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Effectiveness of insider trading law in South Africa's equity market: the mergers and acquisitions example

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Effectiveness of Insider Trading Law in South Africa's Equity Market: The Mergers and Acquisitions Example

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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 Management in Finance and Investment.

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ABSTRACT

Shares in takeover target companies listed on the JSE have historically earned abnormal returns in the days preceding the public announcements of planned takeovers. This has not been tested since the enforcement of insider trading law in South Africa. Furthermore, it is unclear whether the existence of such abnormal returns occur as a result of legal market activity or if it infers illegal insider trading.

The extent of Average Cumulative Abnormal Returns ("ACAR") that occur in the 21 days preceding the announcement of a takeover is established for a sample of 57 takeovers that transpired between 2004 and 2014. ACAR establishes the average abnormal return that each takeover target company accumulates during the 21 day event window. 30 Personal Interviews offer insight into the causes of Cumulative Abnormal Returns ("CAR") preceding each takeover announcement.

Results indicate that shares in takeover target companies accumulate significant ACAR (9.03%) during the 21 trading days preceding the first public announcement of a takeover. Interview findings include the existence of plausible legal explanations for instances of CAR, which contradicts the suggestion that ACAR constitutes *prima facie* evidence of illegal insider trading. However, the study resolved that the occurrences of CAR were as a result of both legal market activity and illegal insider trading occurring after widespread information leaks.

The existence of significant ACAR – more so than in previous South African studies – highlights the need for further investigation into the effectiveness of South African insider trading law in preventing illegal insider trading preceding the announcement of planned takeovers.

DECLARATION

I, _____, 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 Management in Finance & Investment in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Justin Mitchell

Signed at ……

On the …….. day of …… 20…..

DEDICATION

To my wife, Sarah Anne Mitchell, for her sacrifice and loyalty throughout our time at Wits Business School.

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Acknowledgement and gratitude is extended to Professor Odongo Kodongo for his excellent supervision of this research. The general spirit of excellence that prevails among the various professors and staff involved in the Master of Management in Finance and Investment program is cherished.

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CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

The purpose of this research is to establish whether illegal insider trading occurs prior to takeover announcements since the enforcement of insider trading laws in South Africa.

The research will establish the extent to which shares in JSE-listed takeover target companies earn abnormal returns in the days preceding the public announcements of planned takeovers.

The study will resolve whether the occurrences of abnormal returns are as a result of legal market activity or if they infer illegal insider trading.

1.2 Context of the study

The JSE (2013) explains that insider trading is discriminatory at its root, as it involves the information-privileged insider unfairly exploiting the majority who lack access to the same level of information. Ojah, Muhanji and Myburgh (2008) posit that insider trading renders financial markets inefficient on the grounds that outsiders demand compensation (additional risk premium) for their disadvantaged position, resulting in an increased cost of equity and less investment.

In a study into the occurrence of insider trading in the New York Stock Exchange, Keown and Pinkerton (1981) found evidence of excess returns earned by investors in acquired firms prior to the first public announcements of planned mergers, concluding this to be indicative of insider trading.

In a South African context, Bhana (1987, 1999) and Mushidzhi and Ward (2004) found evidence of illegal insider trading in shares of JSE-listed target companies preceding the announcement of takeovers for the periods 1976 – 1985; 1985 – 1996 and 1998 – 2002 respectively. Myburgh and Davis (2004) explain that the

inability of the Companies Act (1973) to curtail insider trading lead to South Africa attaining a repute for widespread insider trading by the end of the 20th century.

In 1997, a South African insider trading regime was established by the King Task Group. The insider trading regime lead to the Insider Trading Act (1998) supplanting the insider trading provisions of the Companies Act (1973). The provisions of the Insider Trading Act allowed for criminal prosecution and civil action, as well as empowering the Financial Services Board (FSB) to enforce the civil provisions. The civil provisions of the Insider Trading Act have since been enforced by the FSB, which has resulted in settlements totalling more than R93 million (JSE, 2013)[1]. In 2004, the Security Services Act (2004) replaced the Insider Trading Act, resulting in a fine tuning and tightening up of the insider trading regulations in South Africa (Wilson, 2011)[2].

In an assessment into the impact that the insider trading regime had on conduct in the market in South Africa, Myburgh and Davis (2004, p.6) found a "striking change in the prevailing attitudes to insider trading, new policies and approaches among listed corporates and their advisors, and – according to most market participants – a sharp reduction in the perceived incidence of insider trading". Similar qualitative findings from Ojah et al. (2008) were substantiated by their quantitative findings that the enforcement of insider trading legislation in the JSE had reduced the cost of equity and enhanced the efficiency of the market.

Contrary to these findings, in a study into the occurrence of insider trading in the JSE during the period 2000 to 2005, van der Plaas (2007) found evidence of Cumulative Abnormal Returns (CAR) in the event window prior to the first public announcement of a merger or acquisition, concluding this to be indicative of insider trading. However, Ojah et al. (2008) suggested that their own findings were not as a result of the *initiation* of insider trading laws, but rather as a result of its *enforcement* thereafter. The 2000 to 2005 timing of the van der Plaas (2007)

[1] A detailed list of Enforcement Actions taken by the FSB is available on their website https://www.fsb.co.za/enforcementCommittee/Pages/enforcementActions.aspx
[2] Subsequently, the Financial Markets Act (2012) has repealed the Security Services Act (2004).

study may not have fully taken into account the enforcement of the insider trading regime[3].

In the latest South African study on the topic, Thaver and Ward (2011) did not find statistically significant abnormal *trading volumes* in the event window prior to the first public announcement of a merger or acquisition, concluding that insider trading was not endemic on the JSE.

The conflicting conclusions drawn by van der Plaas (2007) with those drawn by Myburgh and Davis (2004), Ojah et al. (2008), and Thaver and Ward (2011) motivate further study in order to:

i. Establish the extent to which shares in JSE-listed takeover target companies earn abnormal returns in the days preceding the public announcements of planned takeovers; and
ii. Resolve whether the occurrences of abnormal returns are as a result of legal market activity or if they infer illegal insider trading.

1.3 Background to the research problem

A background to the core concepts of the study provides an introduction to the research problem. The core concepts introduced and defined include: “insider trading”; “insider trading regime and insider trading laws”; “enforcement of insider trading laws”; “takeover”; “target company”; “acquiring company”; and “public announcement”.

1.3.1 *Insider trading*

The JSE (2013, p.4) explains that “the use of privileged information for the purposes of gain (or to avoid a loss) at the expense of others is morally and legally reprehensible. The eradication of this practice is essential to the efficient

[3] The initiation of the insider trading regime occurred in 1998, with the promulgation of the Insider Trading Act (1998), and the enforcement of the civil provisions of the insider trading regime occurred in the years thereafter (1999 onwards).

working and reputation of any market, and the society in which it operates". The Security Services Act (2004, s.72) defines insider trading as, "the buying or selling of a security by someone who has access to material, non-public information about the security".

The JSE (2013) explains that insider trading can either be legal, or illegal. Legal insider trading is trading by a registered insider who clears the trade with the relevant company, and declares the trade via the Stock Exchange News Service ("SENS"). Illegal insider trading is trading by anyone who is trading on the basis of price-sensitive inside information, regardless of the source of the inside information (Security Services Act, 2004).

1.3.2 *Insider trading regime and insider trading laws*

The South African laws regulating insider trading became increasingly insufficient as the economy matured in complexity (Myburgh & Davis, 2004). Prior to the enactment of the Insider Trading Act (1998), the offense was regulated according to the criminal provisions of the Companies Act (1973), necessitating guilt to be proven beyond reasonable doubt (JSE, 2013). Successful prosecution was therefore unlikely[4]. Given that no alternative civil remedies were available, insider trading became rife within the JSE (Myburgh & Davis, 2004). The deficiencies of the legal framework, predominantly concerning the onus of proof in a criminal trial and the lack of a civil remedy, played a major role in the initiation of the insider trading regime (JSE, 2013).

The insider trading regime is a broad term that refers to the set of recommendations made by the King Task Group in 1997, and the subsequent legislation which implemented the recommendations i.e. the Insider Trading Act (1998) and then the Security Services Act (2004). This paper will use the term "insider trading laws" when referring to the insider trading regime and subsequent

[4] There is no precedent in South African law of a criminal prosecution for illegal insider trading prior to the initiation of the insider trading regime (since the 1998 initiation the state has pursued eight criminal prosecutions against those accused of insider trading but no one has yet been convicted).

legislation initiated and enforced in South Africa.

The *initiation* of the insider trading laws occurred in 1998, with the promulgation of the Insider Trading Act (1998), and the *enforcement* of the insider trading laws occurred in the years thereafter (1999 onwards). Ojah et al. (2008) explain that the enforcement of insider trading laws (and not their initiation) is what causes a reduction in illegal insider trading. The enactment of the Security Services Act (2004) provided a fine tuning of the insider trading regulation contained in the Insider Trading Act.

In order to measure the prevalence of insider trading in the JSE *since* the enforcement of the insider trading laws one must allow enough time for the effects of enforcement to become measurable. Between 2000 and 2005, insider trading laws were still in the process of being enforced for the first time, and therefore the van der Plaas (2007) study drawing data from this period may not fully reflect the effects of the enforcement of insider trading laws. The proposed research allows for the effects of enforcement, and therefore uses a data collection period from 01/07/2004 to 30/06/2014.

1.3.1 *Enforcement of insider trading laws*

The Financial Services Board (FSB) is empowered to combat illegal market activity, and can choose to act on reports (made by the Market Regulation Division of the JSE) of alleged insider trading activity (Myburgh & Davis, 2004). The civil provisions of the Insider Trading Act have since been utilised by the FSB, resulting in settlements since 1999 totalling more than R93 million[5] (JSE, 2013).

1.3.2 *Takeover*

Chapter 5 (s.112 to s.114) of the Companies Act (2008) and Companies Amendment Act (2011) defines “fundamental transactions, takeovers and offers”

[5] Enforcement Actions taken by the FSB are available on their website: https://www.fsb.co.za/enforcementCommittee/Pages/enforcementActions.aspx

as a “transaction that would fundamentally alter a company, including the disposal of substantially all of its assets or undertaking, a scheme of arrangement, or a merger or amalgamation”.

A takeover includes: “mergers between listed entities; the acquisition of a significant stake in a company listed on the JSE; the buy-out of minority shareholders; and a leveraged buy-out of a listed company” (Smit & Ward, 2007: p.5).

1.3.3 *Target and acquiring company*

Both Mushidzhi and Ward (2004) and Smit and Ward (2007) refer to a target company as a listed company that is the target for acquisition in a takeover (i.e. the company to be acquired). Both authors define an acquiring company as the company which announces the intention to acquire a significant stake (in excess of 10%) of the ordinary shares of a target company.

1.3.4 *Public announcement*

Section 3.4(a) of the JSE listing requirements outlines the requirements for a listed company in managing confidential and price-sensitive information. Price-sensitive information must be announced via the Stock Exchange News Service (SENS) in order for it to be classified as public information (and such information is confidential until such a time as it is published via SENS). Section 3.5 of the JSE listing requirements states that, “any information to be announced in terms of paragraph 3.4 may not be released, a) during JSE trading hours, until after it has been released on SENS, or b) outside of JSE trading hours, until arrangements have been made for the information to be approved and published before the opening of the JSE on the next business day”.

1.4 Problem statement

1.4.1 *Main problem*

Shares in JSE-listed takeover target companies have historically earned abnormal returns in the days preceding the public announcements of planned takeovers. This has not been tested since the enforcement of insider trading laws in South Africa. Furthermore, it is unclear whether such abnormal returns are as a result of legal market activity or if they infer illegal insider trading.

The problem statement can be broken down into two sub-problems:

1.4.2 *Sub-problem 1*

The extent of abnormal returns earned by shares in JSE-listed takeover target companies in the days preceding the public announcements of planned takeovers has not been determined since the enforcement of insider trading laws in South Africa.

1.4.3 *Sub-problem 2*

It is unclear whether abnormal returns in the days preceding the public announcements of takeovers occur as a result of legal market activity or they infer illegal insider trading.

1.5 Research objectives

1.5.1 *(1) Extent of Abnormal Returns*

In relation to the first sub-problem, this study seeks to establish the extent to which shares in JSE-listed takeover target companies earn abnormal returns in the days preceding the public announcements of planned takeovers.

1.5.2 *(2) Cause of Abnormal Returns*

In relation to the second sub-problem, this study seeks to resolve whether the occurrences of abnormal returns are as a result of legal market activity or if they infer illegal insider trading.

1.6 Significance of the study

The study builds on existing research on insider trading in three areas: 1. the extent of abnormal returns preceding takeover announcements; 2. the cause of abnormal returns preceding takeover announcements; and 3. the prevalence of illegal insider trading in the JSE since the enforcement of insider trading laws in South Africa.

In addition it may offer guidance to regulatory bodies, and the investment banks and legal firms involved in takeovers. The emerging market context of the South African scope of the study may offer a contribution towards other emerging markets with equally or less developed financial and legal systems.

1.7 Delimitations of the study

The following delimitations have been applied to the study:

i. Excluded from the scope of the study are events (other than takeovers) which could result in abnormal returns. Examples of such events include:
   - Corporate activity including rights offers and accelerated book builds;
   - Change in a key personnel (i.e. change in a director);
   - Scheduled earnings and dividend announcements;
   - Major investment or disinvestment.

ii. The study focuses on insider trading of shares in *target companies* involved in takeovers, and excludes from its scope the insider trading of shares of the *acquiring company*. Research has found that there is a lack of evidence of significant short term abnormal returns to shareholders of the acquiring

companies, and therefore less incentive for insiders to trade shares in the acquiring company for speculative gain (Asquith, Bruner & Mullins, 1983; Affeck-Graves, Flack & Jacobson, 1988; Franks, Harris & Titman, 1991; Fuller, Netter & Stegemoller, 2002; Smit & Ward, 2007).

iii. Excluded from the scope of this study are takeovers that occurred in the JSE during the years preceding 1 July 2004. The time frame for the study is the 10 year period from 01 July 2004 to 30 June 2014. This study seeks to resolve the prevalence of illegal insider trading in the JSE since the enforcement of insider trading laws, hence the time frame of this study allowing enough time for the enforcement of the insider trading laws to be reflected in the data.

iv. Excluded from the scope of the study is the test for abnormal trading volumes of both ordinary shares and derivatives of the target company. Thaver (2009) found that abnormal trading volumes preceding a price-sensitive announcement provide a robust indicator of insider trading activities and van der Plaas (2007) suggested that abnormal trading in derivative instruments could also shed further light into illegal insider trading. This study has excluded these aspects from the scope of the study.

1.8 Assumptions

The following assumptions have been made regarding the study:

i. A takeover in which the target company was acquired for less than a 10% premium is not as likely to attract insider trading as those acquired for a 10% premium or more. Based on this assumption the sample excludes takeovers in which less than a 10% premium was paid. The rationale of this is informed by Smit and Ward (2007), Ascioglu and Wood (2002) and van der Plaas (2007) who made similar assumptions based on the same rationale: if there is no or little premium paid for the target company then there is no or little price sensitive information for investors to react to.

ii. The study constitutes two sub-problems and associated objectives which are researched in a sequential basis: Firstly, to establish the extent of abnormal returns in the days preceding the public announcements of planned takeovers;

and secondly – assuming that abnormal returns are identified – to resolve whether the abnormal returns occur as a result of legal market activity or if it infers illegal insider trading. Should there be zero occurrence of abnormal returns then the second sub-problem will not be researchable. The literature suggests there is little change of this occurring (Keown & Pinkerton, 1981; Bhana, 1987; Bhana, 1999; Mushidzhi and Ward, 2004; and van der Plaas, 2007).

CHAPTER 2. LITERATURE REVIEW

Introduction

The first section of the review, labelled “Extent of Abnormal Returns”, pertains to the first research objective, which is to establish the extent to which shares in JSE-listed takeover target companies earn abnormal returns in the days preceding the public announcements of planned takeovers. A review of the following four theoretical foundations of the first research objective contextualises the first hypothesis:

i. A review of literature in relation to the “Efficient Market Hypothesis” introduces the notion that share prices reflect public information.
ii. A review of the literature in relation to the “Capital Asset Pricing Model” introduces the theory that expected share returns are a factor of market returns and the systematic risk of an asset.
iii. A review of the literature in relation to “Event Studies” introduces the methodology used to test for market efficiency and abnormal returns.
iv. A review of the literature in relation to “abnormal returns preceding the announcement of a takeover” introduces the studies which demonstrate that takeover related information is often priced into the share price of the target company prior to its public announcement.

The second section of the review, labelled “Cause of Abnormal Returns”, pertains to the second research objective, which is to resolve whether the occurrences of abnormal returns are as a result of legal market activity or if they infer illegal insider trading. A review of the following two theoretical foundations of the second research objective contextualises the second hypothesis:

i. A review of the literature in relation to “abnormal returns and legal market activity” introduces the studies which reason that occurrences of abnormal returns preceding a takeover announcement can be explained by legal market activity; and

ii. A review of the literature in relation to "abnormal returns and illegal insider trading" introduces the studies which reason that occurrences of abnormal returns preceding a takeover announcement infer illegal trading of price-sensitive inside information.

2.1 (1) Extent of Abnormal returns

2.1.1 *Efficient market hypothesis*

Fama (1970, p.1) states that "a market in which prices always fully reflect available information is called efficient". Jensen (1978, p.4) defines EMH as follows: "A market is efficient with respect to an information set if it is impossible to make profits by trading on the basis of the information." The EMH holds that, apart from noise trading related fluctuations[6], changes in share prices occur as a result of investors pricing new information into the value of share (Fama, 1965).

The idea of an EMH was formally introduced by Fama (1965) who built on the work of Bachelier (1914) and Osborne (1959). Fama (1965) demonstrated that successive price changes in individual securities are independent random variables following a random walk as opposed to being dependent on past prices. The author reasoned that the price of a share is reflective of its implicit fundamental value, which depends on the earning potential of the firm. He further reasoned that fundamental values can change over time as a result of new information related to a factor which could impact the company's prospects. He concludes that "a situation where successive price changes are independent is consistent with the existence of an efficient market for securities, that is, a market where, given the available information, actual prices at every point in time represent very good estimates of intrinsic values" (Fama, 1965: p. 90).

[6] Fama (1965) explains that noise trading is trading that occurs as a result of investor uncertainty and disagreement on fundamental values of a share (as opposed to trading activity based on the impact of new information on the perceived fundamental value of a share).

Fama (1970; 1991) subsequently described three empirical tests for market efficiency, namely (1) weak-form tests for return predictability (degree to which past returns predict future returns), (2) semistrong-form event studies (the speed in which security prices reflect public information announcements), and (3) strong-form tests for private information (the amount of private information not fully reflected in market prices).

i. Weak-form efficiency:

Weak-form efficiency suggests share prices exhibit no sequential dependency as they already reflect historical information (Fama, 1970). Jensen (1968, p.163) explains that under weak-form efficiency, "forecasting techniques which only use the sequence of past prices to forecast future prices are doomed to failure", and that "the best forecast of future price is merely the present price plus the normal expected return over the period".

Providing evidence in support of weak-form efficiency, Fama (1970) cites the findings of Fama (1965), which demonstrate that successive price changes in individual securities are independent random variables following a random walk.

DeBondt and Thaler (1985, 1987) used the contrarian[7] investment strategy to challenge weak-form market efficiency. The authors found that shares identified as the largest underperformers (over performers) over 5 years are more likely to experience underperformance (over performance) relative to the market in subsequent years. They interpret these results in lieu of behavioural finance (market overreaction to significant negative or positive news). Zarowin (1989) and Chan and Chen (1991, p.39) challenge this interpretation, arguing that "there is a risk factor associated with the relative economic performance of firms (a distressed-firm effect) that is compensated in a rational equilibrium pricing model".

Jegadeesh and Titman (1993; 2001) challenge weak-form efficiency on the grounds that momentum investors cause prices to temporarily move away from

[7] Contrarian investment strategy is "an investment style that goes against prevailing market trends by buying assets that are performing poorly and then selling when they perform well" (DeBondt and Thaler, 1987: p. 32).

their fundamental values. The authors found that trading strategies which buy (sell) shares that have performed well (poorly) in the past generate abnormal returns over a 3-12 month period, after which returns revert to market equilibrium.

ii. Semistrong-form efficiency:

Semistrong-form efficiency asserts that stock prices reflect all available public information (Fama, 1970). Jensen (1978) explains that semistrong-form efficiency implies that share prices rapidly adjust to publicly available new information, such that no excess returns can be earned by trading on that information.

In line with semistrong-form efficiency, Fama, Fisher, Jensen and Roll (1969) find that the information in stock splits pertaining to the firm's future dividend pay-outs is, on average, fully reflected in the price of a split share at the time of the split.

In a review of the literature in relation to empirical tests for semistrong-form efficiency, Jensen (1978) cites various studies which are either consistent or in conflict with the semistrong-form of market efficiency. For example, the author cites the findings of Charest (1978a) – which demonstrate that the impact of stock splits on share prices are consistent with semistrong-form efficiency[8] – and contrasts these findings to those of Charest (1978b), which demonstrate that the market price reaction to changes in dividends are inconsistent with semistrong-form efficiency. Jensen (1978) concluded that rather than conclusively disproving or proving forms of market efficiency, the studies collectively serve to highlight the inadequacies in the state of knowledge.

In an attempt to redefine rather than destroy EMH, Grossman and Stiglitz (1980) argue that because information is costly, prices cannot perfectly reflect the information which is available, since if it did, those who spend resources to obtain it would receive no compensation. The authors purport an EMH in which there is an equilibrium degree of disequilibrium, such that prices reflect the information of

[8] See also Jensen (1968) where he found the prices of securities capture the effects of all currently available information.

informed investors; but only partially, so that those who expend resources to obtain information do receive compensation.

In reviews of semistrong-form event studies, Fama (1991; 1998) concludes that while some event studies suggest that stock prices do not respond quickly to specific information, the majority demonstrate that the adjustment of stock prices to new firm-specific events is efficient.

iii. Strong-form efficiency:

Strong-form efficiency asserts that stock prices reflect all information, both public and non-public (Fama, 1970). Under strong-form efficiency, insider information would need to be fully exploited by insiders in order for non-public information to be reflected in the price of a share (Jensen, 1978). Jensen (1978) explains that strong-form efficiency is an extreme form which offers a logical completion to the set of possible hypothesis but that few authors have ever treated it as anything other than that. Fama (1991; 1998) describes the methodological challenges associated with strong-form tests (the joint-hypothesis problem). He explains that the joint-hypothesis problem can result in measured abnormal returns which occur either as a result of market inefficiency (as hypothesised) or merely as a result of an imperfect market equilibrium asset pricing model[9].

2.1.2 *Capital Asset Pricing Model*

The traditional form[10] for capital asset pricing set forth by Sharpe (1964)[11] and Lintner (1965) form the foundations of CAPM, and have been widely used[12] in

[9] Fama (1991; 1998) explains that the joint-hypothesis problem is greatly diminished in semi-strong form event studies which serve to quantify the impact of an event on the daily share price. This is explained in greater detail in CH3 of this study.
[10] Sharpe (1964, p. 438) labelled it the "diagonal model"; Black et al. (1972, p.3) referred to it as the Sharpe-Lintner "mean-variance formulation" or the "traditional model"; while Fama (1968) simply referred to it as the market model.
[11] CAPM was independently introduced and developed by Sharpe (1964), Lintner (1965), Mossin (1966) and later the contribution of the unpublished work of Treynor (1961, 1962) was recognised by French (2003). William Sharpe was awarded the 1990 Nobel Memorial Prize in Economic Sciences partially in recognition of his contribution toward the development of CAPM.
[12] As of September 2014, the authors Sharpe (1964) and Lintner (1965) have been cited in peer reviewed journal articles a total of 13,525 and 8,187 times respectively.

capital asset pricing and calculating expected returns of securities, and of portfolios[13] (Fama & French, 1993; 2004).

Markowitz (1952) pioneered quantifying the relationship between risk and return, and promoted the measurement of the effects of diversification and the limits thereof. Tobin (1958) extended the work of Markowitz (1952) through introducing a risk-free asset to portfolio allocation. Building on Markowitz (1952) and Tobin (1958), Sharpe (1964, p. 438) introduced the "diagonal model" as a model for market equilibrium. Simply stated, the model purports a linear relationship between the returns on any security and a general market factor (Jensen, 1969). After Sharpe (1964) and Lintner (1965) initially misinterpreted the alignment of their models, Fama (1968) subsequently demonstrated that their models represent equivalent approaches to the problem of capital asset pricing under uncertainty.

The traditional Sharpe-Lintner form of the capital asset pricing model states that the expected excess return on an asset is equal to its level of systematic risk (β) multiplied by the expected excess return on the market portfolio. That is, prices of assets (in capital market equilibrium) adjust such that:

$$E(r_j) = E(r_m)\beta_j \qquad (1)$$

Where:

$E(r_j)$ = *the expected excess return on asset j;*

$E(r_m)$ = *the expected excess return on the market portfolio;*

β_j = *the systematic risk of asset j.*

The main result of the model is a statement of the relation between the systematic risk of individual assets and their expected risk premiums (Jensen, 1969).

Black, Jensen and Scholes (1972) provide evidence which demonstrates that the expected excess returns on an asset is not strictly proportional to its level of

[13] Treynor (1965); Sharpe (1966) and notably Jensen (1968; 1969) demonstrated that CAPM can further be used to determine expected portfolio returns.

systematic risk. The authors found that excess returns on high-β (low-β) assets are lower (higher) than the traditional form of the model suggests. They reject the traditional form of the model and instead indicate that the expected return on an asset is better represented by the "Black CAPM"[14] two-factor model[15]:

$$E(r_j) = r_f + \beta_j \left[E(r_m) - r_f\right] \quad (2)$$

Where:

$E(r_j)$ = *the expected return on asset j*

r_f = *the return on the risk-free asset*

$E(r_m)$ = *the expected return on the market portfolio*

β_j = *systematic risk of j relative to the market portfolio.*

In their review of the empirical soundness of the Sharpe-Lintner CAPM and the two-factor Black CAPM, Fama and French (2004) cite various early studies[16] which empirically reject the former and accept the latter.

Subsequent research began to uncover cracks in both the traditional and Black CAPM through identifying variables like size (Banz, 1981); various price ratios (Basu, 1977); leverage (Bhandari, 1988)[17]; and momentum (Jegadeesh and Titman, 1993)[18] that add to the explanation of average returns provided by beta. Fama and French (1992; 1996) confirm that size, earnings-price, debt-equity and book-to-market ratios add to the explanation of expected stock returns provided by market beta.

Fama and French (1993; 1996) propose a three-factor model for expected returns. They find that the model captures much of the variation in average return for portfolios formed on size, book-to-market equity and other price ratios that

[14] The Black CAPM refers to the two-factor model introduced by Black et al. (1972).
[15] Black et al. (1972) relaxed the assumption of availability of riskless borrowing and lending opportunities in order to formulate the two-factor model.
[16] See Fama and French (1993).
[17] Bhandari (1988: p.36) finds that "high debt-equity ratios (book value of debt over the market value of equity, a measure of leverage) are associated with returns that are too high relative to their market betas".
[18] See Jegadeesh and Titman (1993).

cause problems for the CAPM. The superiority of this method in estimating expected terms over a *longer* period is well documented in the literature (Fama and French, 2004).

However, the majority of existing studies which measure expected returns during a *short-term* event window use either the traditional market model or the two-factor Black CAPM (Fama, 1991; MacKinlay, 1997; Binder, 1998)[19] – the reasons being (1) that it is not necessary to complicate the model for estimating short term expected returns, and (2) the Fama-French three-factor model uses constructed indices applicable to equity markets in the United States of America, and as such would need to be re-constructed for application in other markets. Fama (1991) uses the example of takeovers to reason that in instances where a large premium for the target share is offered, then the chosen model for calculating expected returns has little impact on the finding of abnormal returns. The author explains that when, for example, a 15% premium for the target shares is offered, then the finding of significant abnormal returns has little chance of being affected by the choice of model given that the mean-average daily return on equities is normally only about 0.04%[20].

A theme in South African equity market research involves the idea that resource and industrial shares in South Africa are dichotomous. Various authors (Gilbertson & Goldberg, 1981; Bowie & Bradfield, 1993; Van Rensburg & Slaney, 1997; Correia and Uliana, 2004) have found evidence of such market segmentation.

Bowie and Bradfield (1993, 1997) explain that the strong influence of resources shares on the JSE has complicated the use of the CAPM in South Africa, and as such, broad sectorial indices should be used as market proxies instead of the All Share Index. The authors find that the error in predicting expected returns (when using CAPM) is dramatically reduced when sectorial indices are used in place of

[19] Keown and Pinkerton (1981), Mushidzhi and Ward (2004) and van der Plaas (2007) employ the traditional and / or two-factor Black-CAPM during a short term event window.
[20] 10% per year divided by 250 trading days.

the All Share Index. Van Rensburg and Slaney (1997), Van Rensburg (2002), Correia and Uliana (2004), Kruger and Van Rensburg (2008), and Strugnell, Gilbert and Kruger (2011) similarly compared the accuracy of the CAPM in estimating expected returns when using the All Share Index and the various sectorial indices. These authors agree that despite CAPM shortcomings, the use of broad sectorial indices as market proxies offer an increased accuracy in predicting expected returns.

2.1.3 *Event studies*

Binder (1998) explains that the methodology for a typical event study draws on efficient market theory and asset pricing to assess and analyse the impact of new information on security prices and returns.

MacKinlay (1997) provides a historical overview of the use of event study methodology in finance and economic studies, referring to Dolley (1933) as the first to employ the methodology through his examination of the price effects of stock splits. The author references Myers & Bakay (1948), Barker (1956, 1957, 1958), and Ashley (1962) as authors who further advanced event studies during the 1930s until the 1960s. The author cites influential papers by Ball & Brown (1968) and Fama et al. (1969) who first presented the methodology that is still used today.

i. Ball and Brown (1968):

Ball and Brown (1968) were the first to provide evidence showing that share prices react to the release of annual financial statements. The study provides evidence that these announcements convey new information to investors.

The authors used a Sharpe-Lintner CAPM model to quantify expected returns for each share. Abnormal share returns were calculated by subtracting the expected return from actual return:

$$ar_{jt} = r_{jt} - E(r_{jt}) \quad (4)$$

Where:

ar_{jt} = *the abnormal return on share j in time t*

r_{jt} = *is the actual return observed on share j in time t*

$E(r_{jt})$ = *is the return on the market predicted by the CAPM model in time t*

ii. Fama et al. (1969):

Binder (1998, p.111) refers to the Fama et al. (1969) paper as a classic that "started a methodological revolution in accounting and economics" given that their event study methodology has "become the standard method of measuring security price reaction to some announcement or event".

Fama et al. (1969) utilized stock splits as an event in order to test the speed at which stock prices adjust to the new stock split information. The authors use a traditional CAPM-based market model to determine the expected returns of a stock, and then quantify the abnormal returns associated with an event through establishing the residual returns. The residual returns are the difference between expected returns and realised returns, as per (4).

iii. Modifications to event study methodology:

MacKinlay (1997) and Binder (1998) outline the modifications to the methodology developed in Ball & Brown (1968) and Fama et al. (1969) that have since been applied in event studies. The largest modifications to event studies have been in relation to the improvements to CAPM and its use in estimating expected returns over longer event windows (Binder, 1998).

Brown & Warner (1980, 1985) outline complications and adjustments to the original event study methodology, based on their considerations of implementation issues for data sampled at monthly and daily intervals. The authors reason that their findings reinforce the view that the use of daily data is straightforward (in terms of the way one estimates daily expected returns).

McWilliams and Siegel (1997) adjust for confounding events through omission of data that could be exposed to confounding events, which include any information that could have a material impact on the share price of the target company.

2.1.4 *Abnormal returns preceding takeover announcements*

A plethora of studies have demonstrated that a takeover announcement is likely to have a significant price impact on shares of the target company (Jensen and Ruback, 1983; Jarrell & Poulsen, 1989; Ascioglu et al., 2002; Keown & Pinkerton, 1981; Sanders & Zdanowicz, 1992; Mushidzhi & Ward, 2004; and Arnold et al., 2006).

Keown and Pinkerton (1981) found evidence of significant excess returns earned in acquired firms prior to the first public announcement of the planned mergers. Jayaraman, Mandelker and Shastri (1991) similarly found that shareholders of target companies earn significant excess returns over a period of 20 days preceding the announcement. Similar results were found by Mikkelson and Ruback (1985), Dennis and McConnell (1986), and Jarrel and Poulsen (1989).

Bhana (1987) uses a sample of 64 takeovers of JSE-listed companies between 1976 and 1985 and finds that shareholders of the acquired firms earn significant abnormal returns in the 15 days preceding the announcement of the takeover. Bhana (1999) similarly uses a sample of 97 takeovers[21] of JSE-listed companies between 1985 and 1996 and finds that shareholders of the acquired firms earn significant[22] abnormal returns the day before the takeover announcement.

Mushidzhi and Ward (2004) use a sample of 49 takeovers of JSE-listed companies between 1998 and 2002 and demonstrate that shareholders of target

[21] 97 out of 136 formed the "No News" sample, meaning the transactions were not in the news before they were announced.
[22] Significant at the 1% level using a t-test

firms earn significant[23] abnormal returns the day before the takeover announcement.

In a later South African study using a sample of 30 takeovers in the JSE from 2000 to 2005, van der Plaas (2007) similarly demonstrates evidence of significant cumulative abnormal returns from a sample of 30 takeovers in a 21 day pre-announcement event window.

2.1.5 *First Hypothesis*

H_0: ACAR = 0.

The null hypothesis states that shares in takeover target companies accumulate no significant Average Cumulative Abnormal Returns ("ACAR") during the 21 trading days preceding the first public announcement of the takeover.

H_1: ACAR > 0.

The alternative hypothesis states that shares in takeover target companies accumulate significant ACAR during the 21 trading days preceding the first public announcement of the takeover.

[23] Significant at the 5% level using a t-test

2.2 (2) Cause of abnormal returns

The literature is divided as to the cause of abnormal returns preceding the announcement of a takeover. The plethora of analysis on the subject can be divided into two broad categories: those that ascribe abnormal returns to legal market activity and those that ascribe abnormal returns to illegal insider trading.

2.2.1 *Abnormal returns and legal market activity*

Jensen and Ruback (1983) found that over 85% of abnormal returns preceding the announcement of the planned takeover can be attributed to public information, and conclude that abnormal returns preceding an announcement in the form of aggregate run-up statistics must be used cautiously as a measure for illegal insider activity. Comment (1986) similarly points out that the prospect of large takeover premiums and the many kinds of clues legally available to market participants assures the existence of an active market for trading based on prospective takeover targets.

Gupta and Misra (1988) found that illegal insider trading is not a significant contributor to the run-up in the share price of a target company preceding the announcement of a planned takeover. Their findings were based on comparing pre-announcement price run-ups in the seven month period before and after the high profile Dennis Levine insider trading case of May 1986. Their findings were based on the assumption that price run-up patterns should have changed in the seven month period after the case (if these price run-ups were a result of illegal insider trading) given the sentiment and fear in the market at the time.

Jarrell and Poulsen (1989) investigated a sample of 172 successful take-overs on the NYSE between 1981 and 1985. The authors argue that, contrary to the insider trading theory, the occurrence of abnormal returns preceding the announcement of a takeover are consistent with capital markets anticipating the acquisition of a target firm rather than insider trading. The authors concluded, “Our results indicate that the presence of rumours in the news media concerning an impending bid is the strongest variable in explaining unanticipated premiums and pre-bid run-up for tender targets” (Jarrell and Poulsen, 1989, p.244).

De Long, Schleifer, Summers and Waldman (1990) suggest that abnormal returns (preceding the announcement of the price-sensitive information) can be explained, at least partially, by the presence of noise traders. The authors describe noise traders as "positive feedback investors (trend chasers) who buy securities when prices rise and sell when prices fall" (p. 12). The authors purport that the existence of target company abnormal returns (preceding the announcement of the price-sensitive information) may be due to purchases by insiders, while subsequent abnormal returns are influenced by trend-chasing noise traders.

Bhana (1999) investigated a sample of 136 JSE listed companies which were the targets of takeover bids during the period 1985 to 1996. The author acknowledges the perception that lawful speculation is dwarfed by unlawful trading on inside information, but purports that the majority of share trading that occurs prior to price-sensitive announcements is attributable to a functional market and not automatically insider trading. The author finds that "the market identifies potential takeover target companies prior to the first public announcement", concluding that "insider trading is not, on average, a significant contributor to abnormal returns preceding the announcement of the planned takeover" (p. 32).

Mushidzhi and Ward (2004) interpreted their finding of significant abnormal returns in the days preceding the announcement of a takeover as an opportunity for further research, i.e. the results "could be used to explore the possibility of insider trading after the leakage of acquisition information before it is announced to the public" (p. 24).

2.2.2 *Abnormal returns and illegal insider trading*

Keown and Pinkerton (1981) found that the results of their study imply the incidence of substantial amounts of trading based on insider information. Their study examines the impact of trading in inside information in the New York Stock Exchange ("NYSE") in advance of planned takeover announcements by focussing on the daily stock price movements of 194 successfully acquired firms between 1975 and 1978. The authors based their conclusions on the assumption that "abnormal price movements can be interpreted as prima facie evidence of the market's reaction to information in advance of its public announcement" (Keown & Pinkerton, 1981, p.1).

A relevant quote by the industry practitioner J. William Robinson, in a paper by Keown and Pinkerton (1981, p.3), sums up the practical basis upon which their assumption is made, “You start with a handful of people, but when you get close to doing something the circle expands pretty quickly. You have to bring in directors, two or three firms of lawyers, investment bankers, and everybody’s got a secretary. If the deal is a big one, you might need a syndicate of banks to finance it. Every time you let in another person, the chance of a leak increases geometrically.”

In a later study, Keown, Pinkerton, Young, and Hansen (1985) found similar results when comparing abnormal returns from a control sample with those from a sample of takeovers in which insider trading prosecution had taken place.

Jayaraman, Mandelker and Shastri (1991) found that shares in takeover target companies earn significant abnormal returns during a 20 day period prior to a takeover announcement, and interpreted this to be indicative of insider trading.

Bhana (1987) investigated the role of insider trading related to takeovers of target companies listed on the JSE during the period 1976 to 1985. The author interpreted his findings to suggest that insiders appear to take market positions on prospective takeovers approximately 40 trading days before the public announcement, concluding that leakage of inside information occurs at a significant level in the 15 trading days preceding the public announcement.

In a later study into the occurrence of insider trading in the JSE during the period 2000 to 2005, the author van der Plaas (2007) found evidence of cumulative abnormal returns in the event window prior to the first public announcement of a merger or acquisition. He interprets the results as evidence of illegal insider trading: “The overall conclusion from this research report into insider trading in the shares of target companies is that such trading does occur, especially in the days immediately before a public announcement” (van der Plaas, 2007, p. 51).

2.2.3 *Second Hypothesis*

The null hypothesis states that illegal insider trading is not the only explanation for cumulative abnormal returns preceding a takeover announcement.

The alternative hypothesis states that illegal insider trading is the only explanation for cumulative abnormal returns preceding a takeover announcement.

2.3 Conclusion of Literature Review

The first section of the review pertains to the first research objective, which is to establish the extent to which shares in JSE-listed takeover target companies earn abnormal returns in the days preceding the public announcements of planned takeovers.

This second section of the review pertains to the second sub-problem, which is to resolve whether occurrences of abnormal returns are as a result of legal market activity or if they imply illegal insider trading.

The first hypothesis is defined as follows:

H_0: ACAR = 0. The null hypothesis states that shares in takeover target companies accumulate no significant Average Cumulative Abnormal Returns (“ACAR”) during the 21 trading days preceding the first public announcement of the takeover.

H_1: ACAR > 0. The alternative hypothesis states that shares in takeover target companies accumulate significant ACAR during the 21 trading days preceding the first public announcement of the takeover.

The second hypothesis is defined as follows:

The null hypothesis states that illegal insider trading is not the only explanation for cumulative abnormal returns preceding a takeover announcement.

The alternative hypothesis states that illegal insider trading is the only explanation for cumulative abnormal returns preceding a takeover announcement.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Research Paradigm

The purists of quantitative research (Popper, 1959; Ayer, 1966; Schrag, 1992; Maxwell & Delaney, 2004) articulate assumptions that are consistent with what is commonly called a positivist or post-positivist philosophy. Johnson and Onwuegbuzie (2004) expound that quantitative purists maintain that social science inquiry should be objective. Positivism and post-positivism are thus based on the use of experimental methodology in pursuit of objective truth (Philips and Burbules, 2000). Robson (2002) explains that positivists and post-positivists pursue objectivity while recognizing the possible effects of biases and human conjectures. Researchers employing quantitative methodologies have traditionally called for rhetorical neutrality, formal writing style, impersonal passive voice, and technical terminology (Tashakkori & Teddie, 1998, 2010).

On the opposite end of the paradigm spectrum, the purists of qualitative research (Smith, 1983, 1984; Guba & Lincoln, 1989; Lincoln & Guba, 2000; Schwandt, 2000) reject positivism and argue for the superiority of constructivism, idealism, relativism, humanism, and hermeneutics. Johnson and Onwuegbuzie (2004) expound that qualitative purists believe that it is impossible to fully differentiate causes and effects, and that logic flows from specific to general (i.e. explanations are generated inductively from the data). Guba & Lincoln (1989) describe qualitative research as that which is often characterised by a detailed, empathic, and informal writing style.

These two dominant research paradigms have resulted in two distinct research cultures, “one [qualitative] is professing the superiority of ‘deep, rich observational data’ and the other [quantitative] the virtues of ‘hard, generalizable data’” (Sieber, 1973: p. 1335).

Triangulating data sources was established as a means for seeking convergence across qualitative and quantitative methods in order to have biases inherent in any single method diminished by the use of a mixed method approach (Jick, 1979). Greene, Caracelli, & Graham (1989) explain motives for mixing different types of data, reasoning that the findings from one method can assist in developing or interpreting the findings

from the other method. Tashakkori & Teddlie (1998) demonstrate that one method can be nested within another method so as to offer insight into different units of analysis. Johnson and Onwuegbuzie (2004) explain that the objective of mixed methods research as a third paradigm is not to replace the quantitative or qualitative paradigms but rather to draw from the strengths and weaknesses of both.

Creswell (2003) explains that a sequential mixed method approach, in which quantitative and qualitative data is collected sequentially, is used to elaborate on or expand the findings of one method with another method. The author reasons that mixed methods research has come of age and that to include only one of the paradigms falls short of the mainstream approaches being used today. The mixed methods paradigm forms the foundation of the design of this research.

3.2 Research Design

The sequential mixed methods research design takes on the form of (1) an event study methodology in order to address the first research objective and (2) a personal interview approach in order to address the second research objective.

3.2.1 *(1) Extent of Abnormal Returns*

Quantitative event study methodology is used in order to address the first objective, which is to establish whether shares in JSE-listed takeover target companies earn abnormal returns in the days preceding the public announcements of planned takeovers.

A sample of takeovers (of JSE-listed companies) that occurred between July 2004 and June 2014 is drawn from the Competition Commission of South Africa's Merger and Acquisition Case List[24].

In line with the research design adopted by Keown and Pinkerton (1981), Mushidzhi and Ward (2004) and van der Plaas (2007), this study makes use of share price data in order to establish incidences of cumulative abnormal returns ("CAR") earned through holding a

[24] Reference case list source (CCSA, 2014a).

share in a company in the 21 trading days preceding the announcement of a planned takeover. [25]

The two-factor Black-CAPM is used to calculate expected returns for the shares in each target company. The Fama-French three-factor model uses constructed indices applicable to equity markets in the USA, and as such would need to be re-constructed for application in South Africa's equity market. In line with the reasoning of Fama (1991)[26], it is not necessary to complicate the model for estimating short term expected returns, and therefore this study will use the two-factor CAPM in line with the majority of existing studies which measure expected returns during a short-term event window.[27]

Bowie and Bradfield (1993, 1997), Van Rensburg and Slaney (1997) and Correia and Uliana (2004) found that the use of broad sectorial indices as market proxies for application of CAPM in South Africa offer an increased accuracy in predicting expected returns. As such, the sectorial index of each target company is used as the market proxy when applying CAPM (although for interest's sake the All Share Index will also be applied as the market proxy).

Average Cumulative Abnormal Returns ("ACAR") are used to measure the average abnormal return for the sample. As per Smit and Ward (2007), ACAR allows inference on the extent to which takeover-related information is priced into JSE-listed target shares preceding the publication of such information.

3.2.2 *(2) Cause of Abnormal Returns*

A qualitative personal interview approach is used in order to address the second research objective, which is to resolve whether the occurrences of abnormal returns are as a result of legal market activity or if they infer illegal insider trading.

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[25] In a more recent study, Abraham and Harrington (2013) similarly used a short-term event window. The reason for a short-term event window is that an acquiring company commences active engagement with stakeholders in the month before the planned takeover announcement. The information pertaining to the impending takeover announcement only becomes certain after an acquiring company's board gives the mandate to its managing executives to pursue the transaction. It is from this time onwards that insiders holding such information could benefit from taking a position in the target company.

[26] Fama (1991) uses the example of takeovers to reason that in instances where a large premium for the target share is offered, then the chosen model for calculating expected returns has little impact on the finding of abnormal returns.

[27] See Keown and Pinkerton (1981), Mushidzhi and Ward (2004) and van der Plaas (2007) for application of the two-factor CAPM in a short term event study.

Takeovers in which CAR exceeds 5% in the 21 days preceding the announcement of the transaction are selected to form a sub-sample[28]. The acquiring company associated with each individual takeover within the sub-sample of takeovers is identified and contact with the company is made. An available member of the acquiring company's EXCO is interviewed. The purpose of the interviews is to resolve whether the occurrences of CAR are as a result of legal market activity or if it infers illegal insider trading.

JSE (2013) explains that the Financial Services Board ("FSB") Directorate of Market Abuse has the mandate of investigating possible instances of insider trading and market manipulation. As such the FSB could offer valuable insight into this study. The FSB's list of insider trading and market manipulation cases includes a number of investigations into insider trading, some of which include investigations into irregular price movements surrounding a takeover announcement[29]. While the FSB does have a record of enforcement in the form of fines for insider trading, there is also a long list of closed cases without any explanations given (due to the confidentiality of the investigations). The FSB is contacted for a personal interview, with the objective of gaining insight into some of the common reasons that investigations into possible instances of insider trading are closed. The FSB may be able to explain why they found no evidence of insider trading after initially suspecting insider trading on the basis of abnormal returns earned during the period preceding a takeover announcement.

The advantage of using a personal interview approach in order to establish the prevalence of insider trading, as opposed to solely a quantitative study as adopted in Keown and Pinkerton (1981) and van der Plaas (2007) is that the former offers the opportunity to investigate reasons for the quantitative results and therefore offer broader analysis (Creswell, 2003).

[28] The purpose of the interview is to obtain insight into the reasons for the abnormal returns. For the purposes of this study, CAR in excess of 5% over a 21 day period is deemed material enough to require an explanation for such abnormal returns.
[29] Insert link to list of cases

3.3 Population and sample

3.3.1 *Population*

The population of relevance consists of all JSE-listed companies which are the target in a takeover during the 10 year period from 1 July 2004 to 30 June 2014.

The population is identified using the Competition Commission of South Africa's "Merger and Acquisition Case List", which is a Microsoft Excel database available on their website (CCSA, 2014a).

3.3.2 *Sample and sampling method*

i. (1) Extent of Abnormal Returns

From the population of relevance the sample is drawn as follows:

- Takeovers are included in the sample if there is adherence to one or more of the following criteria: Mergers between listed entities; the acquisition of a significant stake in a company listed on the JSE; the buy-out of minority shareholders; or a leveraged buy-out of a listed company.
- The sample is limited to instances where there was at least a 10% premium paid for the target company. The rationale of this is based on Smit and Ward (2007), Ascioglu and Wood (2002) and van der Plaas (2007) who made similar assumptions based on the rationale that if there is no or little premium paid for the target company then there is little price sensitive information for an insider to trade on. The premium is calculated taking into account the offer price and the 30 day Volume Weighted Average Price ("VWAP") of a target company's share.
- The study corrects for confounding events as suggested by McWilliams and Siegel (1997). Confounding events include any information that could have a material impact on the share price of the target company (i.e. dividend announcements or trading updates). The authors adjust for confounding events through omission of data that could be exposed to events that could have a material impact on the share price of the target company. As such, takeover announcements that were preceded by

another material SENS announcement during the event window are omitted from the study.

ii. (2) Cause of Abnormal Returns

From the sample a sub-sample is drawn as follows:

- Takeovers in which CAR exceeds 5% in the 21 days preceding the announcement of the transaction are selected to form a sub-sample.
- The acquiring company associated with each individual takeover within the sub-sample of takeovers is identified.
- Contact with the company's Executive Committee ("EXCO") is made, in the form of a request for a personal interview with a member of the EXCO.

3.4 The research instrument

Secondary share price data is collected from INET BFA in order to address the first sub-problem.

A semi-structured interview approach is used in order to gain insight into the reasons for the existence of abnormal returns preceding the announcement of a takeover. Each acquiring company within the sub-sample is interviewed in order to establish if there was any legal market activity they are aware of that could explain the existence of pre-announcement abnormal returns (for example, establishing if the acquiring company purchased a stake in the target company in the open market in the days preceding the announcement). The semi-structured interview questions are contained in the schedule provided in the Appendix H. The advantages of the semi-structured interview allow for an adaptive quality and the researcher to explore interesting insights should they arise (Creswell, 2003).

3.5 Procedure for data collection

3.5.1 *(1) Extent of Abnormal Returns*

- The population of target companies is selected from the Competition Commission's Merger and Acquisition Case List ("case list").
- The case list is filtered as per the sampling method described in section 3.3.2.
- Once a takeover of a JSE-listed company is identified in the case list, the relevant SENS announcement is read in order to establish if there was at least a 10% premium over the 30 day Volume Weighted Average Price (VWAP) offered for the shares of the target company.
- The SENS announcements surrounding the date of the proposed takeover are read in order to pinpoint the exact date the public were notified that the target company was a target for a takeover. This could be in the form of a specific cautionary announcement or a joint notice of a firm intention of the acquirer to make an offer for the target shares.
- A search for confounding SENS announcements during the event window is undertaken in order to filter out the takeovers exposed to confounding events during the event window. Furthermore, a Google search is undertaken to search for any noteworthy news events that could have impacted the target company during the event window.
- Daily share price data of the target company during the event window is retrieved off INET BFA.
- The market proxy inputs for the CAPM calculation of expected returns is retrieved off INET BFA. The various market proxies which are retried (daily data from 1 July 2004 to 30 June 2014): FTSE/JSE All Share (J203), FTSE/JSE Industrials (J520), FTSE/JSE Financials (J580), FTSE/JSE Mining (J177), FTSE/JSE SA Listed Property (J253), FTSE/JSE Travel & Leisure (J575), FTSE/JSE Platinum & Precious Metals (J153), FTSE/JSE Life Insurance (J857), FTSE/JSE Technology (J590), FTSE/JSE Nonlife Insurance (J853), FTSE/JSE Industrial Engineering (J275), FTSE/JSE Telecommunication (J560), FTSE/JSE Support Services (J279), FTSE/JSE Coal Mining (J151), FTSE/JSE Software & Computer Services (J953), FTSE/JSE Banks (J835), FTSE/JSE General Retailers (J537), FTSE/JSE Equity

Investment Instruments (J898), FTSE/JSE Consumer Goods (J530), FTSE/JSE Pharmaceuticals & Biotechnology (J457), FTSE/JSE Media (J555), FTSE/JSE Food Producers (J357), FTSE/JSE Construction & Materials (J235), FTSE/JSE Gold Mining (J150), and FTSE/JSE Automobiles & Parts (J335).

- The beta coefficients for the CAPM are calculated using the CAPM regression tool available on INET BFA. Beta coefficients for each company are determined by running the regression of the returns for the company against the returns for its sectorial index over the 12 month period preceding the event window. The exercise is repeated using the All Share index in place of the sectorial index.

3.5.2 *(2) Cause of Abnormal Returns*

Interviews are held with the acquiring company in each of the takeovers in which CAR exceeded 5%. The interviews are pre-arranged interviews with one of the members of the acquiring company's EXCO (directly involved in the takeover). The interview process is as follows:

- The acquiring company's contact details are retrieved from the company website. A telephone call to the investor relations contact point is made, to obtain the email details of the relevant and available EXCO member (usually the CEO or CFO). An email is sent to the relevant EXCO member, to set up the interview. The interview is scheduled (follow up with the EXCO members personal assistant is usually required to set up the interview). Where the acquiring company is no longer operational, then the relevant EXCO member at the time of the takeover is contacted for an interview.
- The interviewee is emailed a copy of the Wits Business School 'Interview Information and Consent Form' for signing prior to the commencement of the meeting (see Appendix G for a copy of the form). The interviewee is also sent a copy of the interview questions prior to the interview (See Appendix H for a copy of the generic interview questions).
- Interviews are held in the interviewee's respective offices or otherwise in a coffee shop at a convenient location for the interviewee.

- The first half of the interview is dedicated to the prepared interview questions (Appendix H), and the second half of the interview is used to discuss any unique dynamics associated with the takeover that could explain the abnormal returns.

3.6 Data analysis and interpretation

3.6.1 *Event of interest and event window*

The takeover offer made by the acquiring company for a stake in the target company is the *event of interest*.

The date on which the first public announcement of the takeover occurred is the *event date*, denoted as "t_0". This is the date that the price sensitive information pertaining to a planned takeover became publically available. The event date is either a Firm Intention offer announcement[30], or an Expression of Interest (EOI) announcement[31], or a detailed cautionary announcement outlining an approach by a prospective acquirer (whichever occurs first). A vague cautionary announcement that makes no reference to any potential takeover will not constitute the event date.

The *event window* is broken down into three segments: the pre-announcement period (21 days before the announcement); the announcement day; and the post announcement period (4 days after the announcement).

3.6.2 *Data analysis process (Extent of abnormal returns)*

i. Step 1: Calculating realised returns

Daily realised returns are derived through computing the capital gains achieved through holding an ordinary share each day of the event window. This is denoted by (5) as per Mushidzhi & Ward (2004); Jordan, Miller & Dolvin (2012).

[30] A Firm Intention offer is regulated in terms of Rule 2.7 of the Takeover Code. Such an offer should only be made after careful consideration and when the offeror has every reason to believe that it can and will continue to be able to implement the offer.
[31] An Expression of Interest (EOI) is an informal offer made by a buyer for the purchase of a business. The primary purpose is to suggest a valuation range that a buyer is willing to pay for a company. An EOI is non-binding, usually before a formal due diligence is undertaken, after which the prospective buyer may or may not issue a Firm Intention offer.

$$RR_{jt} = log\left[\frac{P_{jt+1}}{P_{jt}}\right] \quad (5)$$

Where:

RR_{jt} = *Realised return of share j for period t*

P_{jt+1} = *Price of share j at period t+1;*

P_{jt} = *Price of share j at period t.*

Logarithmic returns are used as they are more likely to be normally distributed and to conform to the assumptions of statistical techniques (Strong, 1992).

ii. Step 2: Calculating expected returns

Daily expected returns for shareholders in each target company during the event window are estimated using the two-factor CAPM, as per (2).

iii. Step 3: Calculating abnormal returns

Daily expected returns are subtracted from the daily realised returns in order to derive the daily abnormal return earned by shareholders of each target company during the event window, as per formula (4) (Ball & Brown, 1968; Fama et al., 1969).

iv. Step 4: Calculating cumulative abnormal returns

The daily abnormal returns are summed in order to derive the cumulative abnormal returns ("CAR") for shareholders of each target company during the event window. The formula (6) for CAR is adopted from Smit (2005):

$$CAR_{jt} = \sum_{t=1} AR_{jt} \quad (6)$$

Where:

CAR_{jKL} = *the CAR for share j from the period t =-21 to t = 5; and*

AR_{jt} = *the abnormal return for security j for day t, as per (5).*

v. Step 5: Calculating ACAR

Average Cumulative Abnormal Return ("ACAR") for the sample of takeovers is calculated. ACAR allows inference on the extent to which takeover-related information is

priced into JSE-listed target shares preceding the publication of such information. ACAR (7) entails a mean-average of each CAR, a technique adopted from Smith (2005):

$$ACAR_t = \frac{1}{N}\sum_{t=1}^{N} CAR_{jt} \qquad (7)$$

Where:

$ACAR_t =$ *the average cumulative abnormal return for all shares in the sample for the period from t = -21 to t = +5; and*

$N =$ *number of firms in the sample.*

vi. Step 6: Testing for statistical significance

The sixth and final step of the data analysis process entails using the t-statistic[32] to test whether each CAR and the ACAR are statistically significant from zero.

Kothari and Warner (2007, p.11) explain that,

> *"For a given performance measure, such as the CAR [and ACAR], a test statistic is typically computed and compared to its assumed distribution under the null hypothesis that mean abnormal performance equals zero. The null hypothesis is rejected if the test statistic exceeds a critical value, typically corresponding to the 5% or 1% tail region (i.e., the test level or size of the test is 0.05 or 0.01)."*

The Kothari and Warner (2007) test statistic is given by:

$$\frac{CAR\ (t_1, t_2)}{[\sigma^2(t_1, t_2)]^{\frac{1}{2}}} \qquad (8)$$

Where:

$CAR_j\ (t_1, t_2)$ = *CAR of share j starting at time* t_1 *through to time* t_2

$\sigma^2(t_1, t_2)$ = *Variance of the one-period mean abnormal return.*

[32] Keown and Pinkerton (1981) and Mushudzhi and Ward (2004) similarly use the t-statistic to test to test for statistical significance. van der Plaas (2007) uses the less common bootstrapping technique.

3.6.3 *Data analysis process (Cause of abnormal returns)*

According to the data analysis of Keown and Pinkerton (1981), Bhana (1987), and van der Plaas (2007), the individual instances where a takeover exhibited CAR in the pre-announcement event window would be indicative of insider trading. Similarly, statistically significant ACAR across the sample would be indicative of a significant prevalence of insider trading in the JSE.

The interviews seek to uncover, contrary to the interpretations in the literature mentioned above, if there are any instances of legal market activity (including insider trading that does not violate the law in South Africa) that have contributed to the CAR and ACAR, and therefore resolve whether the occurrences of abnormal returns are as a result of legal market activity or if they infer illegal insider trading.

The data analysis procedure follows the data management system prescribed by Miles and Huberman (1984). This comprises of three linked sub-processes: data reduction, data display, conclusion drawing / verification. During data reduction, the transcripts from recorded interviews are condensed into data summaries for analysis. Any specific differences and inconsistencies are also highlighted at this stage. A descriptive content analysis method is applied to extract themes and contradictions within the data (Neuendorf 2002). The reduced set of data is then displayed using text-based matrices to assist in interpretation (Miles & Huberman, 1984).

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

A presentation of the results from the event study is followed by a description of the results from the personal interviews. The event study offers evidence on the extent of abnormal returns, and the personal interviews provide insight into the cause. A discussion and analysis of the results is presented in chapter 5.

4.2 Results pertaining to (1) Extent of Abnormal Returns

57 takeovers from a population of 102 met the criteria for inclusion in the sample (a 10% premium to the 30 day VWAP was offered and there were no confounding events during the event window). The details of each takeover are set out in Table 1 (Appendix A).

4.2.1 *Realised returns*

Figure 1: Realised Returns vs Benchmark Returns

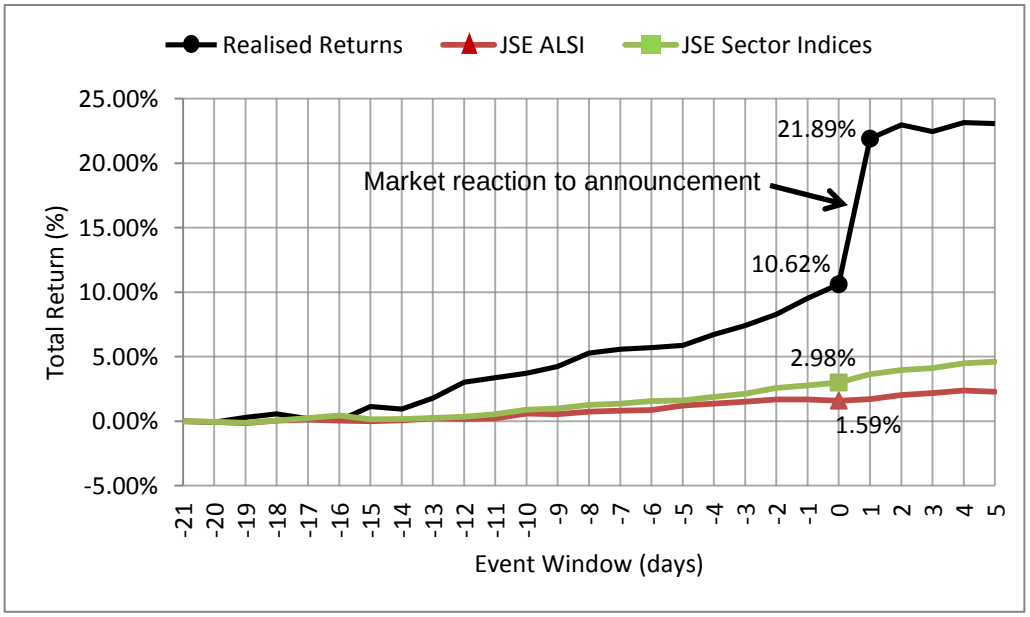


Figure 1 illustrates the sample's average daily realised returns relative to benchmark returns during the event window. The Realised Returns (black line) constitute the mean average daily log return for each of the 57 target companies during the event window.

The JSE ALSI (red line) represents the mean average daily log returns for the All Share Index during the event window. The JSE Sector Indices (green line) represents the mean average daily log returns for each target company's sector index during the corresponding event window.

The results establish that on average, a share in a target company earns 10.62% cumulative return during the 21 days preceding a takeover announcement, compared to cumulative benchmark returns of 2.98% (JSE Sector Indices) and 1.59% (JSE ALSI). The steep black line between data point's t_0 and t_1 represents the 11.27% (i.e. 21.89% less 10.62%) average total return earned by a share in a target company on the day of the announcement. This is comparable to the 0.67% benchmark return (JSE Sector Indices) on the same day. In the 4 day period after the announcement date, a share in a target company earns, on average, 0.29% total return (relative to a 0.24% return for the JSE Sector Indices). Table 2 (Appendix B) sets out the average daily realised returns for the sample, relative to the benchmark returns. These results are discussed in Ch. 5.

4.2.2 *Expected returns*

Figure 2: Expected Returns (Sample Average)

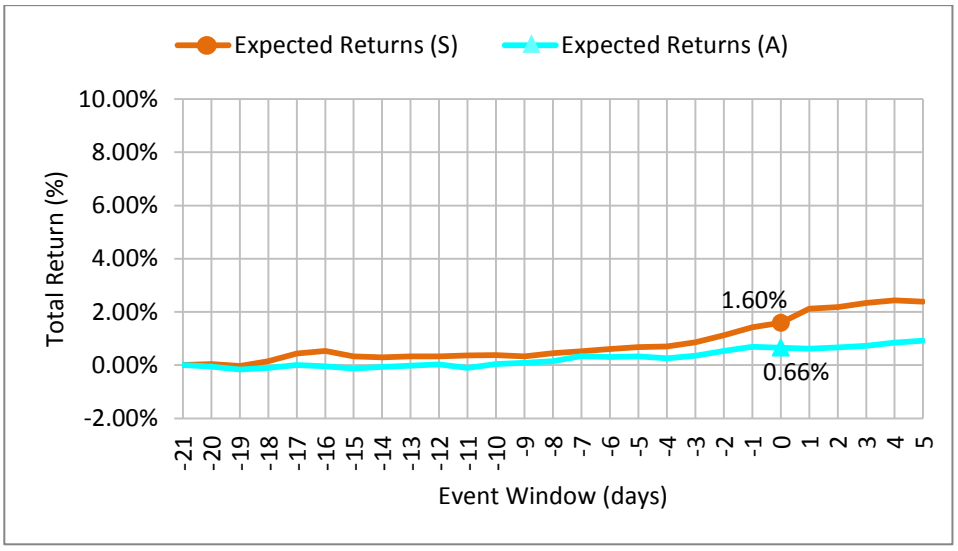


Figure 2 demonstrates the sample's average daily Expected Returns. The Expected Returns is the average of expected returns for a share in each of the 57 target companies during the event window. Expected Returns for each target company is calculated using formula (2). Expected Returns (S) (orange line) makes use of the sector

indices as the market proxies, and Expected Returns (A) (blue line) making use of the All Share Index as the market proxy.

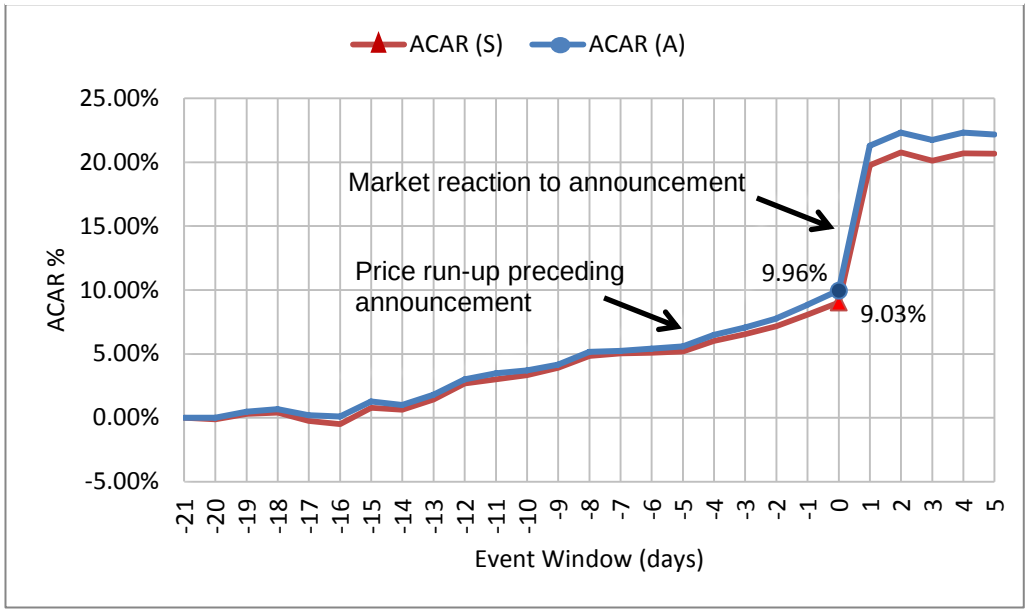
4.2.3 *Abnormal returns*

AR_S and $ACAR_S$ use the JSE Sector Index of each target company as the market proxy when determining expected returns, and AR_A and $ACAR_A$ use the All Share Index as market proxy.

$ACAR_S$ [$ACAR_A$] set out in Table 3 (Appendix C) and illustrated in Figure 3 demonstrates that abnormal returns of 9.03% [9.96%] accumulate in the 21 days preceding the announcement of the takeover.[33]

AR_S [AR_A] of 10.74% [11.32%] occurring on t_1 reflect the abnormal returns achieved on the day of the announcement (representing the market's response to the announcement on t_0). $ACAR_S$ [$ACAR_A$] for the 4 days after the announcement total 0.23% [0.22%].

Figure 3: Average Cumulative Abnormal Returns



[33] Cumulative Abnormal Returns at the event day constitute abnormal returns up until the event (the opening share price for each day is used rather than the closing share price).

4.2.4 *Hypothesis testing*

$ACAR_S$ [$ACAR_A$] equals 9.03% [9.96%], which is significantly different from 0 at the 1% level. We therefore reject the null hypothesis and do not reject the alternative hypothesis, and thus conclude that shares in takeover target companies accumulate significant ACAR during the 21 trading days preceding the first public announcement of the takeover.

4.3 Results pertaining to (2) Cause of Abnormal Returns

4.3.1 *Interview respondents*

Table 4 (Appendix D) contains a breakdown of CAR for each of the 57 target companies (CAR before the event; event day AR; and CAR in the 4 days after the event). In 34 of the takeovers the target company realised CAR in excess of 5% during the 21 day period preceding the announcement of the takeover. These 34 takeovers formed the sub-sample for the purposes of the personal interviews. Table 5 (Appendix E) presents the details of the 34 takeovers that formed the sub-sample.

Of the 34 takeovers that formed the sub-sample, 26 interview respondents were available for personal interviews (respondents were unavailable for 8 of the takeovers). Table 5 (Appendix E) presents the breakdown of takeovers which provided interview respondents.

In addition to the 26 aforementioned interviews, the FSB Directorate of Market Abuse was interviewed on 4 occasions.

4.3.2 *Interview summaries*

In all 26 interviews, the prepared questions were discussed. The interview questions are presented in Annexure G. The notable feedback is summarised below:

Q1: <u>Overview of the transaction</u>

Respondents offered valuable insight into the transaction process, including whom and when outside parties were approached in relation to the transaction.

A common discussion was the fact that the acquiring company informally approaches its significant shareholders at an early stage in the takeover planning in order to get an idea as to whether the takeover would be supported. Respondents differed on whether such shareholders would be classified as insiders at this stage. Several respondents reasoned that shareholders who trade on such information are doing so illegally, while others reasoned that the at this early stage in the takeover timeline the information is not yet price sensitive inside information. The latter group of respondents explained that only once the takeover planning moves from the preliminary planning stage to the stage where the acquiring company receives approval from its board to pursue the takeover does the information become price sensitive inside information according to legislation[34].

The latter group of respondents explained that at the stage when the acquiring company receives approval from its board to pursue the takeover then all parties privy to the takeover related information are required to sign confidentiality agreements, restraining all signatories from trading in the target company.

The timing of the signing of confidentiality agreements and the associated restraint on trade that is placed on signatories was also discussed. Respondents explained that it's not always practical for active institutional investors to sign confidentiality agreements whenever a potential takeover target is discussed, as the restraint of trade would put the shareholder (especially institutional investors) at a disadvantage, and so for practical reasons most institutional investors will not sign a confidentiality agreement until the acquiring company obtains board approval to pursue the takeover.

[34] Respondents clarified that in order for information to be classified as price sensitive inside information then it needs to be specific information and that a "what if" discussion pertaining to a potential takeover target does not constitute specific price sensitive information. i.e. the takeover information would only be specific once the acquiring company has made the *decision* to pursue the takeover.

Q2: Confirmation of Event Date (Public Announcement Date)

All 26 respondents confirmed that the takeover was confidential inside information prior to the public announcement of the planned takeover.

For 39 of the 57 takeovers, the event date was the Firm Intention Announcement[35]. For the other 18 takeovers, the event date was the date of the release of a specific cautionary announcement pertaining to an Expression of Interest[36] submitted to the target company's board (preceding the Firm Intention Announcement).

Respondents confirmed that the public would not be aware of the planned takeover after a vague or "vanilla" cautionary announcement is released, but would be if a specific cautionary announcement is released. Respondents agreed that if a vague cautionary announcement is released, then the event date is the Firm Intention Announcement, but that if a specific cautionary announcement is released then the event date is the date of the cautionary.

This feedback prompted an adjustment to 3 of the 57 takeover event dates. In these instances the event date was moved from the Firm Intention Announcement date to the prior date of the release of a specific cautionary announcement. Respondents explained that in these instances the investors would have been taking a position on the target company based on the specific cautionary released. Respondents explained that the exact price offered by the acquiring company is not known by the public when the event date is the date of a specific cautionary pertaining to an Expression of Interest.

Q3: Existence of Confounding Events

Respondents confirmed their agreement that confounding events (i.e. trading update released on SENS) would distort the quantitative results and as such takeovers with confounding events preceding the event date should be omitted from the study. All 26

[35] A Firm Intention offer is regulated in terms of Rule 2.7 of the Takeover Code. Such an offer should only be made after careful consideration and when the offeror has every reason to believe that it can and will continue to be able to implement the offer.
[36] An Expression of Interest (EOI) is an informal offer made by a buyer for the purchase of a business. The primary purpose is to suggest a valuation range that a buyer is willing to pay for a company. An EOI is non-binding, usually before a formal due diligence is undertaken, after which the prospective buyer may or may not issue a Firm Intention offer.

respondents confirmed that there were no confounding events released on SENS or in the news during the event window.

Q4: Open market share purchases (in the target company by the acquiring company) preceding takeover announcements

Respondents explained that there is a difference between “block trades” and “open market trades”. Respondents explained that block trades involves “a significantly large number of securities being traded at an arranged price between parties outside of the open markets”. Block trades by the acquiring company preceding the event date occurred in 5 of the 57 takeovers (details of block trades are released on SENS). Respondents explained that the block trade will not impact the share’s open market price and volume as it actioned outside of the market. Respondents explained that the public will only become aware of the block trade in the event of an announcement on SENS. It was confirmed that such an announcement is usually accompanied by a specific cautionary announcement pertaining to a takeover and that such an announcement would constitute the event date.

Open market purchase of shares in the target company by the acquiring company during the event window occurred in 4 takeovers. For all 4, less than a 5% stake was acquired in the open market. Respondents confirmed that the public only became aware of these open market purchases at the event date as the requirement to notify the public of the purchases only arises when 5% or more in the target company is acquired. Further investigation of circulars sent to shareholders of each of the 57 takeovers preceding the vote on the proposed takeover provided evidence of the open market purchases made by the acquiring company. The investigation confirmed that there was such activity for 4 out of 57 takeovers.

Q5: Legally Permissible Explanations for Abnormal Returns

Four different possible “legally permissible” explanations were given by respondents:

(1) Informed traders speculating of a possible takeover based on the twin release of vague cautionary announcements by the target and acquiring companies can cause abnormal returns. 13 of the respondents explained that when a vague “vanilla”

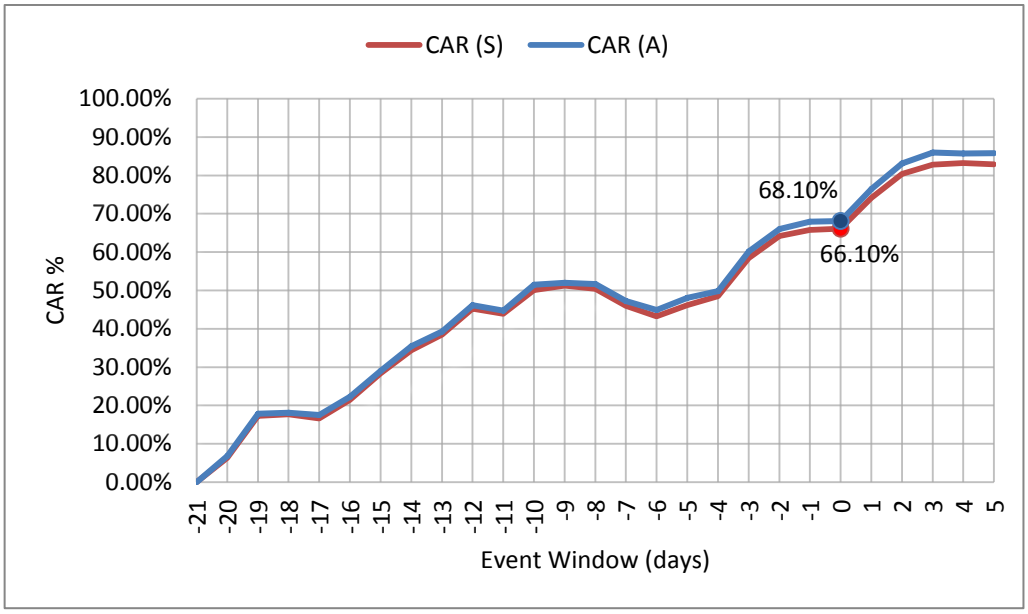
cautionary announcement is released by both a target company and an acquiring company on the same date and within a few minutes of one another then an informed investor can speculate that a takeover announcement may be imminent and thus take a position on the likely target company. Respondents explained that when the twin vague cautionary announcements are subsequently renewed with another vague twin cautionary announcement then it exponentially increases the chance of informed investors taking positions. The phrase “a trained eye won’t miss it” came up on two separate occasions. An inspection of the SENS history of the target and acquiring company revealed that 9 of the 34 takeovers that exhibited CAR in excess of 5% could possibly be explained by the existence of twin release of vague cautionary announcements preceding the event date.

(2) Open market share purchases by the acquiring company can cause an increase in demand for the target company’s shares and thus prompt abnormal returns. Respondents involved in the 4 takeovers in which there were purchases of shares in the target company by the acquiring company preceding the event date reasoned that these purchases would have increased the demand for shares in the target company and thus pushed up the price.

(3) Brokers speculating of possible takeover action after receiving a trade order from the acquiring company for purchase of target company’s shares in the open market can cause abnormal returns. Two respondents reasoned that if a broker receives such a trade order then that broker may suspect the possibility of an impending offer being made for all of the shares in the target company. Such brokers may advise their other clients to take a long position in the target company based on this speculation.

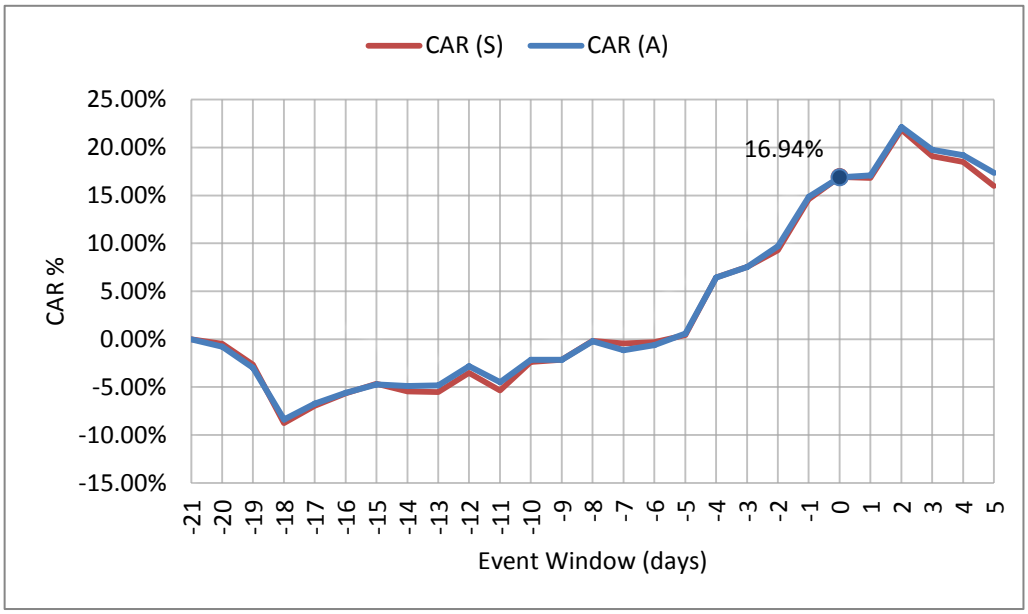
(4) The development curve of a newly formed single-asset resources company can result in a share price movement that tracks the development curve of the asset rather than any index. Two respondents (Mining Company A and Mining Company B) explained that the abnormal returns associated with two of the target company’s shares during the event window can be explained by this phenomenon. The respondents explained that the volatile price movement occurs as the company moves from being an exploration company to one which is operating a profitable mine.

Figure 4: CAR preceding “Mining Company A” takeover announcement



The first respondent explained that the CAR prior to the Mining Company A takeover announcement illustrated in Figure 4 (above) is explainable by “obvious circumstances”, namely the “development curve of the resources asset”. The respondent explained that the target company was newly formed (12 months old), with its single asset being a platinum mine. The respondent explained that the share price increased in parallel with the development curve of the asset rather than as a result of an information leak associated with the impending takeover offer. The reasoning was based around informed investors taking a position in the company as the mine moves from exploratory to operational. The respondent explained that these informed investors are not necessarily responding to news associated with the development curve of the mine, but are rather taking a speculative position based on their anticipation of imminent news related to the operational profitability of the mine. The respondent explained that once the news related to the mine’s operational profitability is released for the first time, the share price of the company will spike up or down, depending on whether it’s good or bad news, but that leading up to this news there is much speculation (and therefore abnormal returns when compared to an index).

Figure 5: CAR preceding Mining Company B takeover announcement



The second respondent explained that the abnormal returns associated with the share price of Mining Company B illustrated in Figure 5 (above) occurred as a result of speculative traders taking a position in anticipation of news related to the profitability of its core diamond mine. The respondent explained that the company was exploratory and that they were busy with a "bulk-sampling exercise" to determine the prospects of operating an abandoned mine. The respondent explained that speculative investors took positions in the company in anticipation of the news related to the results of the bulk-sampling exercise.

Q6: <u>Information leaks leading to insider trading</u>

An average of 10 minutes was spent discussing question six. The majority of respondents were reluctant to address the question as to whether they knew of any specific instances of insider trading based on the takeover related information because of the sensitive nature of such a discussion. All 26 respondents felt that information pertaining to an impending takeover announcement is impossible to keep 100% confidential. The respondents generally perceived a large quantum of CAR to be representative of a large number of investors taking positions based on the leak of the takeover related information. The respondents reasoned that the information will leak for the following reasons:

(1) The large and diverse group that is privy to the information related to the impending takeover means that it is very difficult to keep the information confidential. Both the acquiring company and the target company will have corporate advisory (investment bankers) and legal advisory firms representing them.
(2) There is often more than one bidding company competing to acquire the target company. 14 of the respondents referred to one or more competing bidding companies who were in discussions with the target company's board. These competing companies are often aware of the fact that there are other companies bidding for the target company's board support for a takeover.
(3) Should due diligence be carried out prior to the public announcement of a planned takeover, then it becomes practically very challenging to keep the possibility of a takeover confidential. A due diligence process often involves physical inspections of the target company's assets. Respondents explained that when a known deal maker or competitor is seen inspecting a company's assets with his or her legal and corporate advisors, then bystanders would very likely speculate.

4.3.3 *Views of the Financial Services Board (FSB)*

The four interviews with the FSB Directorate of Market Abuse offered further insight into the cause of abnormal returns preceding the announcement of a takeover. The interviewees explained that the FSB uses instances of abnormal share price movement to trigger further investigation, but that abnormal share price movement does not constitute *prima facie* evidence of illegal insider trading. The interviewees offered examples of when abnormal share price movements did constitute illegal insider trading, and examples of when abnormal share price movements were explainable by normal market forces that had nothing to do with insider trading.

The FSB shared evidence related to a published case where a member of a corporate advisory team to an acquiring company told a friend during a game of squash that the takeover would be announced imminently. The friend traded on the information through his broker, who in turn traded on the information on behalf of 33 other clients, ultimately causing abnormal returns prior to the announcement of the takeover.

The FSB explained that the majority of investigations into irregular price movements preceding the announcement of a takeover were ultimately closed without any evidence of illegal insider trading found. The interviewees explained that the majority of cases were closed on the grounds that the abnormal price movement was as a result of investors taking positions based on their speculation of an impending takeover (nothing illegal). The interviewees clarified that informed analysts look out for any hint of an impending takeover (i.e. twin cautionary announcements released), and take positions accordingly.

The FSB also explained that illegal insider trading needs to be based on (1) specific information that is (2) price sensitive to a known degree. In other words, an investor who invests after hearing that a certain company *may* be a target for a possible takeover is not necessarily illegally trading on inside information but could rather be classified as an informed speculator. In order for such action to be illegal insider trading then the investor would need to know (1) that a takeover offer *will* be announced and (2) what the offer premium is (rendering the information as objectively price-sensitive).

4.3.4 *Implications for Second Hypothesis*

The evidence from the personal interviews suggests that it is challenging to keep information pertaining to the impending takeover 100% confidential and that leakage of the price sensitive information can result in trading activity that would cause the abnormal returns. However, one cannot conclude that evidence of abnormal returns preceding the announcement of a takeover offers *prima facie* evidence of illegal insider trading as there is evidence that there exist legal market activity that can, to a certain extent, explain the abnormal returns.

We therefore fail to reject the second null hypothesis, which states that illegal insider trading is not the only explanation for CAR preceding a takeover announcement. The alternative hypothesis, which states that illegal insider trading is the only explanation for cumulative abnormal returns preceding a takeover announcement, must therefore be rejected.

4.4 Summary of the results

Results from the event study indicate that shares in takeover target companies accumulate significant ACAR during the 21 trading days preceding the first public announcement of the takeover. Results from the 30 personal interviews indicate that illegal insider trading is not the only cause of ACAR. ACAR is attributable to a combination of both legal market activity and widespread information leaks pertaining to the planned takeover announcement.

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

The implication of ACAR in terms of the effectiveness of insider trading regulation is discussed, followed by an interpretation of the results in terms of the EMH. The results from the personal interviews are discussed in terms of their implications regarding the case of abnormal returns.

5.2 Discussion pertaining to (1) Extent of Abnormal Returns

5.2.1 *Effectiveness of insider trading regulation*

Myburgh and Davis (2004) found a perceived decrease in incidence of insider trading in South Africa and Ojah et al. (2008) reasoned that a decrease in insider trading in South Africa was attributable to enforcement of insider trading regulations. Assuming a link between quantum of ACAR and occurrence of insider trading as per findings of van der Plaas (2007), one could expect to see a decrease in the quantum of ACAR since the enforcement of insider trading regulation in South Africa.

Table 6: Comparison of ACAR among studies

	ACAR%	# Days	Period	Sample size	Country
Study Results	9.03%	21	2004 - 2014	57	RSA
Mushidzhi and Ward (2004)	3.87%	10	1998 - 2002	49	RSA
van der Plaas (2007)	8.00%	21	2000 - 2005	30	RSA
Keown and Pinkerton (1981)	13.26%	126	1975 - 1978	194	USA

In Table 6 (above) the ACAR leading up to the takeover announcement is compared to the results from previous studies. The methodology for estimating expected returns and computing abnormal returns used in Muschidzhi and Ward (2004) and Keown and Pinkerton (1981) are comparable to that adopted in this study (use of the two-factor CAPM to determine expected returns). The methodology in van der Plaas (2007) was the same bar the use of control portfolios as market proxies.

Of interest is the fact that ACAR in this study exceeds ACAR findings in van der Plaas (2007) and Mushidzhi & Ward (2004), both of which were based on periods that would not have fully benefitted from the effects of enforcement of insider trading regulation. This suggests that the enforcement of insider trading regulations has not resulted in a decrease in the incidence abnormal returns in shares of a target company preceding the announcement of a takeover. Either there is an insignificant link between ACAR and insider trading, or insider trading regulation has been ineffective in reducing occurrence of insider trading in South Africa.

5.2.2 *Implications for Market Efficiency*

Table 7: Abnormal Returns & Market Efficiency

Benchmark	CAR (Before)	AR (Event)	CAR (After)
Sector Indices	9.03%	10.74%	0.91%
ALSI	9.96%	11.32%	0.86%

i. *Semistrong-form efficiency*

Table 7 (above) indicates that on average, a share in a target company earns 10.74% [11.32%] abnormal returns on the day of the announcement of a takeover. In the 4 days thereafter CAR is 0.91% [0.86%]. These results are fairly consistent with Jensen's (1978) definition of semistrong-form market efficiency, which holds that share prices rapidly adjust to publicly available new information such that no excess returns can be earned by trading on that information.

However, this interpretation is based on averages of the 57 investigated takeovers. Table 4 (Appendix D) contains details of CAR for each of the 57 takeovers. For several of the takeovers there is evidence of material positive / negative CAR in the 4 days after the announcement. While this may suggest that semistrong-form market efficiency doesn't always hold, this interpretation should be made with caution. The occurrences of material CAR after the event date can be somewhat explained by the fact that in these instances the event date was a specific cautionary announcement rather than a Firm Intention announcement. When the event date is a specific cautionary the public would not have known the exact price to be offered for the target company and as such the

quantum of market reaction would have been based on a degree of speculation (hence the continued speculation after the initial reaction). Where the event date was a Firm Intention announcement the lack of CAR in the 4 days after the announcement is indicative of semistrong-form market efficiency.

i. *Strong-form efficiency*

Table 7 (above) indicates that, on average, the market reaction to the announcement constitutes a total of 19.77% ACAR when combining ACAR from t_{-21} to t_1. 9.03% of the ACAR occurs before the announcement is made, and 10.74% of the ACAR occurs on the day of the announcement. This means that 45.7% of the 19.77% ACAR associated with the takeover announcement is reflected in the share price prior the announcement. In terms of Fama's (1970) strong-form efficiency, stock prices must reflect all information, both public and non-public. In other words insider information would need to be fully exploited by insiders in order for non-public information to be reflected in the price of a share (Jensen, 1978). The results indicate that 54.3% of the market reaction to the information only occurred after the information became public. This indicates that the private information was not fully exploited by insiders, suggesting that strong-form efficiency does not hold.

5.3 Discussion pertaining to (2) Cause of Abnormal Returns

5.3.1 *Abnormal Returns caused by legal market activity*

i. *Skilled analysts and legally informed traders*

Comment (1986) argued that the prospect of large takeover premiums and the many kinds of clues legally available to market participants assures the existence of an active market for trading based on prospective takeover targets. Jarrell and Poulsen (1989) similarly argued that the occurrence of abnormal returns preceding the announcement of a takeover is consistent with capital markets anticipating the acquisition of a target firm rather than insider trading. These arguments are consistent with the findings from this study in relation to the 13 respondents who explained that informed traders (skilled analysts) speculate on potential takeover targets when they see the twin release of

vague cautionary announcements by the target and acquiring companies. Analysis of SENS records uncovered 9 takeovers in which CAR could possibly be explained by the existence of twin cautionary announcements which were released by the target company and acquiring company preceding the event date. This evidence is consistent with the views of the FSB interview respondents, who explained that the majority of investigations into irregular price movements are closed because the cause can be explained by informed traders taking positions based on their speculation of an impending takeover.

ii. *Open market acquisitions by acquirer*

There is no prior research that was found which documents the possibility of open market share purchases by the acquiring company causing an increase in demand for the target company's shares before the market is informed of the activity. The findings in this study in relation to the 4 takeovers in which there were purchases of shares in the target company preceding the event date offers a possible cause of the abnormal returns associated with these 4 takeovers. However, the degree to which these open market transactions can account for CAR is unknown. One could argue that the purchases would have had some impact from a supply / demand perspective, although the quantum of all four purchases was less than 5% of the total issue of the target company's shares, suggesting that it may not fully account for CAR.

iii. *Broker speculation*

No previous research was found that offers insight into the possibility of brokers speculating on possible takeover action after receiving a trade order from the acquiring company for purchase of target company's shares in the open market. It is difficult to quantify what impact such activity would have in terms of CAR, although it must be noted that this explanation would only offer insight into 4 of the 34 takeovers in the sub-sample. Regardless of the quantum of its impact, such speculation by brokers could be classified illegal insider trading given that one could argue that it is price-sensitive information and therefore confidential in terms of insider trading regulation. For this reason this explanation alone does not constitute a legal market action which could explain ACAR.

iv. *Development curve of single-asset resources company*

In two of the interviews, the respondents explained that the abnormal price movement occurs as the market anticipates imminent news in relation to the company's progress from an exploration company to a profitable operator. In terms of Fama's (1965) EMH, changes in share prices occur as a result of investors pricing new information into the value of share. One could challenge the validity of the explanation provided by the respondents on the grounds that the SENS records show that there was no information released during the period preceding the announcement of the takeovers and therefore nothing for investors to base the increased price on. However, the respondents reasoned that investors were speculating on the likelihood of new information in relation to the development curve of the asset. Further quantitative investigation may offer further evidence with which one can better test this explanation. i.e. Do other single-asset resources companies exhibit a similar return profile when an exploratory resources company is busy with "bulk-sampling exercises" in order to determine the profitability of a potential mine?

5.3.2 *Abnormal Returns caused by illegal insider trading*

The finding of abnormal returns caused by legal market activity contradicts the notion that existence of CAR constitutes *prima facie* evidence of illegal insider trading. While an abundance of literature interprets the existence of CAR as *prima facie* evidence of illegal insider trading (Keown & Pinkerton, 1981; Jayaraman, Mandelker & Shastri, 1991; Bhana, 1987; van der Plaas, 2007), these quantitative studies base much of their interpretation on assumptions rather than observations.

However, the finding of abnormal returns caused by legal market activity does not mean that there cannot also be a degree of abnormal returns caused by illegal insider trading. All 26 respondents were of the opinion that information pertaining to an impending takeover announcement is impossible to keep 100% confidential and as such the existence of CAR is attributable to information leakage to the majority of research analysts and institutional investors. The respondents reasoned that the information will often leak as a result of (1) the quantum and diversity of insiders involved in takeover negotiations; (2) the existence of more than one prospective acquirer; and (3) the public

nature of a physical due diligence process. This is in line with the reasoning for abnormal returns provided by the industry practitioner J. William Robinson in Keown and Pinkerton (1981, p.3), “You start with a handful of people, but when you get close to doing something the circle expands pretty quickly. You have to bring in directors, two or three firms of lawyers, investment bankers, and everybody’s got a secretary. If the deal is a big one, you might need a syndicate of banks to finance it. Every time you let in another person, the chance of a leak increases geometrically.”

5.4 Conclusion

The plausible examples of legally permissible explanations for ACAR contradict the notion that ACAR constitutes *prima facie* evidence of insider trading. This does not mean that there cannot also be a link between ACAR and insider trading. The evidence from the interviews suggests that ACAR is caused by a combination of legal market activity and widespread leakage of information related to the impending takeover announcement. While ACAR does not constitute *prima facie* evidence of insider trading, it does offer an indication that an information leakage is likely to have occurred. Thus the existence of significant ACAR casts doubt on the effectiveness of insider trading law in preventing the widespread leakage of price-sensitive inside information.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Conclusions of the study

The study established that shares in a sample of 57 JSE-listed takeover target companies earn $ACAR_S$ [$ACAR_A$] of 9.03% [9.96%] in the 21 days preceding the public announcements of planned takeovers. We reject the first null hypothesis and conclude that shares in target companies accumulate significant ACAR during the 21 trading days preceding the first public announcement of the takeover.

The extent of ACAR in this study exceeds the extent of ACAR in Mushidzhi & Ward (2004) and van der Plaas (2007). This is surprising considering that the increased enforcement of insider trading regulation since these studies.

The study resolved that occurrences of abnormal returns occur as a result of a combination of legal market activity and illegal insider trading (due to widespread information leaks).

Respondents offered plausible examples of legally permissible explanations for ACAR. These plausible explanations contradict Keown & Pinkerton's (1981) assumption that ACAR constitutes *prima facie* evidence of insider trading. We therefore fail to reject the second null hypothesis, and conclude that illegal insider trading is not the only explanation for cumulative abnormal returns preceding a takeover announcement.

While ACAR does not constitute *prima facie* evidence of insider trading, it does offer an indication that information leakages are likely to have occurred. The evidence from the personal interviews suggests that it is challenging to keep information pertaining to the impending takeover 100% confidential and that leakage of the price sensitive information can result in trading activity that causes abnormal returns. Thus the existence of significant ACAR highlights the need for further investigation into the effectiveness of insider trading regulation in preventing the widespread leakage of price-sensitive inside information preceding the announcement of planned takeovers.

6.2 Recommendations

The findings from this study could offer insight to the FSB and JSE in their efforts to protect uninformed investors. An investigation into implementing a regulatory requirement for a target company to release a specific cautionary immediately after receiving an approach from a prospective acquirer is recommended. The prevalence of information leakages suggest that there exist information asymmetries among investors within the parameters of the current JSE listing requirements and as such the review of the cautionary requirements would be of value. At the moment the JSE listing requirements include that a cautionary must be released, but there is no mention on whether the cautionary must be specific or merely vague and "vanilla".

The results demonstrate that while abnormal returns preceding a takeover announcement do not constitute *prima facie* evidence of insider trading, it does offer an indication of possible insider trading based on a leakage of inside information. The FSB's tracking of return profiles of takeover targets preceding the announcement of a takeover is therefore a recommended tool to identify individual cases for further investigation.

6.3 Suggestions for further research

An event study testing the semistrong-form EMH in the period after a Firm Intention announcement is recommended. At the time of a Firm Intention announcement the market would be made aware of the offer price, and thus the efficiency with which the market reacts to this new information can be tested. While the results from this study demonstrated that semistrong-form EMH almost holds, the sample was distorted by takeover announcements in which no specific price was announced.

Further research comparing ACAR preceding the following two scenarios is recommended: (1) a target company releases a specific cautionary immediately after receiving an approach from a prospective acquirer, versus (2) a target company releases a vague "vanilla" cautionary and then only informs the market of the approach in a later specific announcement (event date). CAR associated with individual takeovers in this study suggest that ACAR preceding scenario (1) is less than ACAR preceding scenario (2), but such findings would need to be tested with greater precision. Such research may

offer further insight to the FSB and JSE in terms of regulatory requirements pertaining to cautionary announcements related to takeovers.

Another avenue for further research in terms of insider trading preceding takeover announcements on the JSE is related to the extent to which there is abnormal equity derivative trading activity preceding takeover announcements. Notwithstanding the value of such research, the researcher would still be posed with the question of whether evidence of abnormal derivative activity preceding a takeover announcement constitutes *prima facie* evidence of insider trading. As such, further research into establishing the link between any form of abnormal trading activity – be it equity price analysis, derivative trades, or equity volume analysis – and insider trading is recommended.

REFERENCES

Abraham, R., and Harrington, C. (2013). Predicting informed trading at merger announcements. *Journal of Economic Studies*, *40*(5), 658-670.

Affleck-Graves, J.F., Flack, T.P. and Jacobson, A.J. (1988). The effect of merger announcements on the share prices of the acquired and acquiring companies. *South African Journal of Business Management,* 19(14), 147-154.

Ascioglu, N. A. and Wood, R. A. (2002). Merger Announcements and Trading. *The Journal of Financial Research,* 25(2), 263-278.

Asquith P, Bruner RF and Mullins DW. 1983. *The gains to bidding firms from merger. Journal of Financial Economics*, 11, 121-139.

Asquith, P. and Kim, E.H. (1992). The post-merger performance of acquiring firms: A re-examination of an anomaly. *The Journal of Finance,* XLVII(4), 1605-1621.

Ayer, A. J. (Ed.). (1966). *Logical positivism*. Simon and Schuster.

Bachelier, L. (1914). Le jeu, la chance et le hasard. E. Flammarion.

Ball, R. & Brown, P. (1968). An Empirical Evaluation of Accounting Income Numbers. *Journal of Accounting Research*, 6(2), 159-178.

Basu, S. (1977). The relationship between earnings' yield, market value and return for NYSE common stocks: Further evidence. Journal of financial economics, 12(1), 129-156.

Baty, M. (2008). *Insider Trading as a signal used in investment decisions on the AltX: the influence of insider ownership and control.* MBA Thesis, University of Pretoria.

Bernhardt, D., Hollifield, B. and Hughson, E. (1995). Investment and Insider Trading. *The Review of Financial Studies*. 8(2), 501-543.

Bhana, N. (1987). Take-over announcements and insider trading activity on the Johannesburg Stock Exchange. *South African Journal of Business Management,* 18(4), 198-208.

Bhana, N. (1999). The impact of public news regarding potential takeovers on the share price behaviour of target companies. *Investment Analysts Journal,* 50, 29-41.

Bhana, N. (2005). The share price reaction to management buyout announcements of companies listed on the JSE Securities Exchange. *Investment Analysts Journal,* 62, 19–30.

Bhandari, L. C. (1988). Debt/equity ratio and expected common stock returns: Empirical evidence. The Journal of Finance, 43(2), 507-528.

Bhattacharya, U and Daouk, H. (2002). The World Price of Insider Trading. *The Journal of Finance,* 57(1), 75-108(34).

Binder, J.J. (1998). The Event Study Methodology Since 1969. *Review of Quantitative Finance and Accounting,* 11 (1998): 111 – 137.

Black, F., Jensen, M.C., and Scholes, M. (1972). The Capital Asset Pricing Model: Some Empirical Tests. *Studies in the Theory of Capital Markets,* Michael C. Jensen, ed., Praeger Publishers Inc.

Bondt, W. F., & Thaler, R. (1985). Does the stock market overreact?. The Journal of finance, 40(3), 793-805.

Bowie, D. and Bradfield, D. (1993). A review of systematic risk estimation on the JSE*, De Ratione,* 7(1):6-22.

Bowie, D. and Bradfield, D. (1997). Some evidence on the stability of beta coefficients on the JSE, *South African Journal of Accounting Research,* 11(2):1-20.

Brown, S.J. and Warner, J.B. (1980). Measuring Security Price Performance. *Journal of Financial Economics,* 8, 205 – 258.

Brown, S.J. and Warner, J.B. (1985). Using Daily Stock Returns: The Case of Event Studies. *Journal of Financial Economics,* 14, 3 – 31.

Chan, K. C., & Chen, N. F. (1991). Structural and return characteristics of small and large firms. The Journal of Finance, 46(4), 1467-1484.

Comment, R. (1986). *Price and volume activity before tender offers: market anticipation or insider trading?* Paper presented at the American Finance Association, New York.

Competition Commission South Africa ("CCSA"). (2014a). Merger and Acquisition Activity Update. [INTERNET]. Competition Commission South Africa. Available from http://www.compcom.co.za/merger-and-acquisition-activity-update-2/ (Accessed 23 June 2014).

Correia, C., and Uliana, E. (2004). Market segmentation and the cost of equity of companies listed on the Johannesburg Stock Exchange. *South African Journal of Accounting Research*, *18*(1), 65-86.

Creswell, J. W. (2003) Research Design: Qualitative, Quantitative and Mixed Methods Approaches, 2nd ed., Sage Publications, London.

De Bondt, W. F., & Thaler, R. H. (1987). Anomalies: A mean-reverting walk down Wall Street. The Journal of Economic Perspectives, 189-202.

De Long, J.B., Shleifer, A., Summers, L.H. and Waldmann, R.J. (1990). Positive feedback investment strategies and destabilizing rationale speculation. *Journal of Finance,* 45(2): 379-395.

Dennis, D. and McConnell, J.J. (1986). Corporate mergers and security returns. *Journal of Financial Economics,* 16(3): 143-187.

Fama, E. (1965). The Behavior of Stock-Market Prices. *The Journal of Business, 38-39.*

Fama, E. (1968). Risk, Return and Equilibrium: Some Clarifying Comments. *The Journal of Finance,* 29 – 40.

Fama, E. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance,* 45(2), 324–385.

Fama, E. (1991). Efficient Capital Markets: II. *The Journal of Finance,* 46(5), 1575 – 1617.

Fama, E.F. (1998). Market efficiency, long-term returns, and behavioural finance. *Journal of Financial Economics.* 49, 283-306.

Fama, E.F. and French, K.R. (1992). The cross-section of expected stock returns. *The Journal of Finance,* 47(2), 427–465.

Fama, E.F. and French, K.R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33, 3 – 56.

Fama, E.F. and French, K.R. (1996a). Multifactor Explanations of Asset Pricing Anomalies. *The Journal of Finance.* LI(1), 55-84.

Fama, E.F. and French, K.R. (1996b). The CAPM is Wanted, Dead or Alive. *The Journal of Finance.* LI(5), 1947-1958.

Fama, E.F. and French, K.R. (2004). The Capital Asset Pricing Model: Theory and Evidence. *Journal of Economic Perspectives,* 18(3), 25 – 46.

Fama, E.F., Fisher, L., Jensen, M.C. and Rall, R. (1969). The adjustment of stock prices to new information. *International Economic Review,* 10(1), 1-21.

Financial Services Board (FSB). (2004). The impact of South Africa's Insider Trading Regime. Johannesburg: FSB. Summary at ftp://ftp.fsb.co.za/public/insider/activities.pdf (accessed 10 May 2014).

Franks J, Harris R and Titman S. (1991). The postmerger share-price performance of acquiring firms. Journal of Financial Economics, 29(1), 81-96.

Friederich, S., Matatko, J., Gregory, A. and Tonks, I. (2002). Short-run Returns around the Trades of Corporate Insiders on the London Stock Exchange. *European Financial Management.* 8(1), 7-30.

Fuller, K., Netter, J., & Stegemoller, M. (2002). What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. The Journal of Finance, 57(4), 1763-1793.

Gao, Y. and Oler, D. (2004). *Trading in target stocks before takeover announcements*. Western Finance Association annual meeting, October 2004, Vancouver Canada. Vancouver: Western Finance Association: 1–47.

Gilbertson, B., and Goldberg, M. (1981). The market model and the Johannesburg Stock Exchange. *Investment Analysts Journal*, *17*, 40-42.

Greene, J.C., Caracelli, V.J., and Graham, W.F. (1989). Toward a Conceptual Framework for Mixed-Method Evaluation Designs. *Education Evaluation and Policy Analysis,* 11(3), 255-274.

Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. The American economic review, 393-408.

Guba, E. G. (Ed.). (1990). The paradigm dialog. Sage Publications.

Guba, E. G., and Lincoln, Y. S. (1987). The countenances of fourth-generation evaluation: Description, judgement and negotiation. *Palumbo, D., The politics of program evaluation. Newbury Park ua: Sage*, 202-234.

Gupta, A. and Misra, L. (1988). Illegal insider trading: Is it rampant before corporate takeover? *The Financial Review,* 23(4), 453–464.

Hintze, J.L. (2006). NCSS User's Guide. Kaysville, Utah: NCSS.

Jarrell, G.A. and Poulsen, A.B. (1989). Stock trading before the announcement of tender offers: Insider trading or market anticipation? *Journal of Law, Economics, & Organisation,* 5(2), 225–248.

Jayaraman, J., Frye, M.B. and Sabherwal, S. (2001). Informed trading around merger announcements: An empirical test using transaction volume and open interest in options market. *The Financial Review,* 37, 45-74.

Jayaraman, N., Mandelker, G., and Shastri, K. (1991). Market anticipation of merger activities: an empirical test. *Management and Decision Economics,* 12(6), 439-448.

Jegadeesh, N. and Titman, S. (1993). Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency. *Journal of Finance,* 48(1), 65-91.

Jegadeesh, N. and Titman, S. (2001). Profitability of Momentum Strategies: An Evaluation of Alternative Explanations. *Journal of Finance,* 48(1), 65-91.

Jensen, M. C. (1968). The performance of mutual funds in the period 1945–1964. The Journal of finance, 23(2), 389-416.

Jensen, M.C. (1978). Risk, the Pricing of Capital Assets and the Evaluation of Investment Portfolios. Journal of Business, 42, 167-247.

Jensen, M.C. (1988). Takeovers: Their Causes and Consequences. *Journal of Economic Perspectives,* 2(1), 21–48.

Jensen, M.C. and Ruback, R.S. (1983). The market for corporate control. *Journal of Financial Economics,* 11, 5–50.

Jick, T.D. (1979). Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly,* 24, 602-611.

Johannesburg Stock Exchange (Pty) Ltd ("JSE"). (2013) *Insider trading and other market abuses.* Summary at http://www.jse.co.za/docs/insider/insider_trading.pdf (accessed 20 May 2014).

Johnson, R. B., and Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, *33*(7), 14-26.

Jordan, B. D., Miller, T. W., and Dolvin, S.D. (2012). *Fundamentals of Investments: Valuation and Management,* (Sixth international edition). New York: McGraw-Hill

Keown, A.J. and Pinkerton, J.M. (1981). Merger Announcements and insider trading activity: An empirical investigation. *The Journal of Finance,* 36(4), 855–869.

Keown, A.J., Pinkerton, J.M., Young, L., and Hansen, R. (1985). Recent SEC prosecution and insider trading on forthcoming merger announcements. *Journal of Business Research,* 13(3), 329-338.

Kruger, R., and Van Rensburg, P. (2008). Evaluating and constructing equity benchmarks in the South African portfolio management context. Investment Analysts Journal, (67), 5-17.

Kruger, R., and Van Rensburg, P. (2008). Evaluating and constructing equity benchmarks in the South African portfolio management context. *Investment Analysts Journal*, (67), 5-17.

Laffont, J. and Maskin, E.S. (1990). The efficient market hypothesis and insider trading on the stock market. *Journal of political Economy,* 98(1), 70–93.

Lin, J. and Howe, J.S. (1990). Insider trading in the OTC market. *The Journal of finance,* XLV(4), 1273–1284.

Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *The Review of Economics and Statistics*, 47(1), 13-37.

MacKinlay, A.C. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature,* 35(1), 13-39.

Markowitz, H. (1952). Harry M. Markowitz. Portfolio selection, Journal of Finance, 7(1), 77-91.

Maxwell, S. E., and Delaney, H. D. (2004). *Designing experiments and analyzing data: A model comparison perspective* (Vol. 1). Psychology Press.

McWilliams, A. and Siegel, D. (1997). Event studies in managerial research: Theoretical and empirical issues. *Academy of Management Journal,* 40(3), 626–657.

Mikkelson, W. H., & Ruback, R. S. (1985). An empirical analysis of the interfirm equity investment process. Journal of financial economics, 14(4), 523-553.

Miles, M. B. and Huberman, A. M. (1984) *Qualitative Data Analysis,* Sage Publications Ltd, London.

Mossin, J. (1966). Equilibrium in a Capital Asset Market. *Econometrica,* 34(4), 768-783.

Mushidzhi, T.B. and Ward, M. (2004). Abnormal returns for cash vs. share funded acquisitions. *Investment Analysts Journal*, 60, 17–31.

Myburgh, A. and Davis, B. (2004). The impact of South Africa's Insider Trading Regime, A report for the Financial Services Board (pp. 1 – 33), Johannesburg, South Africa.

Neuendorf, K. (2002) The Content Analysis Guidebook, Sage Publications, London.

Ojah, K., Muhanji, S., and Myburg, A. (2008). Market reaction and equity market efficiency: A survey of the insider trading law in South Africa. *The African Finance Journal,* 10(2), 1-28.

Osborne, M. F. (1959). Brownian motion in the stock market. Operations research, 7(2), 145-173.

Phillips, D. C., & Burbules, N. C. (2000). *Postpositivism and educational research*. Rowman & Littlefield.

Popper, K. R. (1959). The logic of scientific discovery New York: Routledge.

Roll, R. (1978) Ambiguity when performance is measured by the security market line. *The Journal of Finance,* 33(4), 1051-1069.

Sanders, R. W., & Zdanowicz, J. S. (1992). Target firm abnormal returns and trading volume around the initiation of change in control transactions. Journal of Financial and Quantitative Analysis, 27(01), 109-129.

Schrag, F. (1992). In defense of positivist research paradigms. *Educational Researcher*, *21*(5), 5-8.

Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry. *Handbook of qualitative research*, *2*, 189-213.

Sharpe, W.F. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *The Journal of Finance,* 19(3), 425 – 442.

Shleifer, A. (2000). *Inefficient Markets: An introduction to Behavioural Finance*. Thesis, Oxford University Press.

Sieber, S. D. (1973). The integration of fieldwork and survey methods. *American journal of sociology*, 1335-1359.

Smit, C.J.B. (2005). *The impact of large acquisitions on the share price and operating financial performance of acquiring companies listed on the JSE*. MBA Thesis, Gordon Institute of Business Science.

Smit, C.J.B. and Ward, M.J.D. (2007). The impact of large acquisitions on the share price and operating financial performance of acquiring companies listed on the JSE. *Investment Analysts Journal.* 65, 5 – 14.

Smith, J. K. (1983). Quantitative versus qualitative research: An attempt to clarify the issue. *Educational researcher*, 6-13.

Strugnell, D., Gilbert, E., and Kruger, R. (2011). Beta, size and value effects on the JSE, 1994-2007. *Investment Analysts Journal*, (74), 1-17.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches* (Vol. 46). Sage.

Tashakkori, A., & Teddlie, C. (Eds.). (2010). *Sage handbook of mixed methods in social & behavioral research*. Sage.

Thaver, K. (2009). *Abnormal volumes traded as an indication of insider trading in JSE listed companies.* MBA Thesis, Gordon Institute of Business Science.

Thaver, K. and Ward, M. (2011). *Abnormal volumes traded as an indication of insider trading in JSE listed companies. Journal for Studies in Economics & Econometrics.* 35(1), 59 – 77.

Tobin, J. (1958). Liquidity preference as behavior towards risk. The review of economic studies, 65-86.

Treynor, J. L. (1965). How to rate management of investment funds. Harvard business review, 43(1), 63-75.

Treynor, J.L., and Mazny, K.K. (1966). Can Mutual Funds Outguess the Market? *Harvard Business Review,* 131 – 136.

van der Plaas, F. (2007). *The occurrence of insider trading in target share of JSE listed companies prior to takeover announcements*. MBA Thesis, Gordon Institute of Business Science.

Van Rensburg, P. (2002). Market segmentation on the Johannesburg Stock Exchange II. *Journal For Studies In Economic And Econometrics*, *26*(1), 83-99.

Van Rensburg, P. and Slaney, K. (1997). Market segmentation on the Johannesburg Stock Exchange*, Journal of Studies in Economics and Econometrics*, 21(3):1-23.

van Rensburg, P., & Robertson, M. (2004). Explaining the cross-section of returns in South Africa: Attributes or factor loadings?. Journal of Asset Management, 4(5), 334-347.

Wilson, C. (2011, 4 May 2011). Insider Trading. *Moneyweb.* Retrieved 21 May, 2014, from http://www.sharenet.co.za/marketviews/article/Insider_Trading/1692

Zarowin, P. (1989). Size, seasonality, and stock market overreaction. Journal of Financial and Quantitative analysis, 25(01), 113-125.

APPENDIX A: TABLE 1

Table 1: Sample Details

#	Target Company	Acquiring Company	Announcement Date
1	Acucap Properties Ltd	Growthpoint Properties Ltd	14-Apr-14
2	Sycom Property Fund Ltd	Growthpoint Properties Ltd	14-Apr-14
3	Kerry Group Ltd	Adcorp Holdings Ltd	03-Apr-14
4	Control Instruments Group Ltd	Torre Industrial Holdings Ltd	12-Dec-13
5	Wits Gold Resources Ltd	Sibanye Gold Ltd	11-Dec-13
6	B&W Instrumentation & Electrical Ltd	Elb Group Ltd	04-Nov-13
7	AFGRI Ltd	AgriGroupe Holdings (Pty) Ltd	27-Sep-13
8	Kagiso Media Ltd	Kagiso Tiso Holdings (Pty) Ltd	10-Sep-13
9	Allied Technologies Ltd	Allied Electronics Corporation Ltd	17-May-13
10	Adcock Ingram Holdings Ltd	The Bidvest Group Ltd	22-Mar-13
11	Amalgamated Appliance Holdings Ltd	The Bidvest Group Ltd	28-Nov-12
12	Cipla Medpro SA Ltd	CIPLA India	21-Nov-12
13	Cape Empowerment Ltd	Management Buy-Out	06-Nov-12
14	Hardware Warehouse Ltd	Steinhoff Doors & Building (Pty) Ltd	26-Sep-12
15	Avusa Ltd	Mvelaphanda Group Ltd	12-Jun-12
16	Ceramic Industries Ltd	Italtile Ltd	28-May-12
17	O-Line Holdings Ltd	OBO Bettermann	22-Feb-12
18	Mercantile Bank Holdings Ltd	Caixa Geral de Depositos S.A.	05-Jan-12
19	IQuad Group Ltd	Sasfin Holdings Ltd	12-Sep-11
20	Optimum Coal Holdings Ltd	Glencore International AG & Lexshell	26-Aug-11
21	Vox Telecom Ltd	Lereko Metier & Investec	14-Jul-11
22	Paracon Ltd	Adcorp Holdings Ltd	06-Jul-11
23	Metorex Ltd	Jinchuan Group Ltd	05-Jul-11
24	Universal Industries Corporation Ltd	Ethos Private Equity	27-May-11
25	Metorex Ltd	Vale S.A.	08-Apr-11
26	Freeworld Coatings Ltd	Kansai Paint Co Ltd	14-Dec-10
27	Glenrand M.I.B Ltd	Aon South Africa (Pty) Ltd	09-Dec-10
28	Dimension Data Ltd	Nippon Telegraph & Telephone Corp.	15-Jul-10
29	CIC Holdings Ltd	Imperial Holdings Limted	13-Jul-10
30	a.b.e. Construction Chemicals Ltd	Chryso Southern Africa (Pty) Ltd	25-May-10
31	Cape Empowerment Trust Ltd	Dynamic Cables RSA Ltd	08-Dec-09
32	Mutual & Federal Insurance Co Ltd	Old Mutual Plc	14-Oct-09
33	TWP Holdings Ltd	Basil Read Holdings Ltd	11-Aug-09

34	Celcom Group Ltd	Management Buy-Out	15-Dec-08
35	Enviroserv Holdings Ltd	Absa Capital Private Equity	05-Aug-08
36	Liberty Holdings Ltd	Standard Bank Group Ltd	27-May-08
37	Bytes Technology Group Ltd	Allied Electronics Corporation Ltd	24-Oct-07
38	Tiger Automotive Ltd	Ethos Private Equity	18-Oct-07
39	Ellerine Holding Ltd	African Bank Investments Ltd	21-Aug-07
40	Diamond Core Resources Ltd	BRC Diamond Corporation	04-Jun-07
41	Brandcorp Holdings Ltd	Ethos Private Equity	25-Apr-07
42	Eland Platinum Holdings Ltd	Xstrata Plc	12-Apr-07
43	Barplats Investments Ltd	Eastern Platinum Ltd	01-Mar-07
44	CBS Property Portfolio Ltd	Public Investment Corporation	02-Feb-07
45	Primedia Ltd	Red Pen 2 General Trading (Pty) Ltd	10-Jan-07
46	Peermont Global Ltd	Opalton Investments (Pty) Ltd	11-Oct-06
47	Paramount Property Fund Ltd	Growthpoint Properties Ltd	20-Oct-06
48	Edgars Consolidated Stores Ltd	Bain Capital	17-Oct-06
49	Metboard Properties Ltd	Growthpoint Properties Ltd	27-Feb-06
50	Venfin Ltd	Vodafone Holdings SA (Pty) Ltd	03-Nov-05
51	Connection Group Holdings Ltd	JDG Group Ltd	01-Aug-05
52	Bridgestone Firestone Maxiprest Ltd	Bridgestone SA Holdings (Pty) Ltd	27-Jul-05
53	Aflease Gold & Uranium Ltd	Southern Cross Resources Inc.	05-Jul-05
54	Capital Alliance Holdings Ltd	Liberty Group Ltd	02-Dec-04
55	Grintek Ltd	SAAB South Africa (Proprietary) Ltd	10-Nov-04
56	United Services Technologies Ltd	Supply Solutions Ltd	29-Oct-04
57	Amalgamated Beverage Industries Ltd	SABMIller Plc	21-Jul-04

APPENDIX B: TABLE 2

Table 2: Realised Returns (vs Benchmarks)

t	Sample	All Share	Sectors
-21	0.00%	0.00%	0.00%
-20	-0.07%	-0.04%	-0.05%
-19	0.35%	-0.11%	-0.08%
-18	0.28%	0.18%	0.17%
-17	-0.37%	0.09%	0.21%
-16	-0.15%	-0.09%	0.18%
-15	1.08%	-0.03%	-0.28%
-14	-0.19%	0.06%	0.01%
-13	0.84%	0.16%	0.08%
-12	1.26%	-0.06%	0.09%
-11	0.34%	0.07%	0.21%
-10	0.36%	0.37%	0.35%
-9	0.52%	-0.05%	0.11%
-8	1.04%	0.20%	0.28%
-7	0.29%	0.08%	0.10%
-6	0.14%	0.05%	0.18%
-5	0.18%	0.34%	0.06%
-4	0.83%	0.14%	0.28%
-3	0.69%	0.16%	0.24%
-2	0.88%	0.18%	0.43%
-1	1.22%	0.00%	0.22%
0	1.11%	-0.10%	0.20%
1	**11.27%**	**0.10%**	**0.67%**
2	1.07%	0.33%	0.31%
3	-0.51%	0.15%	0.15%
4	0.70%	0.20%	0.37%
5	-0.08%	-0.10%	0.14%

APPENDIX C: TABLE 3

Table 3 presents the sample's average daily Abnormal Return and the Average Cumulative Abnormal Return. AR_S and $ACAR_S$ use the JSE Sector Index of each target company as the market proxy when determining expected returns, and AR_A and $ACAR_A$ use the All Share Index as market proxy.

Table 3: Abnormal Returns (Sample Average)

Event Window	Average Abnormal Returns		Average Cumulative Abnormal Returns	
t	AR_S	AR_A	$ACAR_S$	$ACAR_A$
-21	0.00%	0.00%	0.00%	0.00%
-20	-0.12%	-0.01%	-0.12%	-0.01%
-19	0.42%	0.46%	0.30%	0.45%
-18	0.10%	0.21%	0.40%	0.65%
-17	-0.66%	-0.47%	-0.26%	0.18%
-16	-0.24%	-0.09%	-0.50%	0.09%
-15	1.29%	1.16%	0.79%	1.25%
-14	-0.16%	-0.26%	0.63%	1.00%
-13	0.81%	0.79%	1.44%	1.78%
-12	1.25%	1.21%	2.69%	2.99%
-11	0.31%	0.48%	3.00%	3.47%
-10	0.34%	0.20%	3.34%	3.68%
-9	0.57%	0.47%	3.91%	4.15%
-8	0.92%	0.98%	4.83%	5.13%
-7	0.21%	0.09%	5.04%	5.22%
-6	0.05%	0.18%	5.09%	5.40%
-5	0.11%	0.16%	5.20%	5.56%
-4	0.82%	0.90%	6.02%	6.46%
-3	0.53%	0.59%	6.54%	7.05%
-2	0.62%	0.71%	7.16%	7.76%
-1	0.92%	1.06%	8.08%	8.82%
0	0.94%	1.14%	9.03%	9.96%
1	**10.74%**	**11.32%**	**19.77%**	**21.28%**
2	1.01%	1.02%	20.78%	22.30%
3	-0.66%	-0.57%	20.12%	21.73%
4	0.59%	0.57%	20.71%	22.30%
5	-0.03%	-0.16%	20.67%	22.14%

APPENDIX D: TABLE 4

Table 4: CAR per takeover

#	Target Company	CAR Before Event	AR Event Day	CAR After Event
1	Eland Platinum Holdings Ltd	66.10%	8.01%	1.30%
2	B&W Instrumentation & Electrical Ltd	37.28%	33.09%	1.04%
3	Control Instruments Group Ltd	30.51%	8.45%	0.36%
4	Aflease Gold & Uranium Ltd	26.23%	-5.64%	0.28%
5	TWP Holdings Ltd	25.88%	9.52%	-0.94%
6	Optimum Coal Holdings Ltd	24.67%	3.77%	7.39%
7	CIC Holdings Ltd	23.56%	9.35%	-3.64%
8	United Services Technologies Ltd	22.55%	4.15%	2.02%
9	a.b.e. Construction Chemicals Ltd	19.37%	11.57%	0.41%
10	Connection Group Holdings Ltd	18.87%	10.51%	0.71%
11	Barplats Investments Ltd	17.54%	10.39%	-0.07%
12	Diamond Core Resources Ltd	16.94%	-0.12%	-0.25%
13	Metorex Ltd	16.72%	-0.79%	-0.30%
14	Kelly Group Ltd	16.36%	6.70%	0.54%
15	O-Line Holdings Ltd	16.04%	4.09%	0.07%
16	AFGRI Ltd	15.14%	12.48%	0.30%
17	Enviroserv Holdings Ltd	15.10%	12.88%	0.33%
18	Glenrand M.I.B Ltd	11.57%	5.29%	0.08%
19	Amalgamated Appliance Holdings Ltd	11.51%	6.52%	1.10%
20	Metorex Ltd	11.16%	7.77%	-0.99%
21	Cipla Medpro SA Ltd	10.60%	9.52%	1.88%
22	Freeworld Coatings Ltd	9.77%	10.67%	0.04%
23	Witws Gold Resources Ltd	9.16%	27.64%	-6.18%
24	Venfin Ltd	8.35%	23.31%	-1.70%
25	Bridgestone Firestone Maxiprest Ltd	7.83%	9.46%	-0.58%
26	Ceramic Industries Ltd	7.49%	11.79%	-0.04%
27	Paracon Ltd	7.38%	1.56%	0.11%
28	Peermont Global Ltd	6.91%	1.76%	2.03%
29	Capital Alliance Holdings Ltd	6.79%	10.95%	-1.28%
30	CBS Property Portfolio Ltd	5.94%	0.13%	0.19%
31	Bytes Technology Group Ltd	5.82%	12.54%	1.13%
32	Primedia Ltd	5.68%	14.00%	0.19%
33	Acucap Properties Ltd	5.50%	3.69%	1.58%
34	Metboard Properties Ltd	5.50%	8.42%	1.27%
35	Amalgamated Beverage Industries Ltd	4.83%	12.61%	0.04%
36	Brandcorp Holdings Ltd	4.78%	10.11%	0.66%
37	IQuad Group Ltd	4.15%	16.49%	-0.19%
38	Mutual & Federal Insurance Co. Ltd	3.21%	17.04%	0.11%

39	Paramount Property Fund Ltd	1.67%	4.06%	1.16%
40	Sycom Property Fund Ltd	1.60%	7.72%	5.44%
41	Vox Telecom Ltd	1.46%	12.46%	-0.05%
42	Dimension Data Ltd	1.42%	1.96%	0.14%
43	Tiger Automotive Ltd	1.25%	4.17%	0.08%
44	Avusa Ltd	0.74%	8.37%	0.76%
45	Hardware Warehouse Ltd	0.63%	18.01%	-0.51%
46	Edgars Consolidated Stores Ltd	0.33%	8.48%	0.36%
47	Ellerine Holding Ltd	0.31%	13.83%	1.50%
48	Adcock Ingram Holdings Ltd	-0.53%	8.78%	0.15%
49	Cape Empowerment Ltd	-0.71%	23.89%	0.47%
50	Grintek Ltd	-1.22%	19.44%	0.43%
51	Kagiso Media Ltd	-1.81%	15.55%	0.42%
52	Universal Industries Corporation Ltd	-2.05%	11.86%	0.12%
53	Mercantile Bank Holdings Ltd	-2.96%	18.47%	0.76%
54	Liberty Holdings Ltd	-3.53%	18.78%	0.23%
55	Cape Empowerment Trust Ltd	-12.76%	16.04%	1.68%
56	Celcom Group Ltd	-14.44%	15.30%	0.46%
57	Allied Technologies Ltd	-17.64%	25.40%	0.07%

APPENDIX E: TABLE 5

Table 5: Sub-Sample Interview Respondents

#	Target Company	Acquiring Company	Interview
1	Eland Platinum Holdings Ltd	Xstrata Plc	Yes
2	B&W Instrumentation & Electrical Ltd	Elb Group Ltd	Yes
3	Control Instruments Group Ltd	Torre Industrial Holdings Ltd	Yes
4	Aflease Gold & Uranium Ltd	Southern Cross Resources Inc.	Yes
5	TWP Holdings Ltd	Basil Read Holdings Ltd	Yes
6	Optimum Coal Holdings Ltd	Glencore International AG & Lexshell	No
7	CIC Holdings Ltd	Imperial Holdings Limted	Yes
8	United Services Technologies Ltd	Supply Solutions Ltd	Yes
9	a.b.e. Construction Chemicals Ltd	Chryso Southern Africa (Pty) Ltd	Yes
10	Connection Group Holdings Ltd	JDG Group Ltd	Yes
11	Barplats Investments Ltd	Eastern Platinum Ltd	Yes
12	Diamond Core Resources Ltd	BRC Diamond Corporation	Yes
13	Metorex Ltd	Vale S.A.	No
14	Kelly Group Ltd	Adcorp Holdings Ltd	Yes
15	O-Line Holdings Ltd	OBO Bettermann	No
16	AFGRI Ltd	AgriGroupe Holdings (Pty) Ltd	Yes
17	Enviroserv Holdings Ltd	Absa Capital Private Equity	Yes
18	Glenrand M.I.B Ltd	Aon South Africa (Pty) Ltd	Yes
19	Amalgamated Appliance Holdings Ltd	The Bidvest Group Ltd	No
20	Metorex Ltd	Jinchuan Group Ltd	No
21	Cipla Medpro SA Ltd	CIPLA India	Yes
22	Freeworld Coatings Ltd	Kansai Paint Co Ltd	Yes
23	Witwatersrand Gold Resources Ltd	Sibanye Gold Ltd	Yes
24	Venfin Ltd	Vodafone Holdings SA (Pty) Ltd	Yes
25	Bridgestone Firestone Maxiprest Ltd	Bridgestone SA Holdings (Pty) Ltd	Yes
26	Ceramic Industries Ltd	Italtile Ltd	Yes
27	Paracon Ltd	Adcorp Holdings Ltd	Yes
28	Peermont Global Ltd	Opalton Investments (Pty) Ltd	No
29	Capital Alliance Holdings Ltd	Liberty Group Ltd	No
30	CBS Property Portfolio Ltd	Public Investment Corporation	No
31	Bytes Technology Group Ltd	Allied Electronics Corporation Ltd	Yes
32	Primedia Ltd	Red Pen 2 General Trading (Pty) Ltd	Yes
33	Acucap Properties Ltd	Growthpoint Properties Ltd	Yes
34	Metboard Properties Ltd	Growthpoint Properties Ltd	Yes

APPENDIX F: TABLE 8

Table 8: Sector Indices

#	Target Company	Index Name
1	Acucap Properties Ltd	FTSE/JSE SA Listed Property (J253)
2	Sycom Property Fund Ltd	FTSE/JSE SA Listed Property (J253)
3	Kerry Group Ltd	FTSE/JSE Support Services (J279)
4	Control Instruments Group Ltd	FTSE/JSE Automobiles & Parts (J335)
5	Witwatersrand Gold Resources Ltd	FTSE/JSE Gold Mining (J150)
6	B&W Instrumentation & Electrical Ltd	FTSE/JSE Construction & Materials (J235)
7	AFGRI Ltd	FTSE/JSE Food Producers (J357)
8	Kagiso Media Ltd	FTSE/JSE Media (J555)
9	Allied Technologies Ltd	FTSE/JSE Mobile Telecommunications (J657)
10	Adcock Ingram Holdings Ltd	FTSE/JSE Pharmaceuticals & Biotechnology (J457)
11	Amalgamated Appliance Holdings Ltd	FTSE/JSE Consumer Goods (J530)
12	Cipla Medpro SA Ltd	FTSE/JSE Pharmaceuticals & Biotechnology (J457)
13	Cape Empowerment Ltd	FTSE/JSE Equity Investment Instruments (J898)
14	Hardware Warehouse Ltd	FTSE/JSE General Retailers (J537)
15	Avusa Ltd	FTSE/JSE Media (J555)
16	Ceramic Industries Ltd	FTSE/JSE Construction & Materials (J235)
17	O-Line Holdings Ltd	FTSE/JSE Construction & Materials (J235)
18	Mercantile Bank Holdings Ltd	FTSE/JSE Banks (J835)
19	IQuad Group Ltd	FTSE/JSE Support Services (J279)
20	Optimum Coal Holdings Ltd	FTSE/JSE Coal Mining (J151)
21	Vox Telecom Ltd	FTSE/JSE Telecommunication (J560)
22	Paracon Ltd	FTSE/JSE Software & Computer Services (J953)
23	Metorex Ltd	FTSE/JSE Mining (J177)
24	Universal Industries Corporation Ltd	FTSE/JSE Industrial Engineering (J275)
25	Metorex Ltd	FTSE/JSE Mining (J177)
26	Freeworld Coatings Ltd	FTSE/JSE Industrials (J520)
27	Glenrand M.I.B Ltd	FTSE/JSE Nonlife Insurance (J853)
28	Dimension Data Ltd	FTSE/JSE Technology (J590)
29	CIC Holdings Ltd	FTSE/JSE Support Services (J279)
30	a.b.e. Construction Chemicals Ltd	FTSE/JSE Construction & Materials (J235)
31	Cape Empowerment Trust Ltd	FTSE/JSE Equity Investment Instruments (J898)
32	Mutual & Federal Insurance Company Ltd	FTSE/JSE Nonlife Insurance (J853)
33	TWP Holdings Ltd	FTSE/JSE Construction & Materials (J235)
34	Celcom Group Ltd	FTSE/JSE General Retailers (J537)
35	Enviroserv Holdings Ltd	FTSE/JSE Support Services (J279)
36	Liberty Holdings Ltd	FTSE/JSE Life Insurance (J857)
37	Bytes Technology Group Ltd	FTSE/JSE Technology (J590)
38	Tiger Automotive Ltd	FTSE/JSE General Retailers (J537)
39	Ellerine Holding Ltd	FTSE/JSE General Retailers (J537)

40	Diamond Core Resources Ltd	FTSE/JSE Mining (J177)
41	Brandcorp Holdings Ltd	FTSE/JSE General Retailers (J537)
42	Eland Platinum Holdings Ltd	FTSE/JSE Platinum & Precious Metals (J153)
43	Barplats Investments Ltd	FTSE/JSE Platinum & Precious Metals (J153)
44	CBS Property Portfolio Ltd	FTSE/JSE SA Listed Property (J253)
45	Primedia Ltd	FTSE/JSE Media (J555)
46	Peermont Global Ltd	FTSE/JSE Travel & Leisure (J575)
47	Paramount Property Fund Ltd	FTSE/JSE SA Listed Property (J253)
48	Edgars Consolidated Stores Ltd	FTSE/JSE General Retailers (J537)
49	Metboard Properties Ltd	FTSE/JSE SA Listed Property (J253)
50	Venfin Ltd	FTSE/JSE Financials (J580)
51	Connection Group Holdings Ltd	FTSE/JSE General Retailers (J537)
52	Bridgestone Firestone Maxiprest Ltd	FTSE/JSE Consumer Goods (J530)
53	Aflease Gold & Uranium Resources Ltd	FTSE/JSE Mining (J177)
54	Capital Alliance Holdings Ltd	FTSE/JSE Financials (J580)
55	Grintek Ltd	FTSE/JSE Industrials (J520)
56	United Services Technologies Ltd	FTSE/JSE Industrials (J520)
57	Amalgamated Beverage Industries Ltd	FTSE/JSE Consumer Goods (J530)

APPENDIX G: INTERVIEW INFORMATION & CONSENT FORM

The Graduate School of Business Administration
University of the Witwatersrand
2 St David's Place, Parktown,
Johannesburg, 2193,
South Africa
PO Box 98, WITS, 2050
Website: www.wbs.ac.za



MM FINANCE & INVESTMENT INTERVIEW CONSENT FORM

INFORMATION SHEET AND CONSENT FORM

Who I am
My name is Justin Mitchell. I am conducting research for the purpose of completing my Master of Management in Finance and Investment at Wits Business School.

What I am doing
I have conducted the first part of my research and found that shares in JSE-listed target companies often earn abnormal returns in the days preceding the public announcement of a planned takeover. It is unclear (academically) whether these occurrences of abnormal returns are as a result of a) explainable legal market activity or b) trading in the target shares by parties in possession of "leaked" information pertaining to the planned takeover announcement. My study aims to resolve whether the occurrences of abnormal returns are as a result of "legal market activity" or if they otherwise infer the "leakage of information in relation to the takeover".

Your participation
I am asking you whether you will allow me to conduct one interview with you. If you agree, I will ask you to participate in one interview for approximately one hour. I am also asking you to give me permission to tape record the interview. I tape record interviews so that I can accurately record what is said.

Please understand that **your participation is voluntary** and you are not being forced to take part in this study. The choice of whether to participate or not, is yours alone. If you choose not take part, you will not be affected in any way whatsoever. If you agree to participate, you may stop participating in the research at any time and tell me that you don't want to continue. If you do this there will also be no penalties and you will not be prejudiced in any way.

Confidentiality
Any study records that identify you will be kept confidential. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including my academic supervisor/s. (All of these people are required to keep your identity confidential.)

All study records will be destroyed after the completion and marking of my thesis. I will refer to you by a code number or pseudonym (another name) in the thesis and any further publication.

Who to contact if you have been harmed or have any concerns
This research has been approved by the Wits Business School. If you have any complaints about ethical aspects of the research or feel that you have been harmed in any way by participating in this study, please contact the Research Office Manager at the Wits Business School, Mmabatho Leeuw. Mmabatho.leeuw@wits.ac.za

CONSENT

I hereby agree to participate in research on the "Effectiveness of Insider Trading Law in South Africa's Equity Market: The Mergers and Acquisitions Example". I understand that I am participating freely and without being forced in any way to do so. I also understand that I can stop participating at any point should I not want to continue and that this decision will not in any way affect me negatively.

I understand that this is a research project whose purpose is not necessarily to benefit me personally in the immediate or short term.

I understand that my participation will remain confidential.

……..
Signature of participant **Date**:……..

I hereby agree to the tape-recording of my participation in the study.

……..
Signature of participant **Date**:……..

APPENDIX H: INTERVIEW QUESTIONS

The Graduate School of Business Administration
University of the Witwatersrand
2 St David's Place, Parktown,
Johannesburg, 2193,
South Africa
PO Box 98, WITS, 2050
Website: www.wbs.ac.za



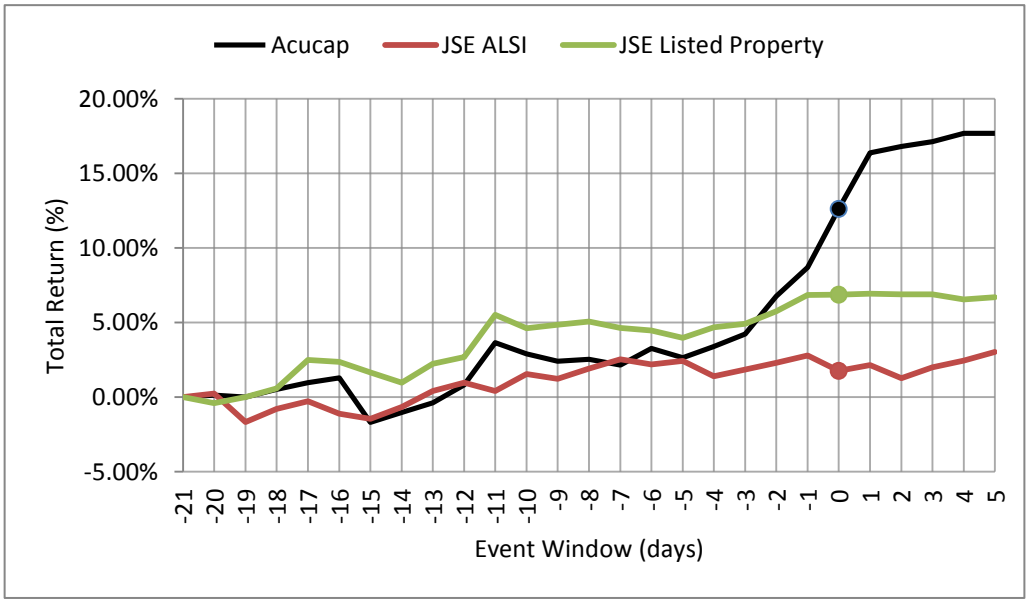
MM FINANCE & INVESTMENT INTERVIEW QUESTIONS

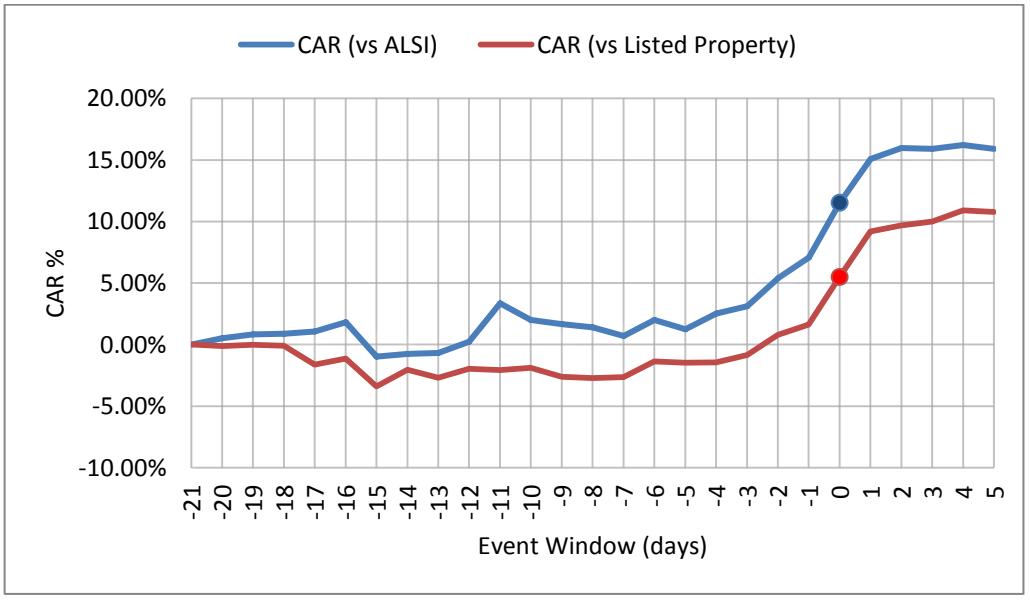
Discussion Questions: [Acquiring] & [Target] transaction

1. Please will you provide an overview of the transaction and the process that [Acquiring] undertook in planning and executing the transaction?
2. Was the transaction confidential inside information prior to its announcement via SENS on [date]? i.e. Was there an announcement prior to the [date] SENS announcement which resulted in the planned transaction being anticipated by the market?
3. Are there any confounding events (i.e. dividend announcement) that you are aware of that may have caused changes in prices of the shares of [Target] in the 21 trading days preceding the announcement via SENS on [date]?
4. Did [Acquiring] purchase any shares in [Target] during the 21 trading days preceding the announcement via SENS on [date]? If so, 1) how many? 2) Was this purchase information made public?
5. Please will you provide an explanation for the existence of abnormal returns in [Target] preceding the [date] SENS announcement. Are you aware of any possible legally permissible reasons for the abnormal returns?
6. Is it possible that the price-sensitive information may have been obtained by persons who may have traded on the information, in the 21 trading days preceding the announcement via SENS on [date]?

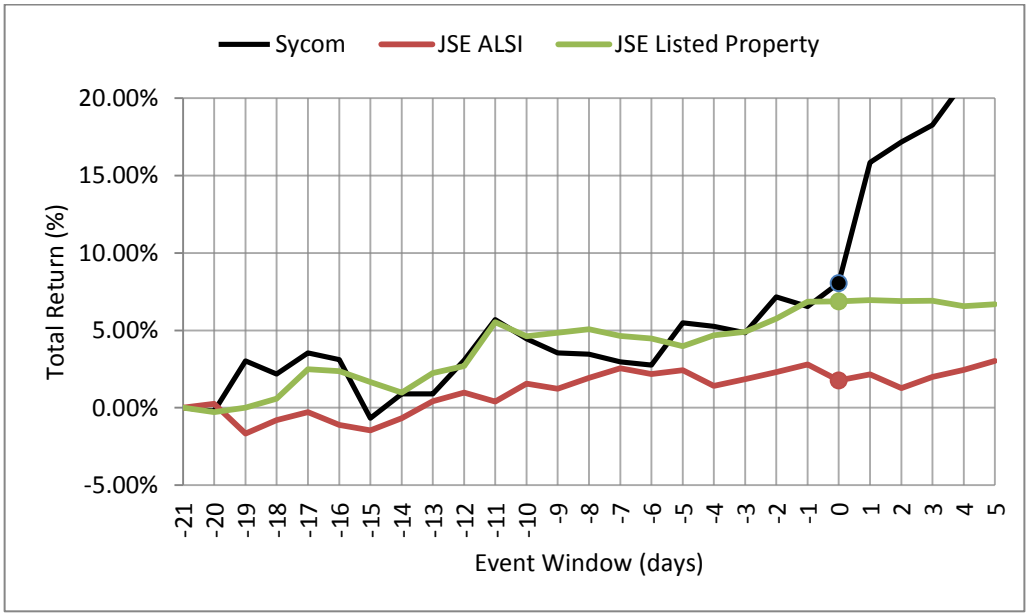
APPENDIX I: GRAPHICAL ILLUSTRATION PER TAKEOVER

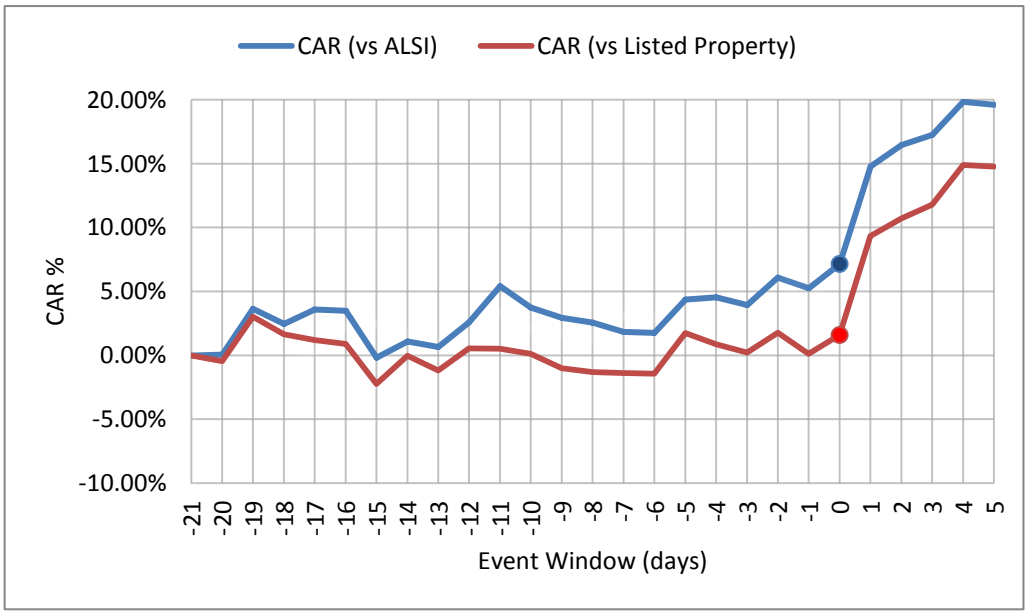
#	Target Company	Acquiring Company	Announcement Date
1	Acucap Properties Ltd	Growthpoint Properties Ltd	14-Apr-14



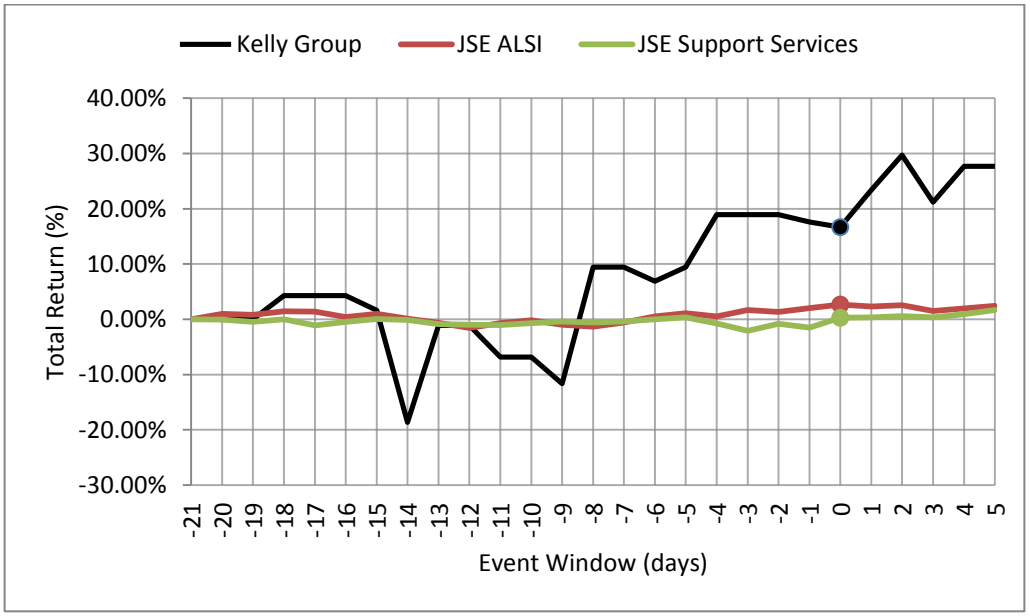


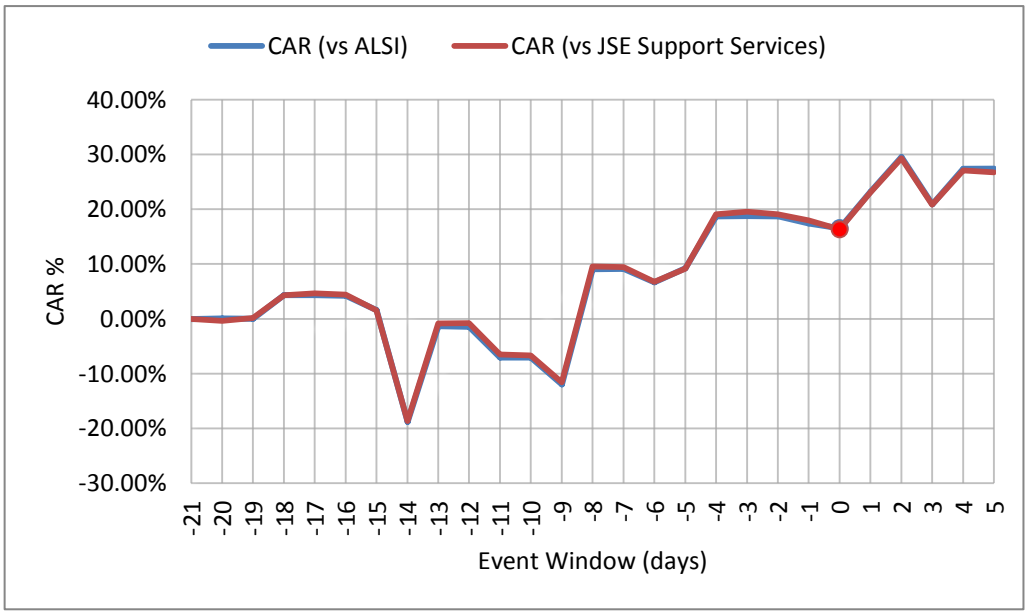
#	Target Company	Acquiring Company	Announcement Date
2	Sycom Property Fund Ltd	Growthpoint Properties Ltd	14-Apr-14



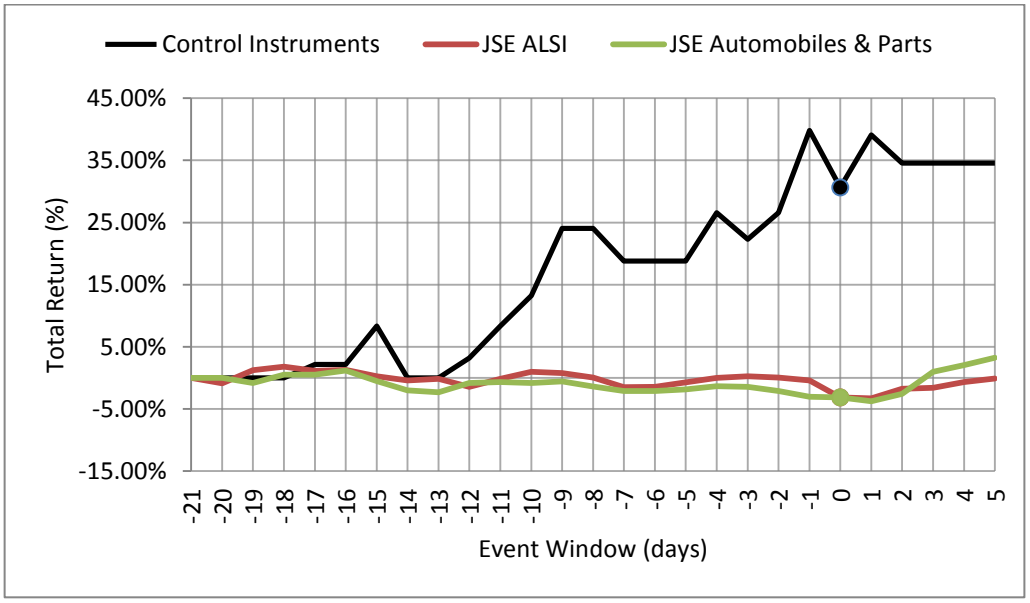


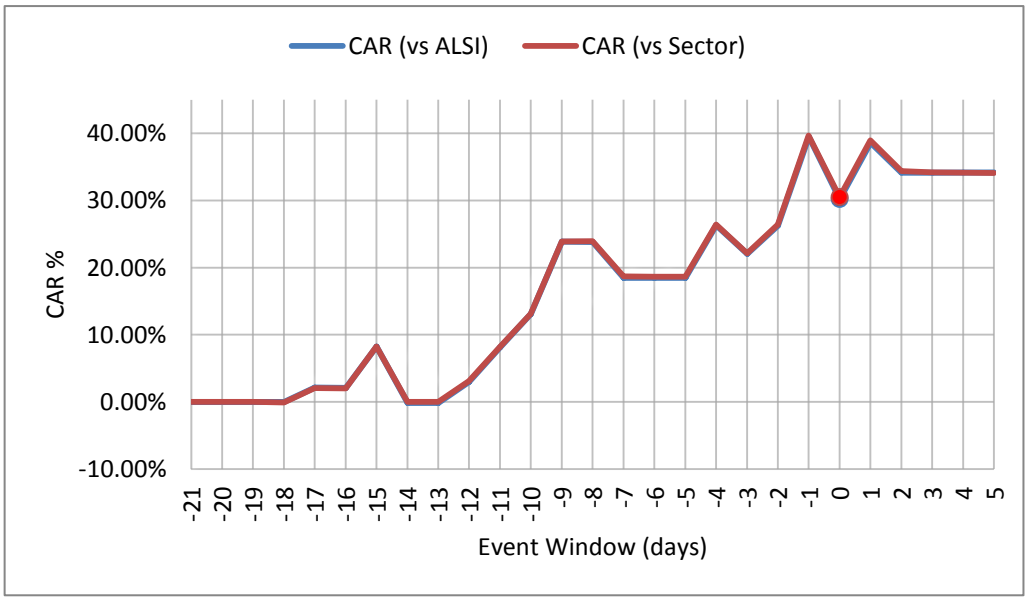
#	Target Company	Acquiring Company	Announcement Date
3	Kerry Group Ltd	Adcorp Holdings Ltd	03-Apr-14



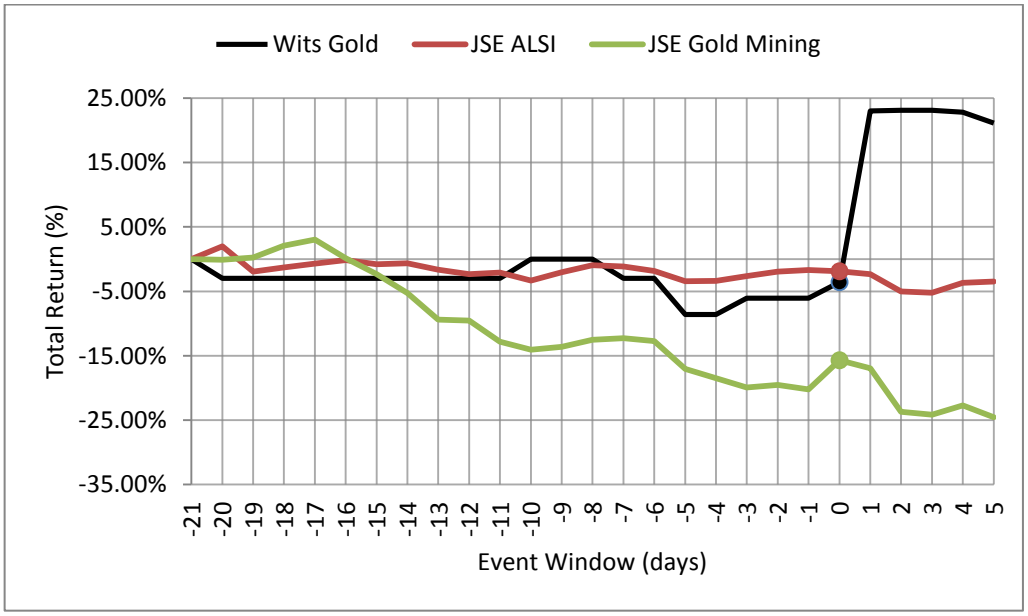


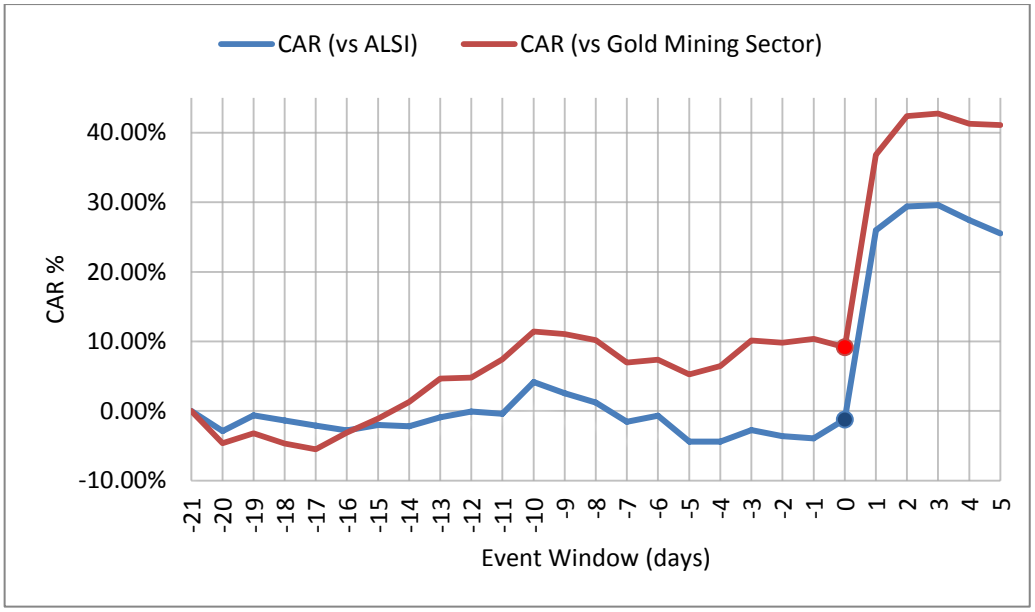
#	Target Company	Acquiring Company	Announcement Date
4	Control Instruments Group Ltd	Torre Industrial Holdings Ltd	12-Dec-13



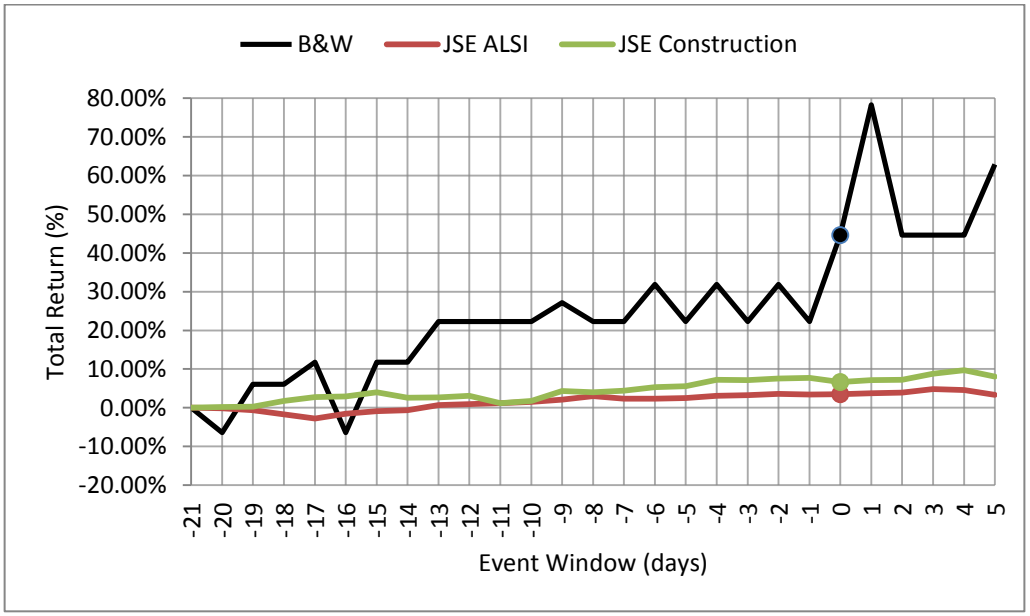


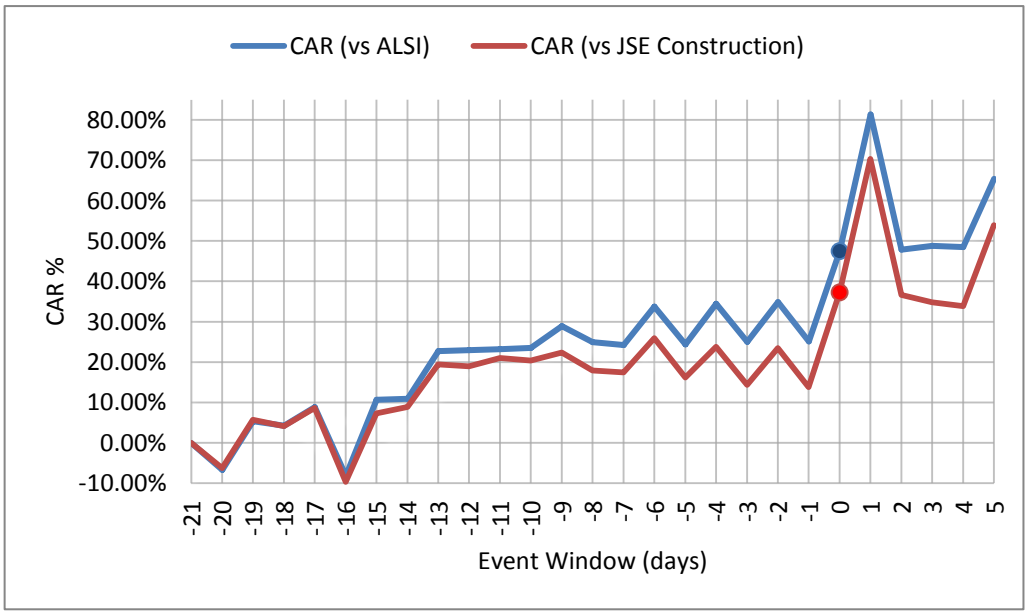
#	Target Company	Acquiring Company	Announcement Date
5	Wits Gold Resources Ltd	Sibanye Gold Ltd	11-Dec-13



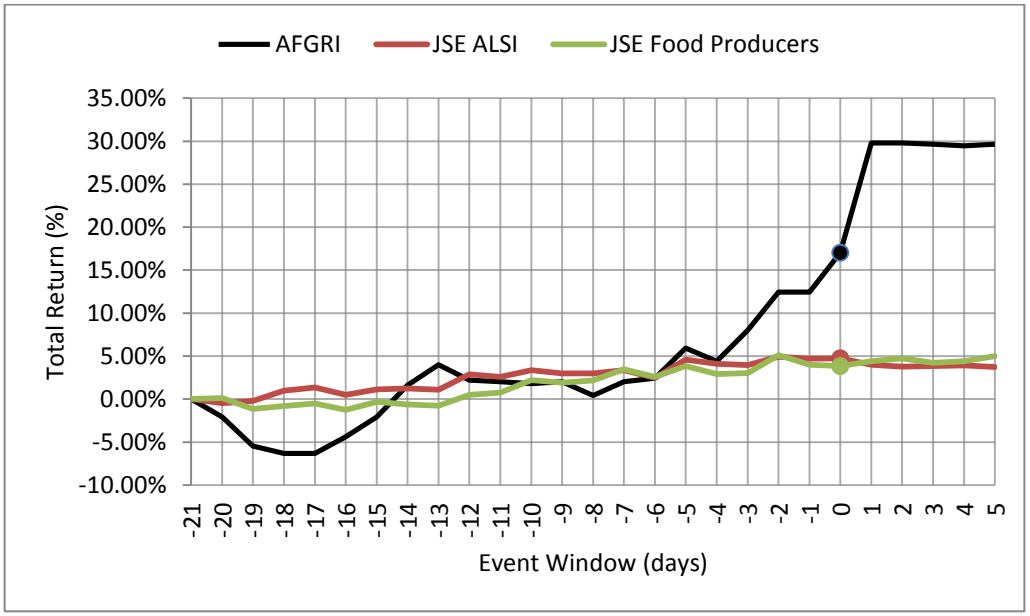


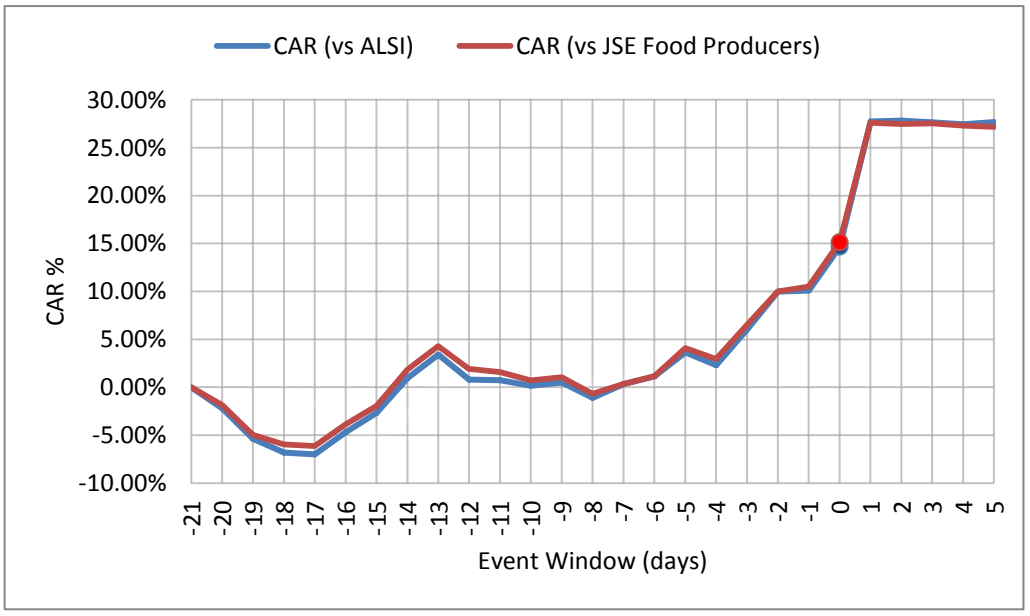
#	Target Company	Acquiring Company	Announcement Date
6	B&W Instrumentation & Electrical Ltd	Elb Group Ltd	04-Nov-13



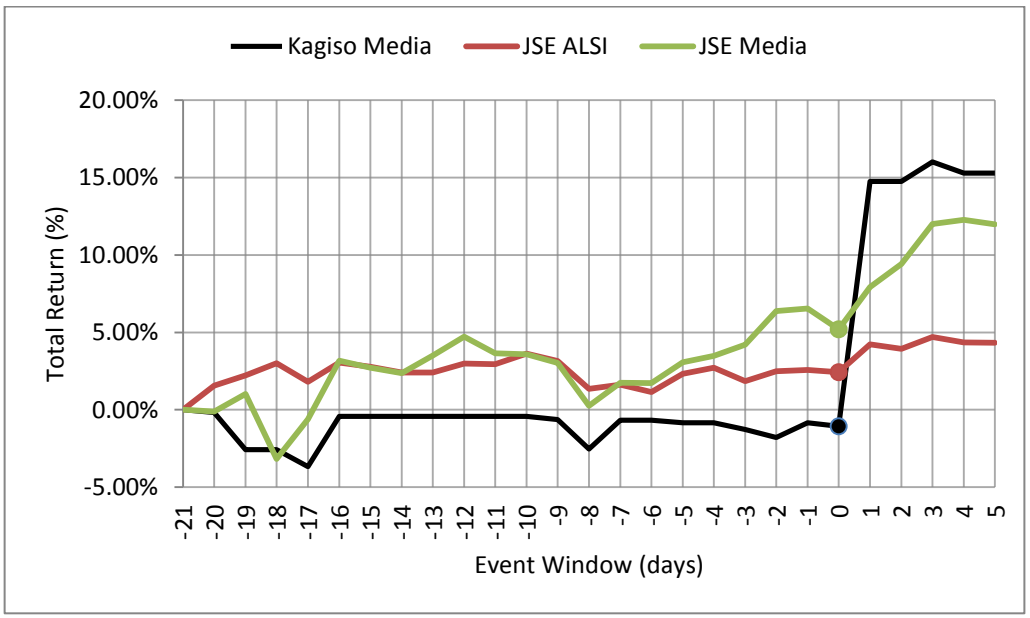


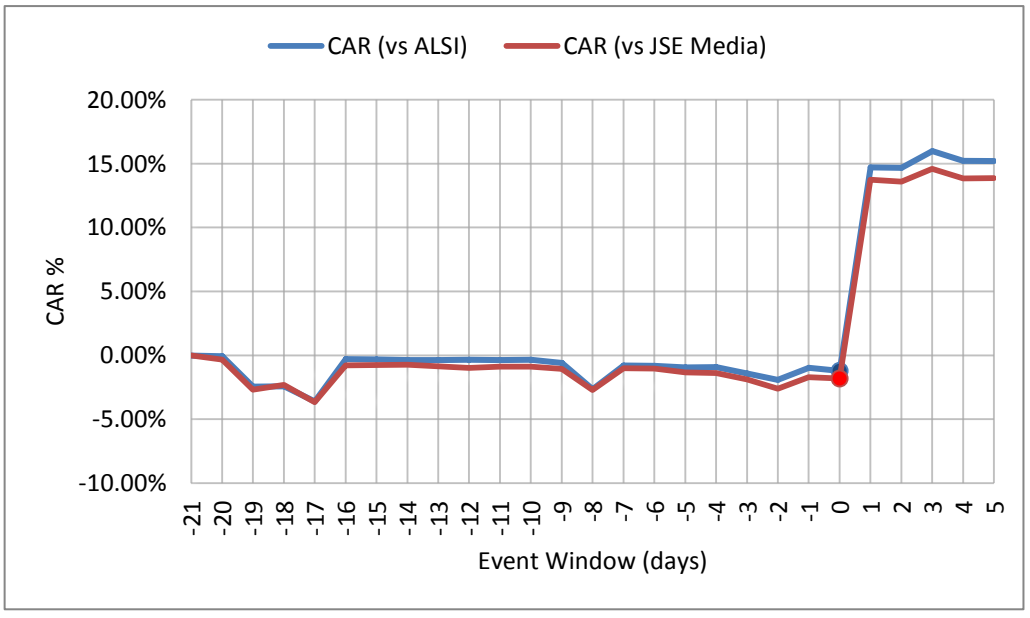
#	Target Company	Acquiring Company	Announcement Date
7	AFGRI Ltd	AgriGroupe Holdings (Pty) Ltd	27-Sep-13



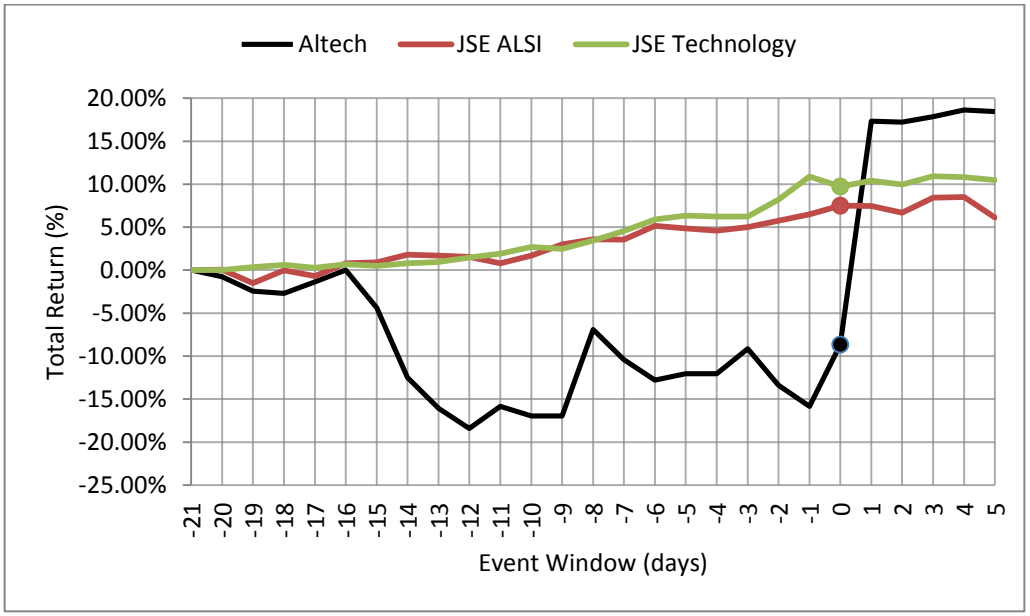


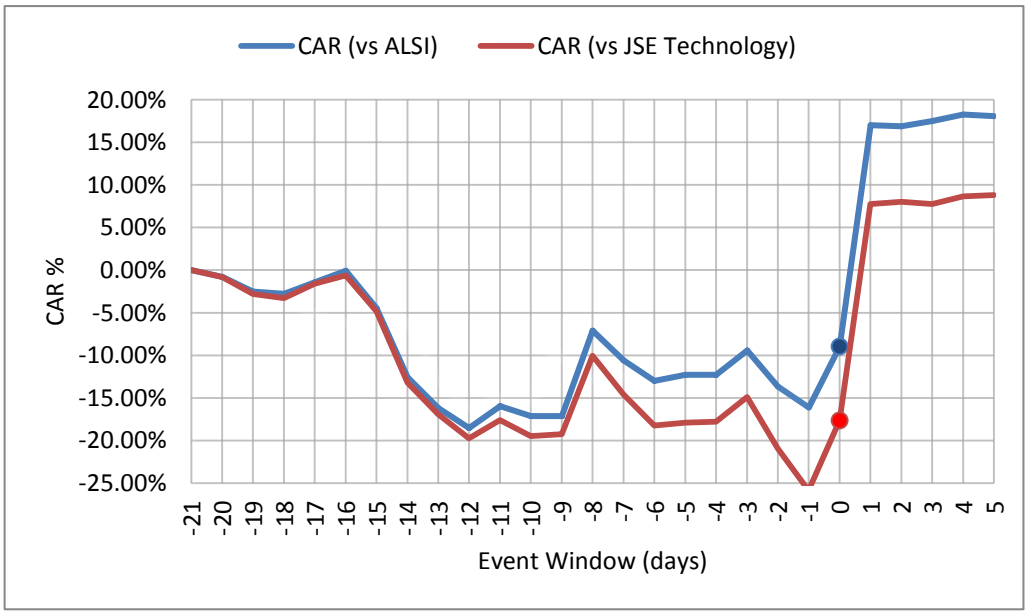
#	Target Company	Acquiring Company	Announcement Date
8	Kagiso Media Ltd	Kagiso Tiso Holdings (Pty) Ltd	10-Sep-13



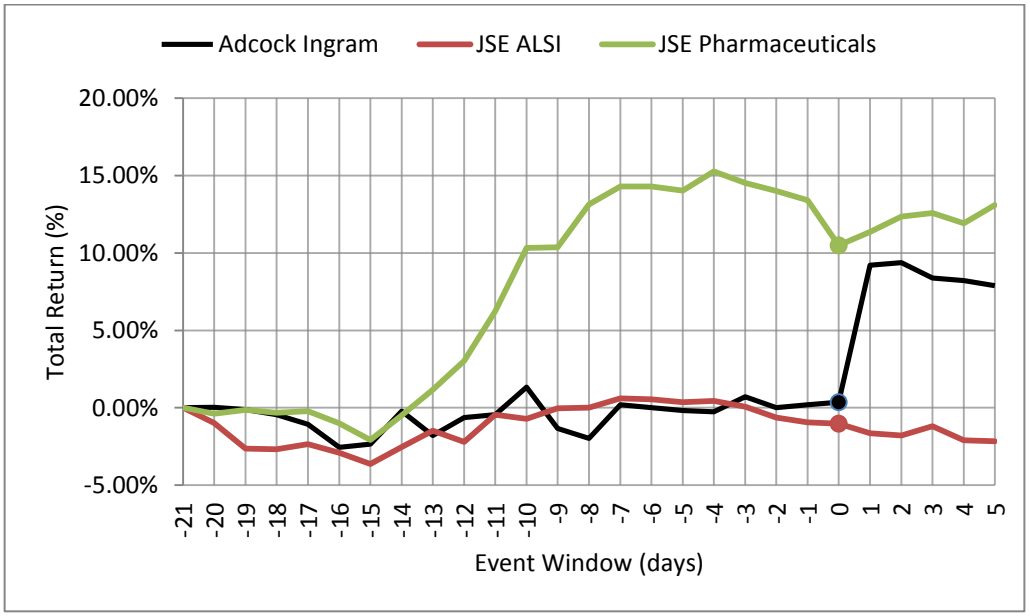


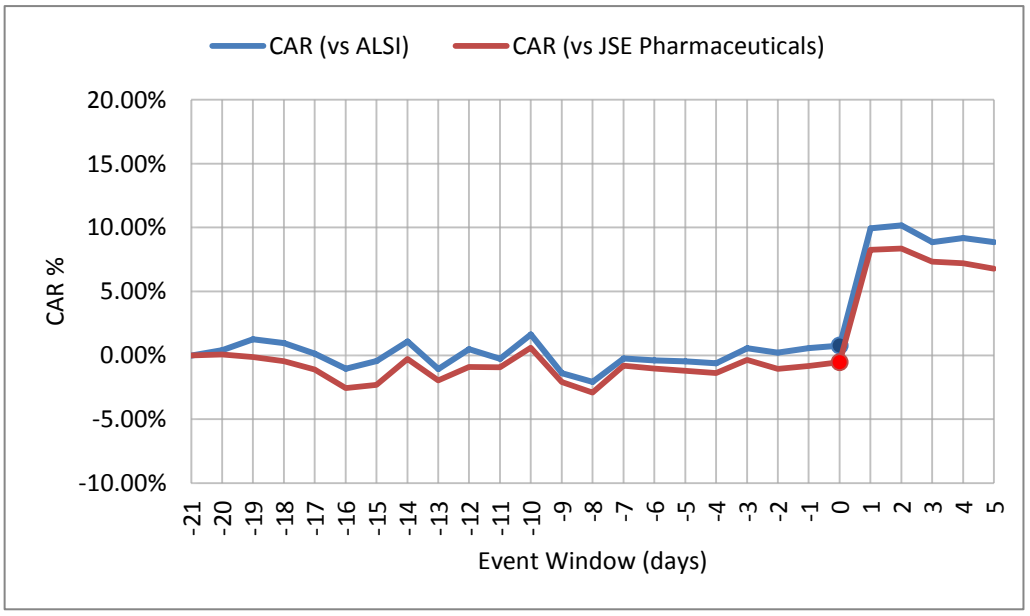
#	Target Company	Acquiring Company	Announcement Date
9	Allied Technologies Ltd	Allied Electronics Corporation Ltd	17-May-13



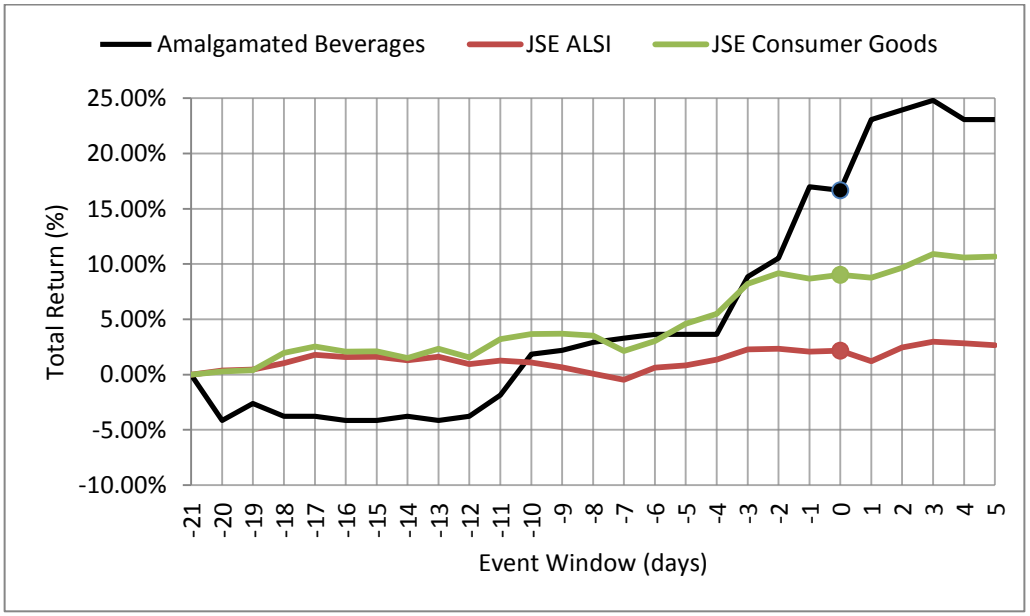


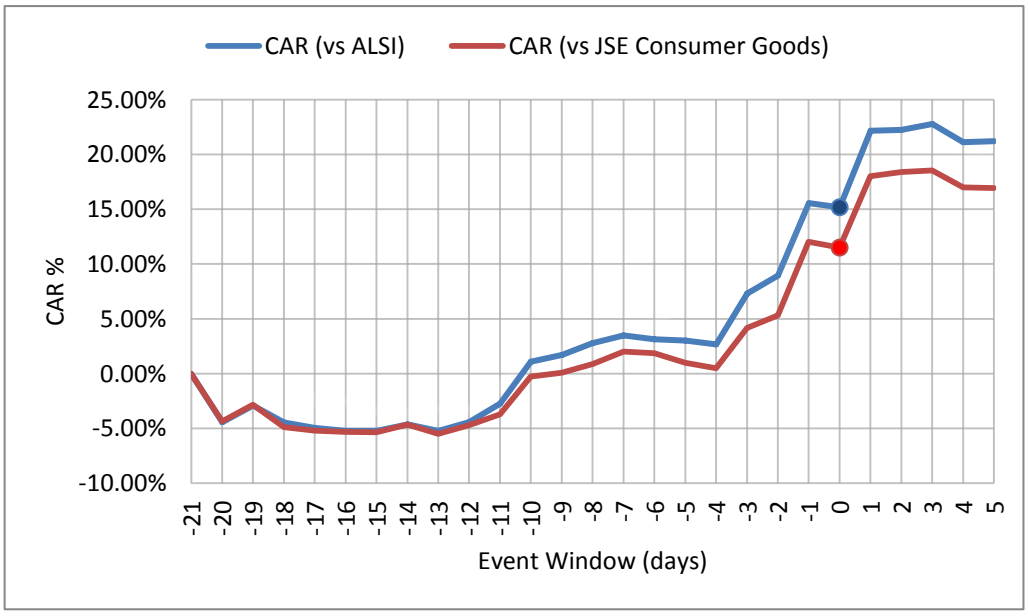
#	Target Company	Acquiring Company	Announcement Date
10	Adcock Ingram Holdings Ltd	The Bidvest Group Ltd	22-Mar-13



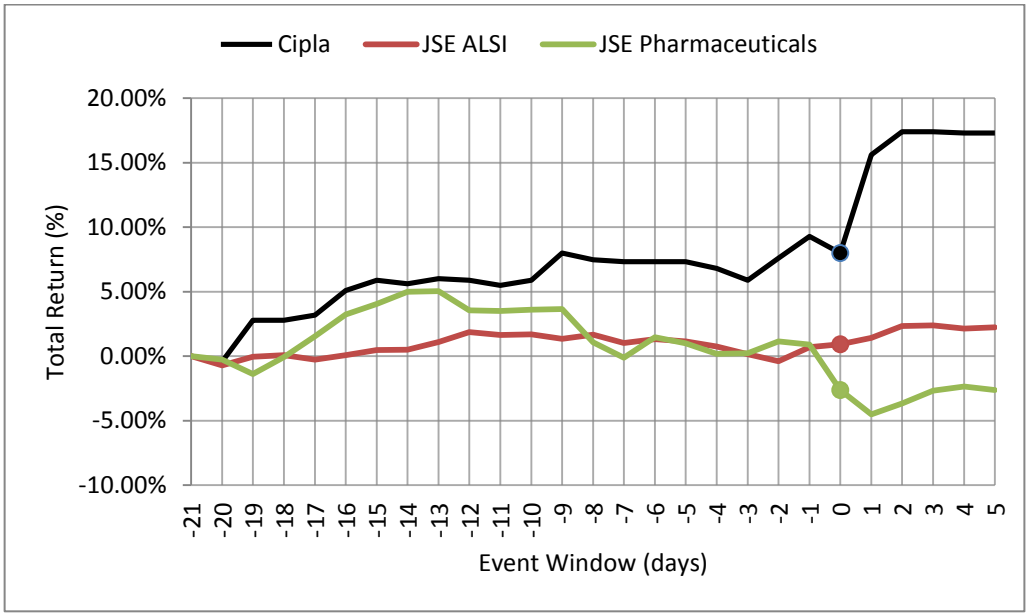


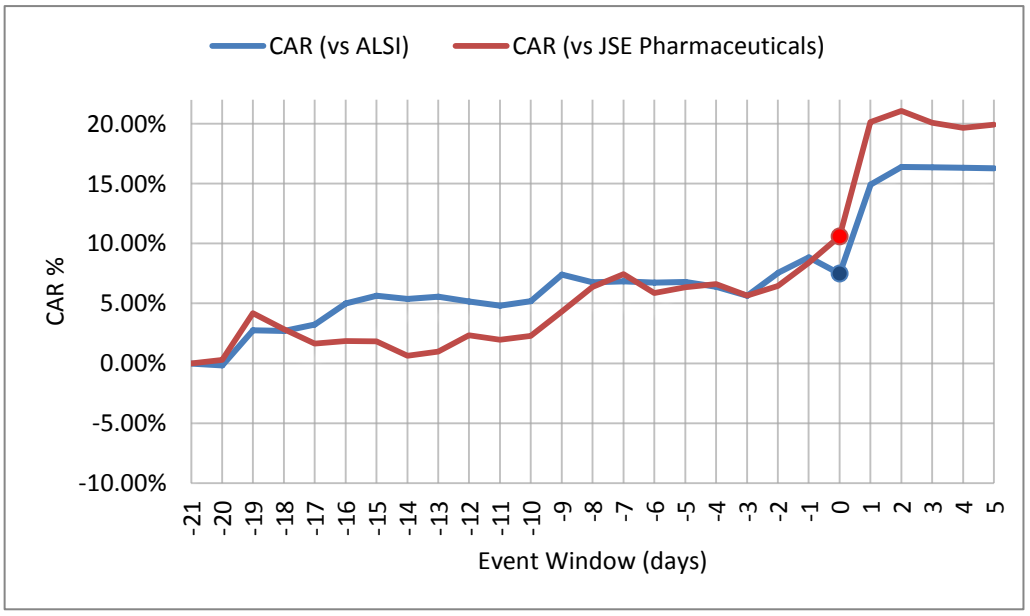
#	Target Company	Acquiring Company	Announcement Date
11	Amalgamated Appliance Holdings Ltd	The Bidvest Group Ltd	28-Nov-12



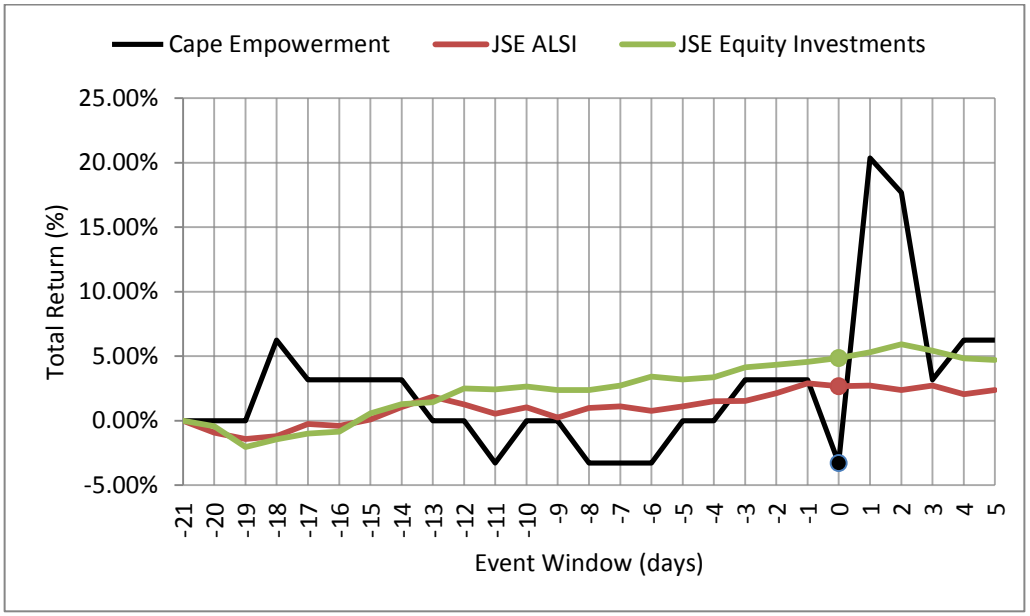


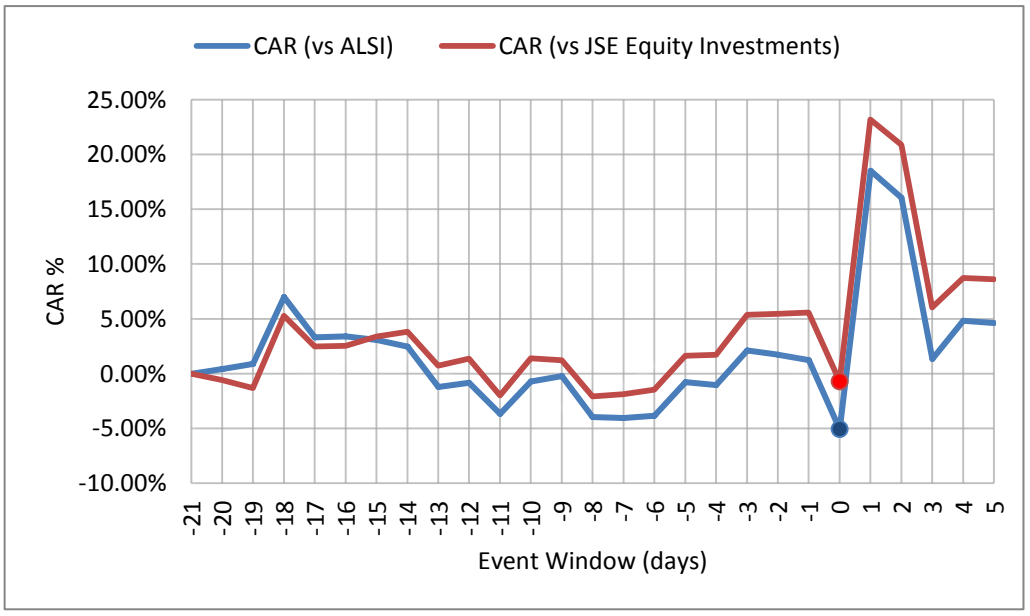
#	Target Company	Acquiring Company	Announcement Date
12	Cipla Medpro SA Ltd	CIPLA India	21-Nov-12



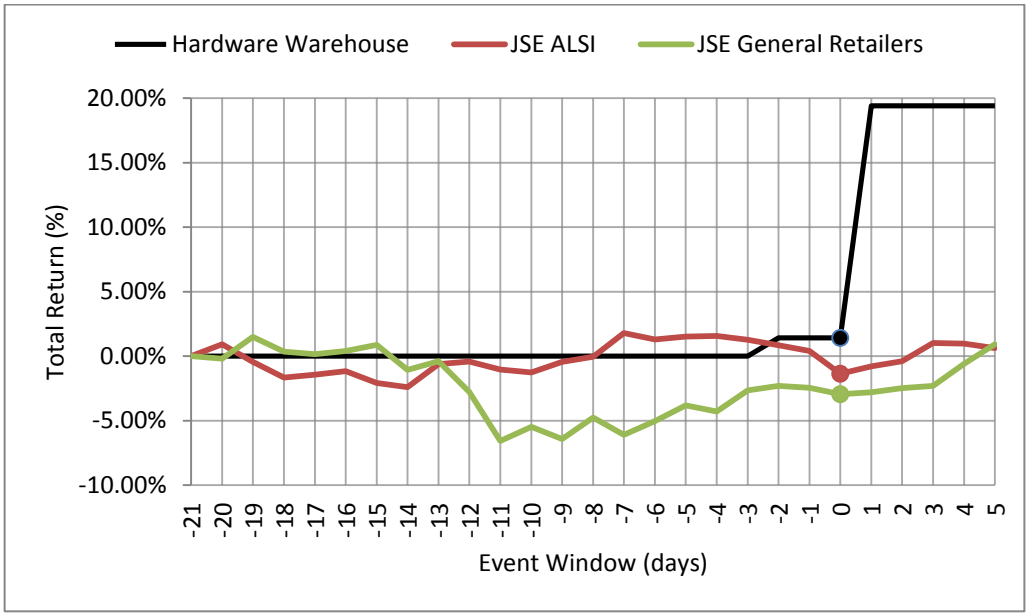


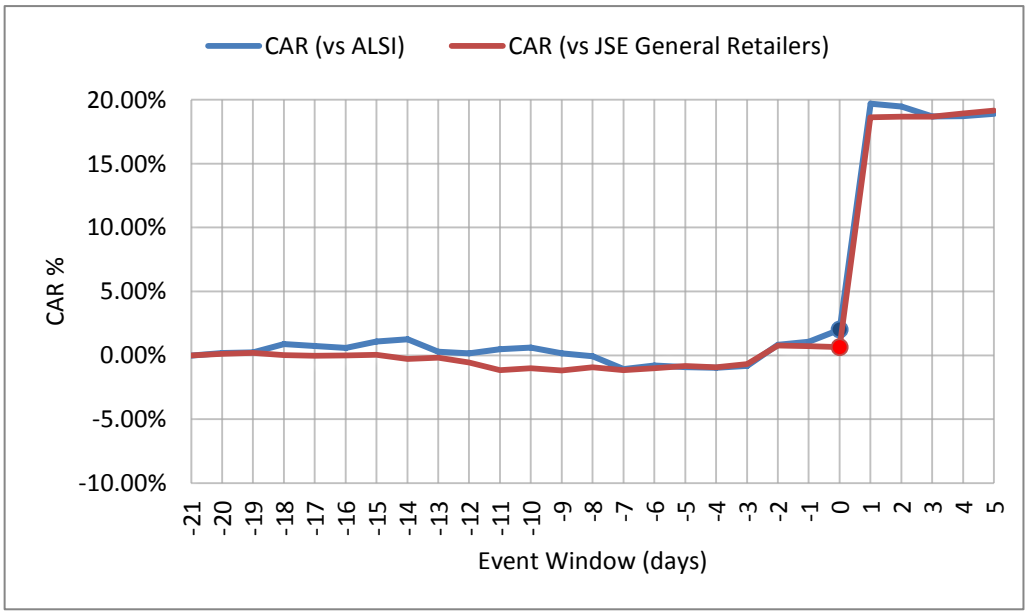
#	Target Company	Acquiring Company	Announcement Date
13	Cape Empowerment Ltd	Management Buy-Out	06-Nov-12



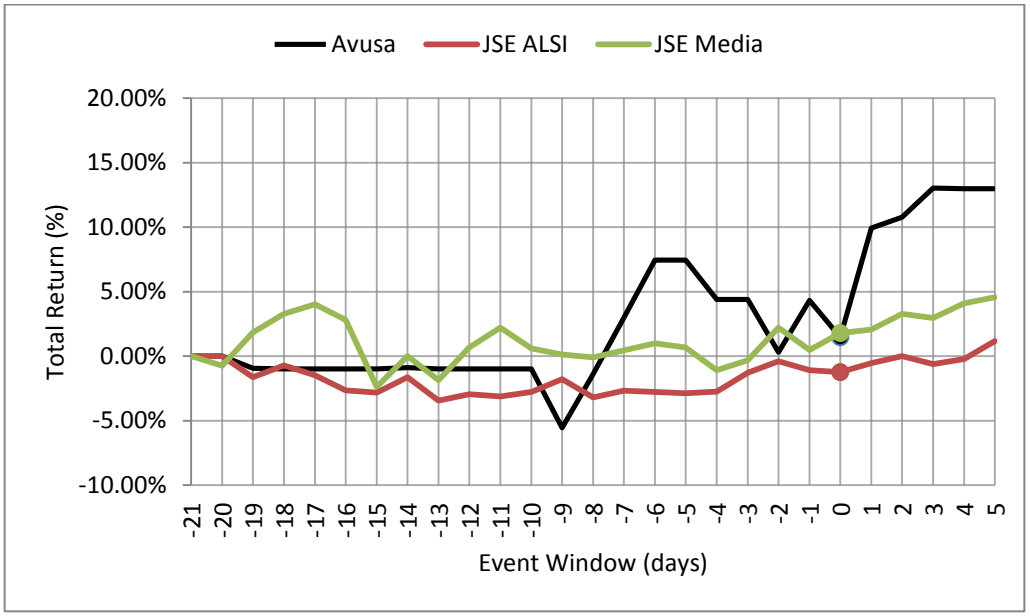


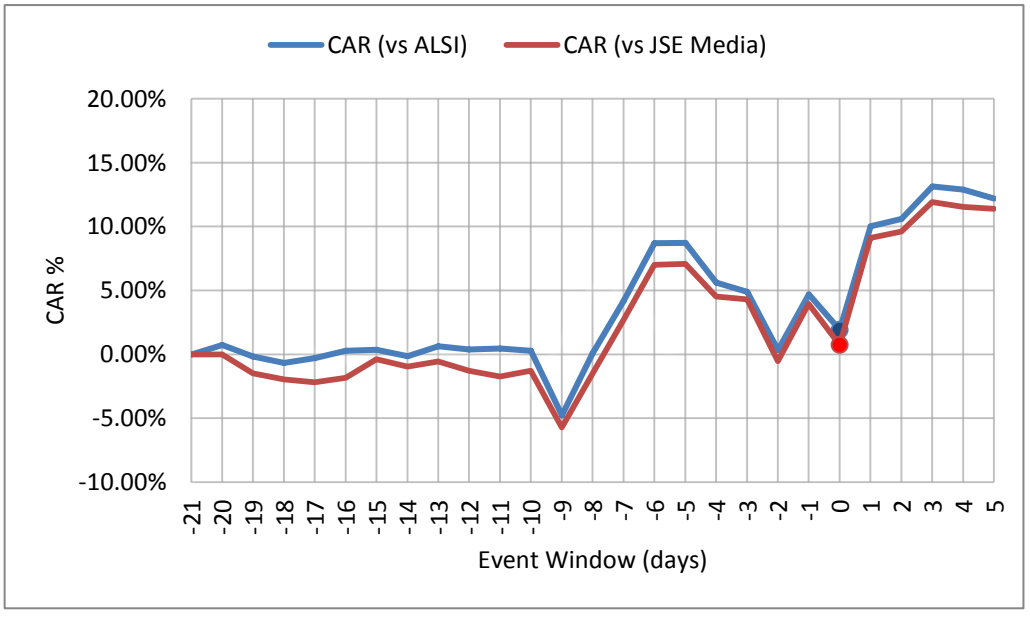
#	Target Company	Acquiring Company	Announcement Date
14	Hardware Warehouse Ltd	Steinhoff Doors & Building (Pty) Ltd	26-Sep-12



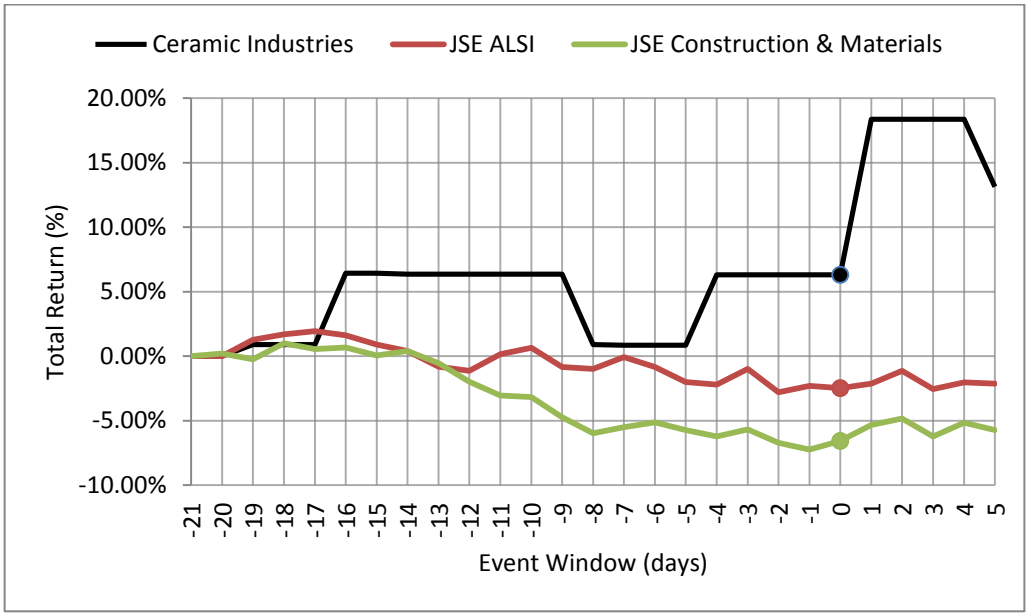


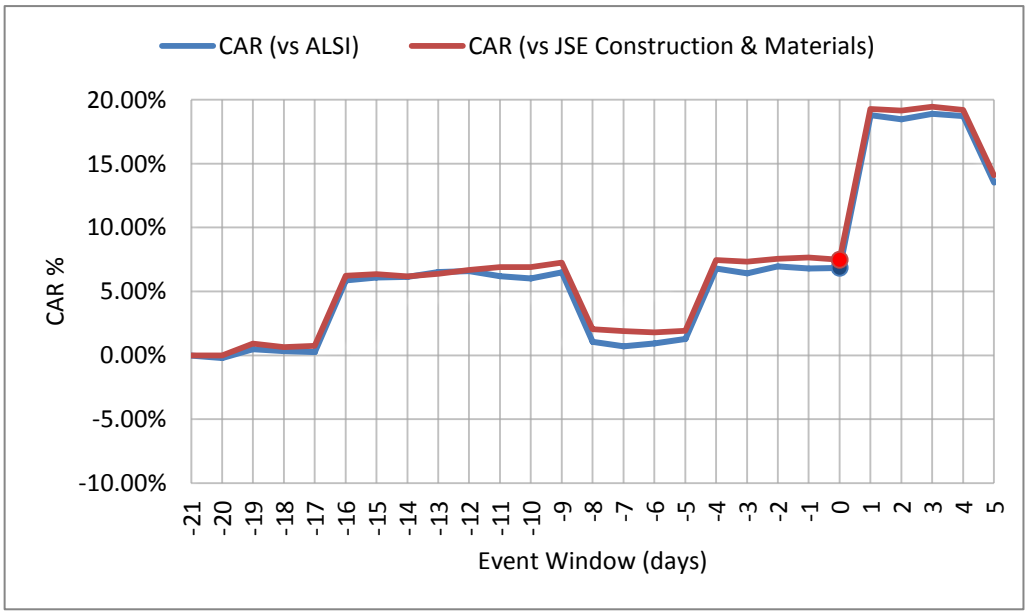
#	Target Company	Acquiring Company	Announcement Date
15	Avusa Ltd	Mvelaphanda Group Ltd	12-Jun-12



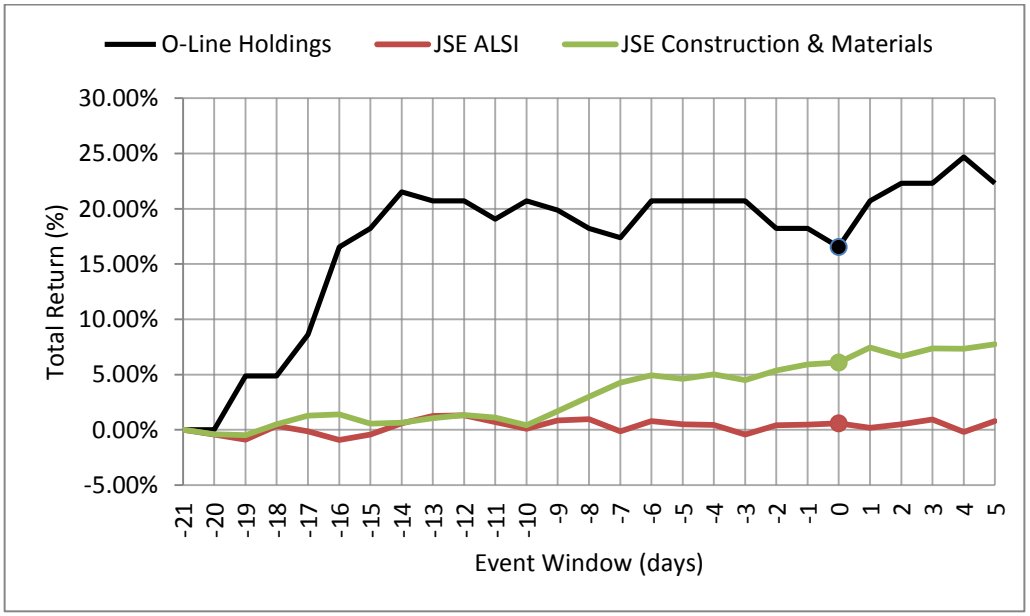


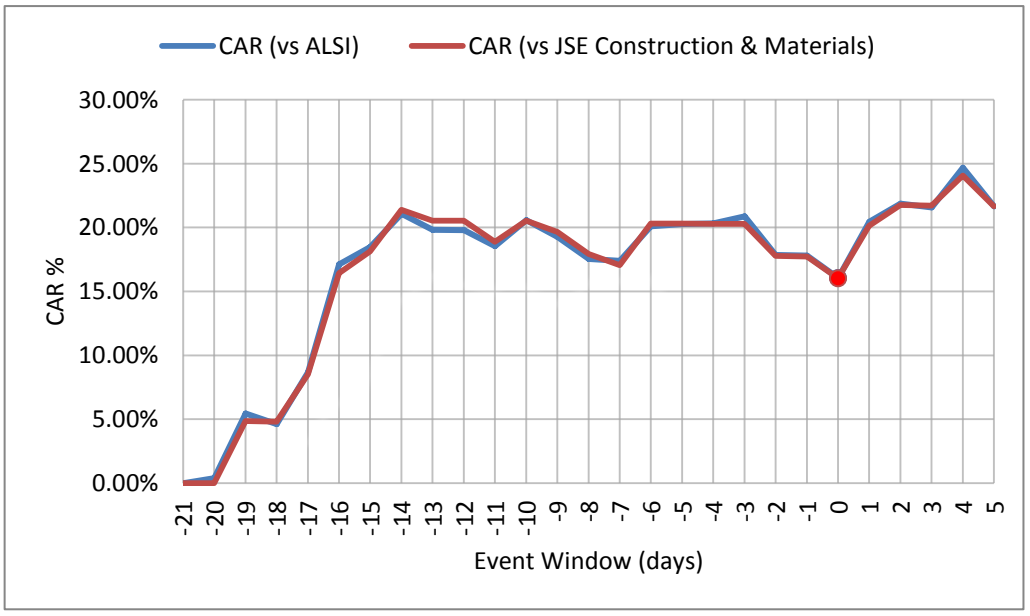
#	Target Company	Acquiring Company	Announcement Date
16	Ceramic Industries Ltd	Italtile Ltd	28-May-12



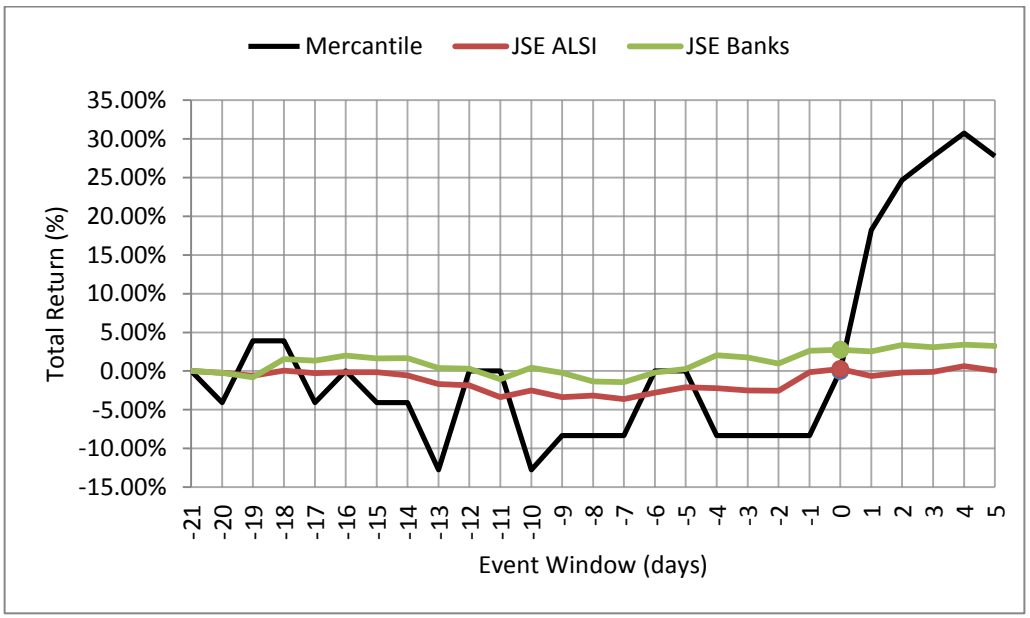


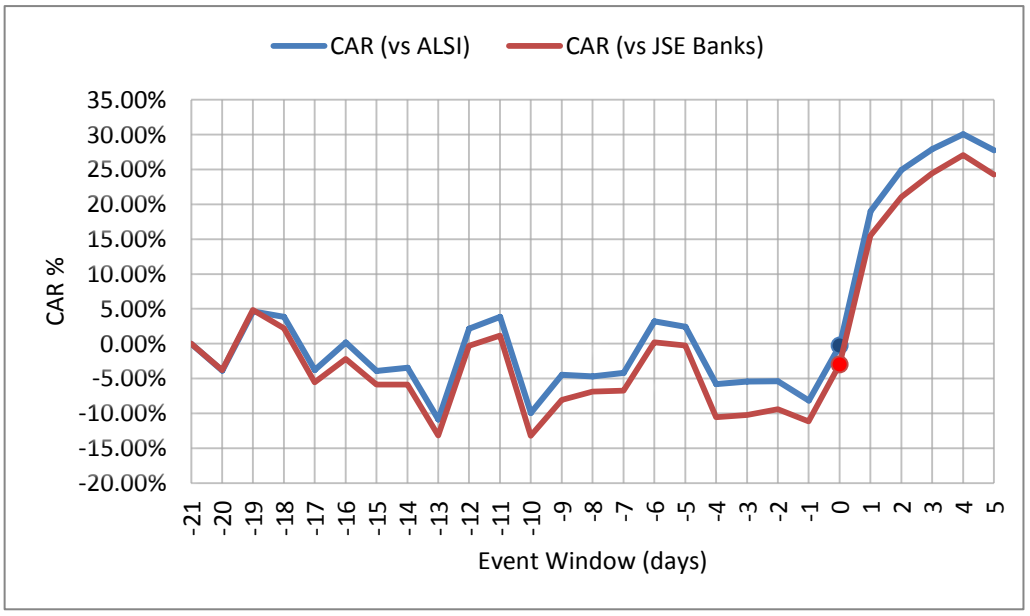
#	Target Company	Acquiring Company	Announcement Date
17	O-Line Holdings Ltd	OBO Bettermann	22-Feb-12



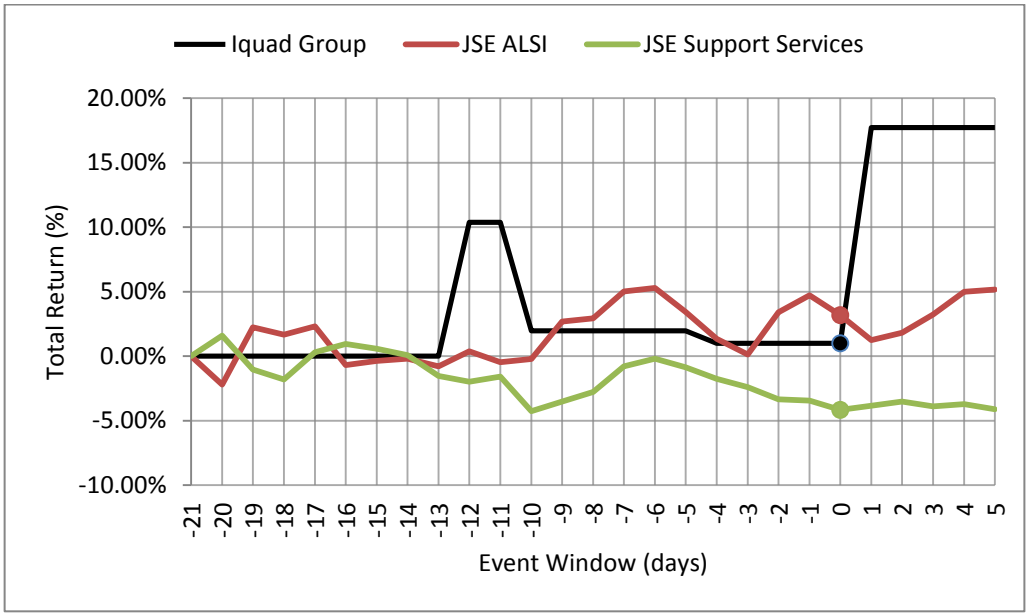


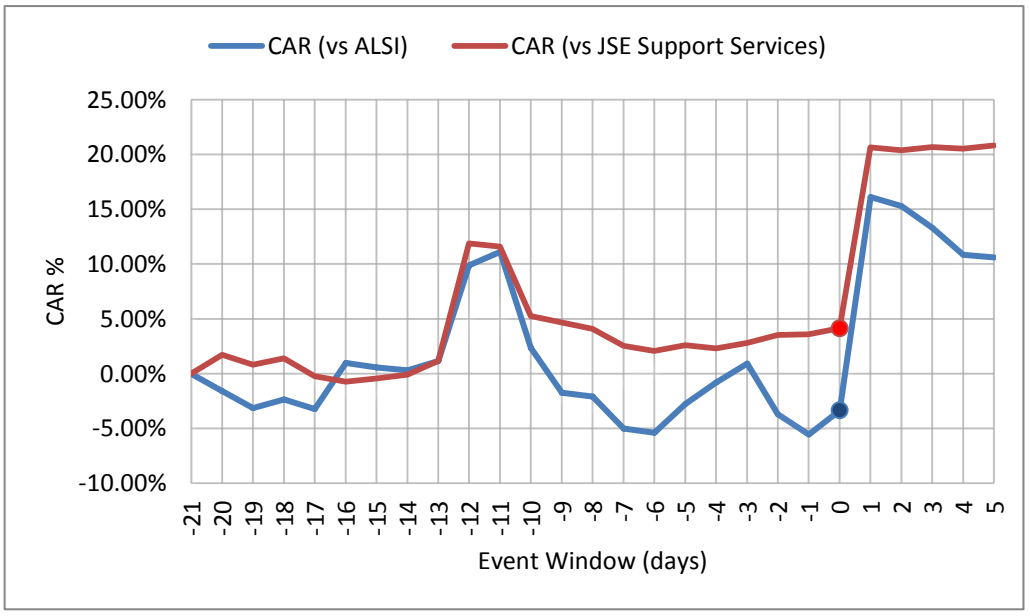
#	Target Company	Acquiring Company	Announcement Date
18	Mercantile Bank Holdings Ltd	Caixa Geral de Depositos S.A.	05-Jan-12



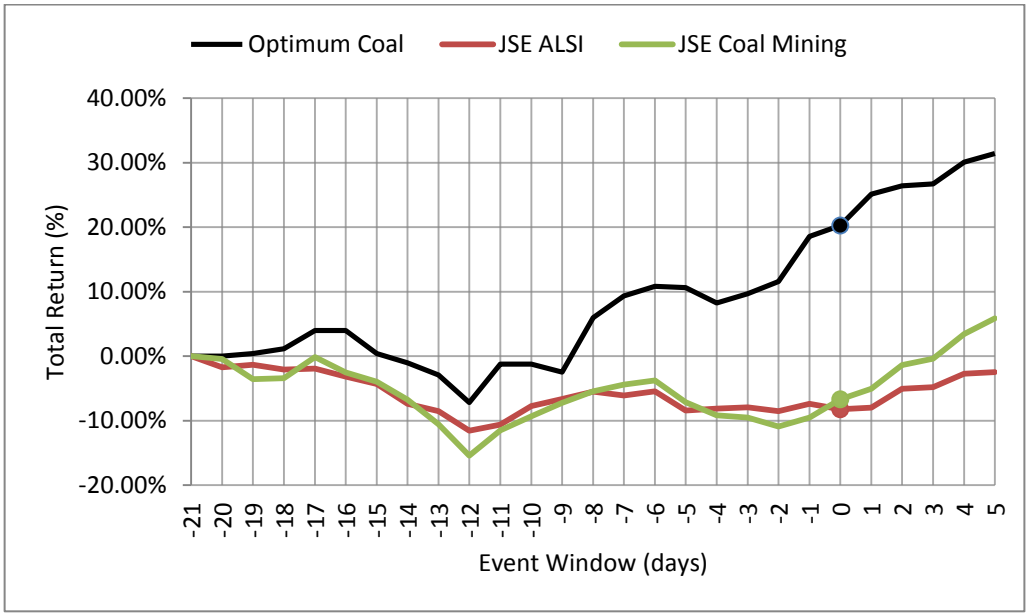


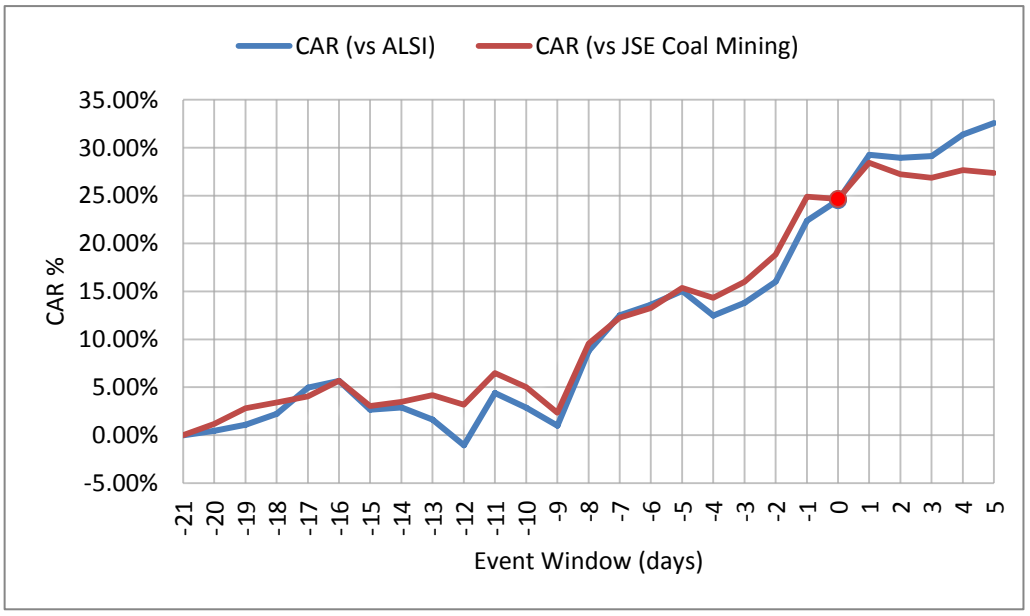
#	Target Company	Acquiring Company	Announcement Date
19	IQuad Group Ltd	Sasfin Holdings Ltd	12-Sep-11



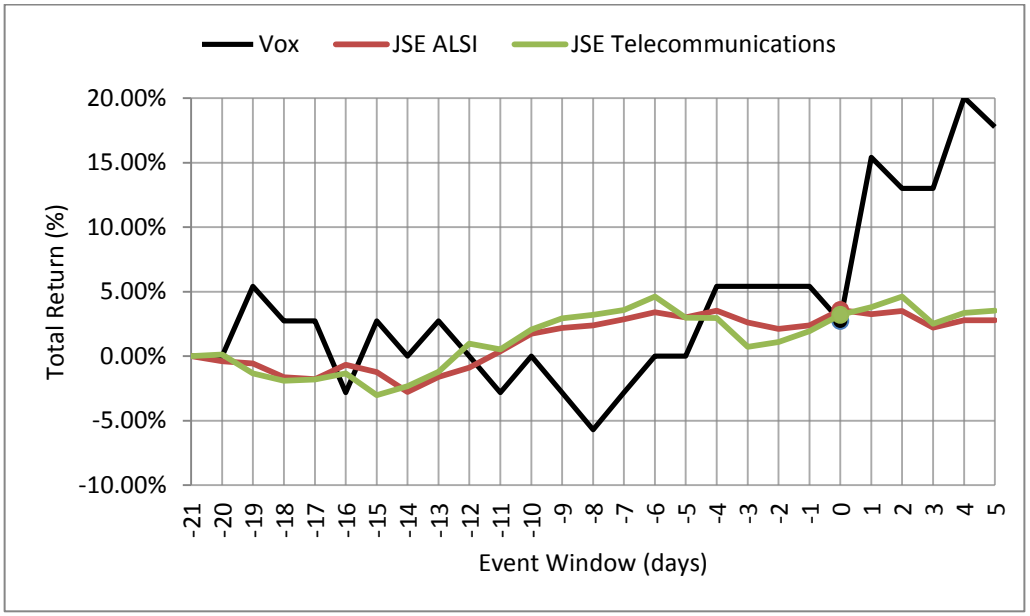


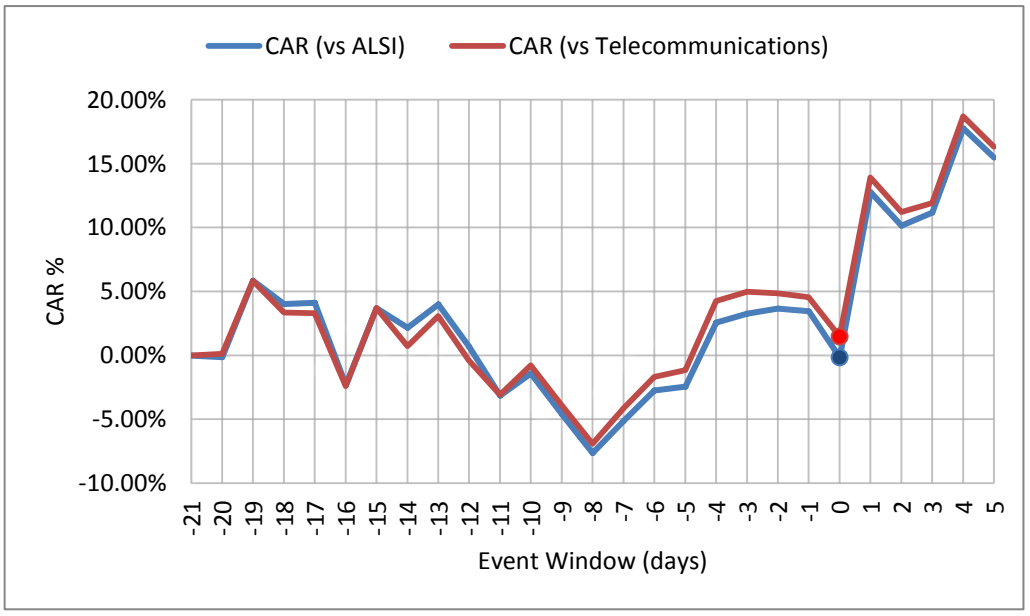
#	Target Company	Acquiring Company	Announcement Date
20	Optimum Coal Holdings Ltd	Glencore International AG & Lexshell	26-Aug-11



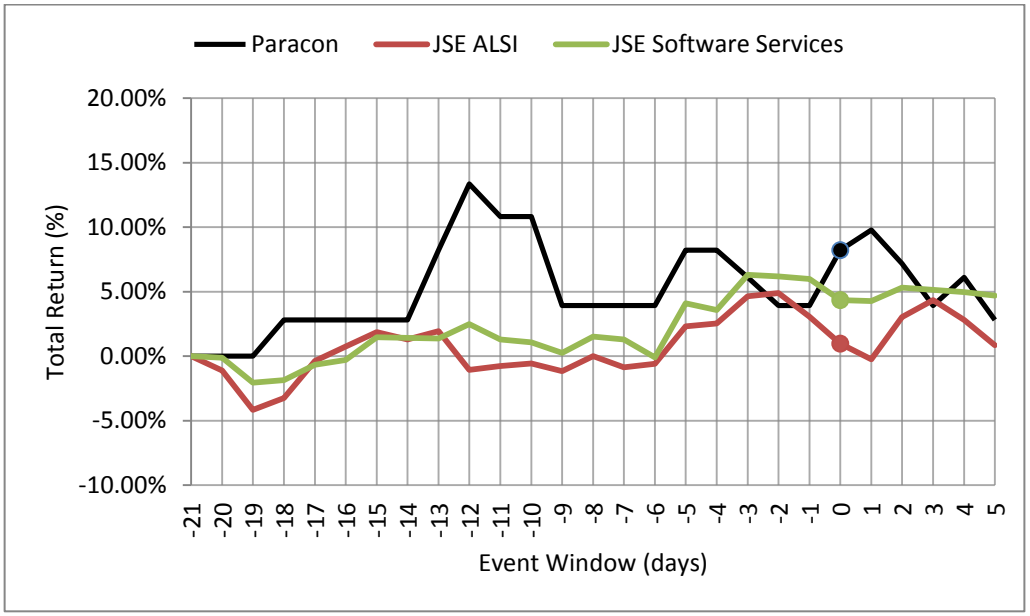


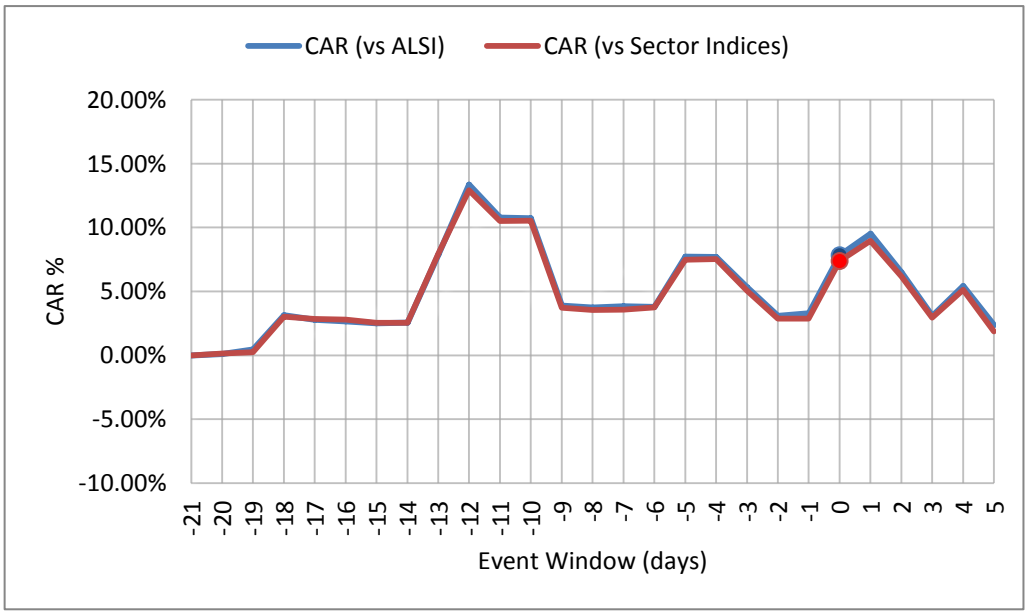
#	Target Company	Acquiring Company	Announcement Date
21	Vox Telecom Ltd	Lereko Metier & Investec	14-Jul-11



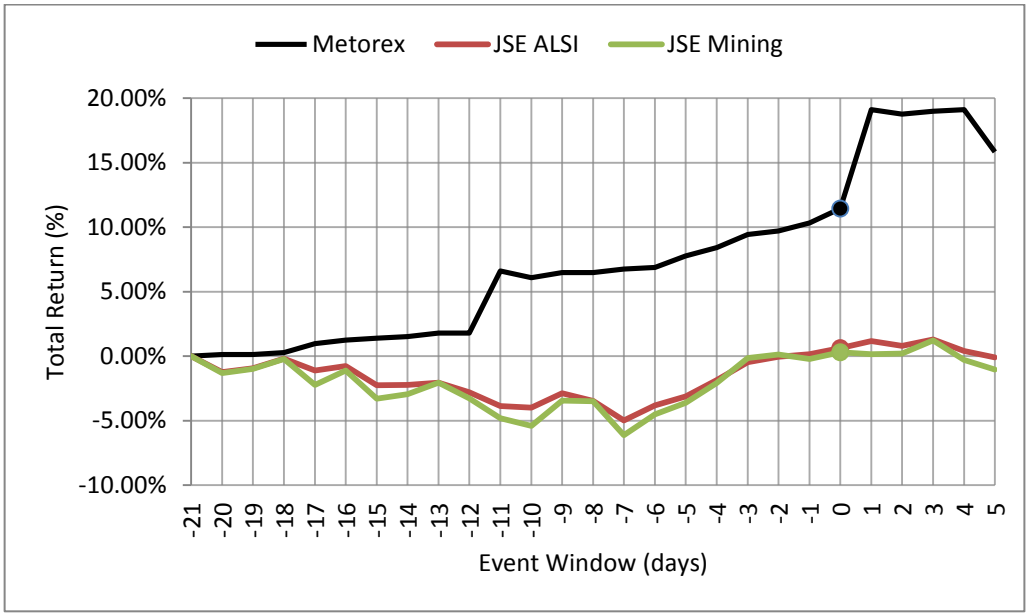


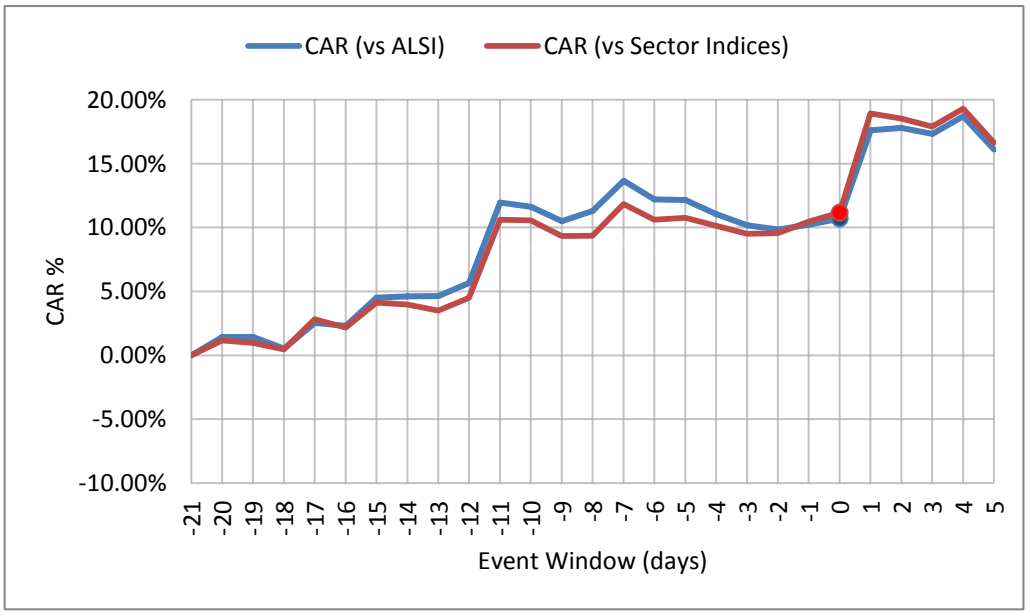
#	Target Company	Acquiring Company	Announcement Date
22	Paracon Ltd	Adcorp Holdings Ltd	06-Jul-11



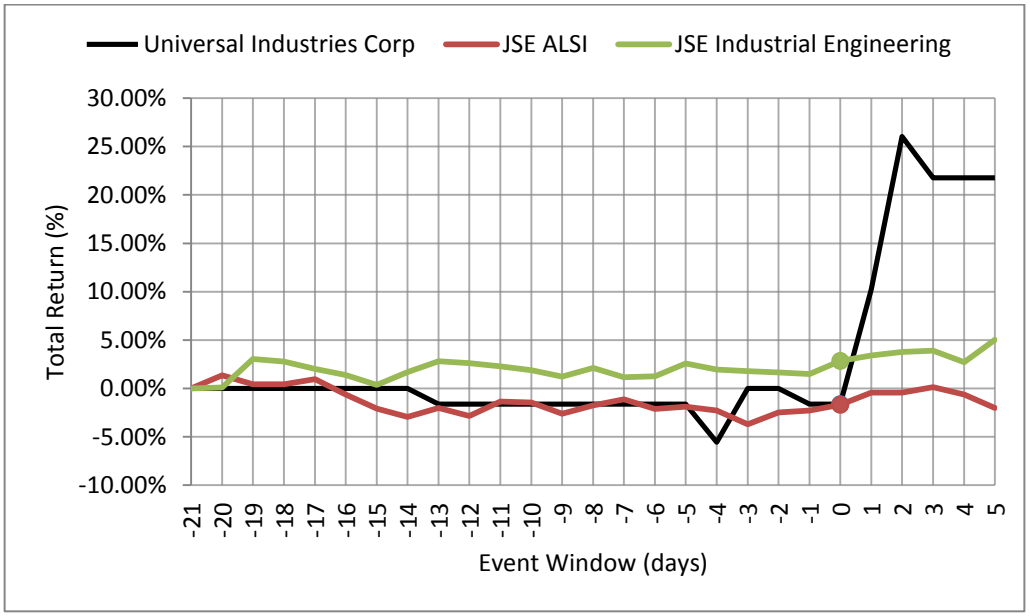


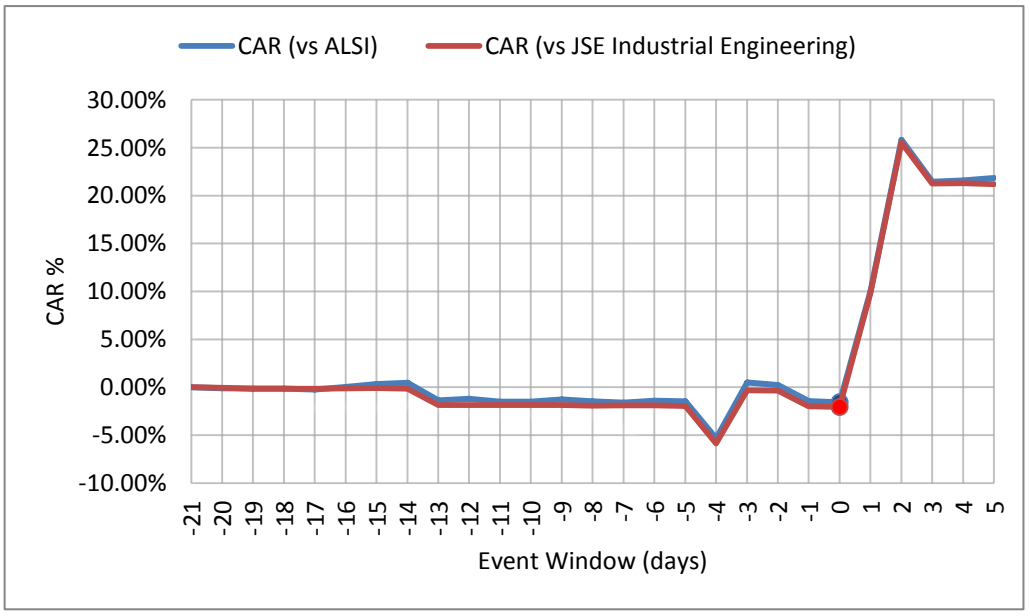
#	Target Company	Acquiring Company	Announcement Date
23	Metorex Ltd	Jinchuan Group Ltd	05-Jul-11



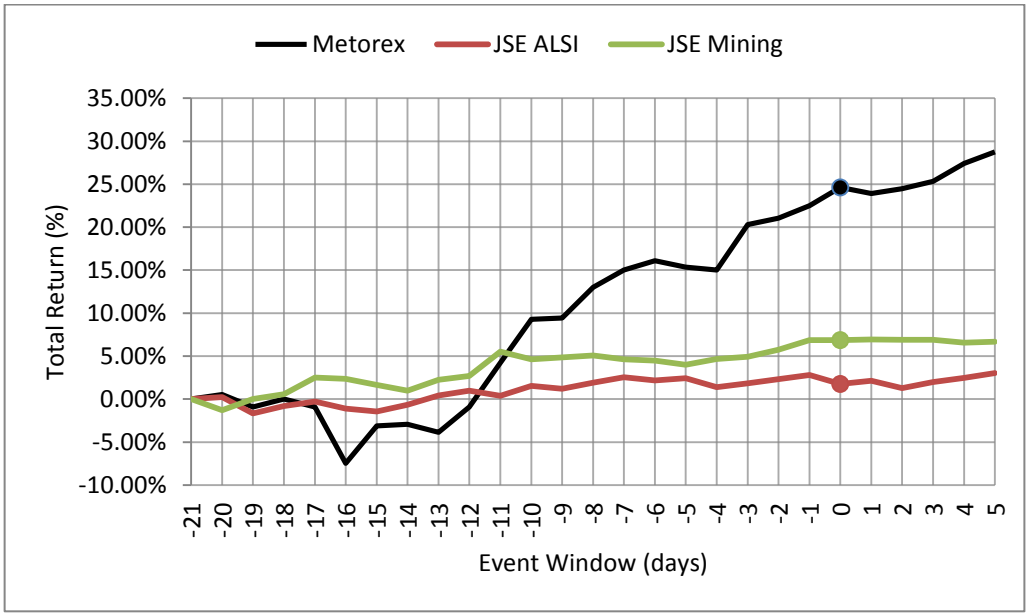


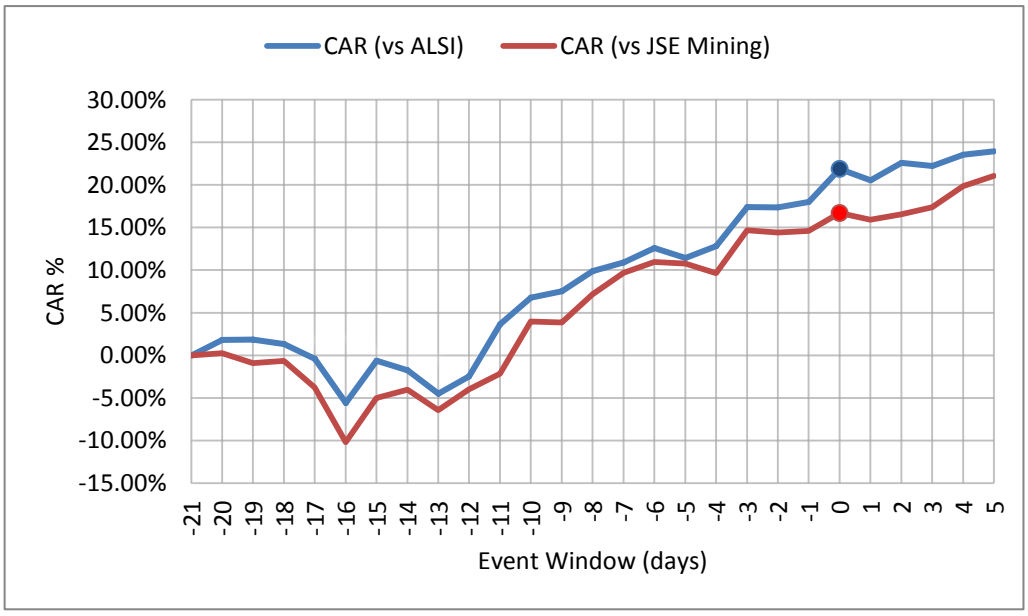
#	Target Company	Acquiring Company	Announcement Date
24	Universal Industries Corporation Ltd	Ethos Private Equity	27-May-11



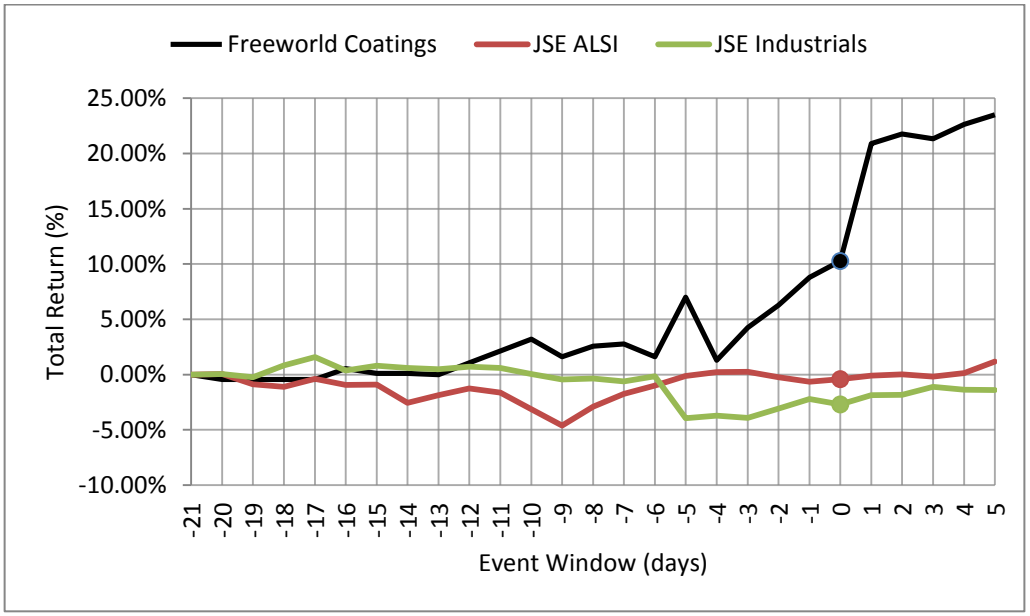


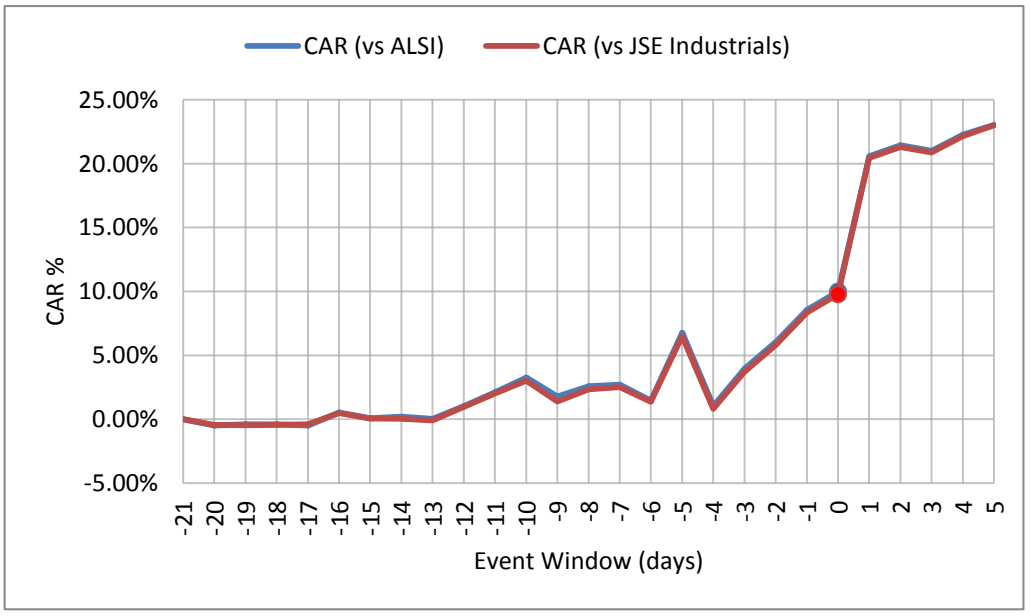
#	Target Company	Acquiring Company	Announcement Date
25	Metorex Ltd	Vale S.A.	08-Apr-11



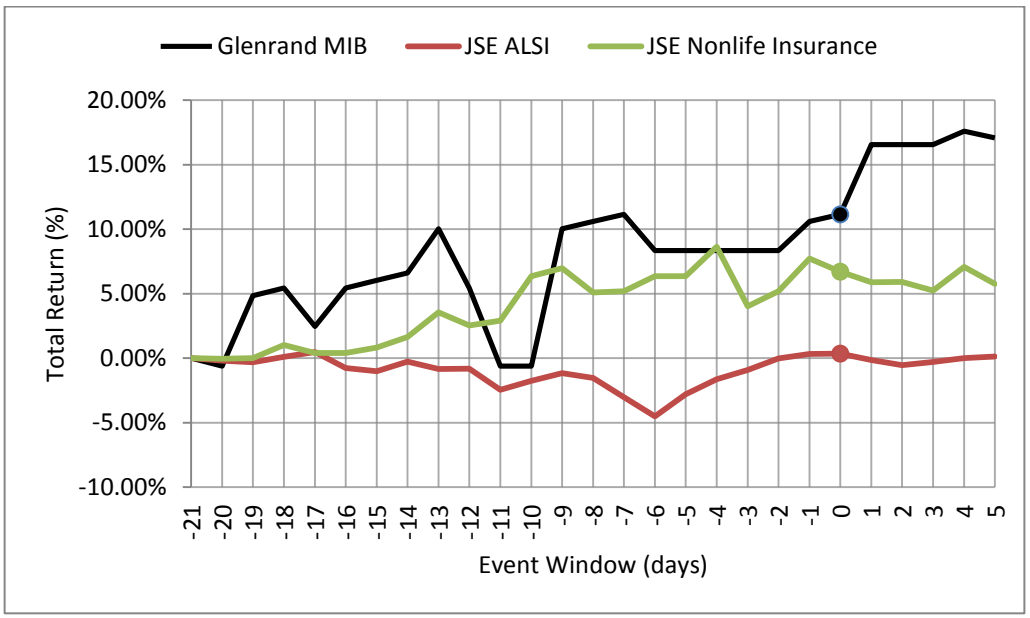


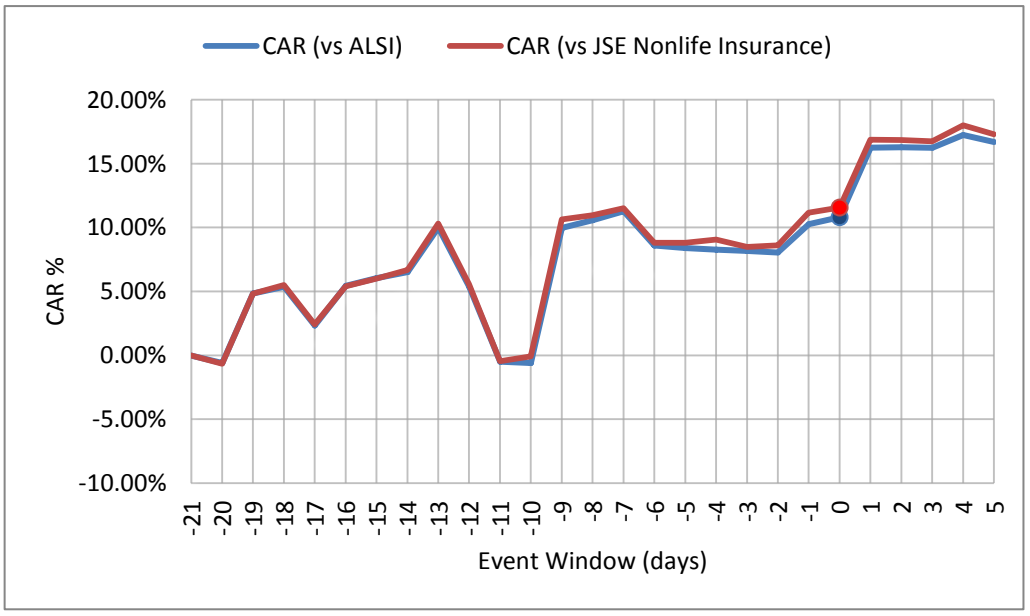
#	Target Company	Acquiring Company	Announcement Date
26	Freeworld Coatings Ltd	Kansai Paint Co Ltd	14-Dec-10



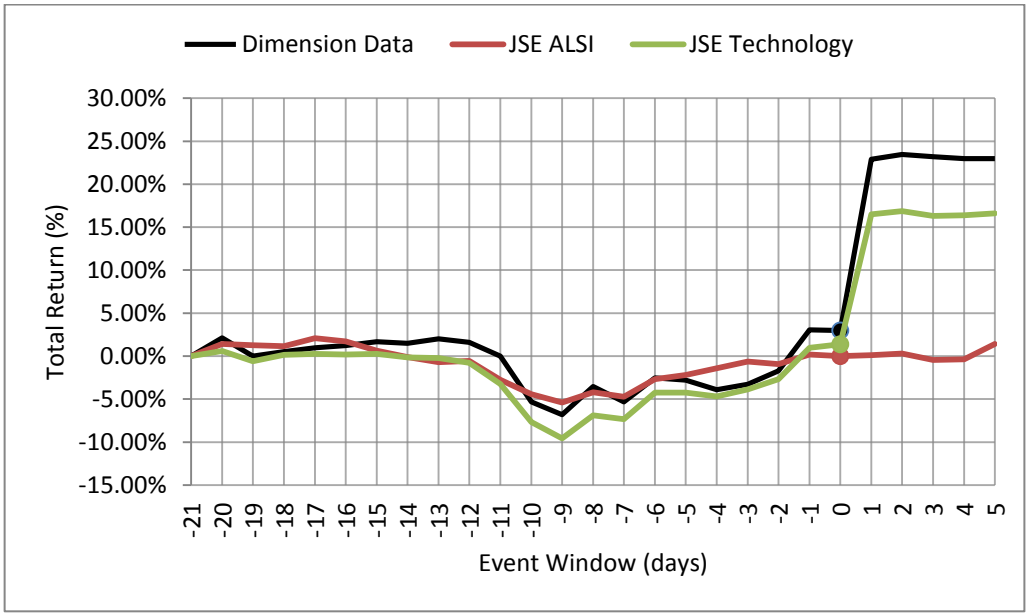


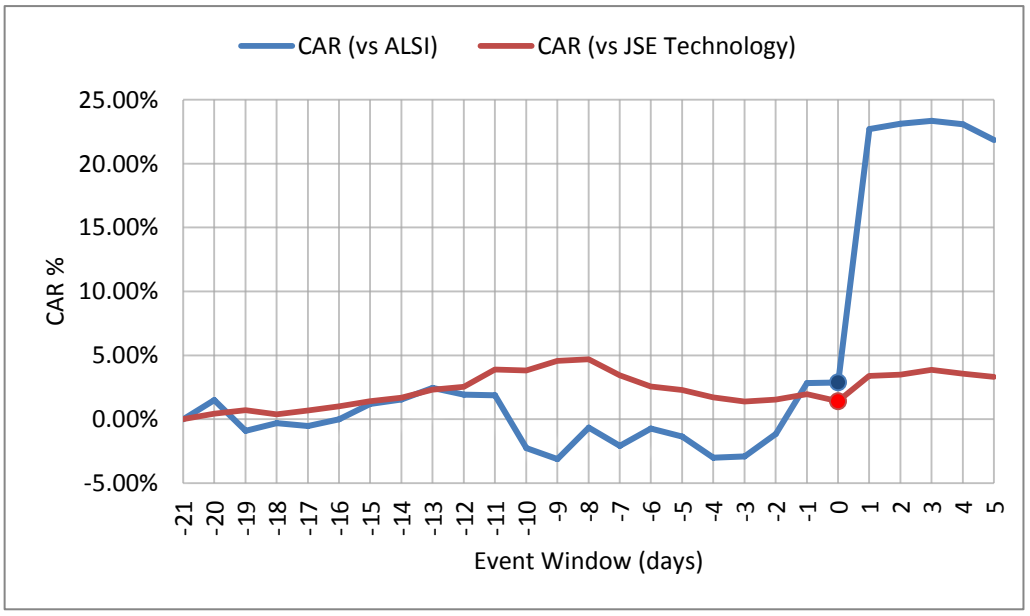
#	Target Company	Acquiring Company	Announcement Date
27	Glenrand M.I.B Ltd	Aon South Africa (Pty) Ltd	09-Dec-10



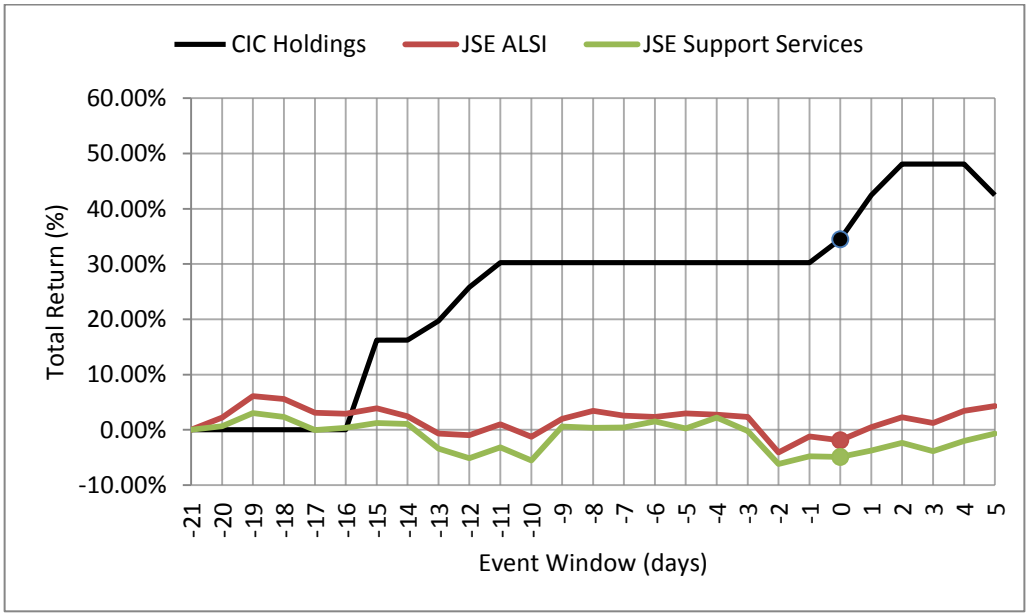


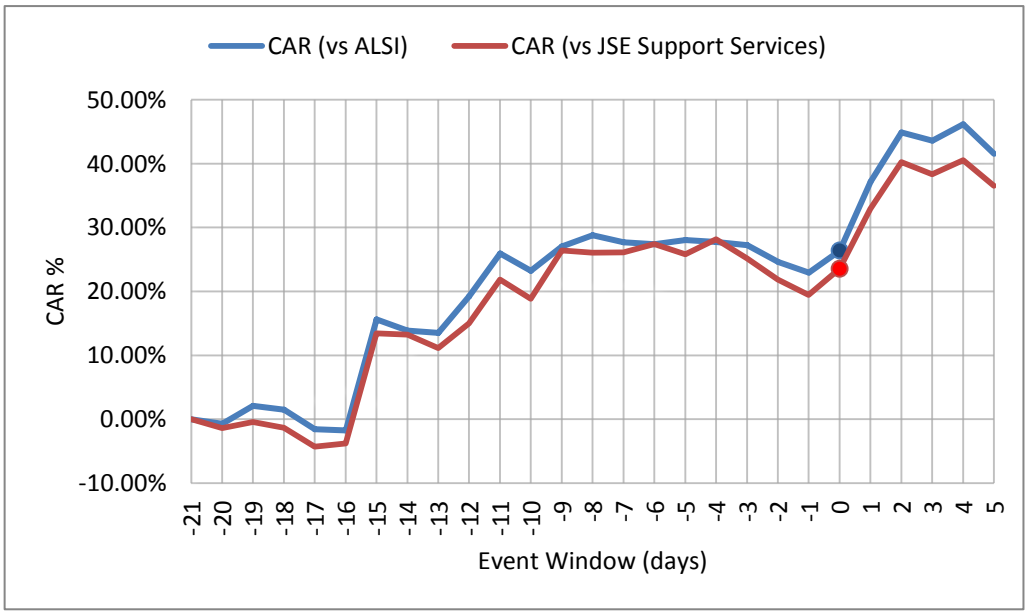
#	Target Company	Acquiring Company	Announcement Date
28	Dimension Data Ltd	Nippon Telegraph & Telephone Corp.	15-Jul-10



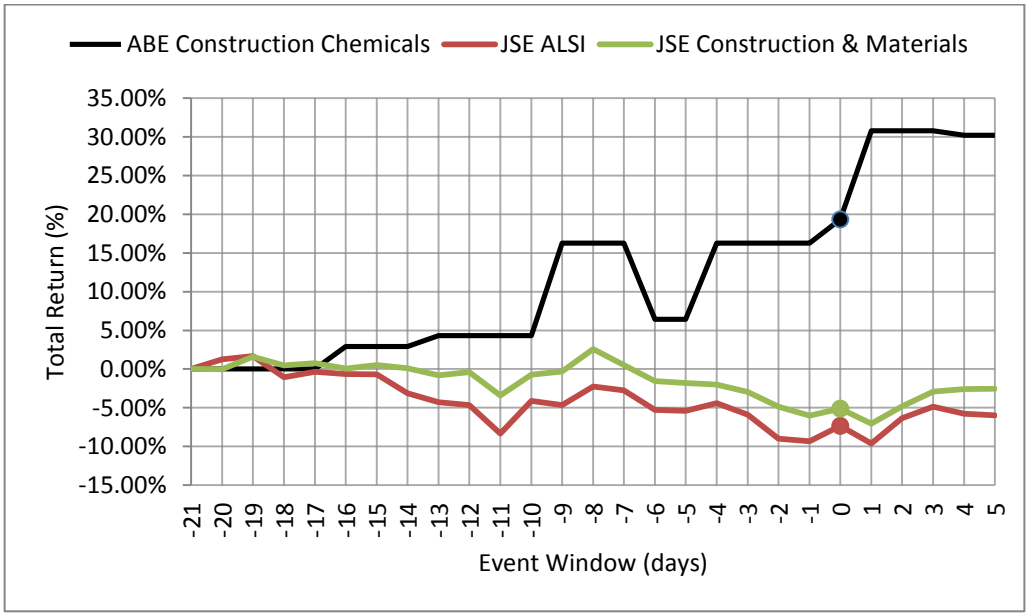


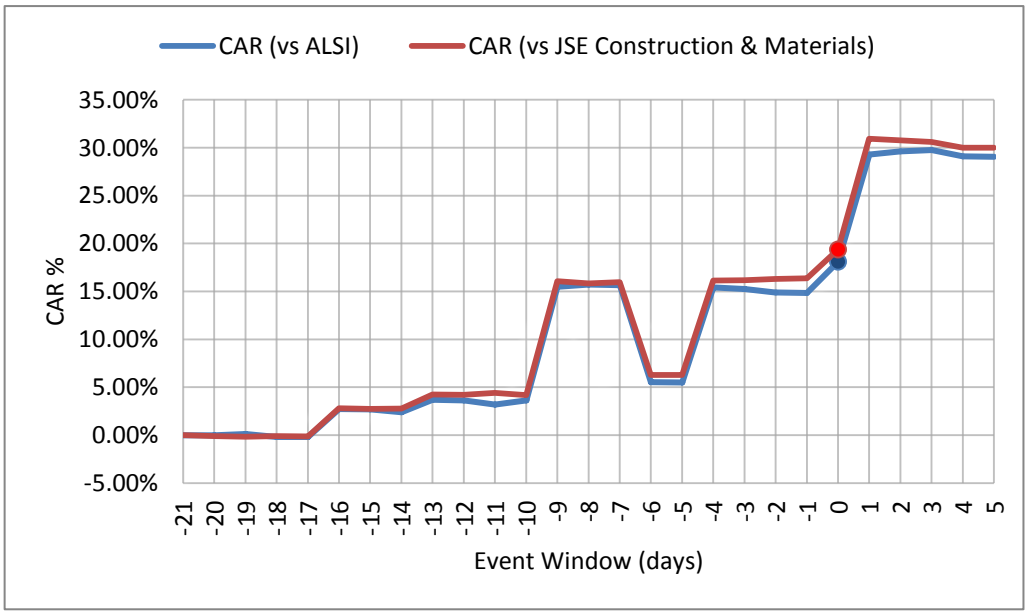
#	Target Company	Acquiring Company	Announcement Date
29	CIC Holdings Ltd	Imperial Holdings Limted	13-Jul-10



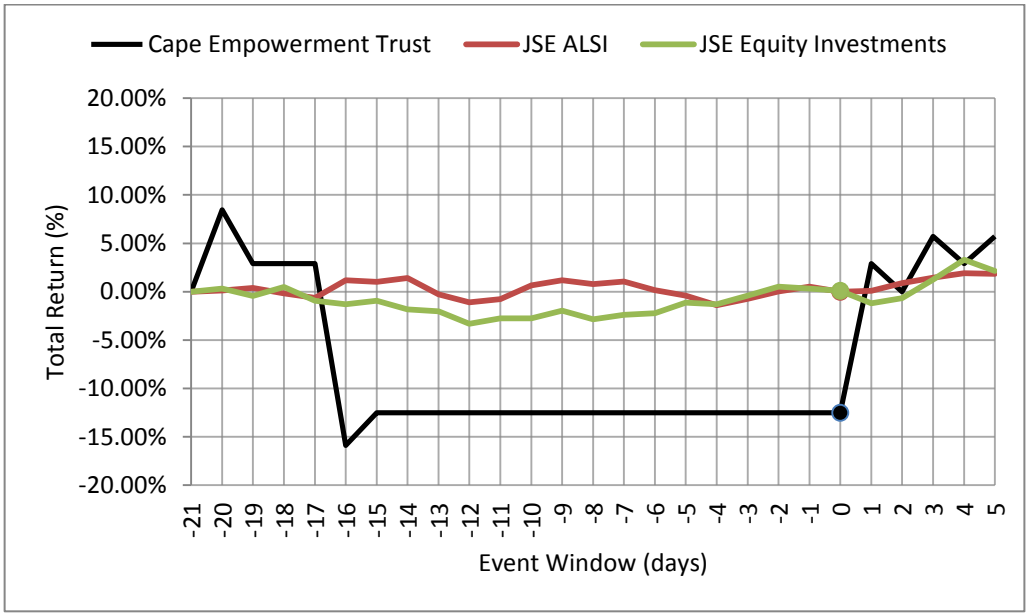


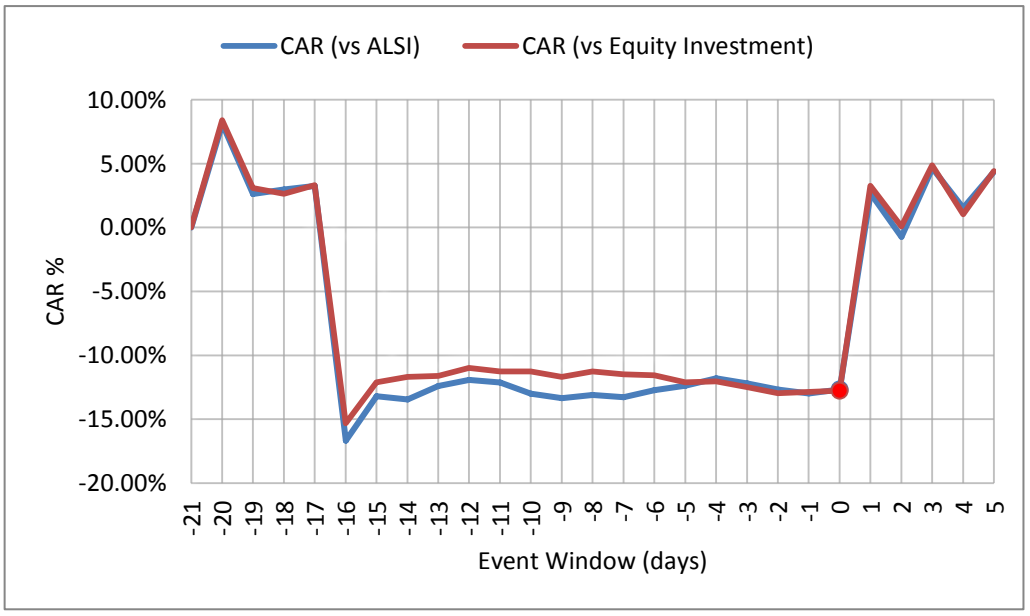
#	Target Company	Acquiring Company	Announcement Date
30	a.b.e. Construction Chemicals Ltd	Chryso Southern Africa (Pty) Ltd	25-May-10



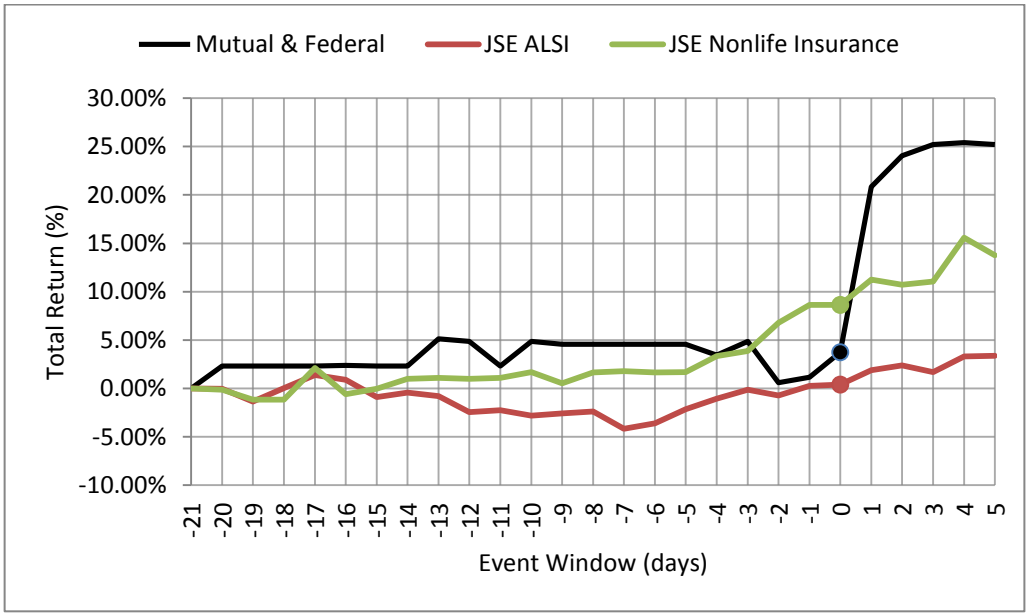


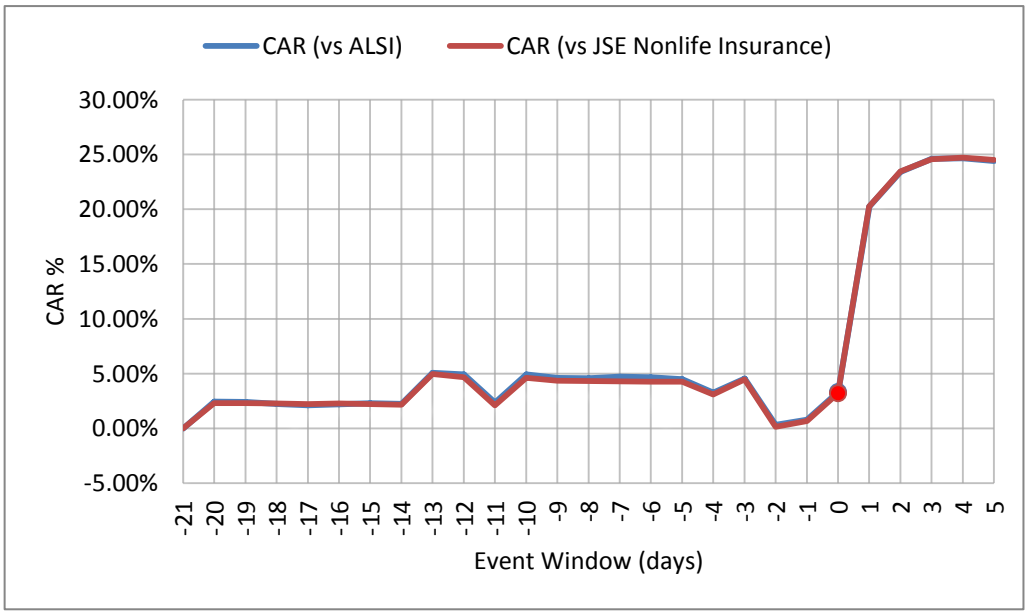
#	Target Company	Acquiring Company	Announcement Date
31	Cape Empowerment Trust Ltd	Dynamic Cables RSA Ltd	08-Dec-09



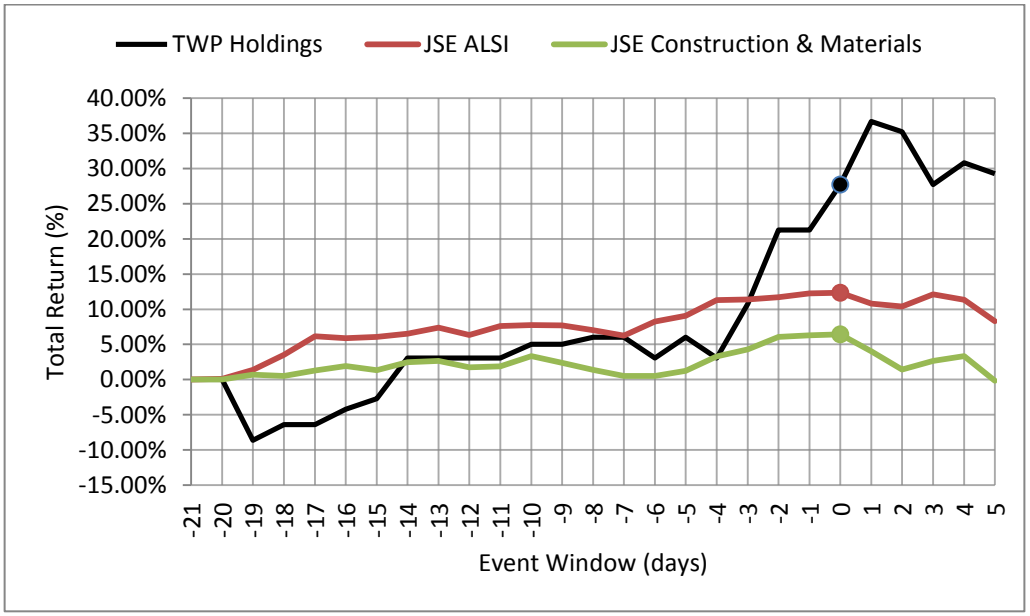


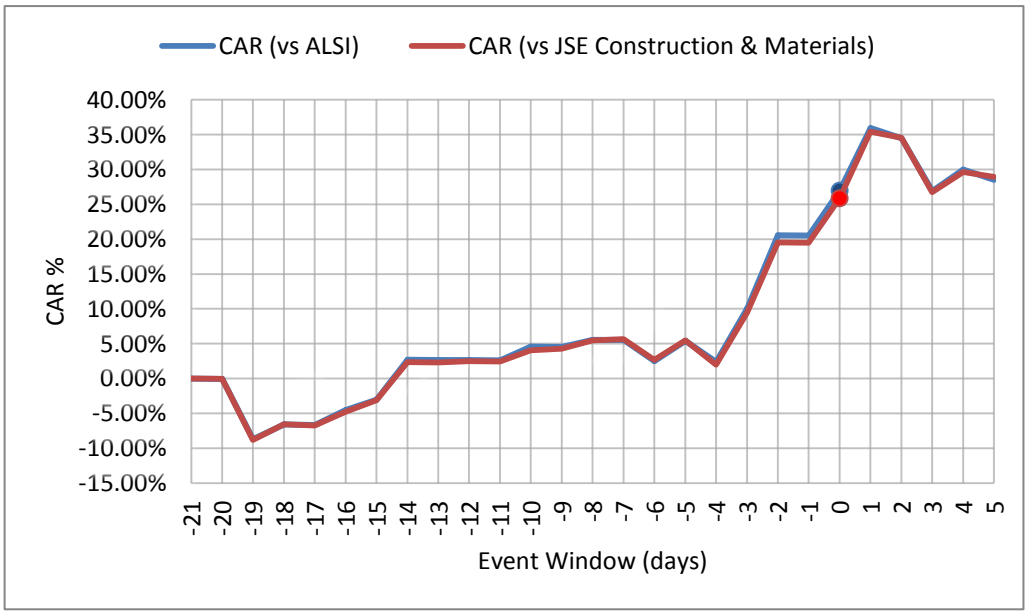
#	Target Company	Acquiring Company	Announcement Date
32	Mutual & Federal Insurance Co Ltd	Old Mutual Plc	14-Oct-09



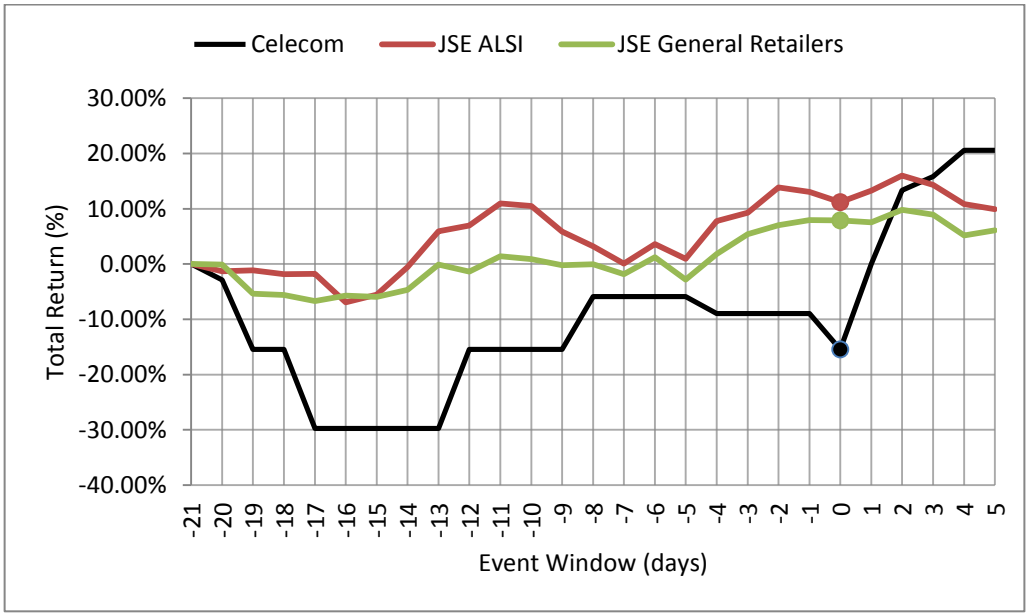


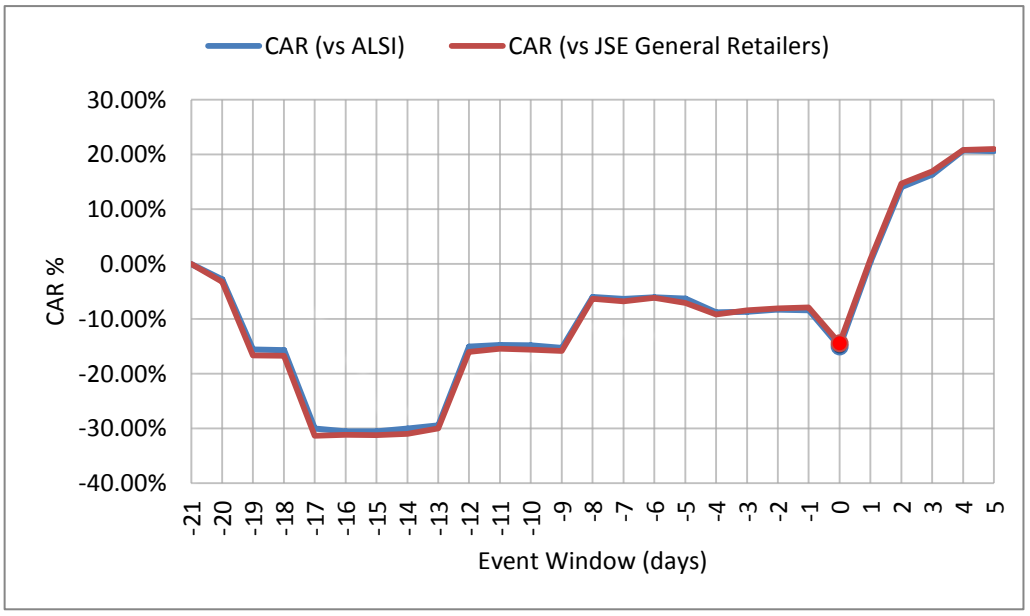
#	Target Company	Acquiring Company	Announcement Date
33	TWP Holdings Ltd	Basil Read Holdings Ltd	11-Aug-09



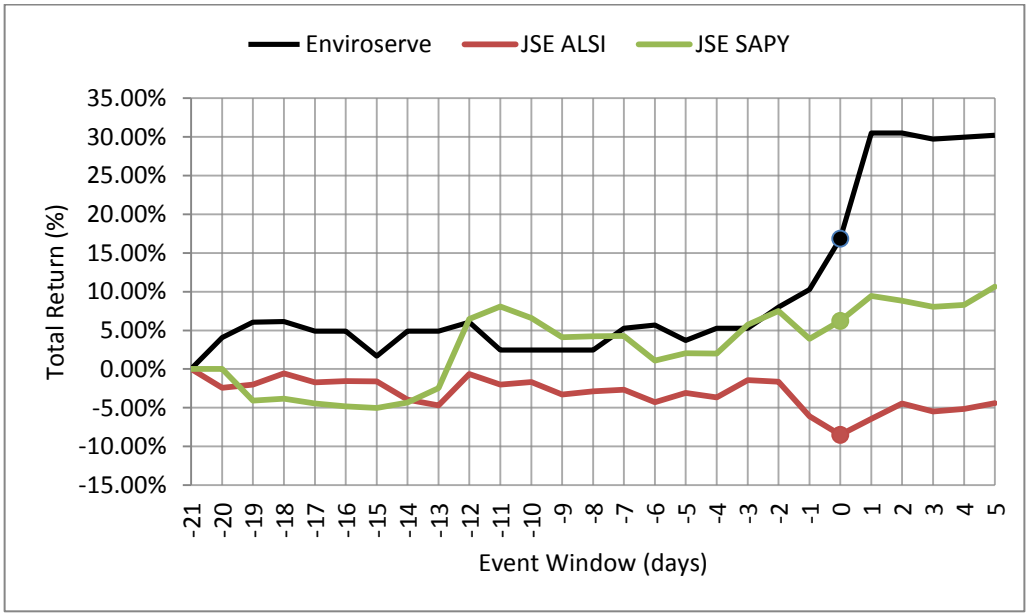


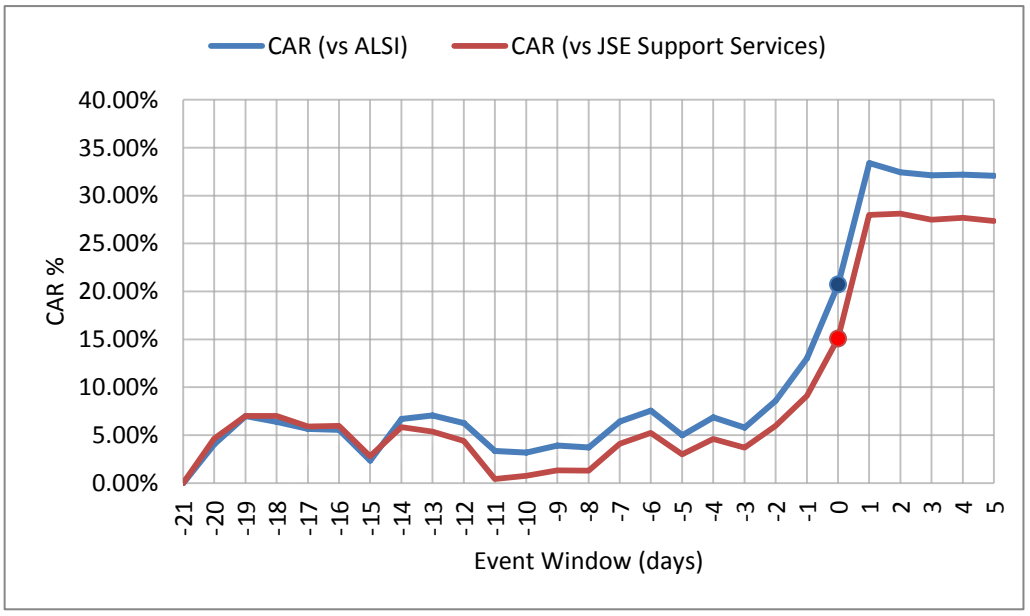
#	Target Company	Acquiring Company	Announcement Date
34	Celcom Group Ltd	Management Buy-Out	15-Dec-08



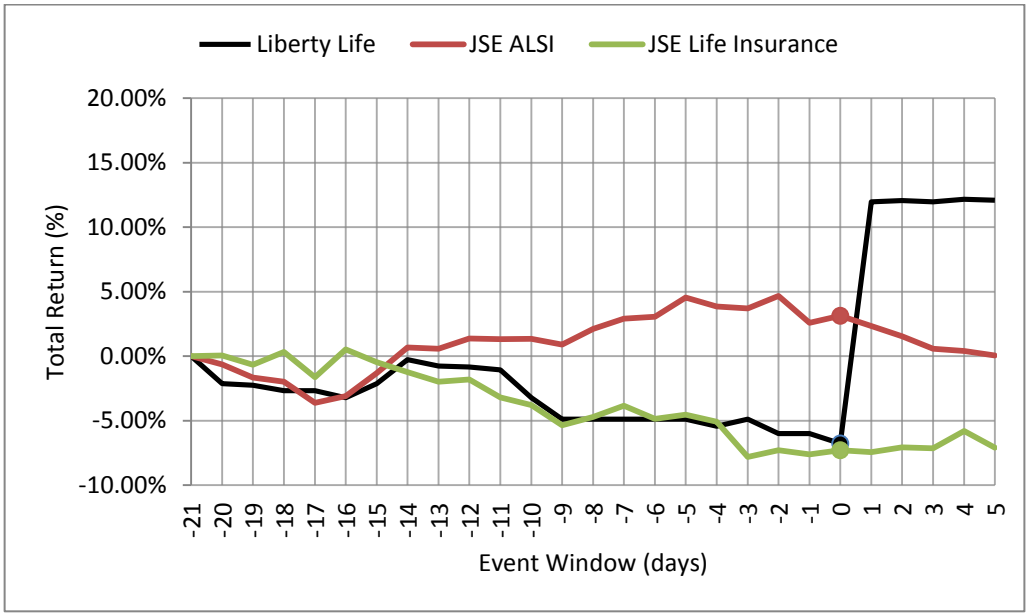


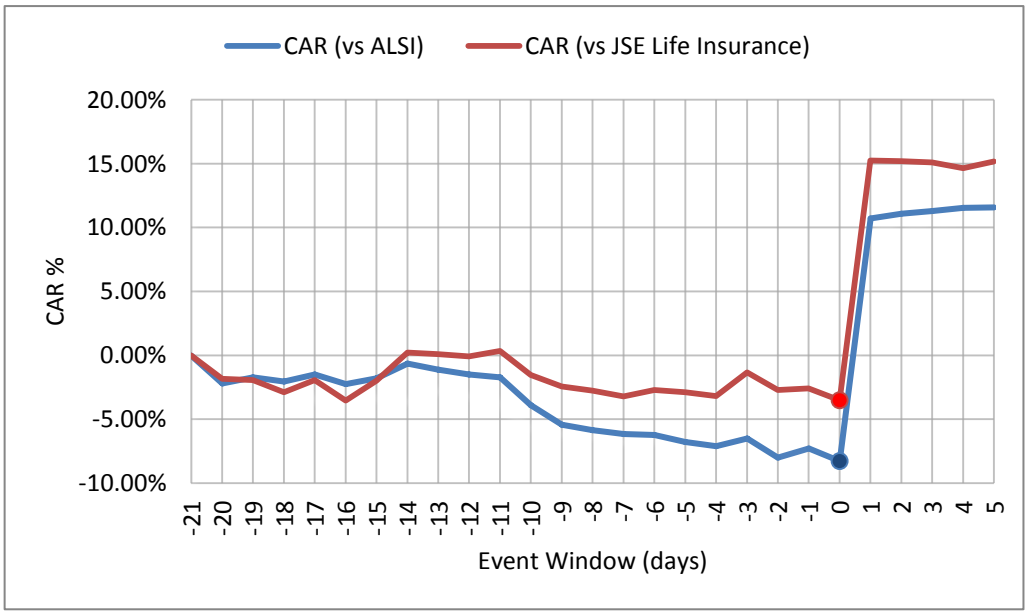
#	Target Company	Acquiring Company	Announcement Date
35	Enviroserv Holdings Ltd	Absa Capital Private Equity	05-Aug-08



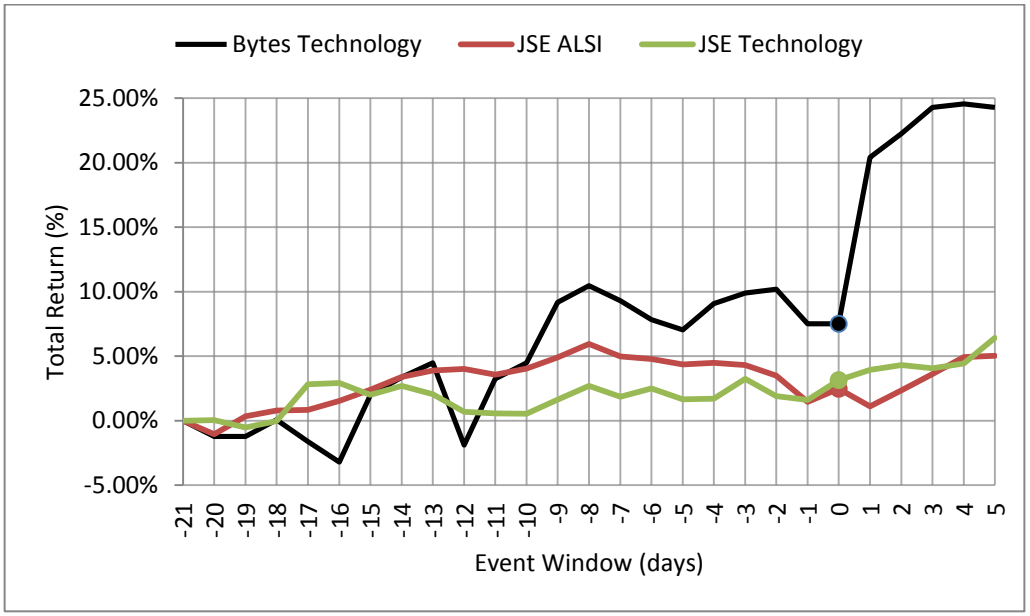


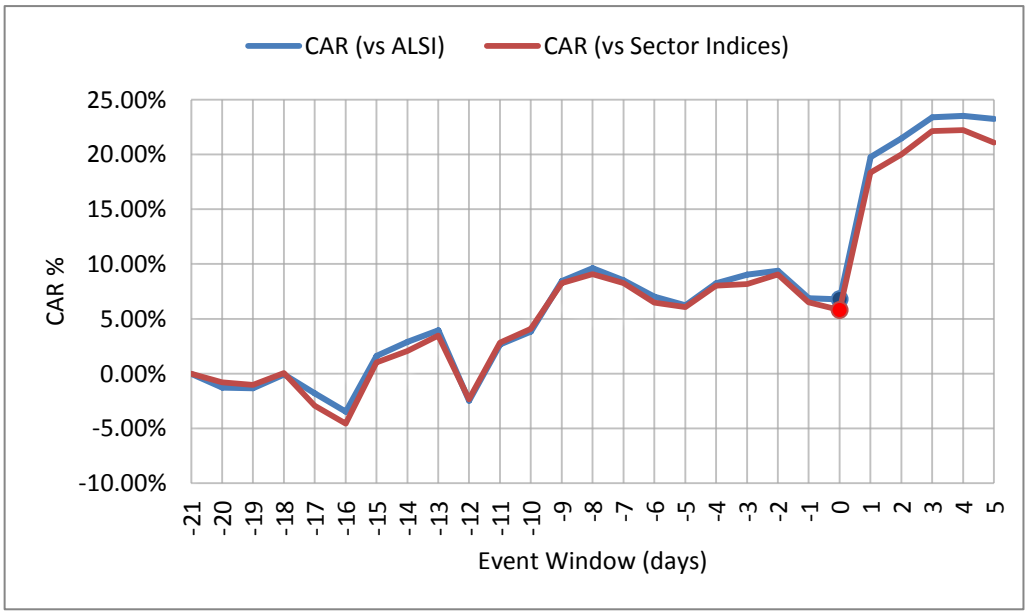
#	Target Company	Acquiring Company	Announcement Date
36	Liberty Holdings Ltd	Standard Bank Group Ltd	27-May-08



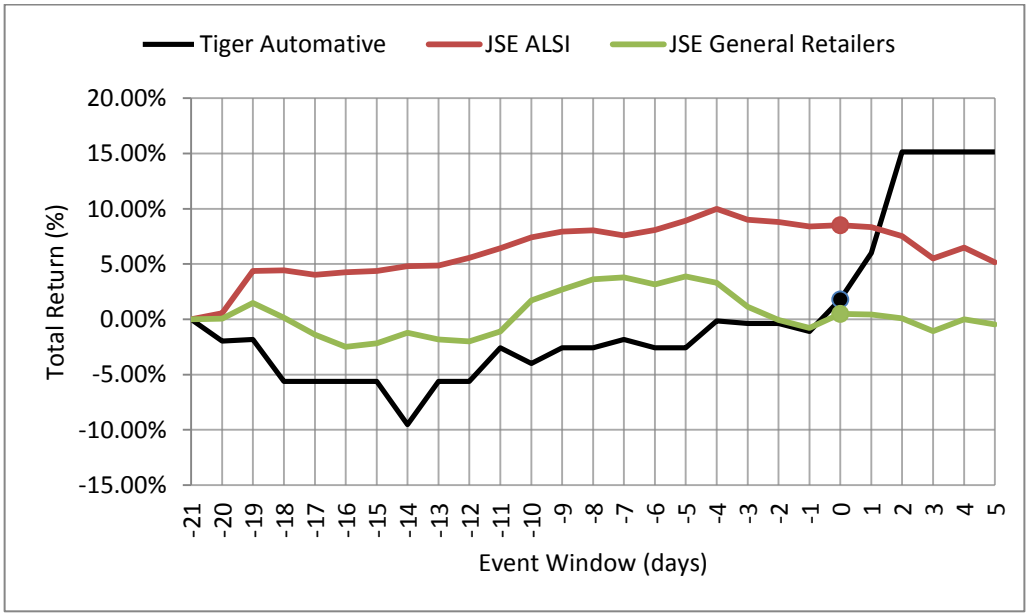


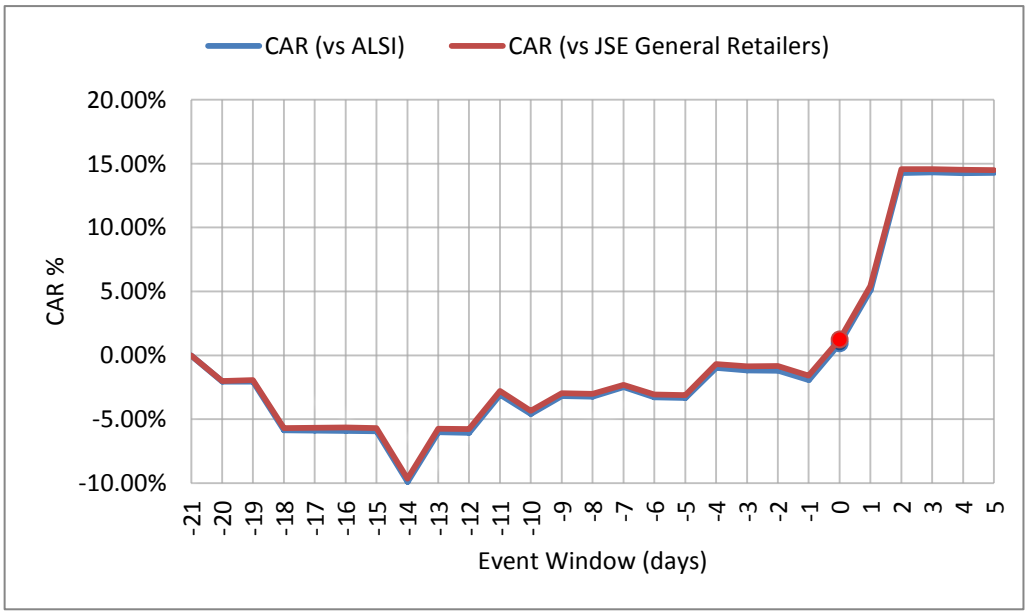
#	Target Company	Acquiring Company	Announcement Date
37	Bytes Technology Group Ltd	Allied Electronics Corporation Ltd	24-Oct-07



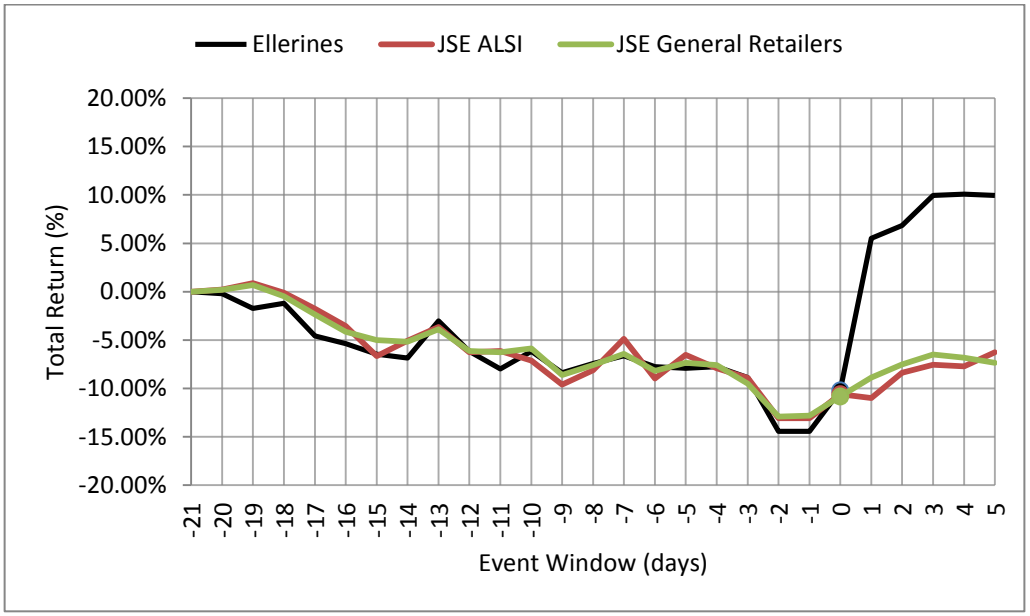


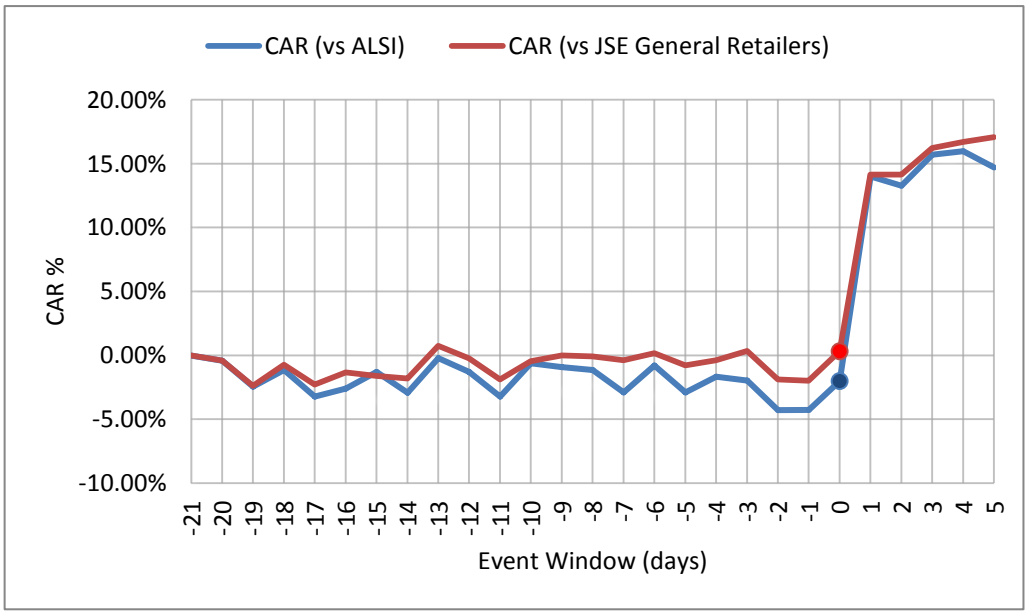
#	Target Company	Acquiring Company	Announcement Date
38	Tiger Automotive Ltd	Ethos Private Equity	18-Oct-07



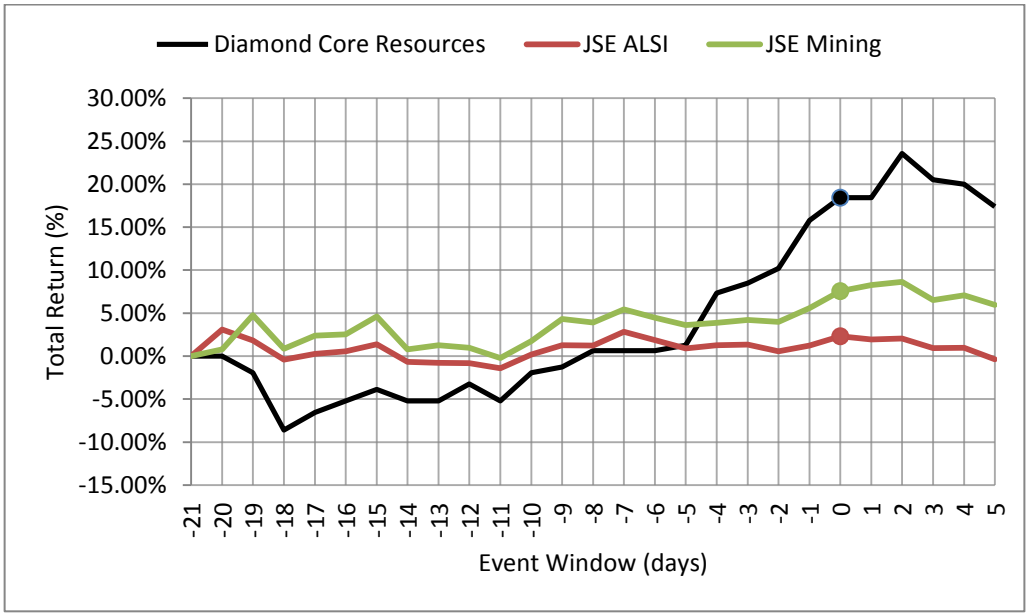


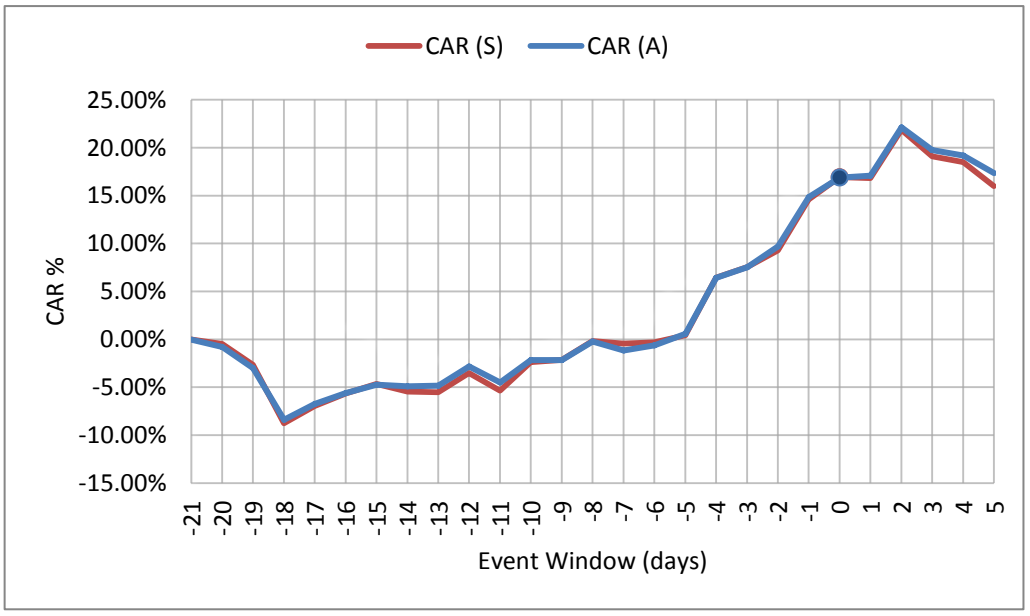
#	Target Company	Acquiring Company	Announcement Date
39	Ellerine Holding Ltd	African Bank Investments Ltd	21-Aug-07



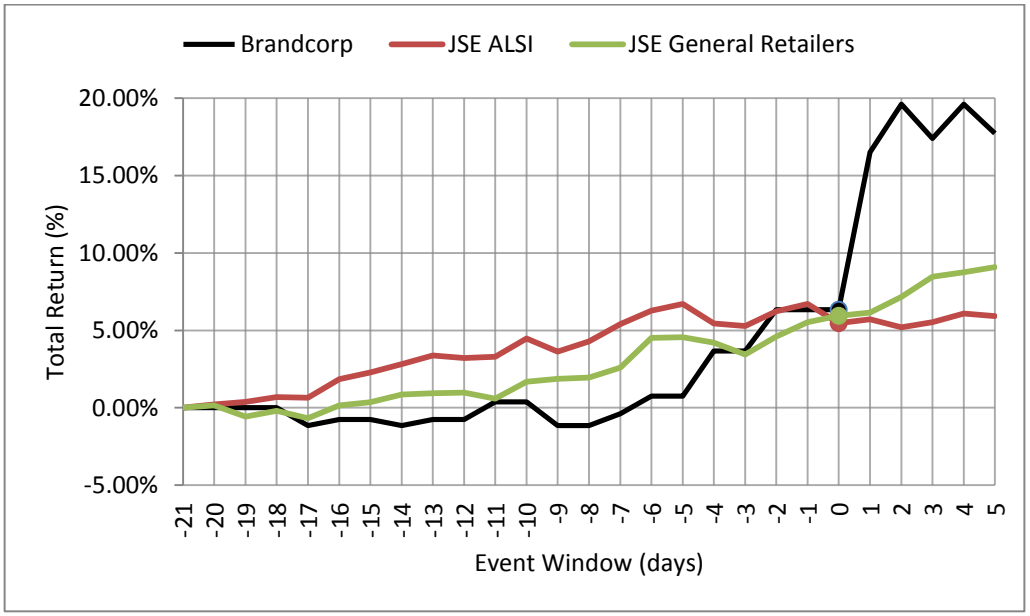


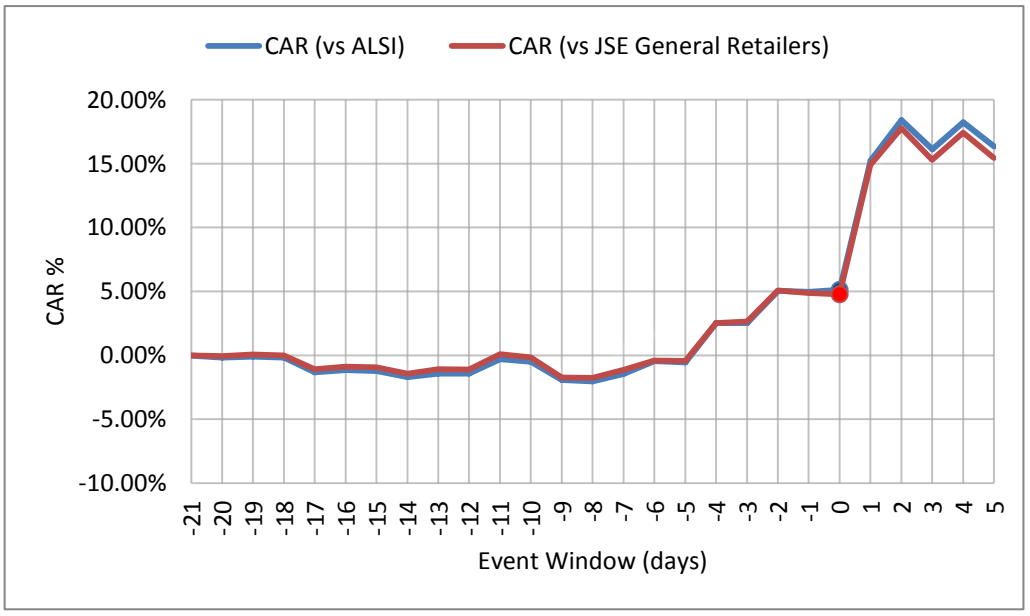
#	Target Company	Acquiring Company	Announcement Date
40	Diamond Core Resources Ltd	BRC Diamond Corporation	04-Jun-07



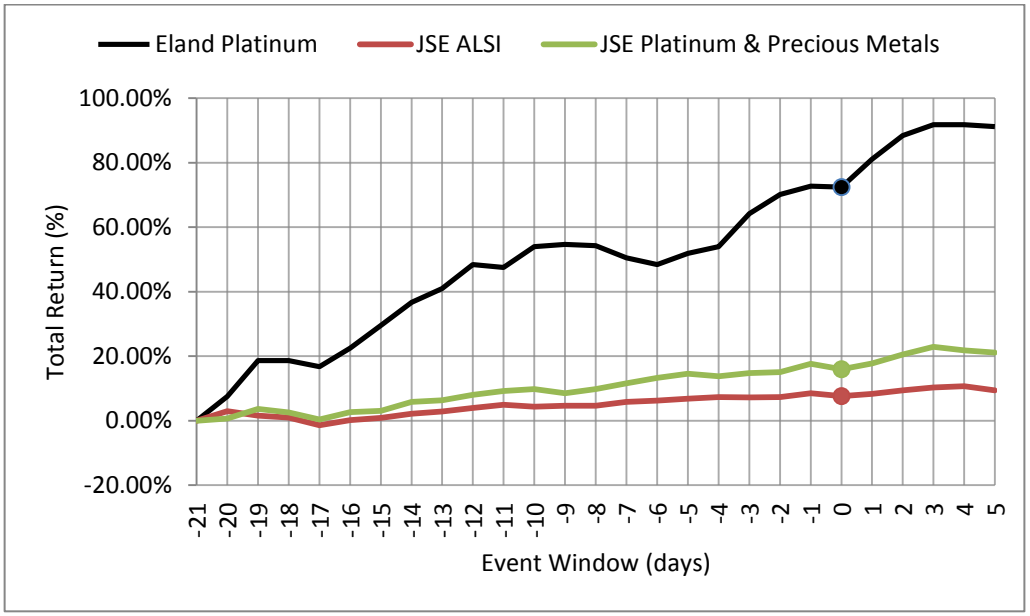


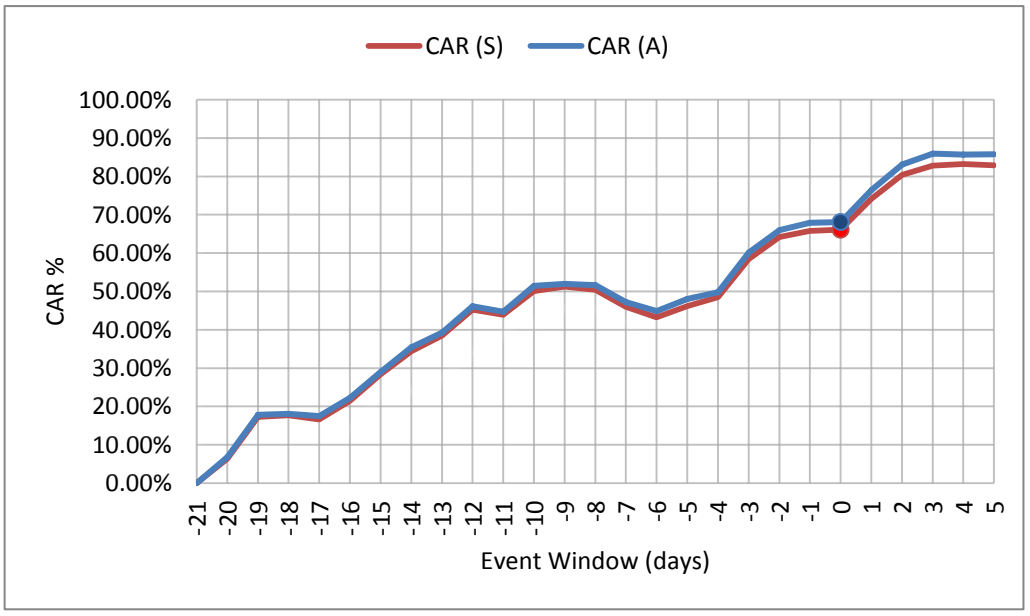
#	Target Company	Acquiring Company	Announcement Date
41	Brandcorp Holdings Ltd	Ethos Private Equity	25-Apr-07



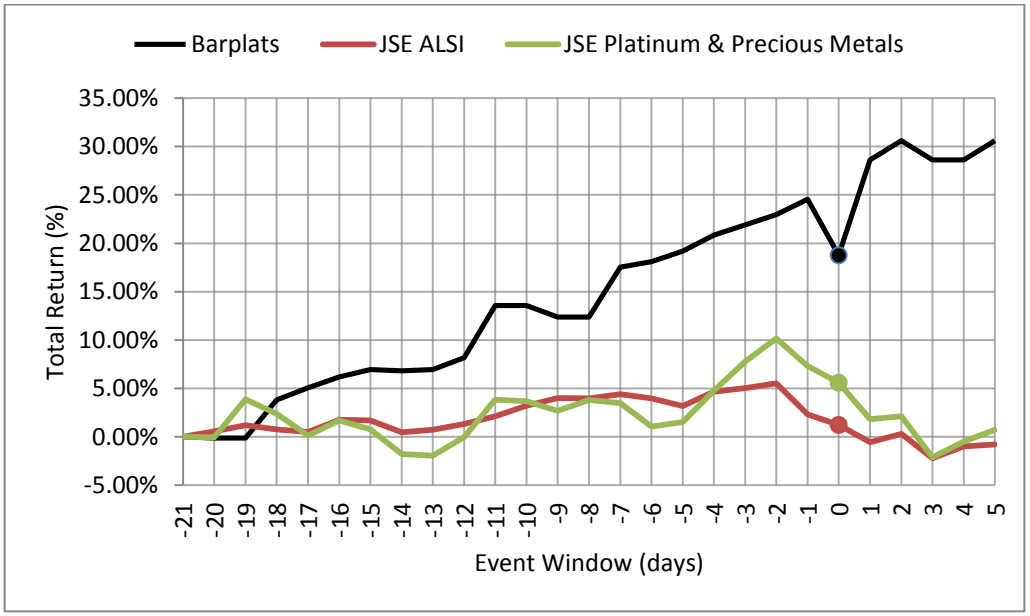


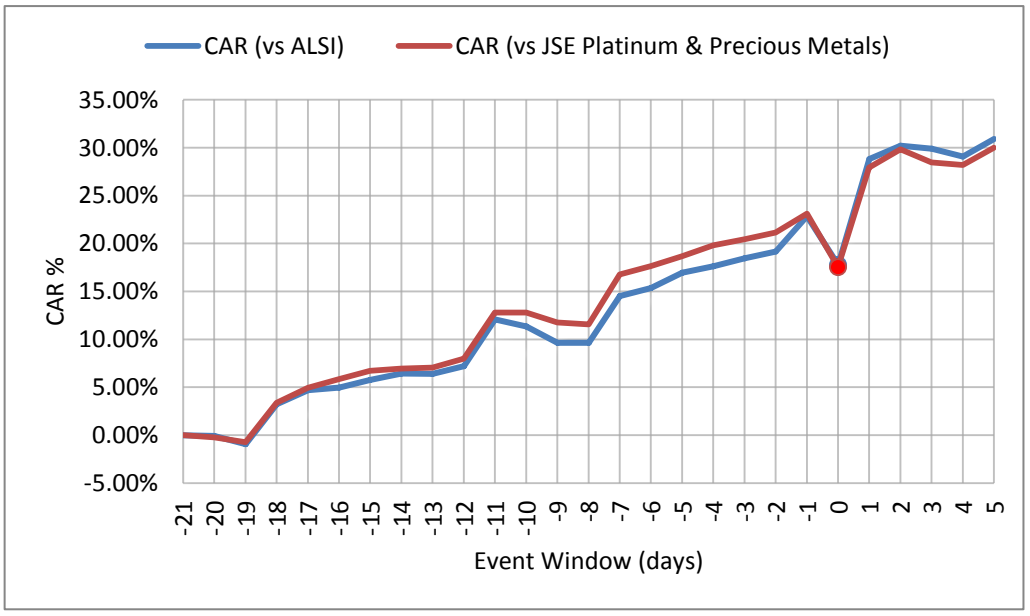
#	Target Company	Acquiring Company	Announcement Date
42	Eland Platinum Holdings Ltd	Xstrata Plc	12-Apr-07



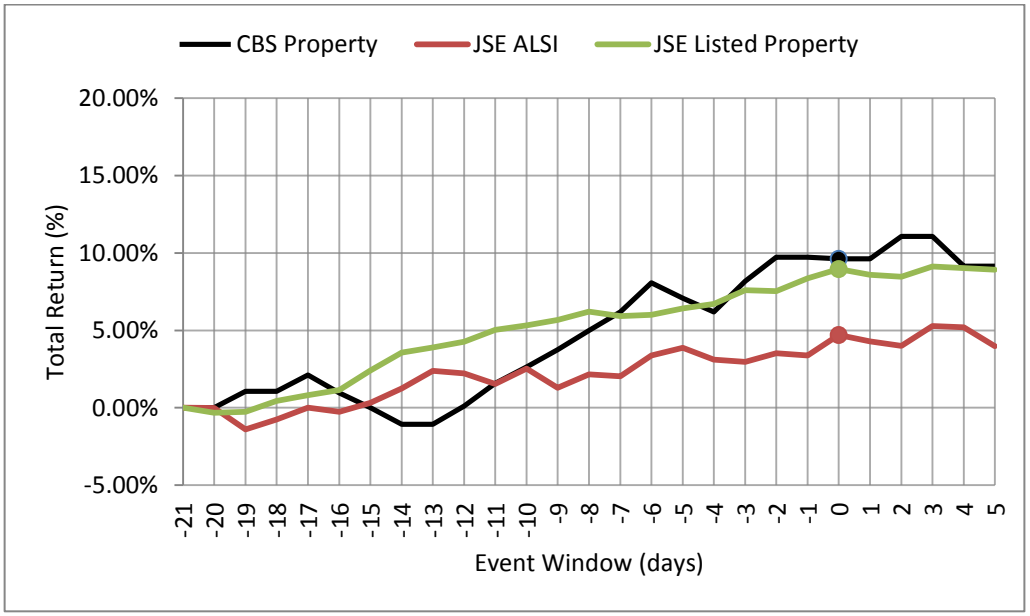


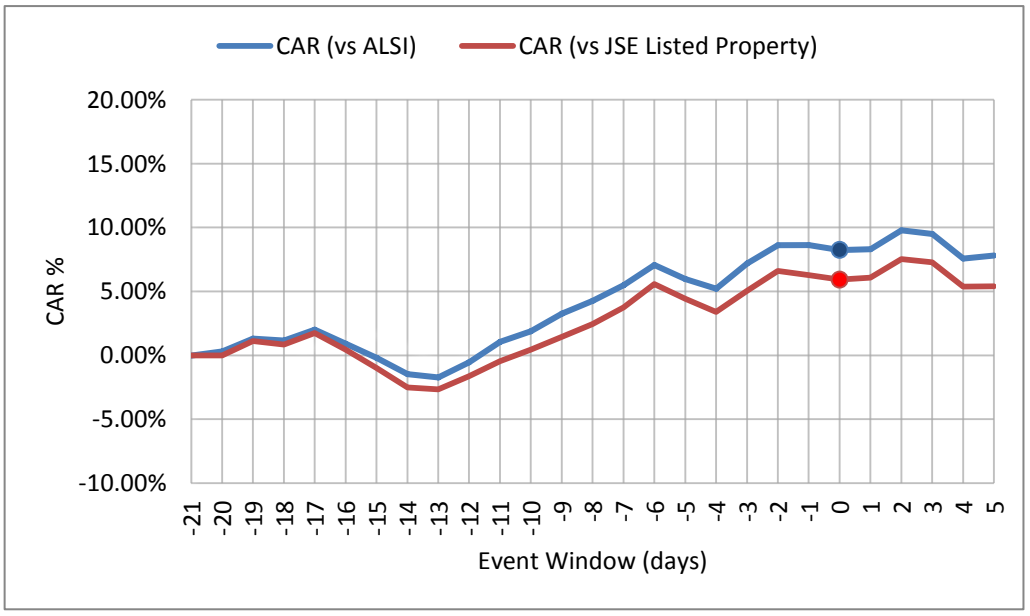
#	Target Company	Acquiring Company	Announcement Date
43	Barplats Investments Ltd	Eastern Platinum Ltd	01-Mar-07



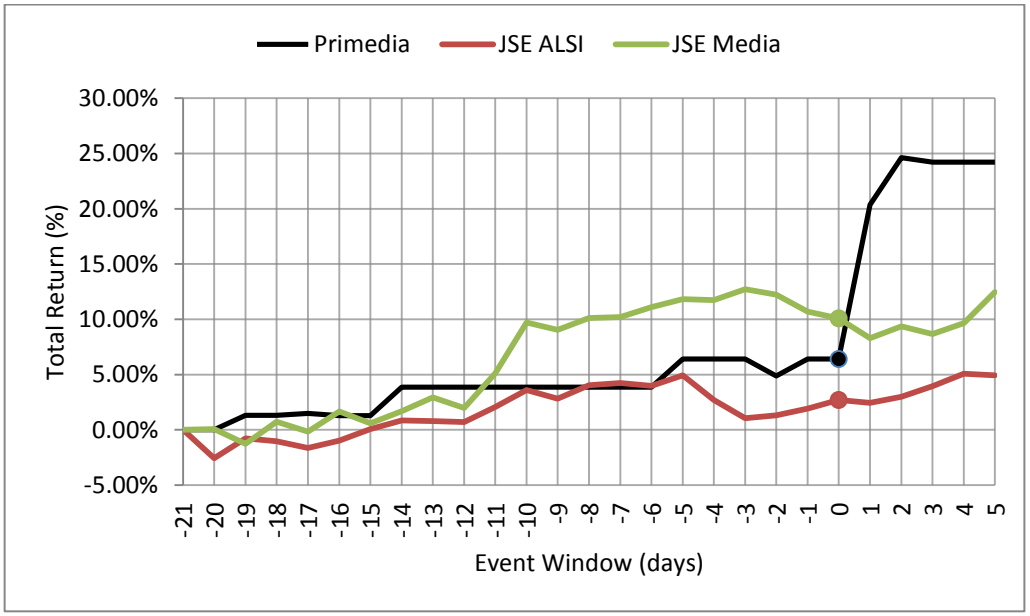


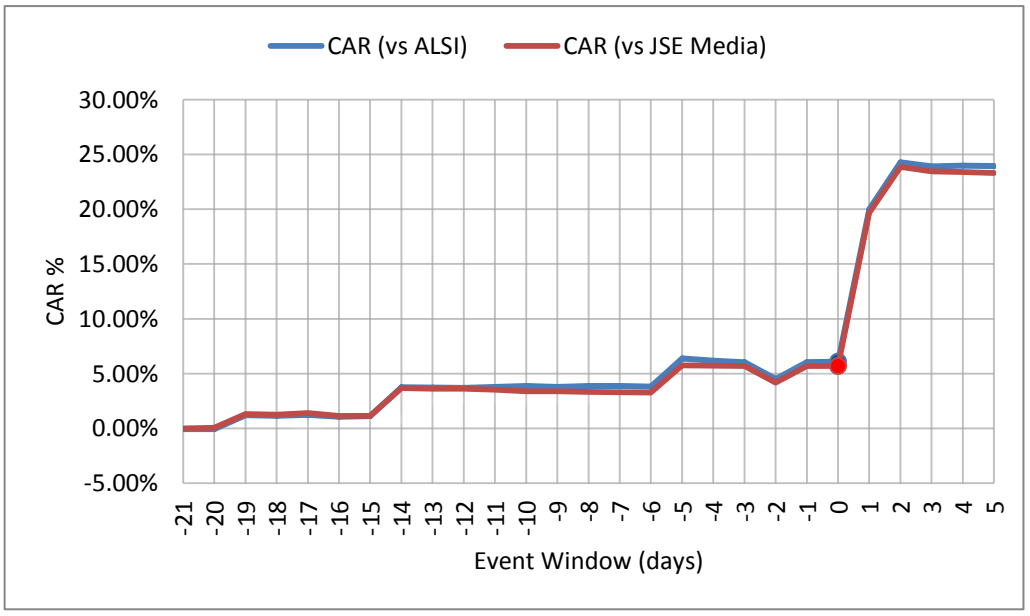
#	Target Company	Acquiring Company	Announcement Date
44	CBS Property Portfolio Ltd	Public Investment Corporation	02-Feb-07



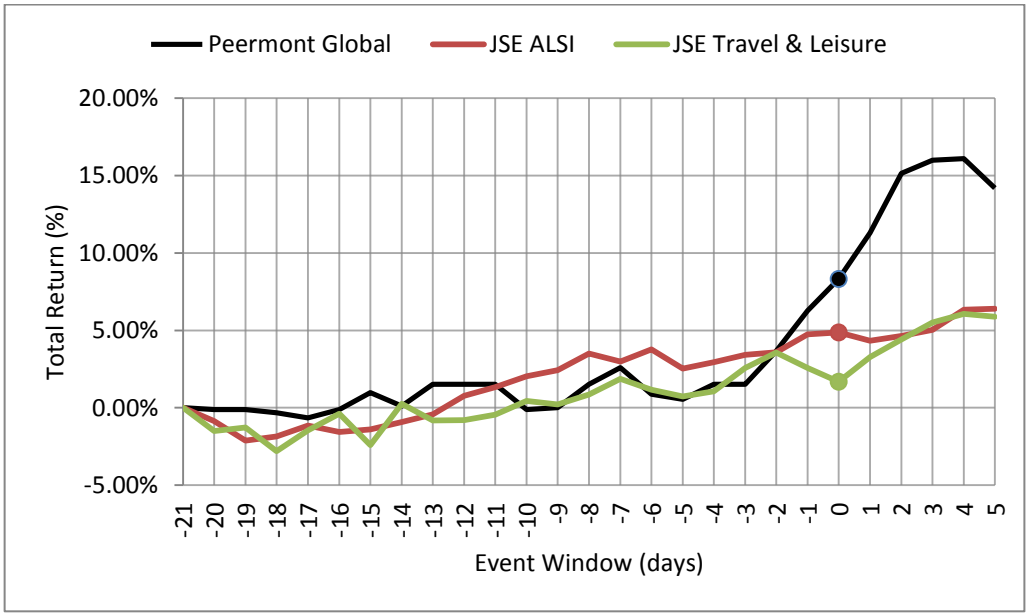


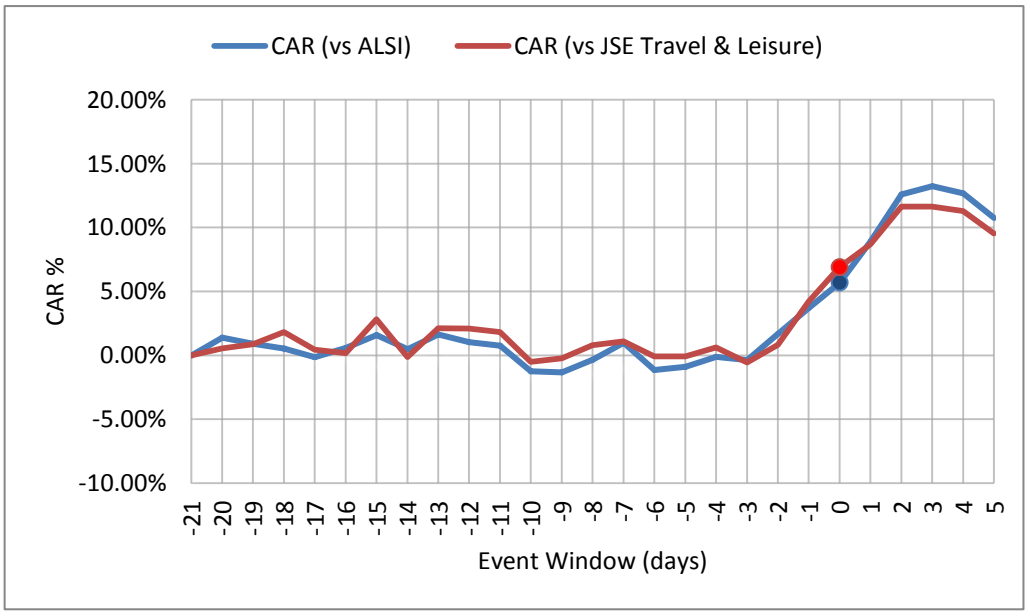
#	Target Company	Acquiring Company	Announcement Date
45	Primedia Ltd	Red Pen 2 General Trading (Pty) Ltd	10-Jan-07



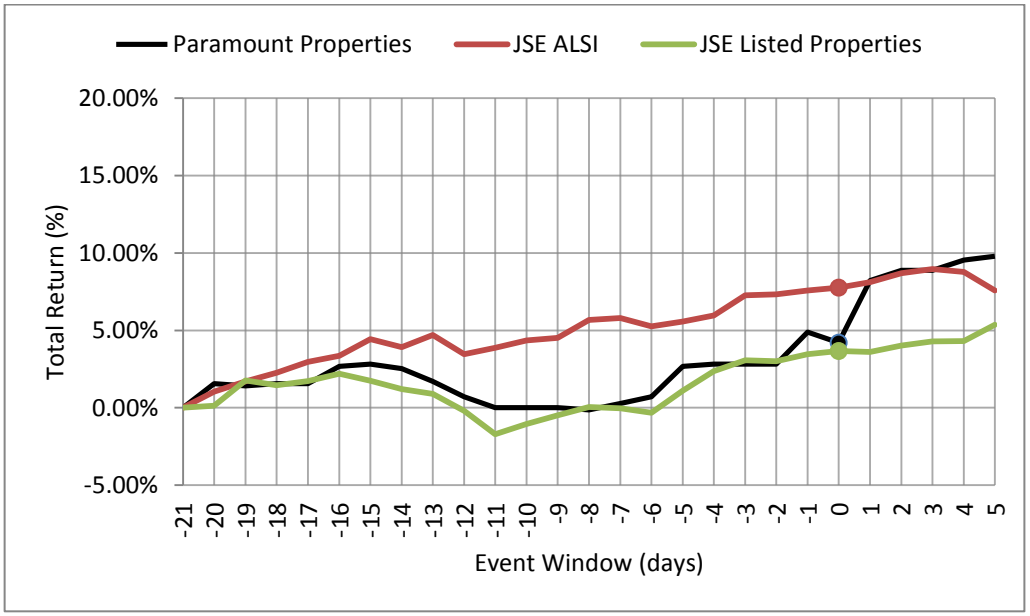


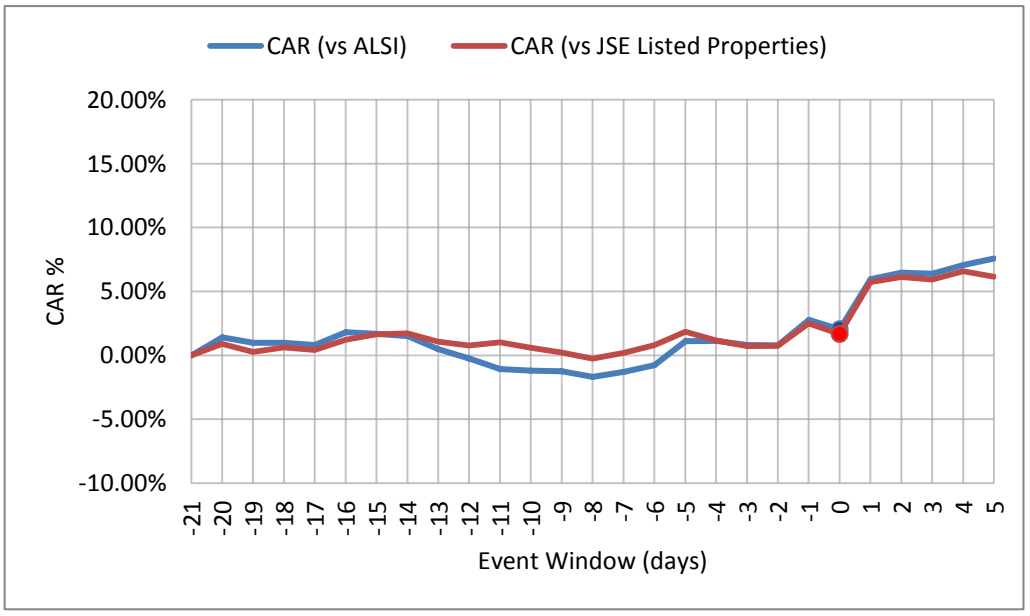
#	Target Company	Acquiring Company	Announcement Date
46	Peermont Global Ltd	Opalton Investments (Pty) Ltd	11-Oct-06



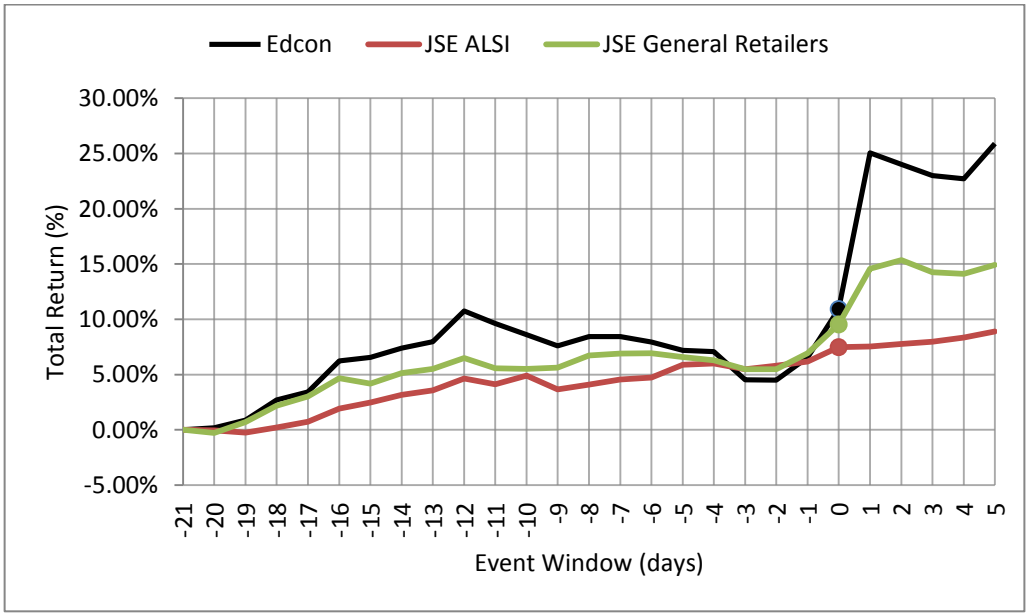


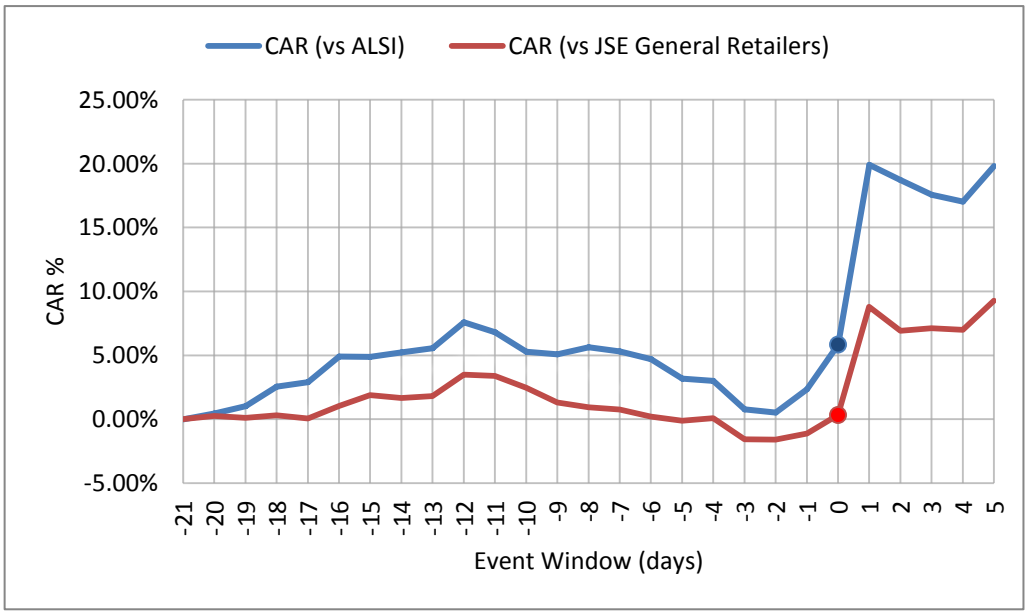
#	Target Company	Acquiring Company	Announcement Date
47	Paramount Property Fund Ltd	Growthpoint Properties Ltd	20-Oct-06



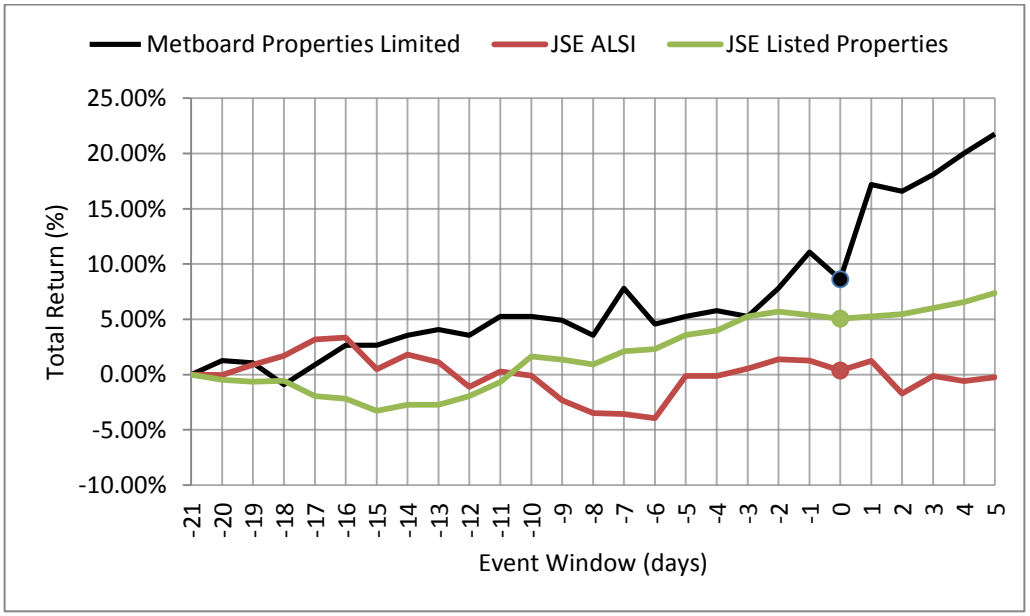


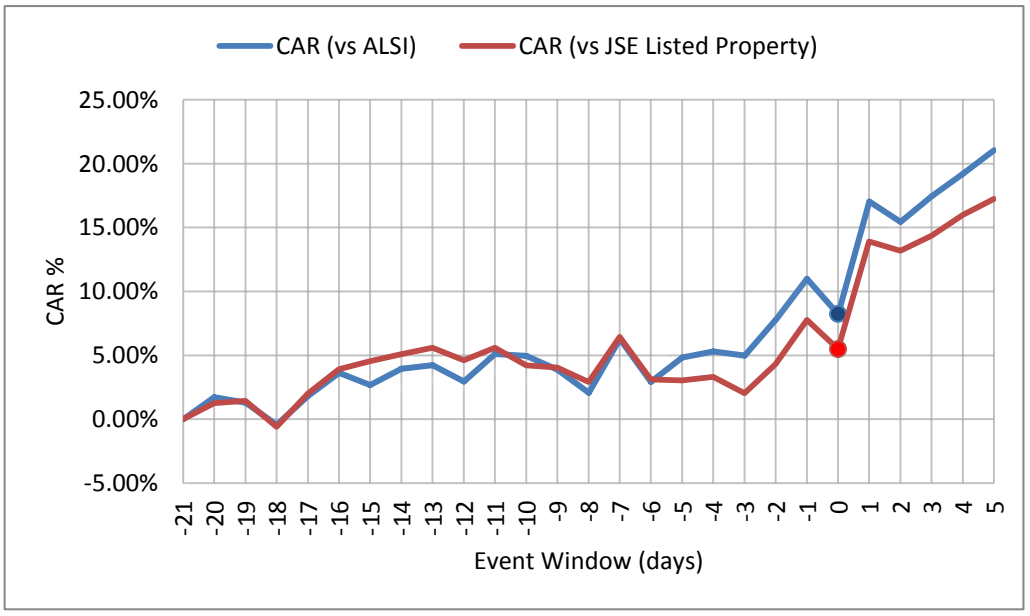
#	Target Company	Acquiring Company	Announcement Date
48	Edgars Consolidated Stores Ltd	Bain Capital	17-Oct-06



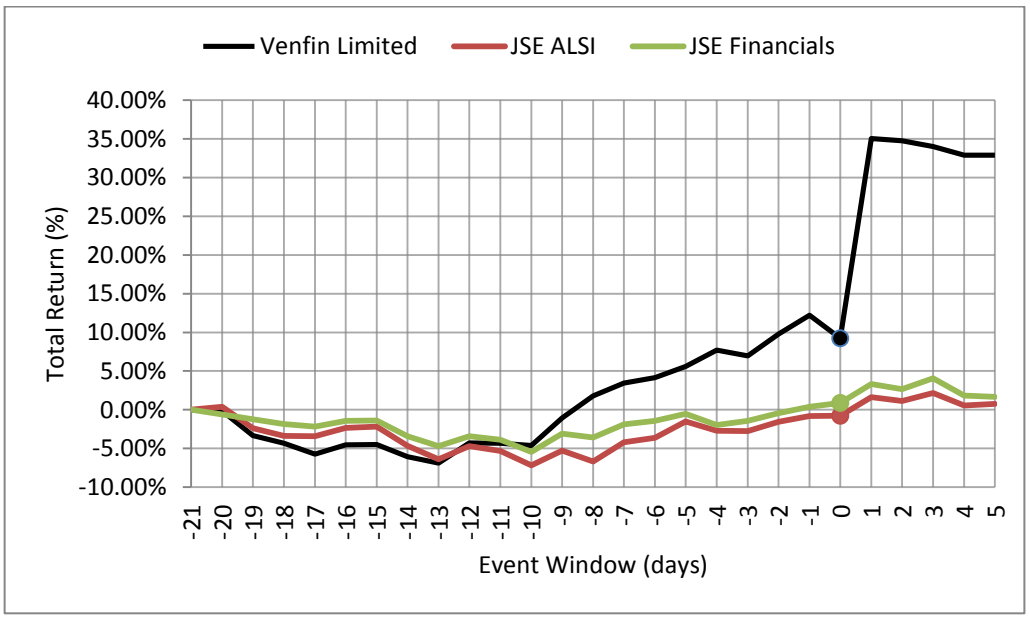


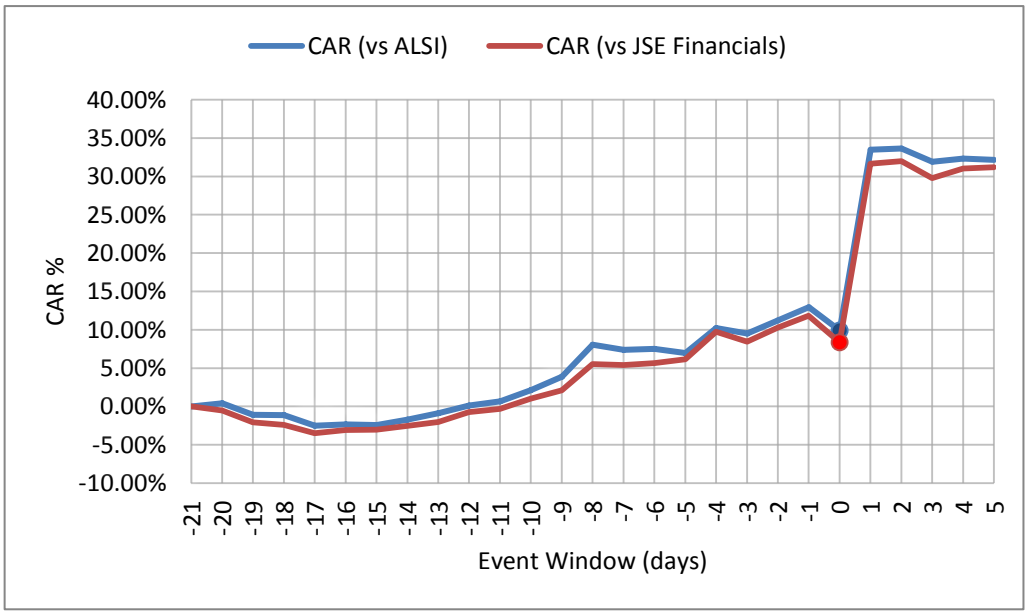
#	Target Company	Acquiring Company	Announcement Date
49	Metboard Properties Ltd	Growthpoint Properties Ltd	27-Feb-06



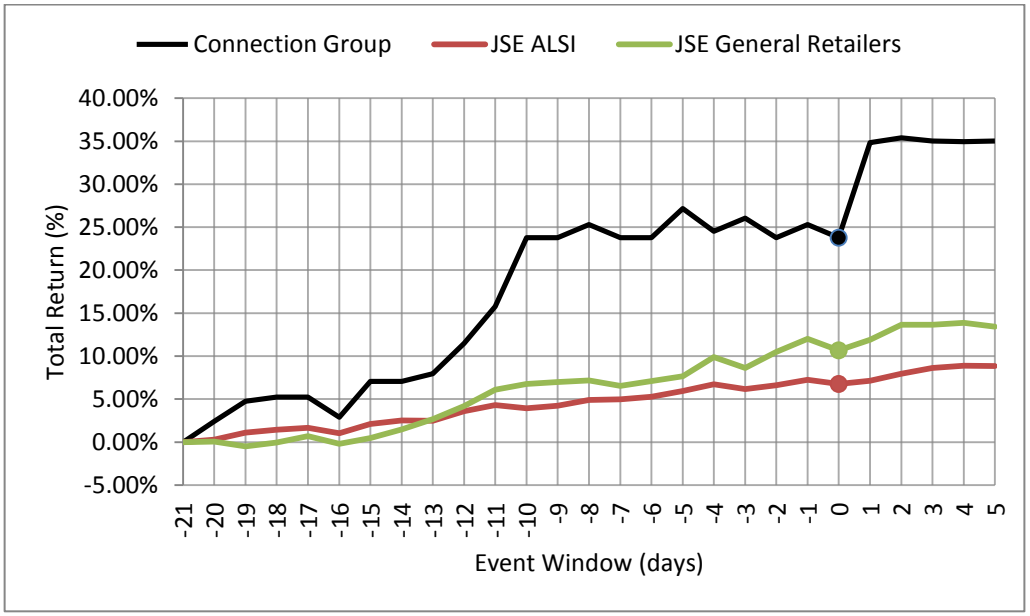


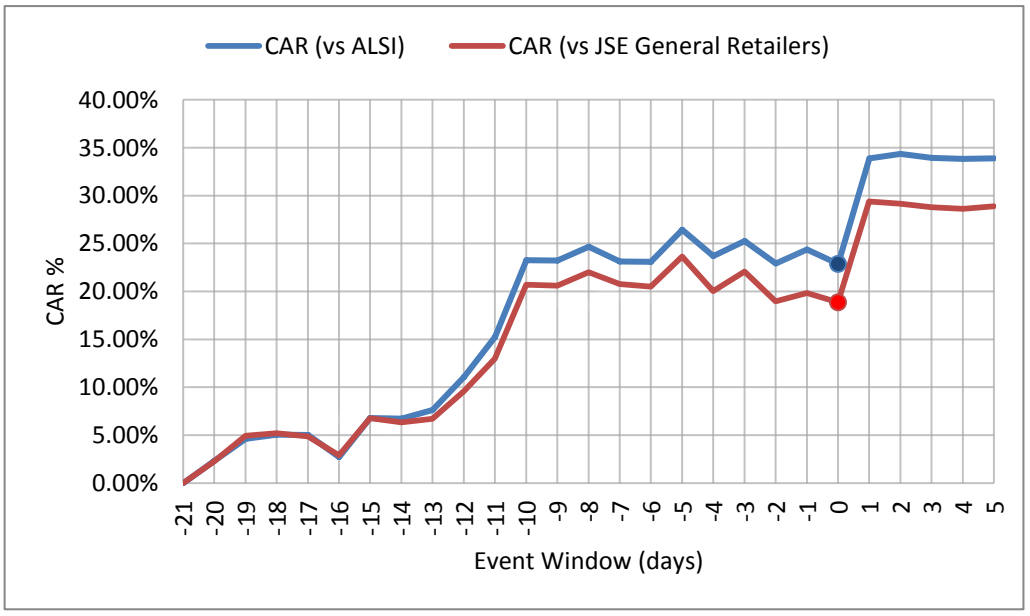
#	Target Company	Acquiring Company	Announcement Date
50	Venfin Ltd	Vodafone Holdings SA (Pty) Ltd	03-Nov-05



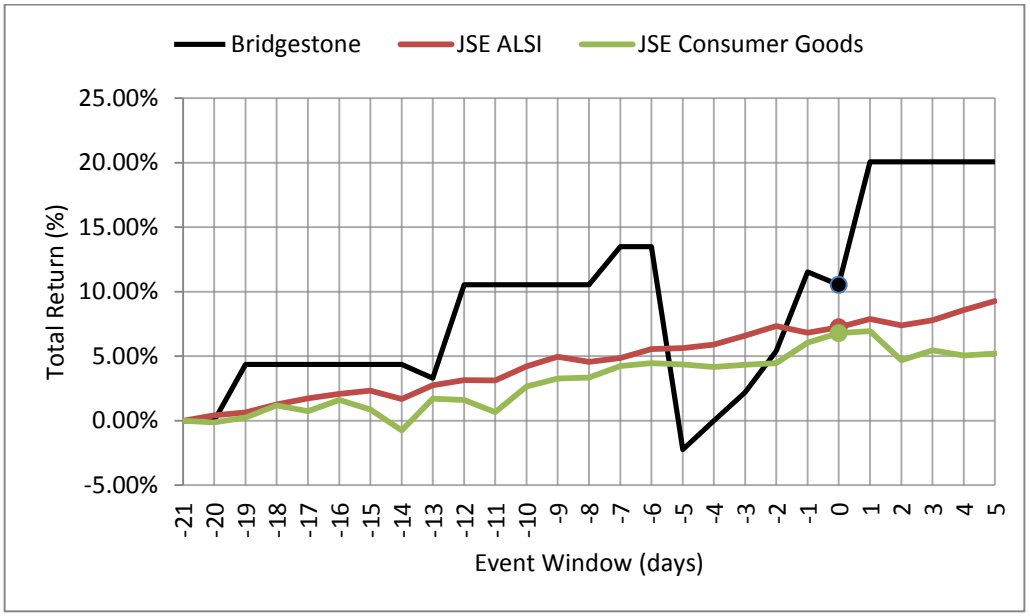


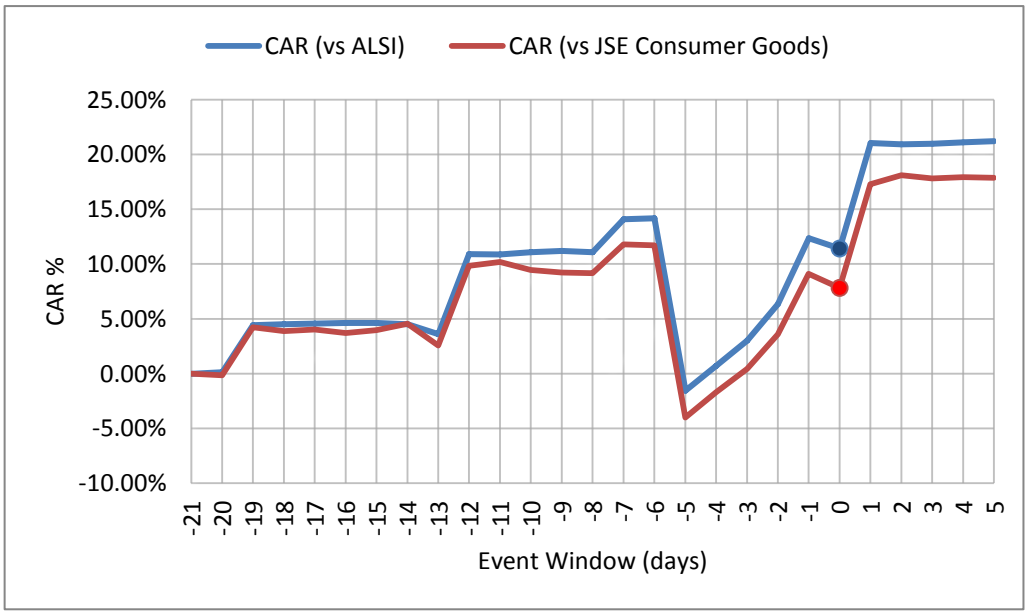
#	Target Company	Acquiring Company	Announcement Date
51	Connection Group Holdings Ltd	JDG Group Ltd	01-Aug-05



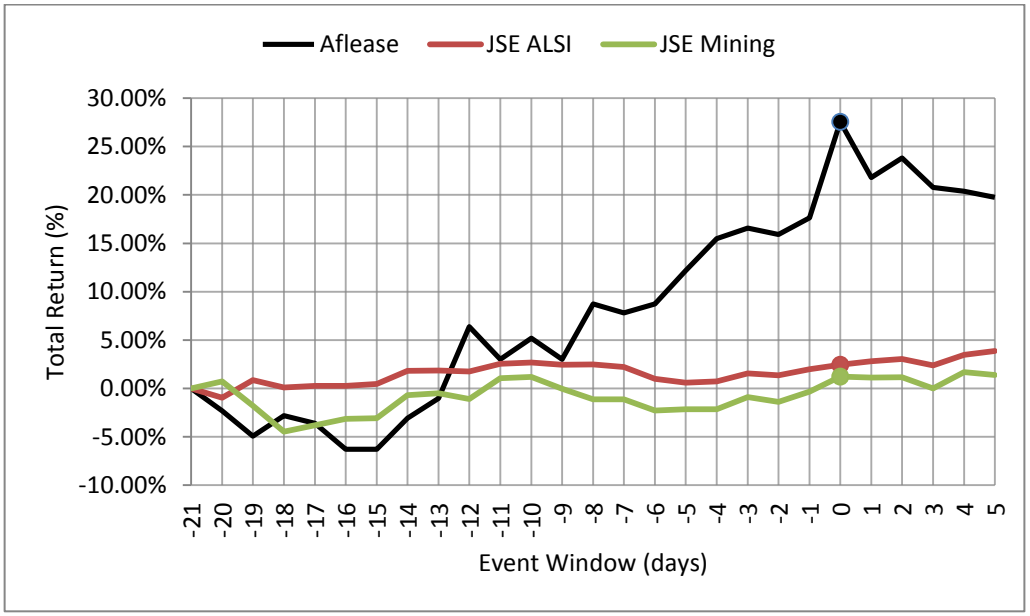


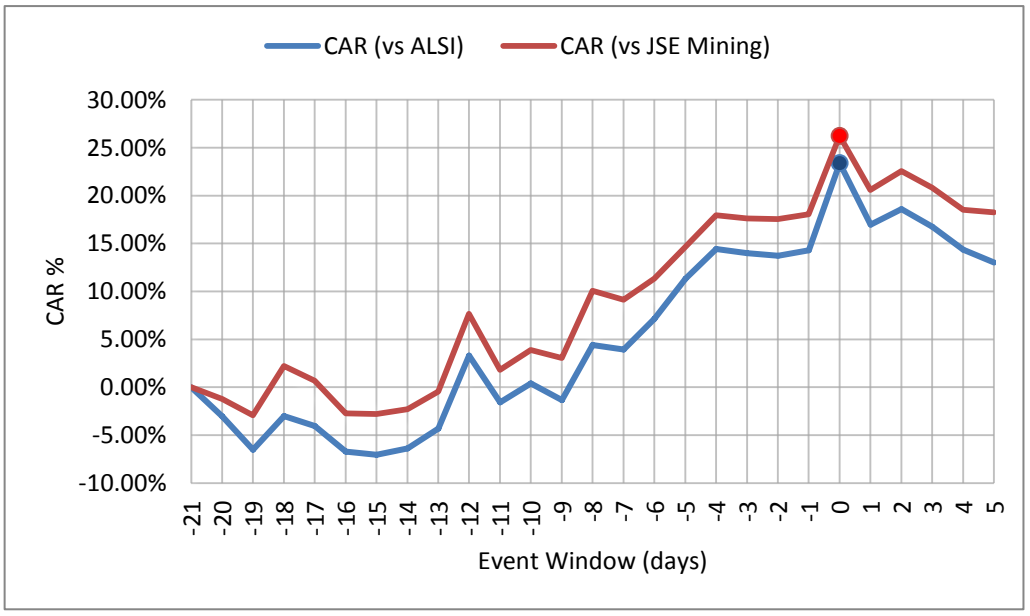
#	Target Company	Acquiring Company	Announcement Date
52	Bridgestone Firestone Maxiprest Ltd	Bridgestone SA Holdings (Pty) Ltd	27-Jul-05



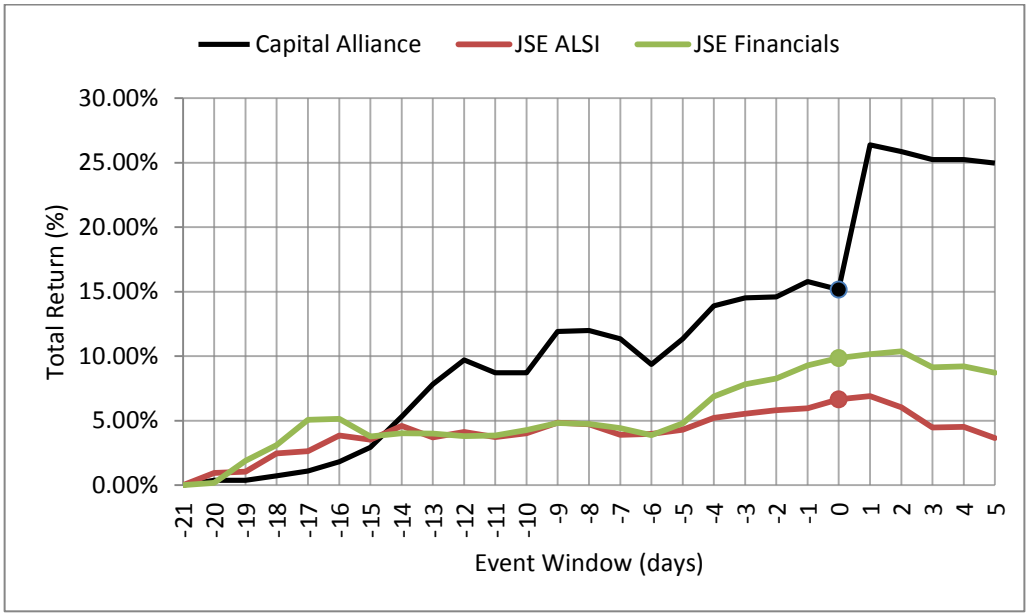


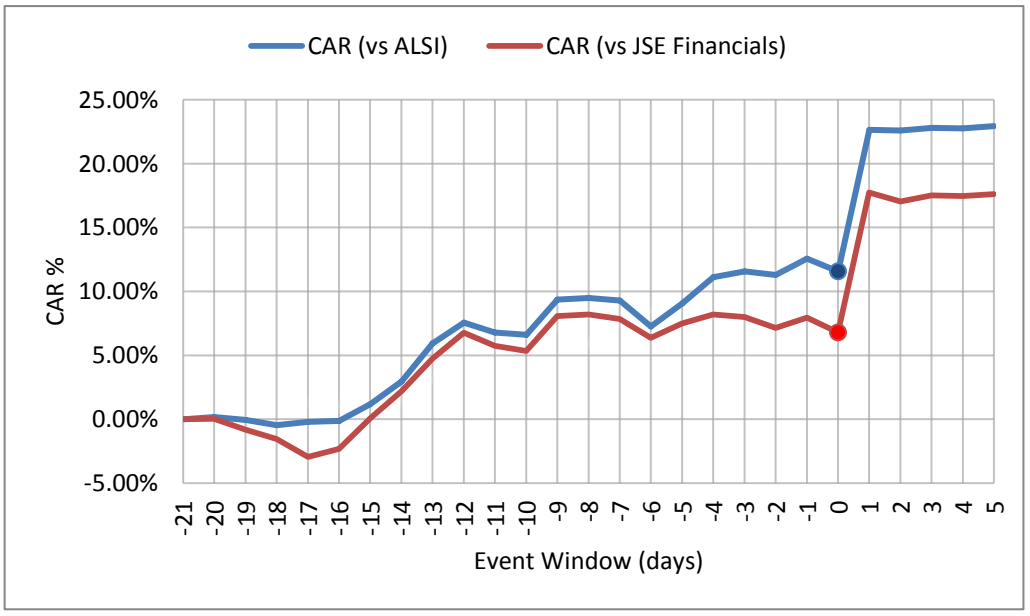
#	Target Company	Acquiring Company	Announcement Date
53	Aflease Gold & Uranium Ltd	Southern Cross Resources Inc.	05-Jul-05



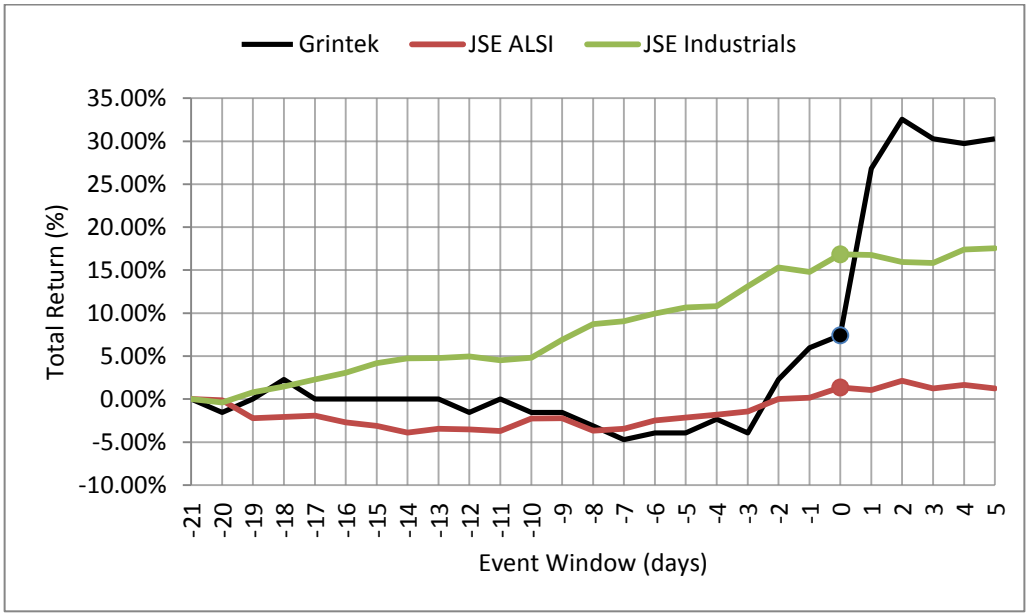


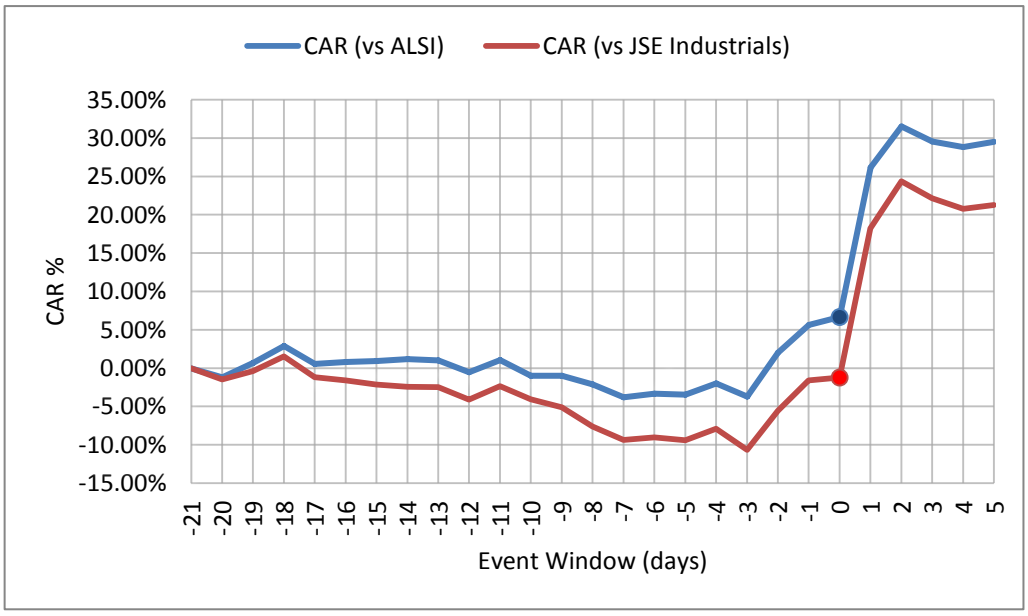
#	Target Company	Acquiring Company	Announcement Date
54	Capital Alliance Holdings Ltd	Liberty Group Ltd	02-Dec-04



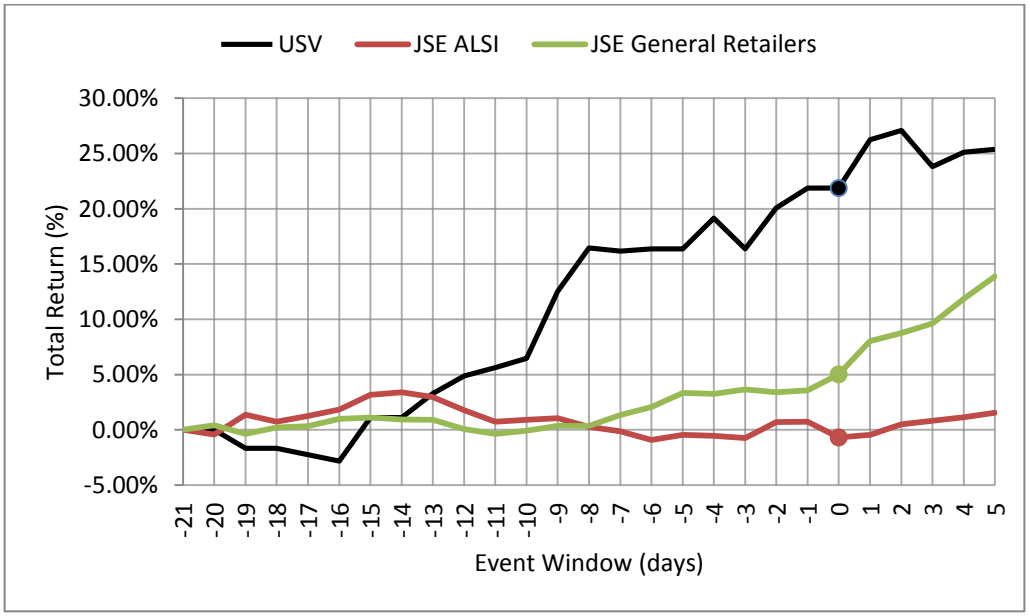


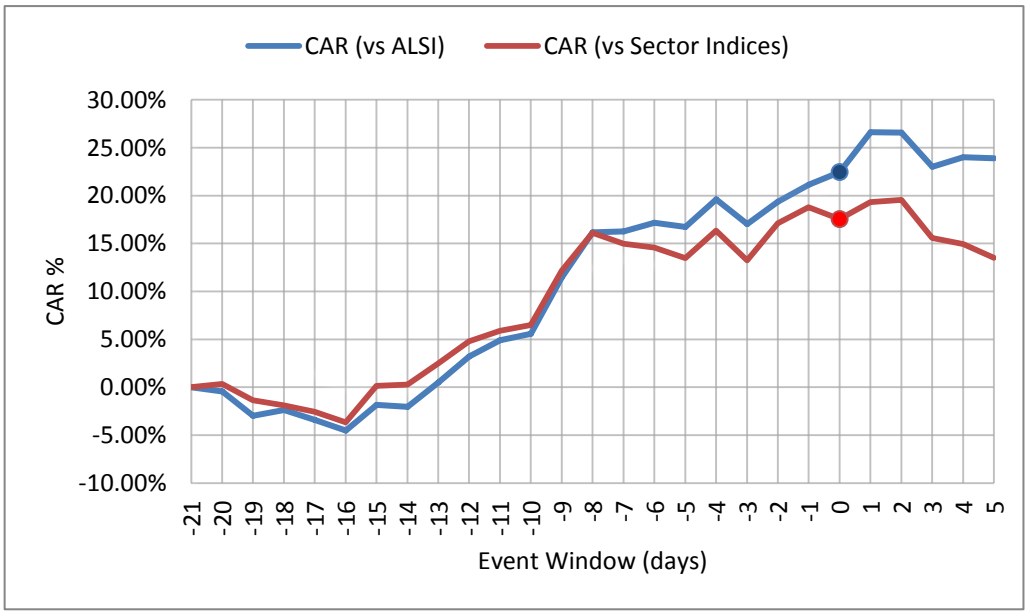
#	Target Company	Acquiring Company	Announcement Date
55	Grintek Ltd	SAAB South Africa (Proprietary) Ltd	10-Nov-04





#	Target Company	Acquiring Company	Announcement Date
56	United Services Technologies Ltd	Supply Solutions Ltd	29-Oct-04





#	Target Company	Acquiring Company	Announcement Date
57	Amalgamated Beverage Industries Ltd	SABMIller Plc	21-Jul-04

