evidence outlined in Section 2.2.4 around market efficiency on the JSE Securities Exchange leans more towards weak market efficiency, therefore this study assumed that weak form market efficiency was met and tested for semi-strong to strong form market efficiency. The event was unanticipated by the market; company insiders may have access to information shortly before it becomes publicly available, however, they are forbidden from trading on the information in terms of the Insider Trading Act of 1998 and the Securities Services Act 34 of 2004. Therefore, the market only became aware of the repurchase programme on its announcement. A short event window provides reasonable confidence that an abnormal return is due to an event (McWilliams and Siegel 1997); a five day event window was used while ensuring that no other event was reported within three days of the announcement and no other repurchase announcement was made sixty days prior to the repurchase announcement.

Based on previous literature, negative returns were expected for the period prior to the event, however, a positive estimation period share price return of 0.69% was observed, compared to Comment & Jarrell (1991) who found that announcements are preceded by negative stock performance and Ikenberry et al. (1995) who observed negative abnormal returns of -3.07% prior to the repurchase announcements. The estimation period findings indicate that repurchasing activity was taking place in the days preceding the repurchase announcement, thus affecting the share price movement.

Evidence from the study does not suggest that the announcement period share returns are significantly greater than zero. The study found an announcement period share price reaction of 0.32%, whereas a significant share price reaction of around 3% was observed by Vermaelen (1981), Comment and Jarrell (1991), Ikenberry et al. (1995) and Ziebart (1997). Vermaelen (1981) observed an

average abnormal return of 3.62% for open market repurchase announcements during the announcement period; Comment and Jarrell (1991) observed an average abnormal share return of 2.3% around the announcement period; Ikenberry et al. (1995) found abnormal returns of 3.54% around the announcements; and Liu and Ziebart (1997) observed an abnormal return of 2.9% for the repurchase announcement period. Share price reaction observed by this study is consistent with previous studies on the JSE Securities Exchange by Daly (2002) and Blackstock (2006), who observed lower announcement abnormal returns. Daly (2002) reported returns of -0.31% around the announcement period and concluded that there was no significant market reaction to the announcement of share buybacks and Blackstock (2006) observed returns of 1.33% around the announcement period and also concluded that the findings were statistically insignificant. Bhana (2007), however, observed statistically significant abnormal returns of 4.38% at the time of the announcement.

The analysis of results between the pre-financial crisis period and the financial crisis period indicates higher volatility in the financial crisis period. A financial crisis is seen as a collapse of the financial system, resulting in episodes of financial market volatility marked by significant problems of illiquidity and insolvency among financial market participants. Unexpectedly, higher positive share price reaction is observed during the financial crisis period. Pre-financial crisis announcement period share price reaction of 0.07% is observed, compared to a higher financial crisis announcement period share price reaction of 1.02%, an indication that liquidity may not be available to the same degree for every market participant.

Overall share price reaction observed is negative from $day_{-2\ to}$ day_{-1} consistent with previous literature. However, share price reaction continues to be negative or statistically insignificant on day_0, inconsistent with most empirical findings where positive abnormal returns are observed around the event day. Furthermore, the results indicate market response to share repurchase announcements on day_1, suggesting delayed market response or reaction to an unanticipated event with no information leakages prior the event. Vermaelen

(1981) observes market reaction on day_{-1} possibly because day_0 was the day the repurchase was published in the Wall Street Journal, a day after the announcement was made on the stock exchange. Ikenberry et al. (1995) found that in the short run the market tends to underreact to the repurchase announcement and to underestimate the value of an open market repurchase announcement. Ikenberry et al. (1995) suggest that the market's initial response to repurchase announcements is not complete, in support, Bhana (2007) finds that the information conveyed by open market share repurchases announcements is not fully incorporated in the share price. However, immediate share price response is a signal that the JSE Securities Exchange is an efficient capital market at least in the semi-strong form.

Improved technology makes the latest company information and data available to investors faster than ever before and as a result the market has become more integrated and better informed. This may well have reduced information asymmetry in the market and impacted on market reaction to share repurchase announcements. Ikenberry et al. (1995) suggest that market reaction to news is not always completed over short time periods because either the market ignores a substantial portion of this undervaluation signal, or managers are overly optimistic about their firm's value. If management was trying to signal optimism or share undervaluation, then the market is ignoring this signal.

Although share repurchase announcements are influenced by regulation, it is not a legal or regulatory requirement for a company listed on the JSE Securities Exchange to reveal their intention to launch a share repurchase programme. Evidence suggests that disclosure is made on the business day immediately following the day on which an aggregate 3% threshold is reached or exceeded. If open market share repurchase takes place over time and trading volumes remain constant then the transaction may well go by unnoticed by the market. This explains why investors do not fully respond to the news of share repurchase announcements on the JSE Securities Exchange (Bhana 2007); because the announcements were probably confirmation that share repurchases had already taken place.

Given that disclosure is usually made following the repurchase of an aggregate 3% threshold, the findings suggest repurchase activity took place when management viewed the shares as undervalued, followed by an announcement when the 3% threshold was reached. This implies that the announcement is a mere formality as a consequence of the threshold being reached and not a signal to the market, as opposed to previous literature where repurchase announcements are signals to the market of the intention to repurchase shares that are believed to be undervalued; hence, the expected negative returns before announcement and the positive market reaction upon announcement. The signal on the JSE Securities Exchange preceding any repurchase activity is the approval of the repurchase programme at the general meeting. However, at that point, the repurchase decision remains an option without concrete commitment and this was not the focus of this research.

5.4 Conclusion

The JSE Securities Exchange is an efficient capital market in the semi-strong form. The results do not indicate any significant share price reaction and the market appears to respond unfavourably to open market share repurchase announcements on the JSE Securities Exchange. Market response is positive though not significant. Therefore, based on the results and the significance tests that returns are not statistically different from zero, there is insufficient evidence to reject the null hypothesis. Thus, the null hypothesis (H_0), that open-market share repurchase announcements by companies listed on the JSE Securities Exchange do not result in significant share price reaction around the announcement date, is accepted; and the alternate hypothesis H_a, that open-market share repurchase announcements by companies listed on the JSE Securities Exchange result in significant share price reaction around the announcement date, is rejected.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter summarises the findings of this study. Section 6.2 discusses the conclusions of the study. Section 6.3 discusses recommendations from the findings of the study and Section 6.4 offers suggestions for future research.

6.2 Conclusions of the study

This study examined share price reaction to open market share repurchase announcements for ordinary shares listed on the JSE Securities Exchange. There were more share repurchase announcements in a bull market compared to a bear market, with an average 1.5 share repurchase announcements per month in the pre-crisis period compared to an average 0.6 announcements per month during the financial crisis period. Market reaction to open market share repurchase announcements on the JSE Securities Exchange is positive yet statistically insignificant. The study found higher returns with lower event day share price volatility in the pre-crisis period, the bull market, in comparison to lower returns with higher event day share price volatility in the crisis period, the bear market. Market response supports semi-strong form market efficiency. However, evidence suggests that the market underreacts to open market share repurchase announcements probably due to repurchase announcements being made after share repurchase activity has taken place. Undervaluation has emerged as the motivation for share repurchase on the JSE Securities Exchange. The findings of this study support the undervaluation hypothesis as motivation for share repurchases and not the information signalling hypothesis.

Previous research has shown that repurchase announcements have been accompanied by negative pre-announcement returns and positive announcement returns. Although not significant, the results of this study are consistent with previous research.

6.3 Recommendations

The purpose of this study was to examine share price behaviour around open market share repurchase announcements in the South African environment for securities listed on the JSE Securities Exchange (JSE).

The JSE Securities Exchange is an efficient capital market in the semi-strong form. Motivation for share repurchase on the JSE Securities Exchange is the undervaluation of shares as opposed to signalling. Therefore the signal to shareholders to make investment decisions on share repurchase for companies listed on the JSE Securities Exchange is the general meeting were the repurchase programme is approved as it precedes any repurchase activity or any share price movement due to any repurchase activity.

Given the immediate positive but insignificant market reaction during the announcement period of open market share repurchase announcements, company management who are considering to repurchase shares need to adjust their funding requirements to accommodate share price response to repurchase activity and announcement. Information signalling might not be the motivation but it may have an impact on the share price.

The results suggest that share repurchase announcements yield positive though insignificant returns. Opportunities to outperform the market exist after the general meeting where the repurchase programme is approved. Investment positions for short term profit opportunities and for long term buy-and-hold opportunities are best taken after approval of the share repurchase programme at the general meeting. Thereafter share performance is monitored allowing traders and investors to respond accordingly to maximise value.

6.4 Suggestions for further research

To broaden the understanding of share repurchase in South Africa, further research on share repurchase is suggested:

Due to the legal requirements for shares listed on the JSE Securities Exchange, every share repurchase programme is preceded by authorisation at the Annual General Meeting. The event date could be changed to the date of the general meeting where the repurchase programme is approved.

Further study can be conducted to analyse share price movement between the general meeting where share repurchase was authorised and the date at which the repurchase programme is announced on SENS.

Share price reaction to a share repurchase announcement tends to indicate a positive response on announcement day. Further study could be performed using the announcement day only as the event period. In addition, the study could analyse trading volumes the day before the announcement day and during the announcement day to scrutinise intraday trade.

Improved technology has integrated the market and investors are informed faster about the latest company information and data thus reducing reaction time. Analysis of hourly share price reaction following repurchase announcements or repurchase activity could be performed to test the speed at which the share price reflects new information. In addition, share repurchase activity can be analysed to test how it immediately influences the share price.

A review of repurchasing announcements disclosed on the Stock Exchange News Service compared to repurchasing activity that has taken place and the effects of disclosure or non-disclosure on the share price of the repurchasing company.

A review of disclosure requirements for share repurchase announcements pre and post repurchase activity on the Stock Exchange News Service to test the adequacy of compulsory versus voluntary disclosure communication to the market.

Finally, sector analysis on open market share repurchase announcements can be tested to determine which sectors show greater response to share repurchase announcements.

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APPENDIX A

Open market share repurchase events with exclusions and reasons for exclusion

No	Source Name	Declaration Date	Not primary listing	Not on Main board	Not Ordinary shares	De-listed	Announcement within 60 days
1	Seardel Invest Corp Ltd	04 Feb 2005			x		
2	Woolworths Holdings Ltd	04 Mar 2005					
3	Psg Group Limited	11 Mar 2005					
4	Woolworths Holdings Ltd	16 Mar 2005					x
5	Peregrine Holdings Ltd	01 Apr 2005					
6	Peregrine Holdings Ltd	18 Apr 2005					x
7	Caxton Ctp Publish Print	16 May 2005					
8	Imperial Holdings Ltd	08 Jun 2005					
9	Standard Bank Group Ltd	29 Jun 2005					
10	Metropolitan Hldgs Ltd	27 Jul 2005				x	
11	Gold Fields Ltd	16 Aug 2005					
12	Nampak Ltd Ord	29 Aug 2005					
13	Telkom Sa Ltd	02 Sep 2005					
14	Liberty Holdings Ltd Ord	08 Sep 2005					
15	Standard Bank Group Ltd	08 Sep 2005					
16	African Oxygen Ltd Ord	29 Sep 2005					
17	Metropolitan Hldgs Ltd	18 Oct 2005				x	
18	Sanlam Ltd	25 Oct 2005					
19	Telkom Sa Ltd	04 Nov 2005					
20	Nampak Ltd Ord	11 Nov 2005					
21	Liberty Holdings Ltd Ord	15 Nov 2005					
22	Standard Bank Group Ltd	16 Nov 2005					
23	Metropolitan Hldgs Ltd	17 Nov 2005				x	
24	Standard Bank Group Ltd	12 Dec 2005					x
25	Sanlam Ltd	14 Dec 2005					x

No	Source Name	Declaration Date	Not primary listing	Not on Main board	Not Ordinary shares	De-listed	Announcement within 60 days
26	Brimstone Investment	14 Dec 2005			x		
27	Seardel Invest Corp Ltd	15 Dec 2005					
28	Seardel Invest Corp Ltd	15 Dec 2005			x		
29	Seardel Invest Corp Ltd	20 Dec 2005					x
30	Seardel Invest Corp Ltd	20 Dec 2005			x		
31	Sub Nigel Gold Mining Co	20 Dec 2005				x	
32	Metropolitan Hldgs Ltd	21 Dec 2005				x	
33	Grindrod Ltd	28 Dec 2005					
34	Seardel Invest Corp Ltd	18 Jan 2006					x
35	Seardel Invest Corp Ltd	18 Jan 2006			x		
36	Seardel Invest Corp Ltd	26 Jan 2006			x		
37	Trematon Capital Inv Ltd	20 Feb 2006					
38	Assore Ltd	21 Feb 2006					
39	Peregrine Holdings Ltd	22 Feb 2006					
40	Trematon Capital Inv Ltd	08 Mar 2006					x
41	Matodzi Resources Ltd	22 Mar 2006				x	
42	African Bank Investments	29 Mar 2006					
43	Network Healthcare Hldgs	26 Apr 2006					
44	Clicks Group Ltd	16 May 2006					
45	Barloworld Ltd	22 May 2006					
46	Astral Foods Ltd	02 Jun 2006					
47	Sanlam Ltd	14 Jun 2006					
48	Seardel Invest Corp Ltd	15 Jun 2006					
49	Sun International Ltd	20 Jun 2006					
50	Truworths International	21 Jun 2006					
51	Control Instruments Grp	22 Jun 2006					
52	Woolworths Holdings Ltd	26 Jun 2006					
53	Standard Bank Group Ltd	29 Jun 2006					
54	Barloworld Ltd	03 Jul 2006					x
55	Anglo American Plc	19 Jul 2006	x				
56	Metropolitan Hldgs Ltd	20 Jul 2006				x	

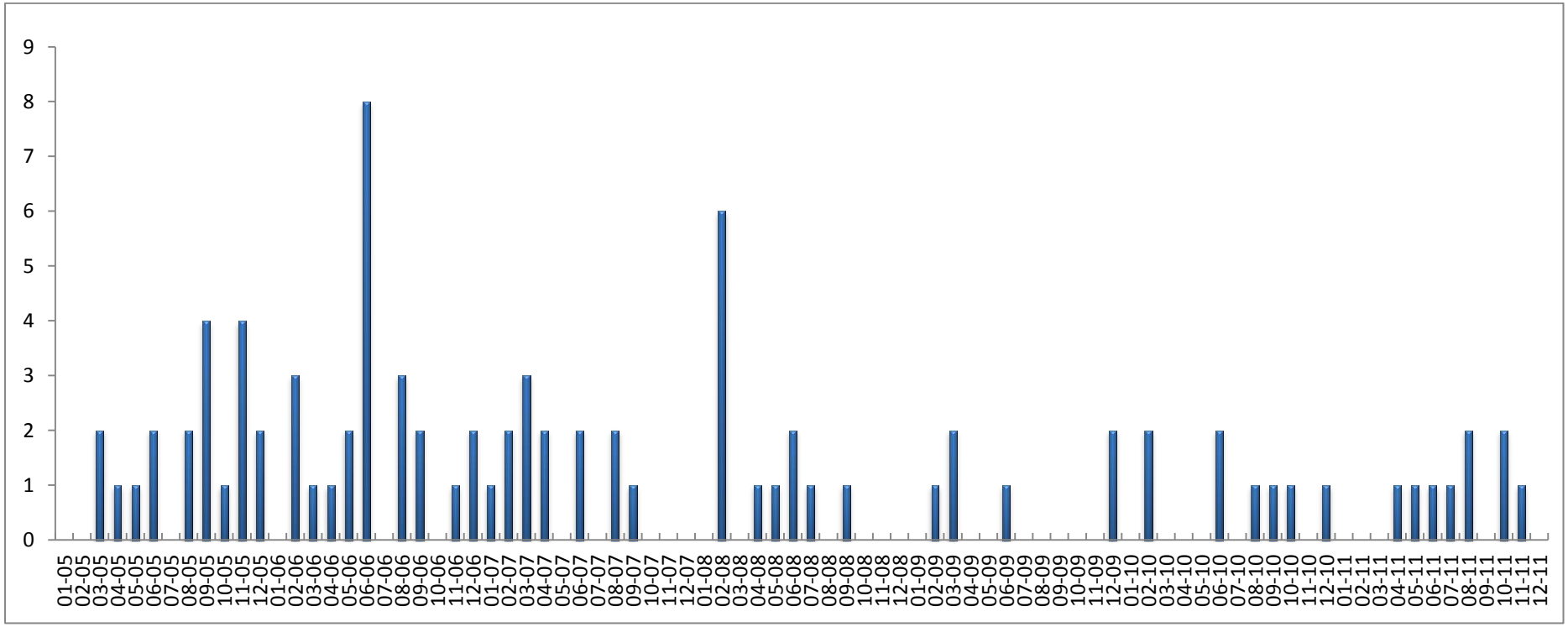
No	Source Name	Declaration Date	Not primary listing	Not on Main board	Not Ordinary shares	De-listed	Announcement within 60 days
57	Seardel Invest Corp Ltd	07 Aug 2006					x
58	Seardel Invest Corp Ltd	07 Aug 2006			x		
59	Barloworld Ltd	08 Aug 2006					x
60	Network Healthcare Hldgs	16 Aug 2006					
61	Telkom Sa Ltd	18 Aug 2006					
62	Peregrine Holdings Ltd	21 Aug 2006					
63	Coronation Fund Mngrs Ld	19 Sep 2006					
64	Network Healthcare Hldgs	28 Sep 2006					x
65	Astral Foods Ltd	29 Sep 2006					
66	Seardel Invest Corp Ltd	23 Nov 2006					
67	Sanlam Ltd	15 Dec 2006					
68	Astral Foods Ltd	19 Dec 2006					
69	Sun International Ltd	29 Jan 2007					
70	Telkom Sa Ltd	01 Feb 2007					
71	Telkom Sa Ltd	05 Feb 2007					x
72	Reunert	28 Feb 2007					
73	Truworths International	02 Mar 2007					
74	Value Group Ltd	09 Mar 2007					
75	York Timber Org	20 Mar 2007					
76	Exxaro Resources Ltd	12 Apr 2007					
77	Nedbank Group Ltd	13 Apr 2007					
78	Quyn Holdings Ltd	07 May 2007				x	
79	Metropolitan Hldgs Ltd	20 Jun 2007				x	
80	Woolworths Holdings Ltd	26 Jun 2007					
81	Tongaat Hulett Ltd	29 Jun 2007					
82	Clicks Group Ltd	02 Aug 2007					
83	Coronation Fund Mngrs Ltd	16 Aug 2007					
84	Anglo American Plc	28 Aug 2007	x				
85	Astral Foods Ltd	21 Sep 2007					
86	Bhp Billiton Plc	01 Feb 2008	x				
87	Corwil Investments Ltd	11 Feb 2008					

No	Source Name	Declaration Date	Not primary listing	Not on Main board	Not Ordinary shares	De-listed	Announcement within 60 days
88	Bhp Billiton Plc	12 Feb 2008	x				
89	Aveng Ltd	15 Feb 2008					
90	Nedbank Group Ltd	18 Feb 2008					
91	Clicks Group Ltd	19 Feb 2008					
92	Telkom Sa Ltd	26 Feb 2008					
93	Datatec Ltd	28 Feb 2008					
94	Datatec Ltd	06 Mar 2008					x
95	Metropolitan Hldgs Ltd	01 Apr 2008				x	
96	Standard Bank Group Ltd	04 Apr 2008					
97	Aveng Ltd	06 May 2008					
98	Standard Bank Group Ltd	22 May 2008					x
99	Standard Bank Group Ltd	10 Jun 2008					x
100	Datatec Ltd	17 Jun 2008					
101	Jd Group Ltd	18 Jun 2008					
102	Aeci Ltd Ord	22 Jul 2008					
103	Coronation Fund Mngrs Ld	25 Sep 2008					
104	SA Corp Real Estate Fund	14 Nov 2008			x		
105	Clicks Group Ltd	02 Feb 2009					
106	Sanlam Ltd	11 Mar 2009					
107	Coronation Fund Mngrs Ld	30 Mar 2009					
108	Emira Property Fund	20 Apr 2009			x		
109	Metropolitan Hldgs Ltd	19 May 2009				x	
110	Grindrod Ltd	19 Jun 2009					
111	Grindrod Ltd	19 Jun 2009			x		
112	Santova Logistics Ltd	26 Aug 2009		x			
113	Kaydav Group	02 Dec 2009					
114	Advtech Ltd	09 Dec 2009					
115	Psg Group Limited	19 Feb 2010					
116	Pik N Pay Stores Ltd	25 Feb 2010					
117	Imperial Holdings Ltd	15 Jun 2010					
118	Mustek Ltd	18 Jun 2010					

No	Source Name	Declaration Date	Not primary listing	Not on Main board	Not Ordinary shares	De-listed	Announcement within 60 days
119	Psg Group Limited	24 Aug 2010					
120	Gijima Group Ltd	13 Sep 2010					
121	Aveng Ltd	05 Oct 2010					
122	Aveng Ltd	20 Oct 2010					x
123	Clicks Group Ltd	01 Dec 2010					
124	Aveng Ltd	10 Dec 2010					x
125	Aveng Ltd	14 Dec 2010					x
126	Bhp Billiton Plc	14 Dec 2010	x				
127	Bhp Billiton Plc	22 Dec 2010	x				
128	Bhp Billiton Plc	29 Dec 2010	x				
129	Bhp Billiton Plc	24 Jan 2011	x				
130	Bhp Billiton Plc	31 Jan 2011	x				
131	Austro Group Limited	12 Apr 2011					
132	Imperial Holdings Ltd	09 May 2011					
133	Woolworths Holdings Ltd	06 Jun 2011					
134	Avi Ltd	07 Jul 2011					
135	Caxton Ctp Publish Print	05 Aug 2011					
136	Woolworths Holdings Ltd	22 Aug 2011					
137	Woolworths Holdings Ltd	07 Sep 2011					x
138	Austro Group Limited	11 Oct 2011					
139	Kaydav Group	12 Oct 2011					
140	Santova Logistics Ltd	28 Oct 2011		x			
141	Mustek Ltd	18 Nov 2011					
Total Announcements		**141**					
less: Exclusions		**(51)**	9	2	10	11	19
Total Sample		**90**					

APPENDIX B

Open market share repurchase announcements per month



APPENDIX C

Number of open market share repurchase announcements per company