The short and long term effects of large takeovers on the share price performance of acquiring companies listed on the JSE

Mark T.G Stafford
11356147

A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

7 November 2012

Abstract

Whether mergers and acquisitions create or destroy shareholder value for acquiring companies has been widely researched and remains fairly inconclusive. The purpose of this research was to study the short term and long term impacts of large acquisitions on the share price performance of acquiring companies using the event study methodology.

From a population of 11 062 acquisitions made by JSE listed companies between 1999 and 2008, 39 acquisitions met the relevant criteria of non-occurrence of confounding events and the availability of information. The Cumulative Abnormal Returns of acquiring companies over a short term period surrounding the announcement date and the longer term post-announcement date period were tested to observe whether they were significantly different to zero.

Whilst statistically significant Cumulative Abnormal Returns were observed over the short term 3-day event window [-1;+1], no statistically significant Cumulative Abnormal Returns were observed around the remaining five event windows.

Keywords

Mergers, acquisitions, share price, JSE.

Declaration

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

_____

Mark Stafford
November 2012

Acknowledgements

Firstly, I would like to thank my supervisor, Kuben Thaver, for his valuable direction, support and on-going availability right up to the finishing line.

I also extend my gratitude to Professor Michael Ward for providing me with the data sets and access to his control portfolio model, which were vital components necessary for the completion of this study.

I would also like to thank my brother for his loving support over the years – in particular when it has mattered most. Without his support, none of this would have been possible.

Finally, I would like to thank my wonderful fiancé for her love, understanding and support over the past 6 years. I look forward to our time together in this life and beyond.

CONTENTS

CHAPTER 1: PROBLEM DEFINITION

1.1 Introduction

Benoit, Xavier and Alain (2010) state that financial theory traditionally considers the improvement of share price performance to be the primary purpose of takeover transactions given the fact that a company's shareholders, as the beneficiaries of improved share price performance, are its owners. Accordingly, one of the primary purposes of any merger and acquisition ("M&A") transaction should be the creation of value in the hands of company shareholders by way of a concomitant increase in share price performance pursuant to the announcement and execution of the transaction.

The on-going and increasingly high levels of M&A activity over the past few decades continues to hold the attention of the public, corporates, merchant banks, the media, investors and researchers who try to understand the effects of takeovers on *inter-alia* share price performance (Kursten, 2008 and Smit, 2005). As M&A activity remains high (Ribeiro, 2010) it would be reasonable to expect to find conclusive evidence which, as a general rule at least, suggests that the share price performance of acquiring companies increases during the post announcement period of the acquisition. However, since M&A transactions take place under conditions of uncertainty, it should not be surprising that not all transactions are successful (Soongswang, 2009). Bruner (2005) consolidated the findings of 44 prior studies into the effects of M&A transactions and concluded that one third of these prior studies demonstrate value destruction, one third demonstrate value conservation and one third demonstrate value creation.

As discussed in more detail in chapter 2, the evidence from a wealth of research conducted in developed countries of the world on the share price performance of acquiring companies appears to carry mixed results and is, in some respects, fairly uncertain. Based on the research conducted for the purposes of this report, it is clear that the majority of research in this field has been conducted in the developed countries of the world. Of the research which has been conducted in the developed countries of the world, a large number of findings suggest that the share price performance of acquiring companies either decreases or increases marginally or stays the same during the post announcement period of the acquisition.

There is a fairly limited amount of research which has been conducted in the developing countries on the share price performance of acquiring companies (Ma, Pagan and Chu, 2009). However, in recent years, a new body of research which has been conducted in the developing countries of the world has begun to emerge (Ma *et al*, 2009). The conclusions drawn from this emerging research suggests that the share price performance of acquiring companies increases during the post announcement period of the acquisition, as discussed in chapter 2. This contrasts with much of the significant body of research which has been conducted in the developed countries of the world.

1.2 Research problem and motivation

There is plethora of research which has been done on the impact of M&A transactions on share price performance of companies which participate in these transactions. Most of this research has been focussed on the Australian, UK, USA and European stock markets ("Developed World") (Ma *et al* 2009, Soongswang, 2009, Wong and Cheung, 2009 and Pangarkar and Lie, 2004). Over the past decade research has been conducted based in the Asian markets such as China, India, Indonesia, Japan, Malaysia, Hong Kong, South Korea, Taiwan and Singapore ("Developing World") but given the fact that the initiation of research in these markets is a fairly recent event, the number of available studies is fairly limited (Wong and Cheung, 2009). There is also a limited amount of relevant research which has been conducted in the South African environment (Wimberley and Negash, 2004, Mushidzhi and Ward, 2004, Smit, 2005 and Kyei, 2008).

As discussed in chapter 2, research on the impact of the share price performance of acquiring companies based in the Developed World is in many respects inconclusive and inconsistent. However, a significant number of event studies have demonstrated that M&A activity appears to have created shareholder value on the whole, with most of the positive returns accruing to the target company and quite often negative returns accruing to shareholders of acquiring companies (Andrade, Mitchell and Stafford, 2001, Mushidzhi and Ward, 2004 and Dutta and Jog, 2009). However, research conducted on companies based in the Developing World, whilst more recent and significantly more limited in terms of the number of studies conducted, appears to be more consistent (Vaziri, 2011 and Wong and Cheung, 2009). This research suggested that positive abnormal returns are frequently enjoyed by shareholders of acquiring companies in the long term, while there is a mix of results on the short term effects

(Vaziri, 2011 and Wong and Cheung, 2009). Intuitively, given the fact that the primary purpose of M&A transactions is to create value for shareholders, it would appear that the results experienced in the Developing World are easier to accept than those results experienced in the Developed World. However, the fault with this intuitive thought process is that it fails to take into account the dynamics of the market and the reality associated with the hubris hypothesis and other realities associated with why M&A transactions often fail – as discussed in more detail in chapter 2.

In so far as research conducted in the South African environment is concerned, Smit's (2005) study of acquisitions made by companies listed on the Johannesburg Stock Exchange Limited ("JSE") covers a period of three years, has a sample size of 20 acquisitions and considers the short term effects of acquisitions on share price performance. Kyei's (2008) study attempted to build on Smit's study by focusing on the long term effects over the same three year period. Kyei conceded that, with a sample size of 14 in circumstances where the minimum sample size should have much larger, this small sample size is the Achilles heel of his study. Accordingly, Kyei suggested that this weakness presents an opportunity for future studies through the selection of a long enough time period to obtain a large enough sample size to draw more meaningful conclusions.

The majority of studies undertaken to determine the effects of M&A transactions on the share prices of companies involved in the transaction consider the short term effects on share price performance (Guest, Bild and Runsten, 2010 and Delaney and Wamuziri, 2004). Hussan, Patro, Tuckman and Wang (2007) took the view that while the short term effects of acquisitions on the share price performance of acquiring companies are significant due to the immediate stock market trading opportunities they create for investors, they also contend that whether M&A transactions have a sustainable long term positive effect is more relevant. Ma *et al* (2009), contend that M&A transactions are typically long term investments by companies which cannot be properly evaluated on the basis of the market's reaction over a short term period of a number of days. McWilliams and Siegel (1997) confirmed that those in favour of short term effects take the view that the initial reaction of the efficient market is a reasonable precursor of the actual long term performance. However, Shleifer and Vishny's (2003) behavioural theory of corporate acquisitions suggests that markets are inefficient. Agrawal and Jaffe (2000) also indicated that there is a growing acceptance that markets are not necessarily perfectly efficient and frequently take some time to

integrate new information into the share price of companies – which lends support for the need to consider the long term effects acquisitions.

Wimberley and Negash (2004) indicated that South African research on M&As is limited, restricted by small samples and generally focuses the short term effects of acquisitions on share price performance only. This view was bolstered by the fact that, despite a comprehensive search through the databases of academic research made available by the Gordon Institute of Business, only three other relevant South African studies could be found. All three studies were restricted by small samples, while two of the studies focussed on the short term effects of acquisitions on share price performance and only one on the long term effects.

Wimberley and Negash (2004) also indicated that prior to their study, there was no reliable research available on the long term effects of mergers and acquisitions in South Africa. They further indicated that a study of the long term effects of acquisitions on share price performance is required in order to confirm whether the overall share price gains (if any) are permanent and to compare the long term effects with the short term effects. Importantly, the only other South African study that could be found for the purposes of the literature review of this study on the long term effects was Kyei's (2008) study – with its inherent weakness. Accordingly, there appears to remain a dearth of available and reliable research in South Africa on the long term effects of M&As.

Given the apparent dearth of research which has been conducted in the South African environment, Shekhar and Torbey (2005) further validate the need for this proposed study by promoting the need for further research to be done at a country specific level. And given the earlier arguments in favour of both the short term and long term effects of acquisitions on share price performance, the time seems ripe for research to be conducted on both the short term and long term effects of large acquisitions on the share price performance of acquiring companies listed on the JSE.

1.3 Research aim

The aim of the intended research is to explore the short term and long term effects of large M&A transactions on the share price of acquiring companies listed on the JSE; in particular those acquisitions where the purchase price constitutes more than 20% of the market capitalisation of these acquiring companies. It is proposed that a significant

limitation of much prior research is the time period which the research covers. Accordingly, this research will cover a ten year period covering the years 1999 to 2008 – a significantly longer period than the three year period of both Smit's (2005) study of the short term effects and Kyei's (2008) study of the long term effects. In fact the time period from which this study will continue is from where Wimberley and Negash's (2004) ten year period of the long term effects ended. Wimberley and Negash's study is, other than Kyei's study the only other South African study noted which addresses the long term effects of mergers and acquisitions of companies listed on the JSE. The study will end in 2008 in order to allow for an appropriate long term post announcement period, as discussed in chapter 4. In addition to which, the Ernest and Young database of mergers and acquisitions in South Africa (which this study relied on in the data collection process) has not been updated since 2009.

Importantly, as no other study could be found which covers both the short term and long term effects of M&A transactions on share price performance in South Africa, this study will not only extend the time period of research conducted by Wimberley and Negash (2004) into the long term effects by a further ten year period but will be, if not the only, one of few South African studies conducted on both the short term and long term effects of mergers and acquisitions on the share price performance of acquiring companies. For the purposes of this research, no other published South African studies which consider both the long term and short term effects of large acquisitions on share price performance could be found.

This research report is set out as follows: chapter 2 describes the relevant theory by way of a literature review; chapter 3 sets out the research hypotheses; chapter 4 describes and explains the research methodology applied through the research process; chapter 5 describes and explains the results of the research undertaken; chapter 6 discusses the results of the research; and chapter 7 contains the conclusion and recommendations for further research.

CHAPTER 2 – LITERATURE REVIEW

2.1 Introduction

This literature review presents the reader with a general overview of M&A transactions and the principal reasons why companies engage in M&A activity. The review then goes on to discuss the phenomenon of merger waves, it addresses the primary reasons for M&A failure and also addresses the wealth effects of mergers and acquisitions both in the long term and the short term, as well as the impact of cash versus share funded transactions. An important dialogue on the differing wealth effects of M&A transactions in the Developed and Developing World is then followed by a dialogue on event studies.

Importantly, this literature review also sets the scene for the hypothesis recorded in chapter 3 and presents a large number of related studies, a number of which are important for the purposes of justifying this study and a further number of which are important for the purposes of contextualising the results recorded in chapter 6.

2.2 Overview of mergers and acquisitions

Kumar and Paneerselvam (2009) defined M&A activity as an attempt by the acquiring company to secure control of the target company and implement an operational strategy that would have the effect of increasing the value of both companies.The research conducted in the field of M&As has been prolific over the past few years (Ribeiro, 2010). This is far from surprising as M&A activity has become increasingly relevant in terms of corporate growth. This is borne out by the sheer number of transactions which have occurred in the most recent global M&A wave (Ribeiro, 2010).

M&As are an important topic in the field of finance and strategy; in particular with regards performance related issues, and have been subjected to numerous and varied academic studies (Kumar, 2009). Kumar (2009) confirmed that studies of post-acquisition performance often follow an analysis of share price performance to determine the gains (if any) related to the acquisition. The reason for this, he went on to state, is that, in the context of M&A, value should be reflected in the share price of companies.

M&As are not pioneering financial innovations, in fact they have been a key strategic tool for more than a century and there are a fairly standard set of incentives for managers to acquire target companies; including the need to create shareholder value (Langford and Brown, 2004 and Wimberley and Negash, 2004). M&As are one of the primary means of achieving corporate growth and development and have, as a primary objective, the maximisation of shareholder value (Delaney and Wamuziri, 2004).

Whilst it may be trite to say that the primary objective of every company is to grow profitably, it is important to note that this growth can be achieved either through organic growth or via external growth (Jayesh, 2012). External growth can be achieved through the acquisition of existing businesses or through M&As (Jayesh, 2012).

The key drivers of effective M&A strategies have been deemed to fall into the following five categories (Mamdani and Noah, 2004):

(a) removing over-capacity in mature industries;

(b) rolling up competitors in geographically fragmented markets;

(c) extending into new products or markets;

(d) purchasing R&D and new technology platforms; and

(e) exploiting and eroding industry boundaries through industry convergence.

2.3 Reasons for and objectives of mergers and acquisitions

An acquiring company can look for M&A opportunities for a number of reasons. Many companies site mergers as their primary strategic tool for growth and success, and point to: possible economies of scale; synergies; and greater efficiency as the key reasons for M&As (Andrade *et al*, 2001).

Economic theory has offered a number of reasons as to why M&As may occur, including: proficiency related reasons (which often involve economies of scale or other synergies); to create market power, possibly by forming monopolies or oligopolies; market discipline, for example in respect of the removal of incompetent target

management; self-serving attempts by management of the acquiring company to over expand; and to take advantage of any opportunities for diversification, such as exploiting internal capital markets and managing risk for undiversified managers (Andrade *et al* 2001).

Kode, Ford and Sutherland (2003) suggested that the most predominant reasons for M&As are:

(a) industry specific;

(b) globalisation – which leads to requirements for scale;

(c) growth;

(d) the need to expand product and service ranges;

(e) diversification; and

(f) the need to leverage core competencies.

Kiymaz and Baker (2008) stated that amongst the many reasons cited for M&As, the following are amongst the most important:

(a) synergy – which can be defined as an increase in competitiveness with the emergence of resultant cash flows in excess of what the two companies are likely to generate independently;

(b) agency – sometimes referred to as managerialism, which suggests M&As take place because they benefit the acquirer management team at the expense of acquirer shareholders; and

(c) hubris – an hypothesis which suggest that management makes mistakes in the process of evaluating target companies and, in so doing, may pay unwarranted premiums as they overrate their abilities to extract value from the target company.

According to Harford (1999), cash rich firms are more likely to engage in acquisition activities that destroy shareholder value than non-cash rich firms. Harford also stated that acquisitions by these cash rich firms are generally as a result of desire by management to increase their authority or to reduce company risk through a process of diversification. Harford further stated that acquisitions by cash rich firms are often as a result of misalignment in the incentives to management and that management incentives in these circumstances are usually aligned to the expansion in the size of the company beyond the size that maximises shareholder wealth. In this regard, Harford concluded that this misalignment is often a result of remuneration being positively related to growth rather than maximisation of shareholder wealth.

Smit (2005) stated that in spite of the uncertainty associated with whether M&As are value creating or destroying, M&A still continues to form an integral part of the strategy of many companies. Fuller, Netter and Stegemoller (2002) suggested that the reason for this is that while returns appear to be on average negligible, the large variation in these returns may encourage acquiring companies to engage in M&A activity in the hope that they find an acquisition that brings with it large returns.

There are five distinct categories of objectives for M&A transactions (Bruner, 2005, Langford, 2004 and Yang, Lin, Chou and Cheng, 2010), namely:

(a) to exploit economies of scale;

(b) to deal with interdependencies or leverage synergies;

(c) to expand current markets and product lines;

(d) to enter new businesses; and

(e) to maximise and utilise the firm's financial capabilities.

As discussed below, although the basic aim of M&A activity is the enhancement of shareholder value or wealth, the results of a large number of studies reveal that on average, mergers and acquisitions consistently benefit the target company shareholders but not necessarily the acquirer company shareholders (Jayesh, 2012).

Given the fact that academic research has shown that a significant number of M&As have the effect of destroying value for shareholders of the acquiring company, the obvious question to ask is why so many CEOs have persisted over the years with something that is on the face of it a risky strategy (Langford, 2004). Langford (2004) offers two primary reasons for this. Firstly CEOs often find themselves getting caught up in the adrenaline rush of M&As, particularly when an extensive M&A wave overwhelms their particular industry. Secondly, caught up in the thrust of this excitement, CEOs then often select the wrong targets overpay and in the process of becoming distracted by post-merger integration logistics, often neglect their pre-existing businesses.

2.4 Merger and acquisition waves

According to Ribeiro (2010), whilst a significant amount is known about the general pattern of M&A activity, the simple fact that M&A activity tends to occur in waves continues to be an area of considerable interest to researchers worldwide.

M&A activity tends to occur in cycles, not entirely dissimilar to economic cycles: a sudden rise and fall or deal peaks in M&A activity quickly followed by crashes are not altogether uncommon in M&A activity, which resembles the volatility of stock markets (Ribeiro, 2010). As is the case in stock market bubbles, M&A activity can become so intense that it leads to what is commonly referred to as a merger wave (Ribeiro, 2010).

Mitchell and Mulherin (1996) attempted to address the issue of why M&As occur by building on two empirical features of M&A activity over the last century, namely that: M&A activity occurs in waves; and within a particular wave, M&As appear to strongly cluster by industry. Mitchell and Mulherin further stated that these features appear to suggest that M&A could occur as a result of unexpected shocks to the structure of a particular industry.

According to Andrade *et al* (2001), whilst M&A activity occurs in easily identifiable waves over time, these waves are not similar. In fact, they further stated that the identity of the various industries which form part of each M&A wave varies tremendously.

Andrade *et al* (2001) also stated that if M&A activity happens in waves but each wave is industry specific then a large portion of M&A activity may be as a result of industry level shocks. They then further stated that industries then react to these shocks by

restructuring via the M&A process. Examples of these industry level shocks which are provided include: technological innovation; supply shocks and deregulation. In this regard, Andrade *et al* concluded that the industry shock explanation for mergers has added significantly to our understanding of M&A activity, not insofar as how M&A create value, but rather when and why they occur.

Mergers and acquisitions tend to peak in waves in the presence of two catalysts (Langford, 2004):

(a) a significant discontinuity in the business environment which can be caused by issues such as new technologies, new or fast growth markets or change in regulatory environments; and

(b) the emergence of new sources of finance.

Langford (2004) and Ribeiro (2010) identified the occurrence of the following six global M&A waves:

(a) the first significant merger wave which took place at the end of the 19th Century was as a direct consequence of rapidly expanding markets and an abundance of bank finance;

(b) the second wave took place in the 1920s and with a consequence of buoyant equity markets inspired a wave of vertical mergers;

(c) the third merger wave took place in the 1950s and 1960s and was caused by an abundance of high priced equity;

(d) the fourth merger wave of the 1980s, which were financed by junk bonds, was caused by a massive demand for new products such as computers and pharmaceuticals;

(e) the fifth merger wave of the mid 1990s which ran until early 2000 was as a result of the new mass market products which were emerging such as mobile phones and converging technologies, together with deregulation in these environments;

(f) the sixth (and most recent) M&A wave ran from 2003 – 2007 and was primarily a result of globalisation, private equity investment and shareholder activism.

2.5 The wealth effects of mergers and acquisitions and the creation of shareholder value

Andrade *et al* (2001) identified that two primary objectives in corporate finance research are:

(a) how to measure value creation or value destruction though M&A transactions;

(b) how to distribute this value creation or destruction between the acquiring company and the target company.

A significant volume of evidence has suggested that the combined returns of M&A transactions in the hands of shareholders of target companies and acquiring companies are positive (Kiymaz and Baker, 2008, Delaney and Wamuziri, 2004 and Mueller and Sirower, 2003). In so far as the effect of acquisitions on shareholder wealth in target companies is concerned, an abundance of prior studies has shown that shareholders' of target companies often enjoy positive abnormal returns (Al-Sharkas and Kabir Hussan, 2010, Kiymaz and Baker, 2008, Hussan *et al*, 2007 and Bruner 2005).

From the point of view of the acquiring company, a question of fundamental importance is whether the present value of future cash flows from an acquisition is larger than the present value of the costs (Guest *et al*, 2010). Put differently, does the proposed transaction have a positive net present value? Guest *et al* (2010) concluded that if this is indeed the case, then the value (and therefore the share price as one possible measure of value) of the acquiring company should increase in the post-acquisition period. Guest *et al* also confirmed that financial theory is an important criteria for acquiring companies to apply and should be the method which financial executives apply when valuing an acquisition target. This being the case, one could reasonably expect the share price of an acquiring company to increase after a large acquisition is made. However, it would appear that this is all too frequently not the case (Bogan and Just, 2009).

Contrary to a KPMG survey in London which found that 53% of M&As destroy value (Brewis, 2000), Bruner (2005) refuted the popular belief that M&A transactions ultimately destroy shareholder value. On the contrary, Bruner (2005) concluded that the shareholders of acquiring companies, as a general rule, earn approximately the

required rate of return on investment and in so doing purports to demonstrate that M&A activity in the developed world economies is at least a value-maintaining proposition for shareholders of acquiring companies.

There are a number of factors which contribute to determining whether shareholder value is created through the merger and acquisition process (Arugaslan, DeMello and Yaman, 2012). These factors include:

(a) tender offer - it is often found that in a tender offer process there is less information leakage before the formal merger announcements. Furthermore, in a tender offer there is a greater likelihood that the shares of the target company will be undervalued;

(b) bidder size - often the smaller acquirer firms obtain a higher announcement return than the returns enjoyed by larger firms;

(c) method of payment - in pure stock exchange acquisitions, the acquiring firms more frequently obtain significant negative returns whereas they obtain normal returns in cash offers;

(d) ownership structure – private firm M&A activity is more likely to be influenced by potential synergies and the creation of shareholder wealth and less likely to be influenced by ego and other factors associated with prestige; Furthermore, acquiring companies are more likely to underpay for private companies because the market for these companies is illiquid;

(e) strategic objective – companies which focus on geographic expansion or increased market share tend to have higher returns than acquisitions with other objectives;

(f) same industry - the announcement returns for acquiring companies are often higher when the acquiring company and the target company operate in a similar line of business.

Roll (1988) identifies a number of the potential sources of gains from M&A, including the following:

(a) monopoly power - which includes the ability to enjoy monopolistic profits;

(b) synergy - in particular reductions in production and/or distribution costs;

(c) the ability to eliminate or discard inferior management of target companies;

(d) financial motivation - for example the use of tax shields.

The assessors of the 1990s have created the perception in their press that acquisitions destroy shareholder value and, as a result, new and stricter corporate governance rules have led to greater calls for companies to declare dividends and in so doing return cash to shareholders as well as engaging share repurchase schemes in an effort to eliminate the risk that cash in the hands of management will not be used optimally (Mamdani and Noah, 2004).

Mamdani and Noah (2004) confirmed (in a Morgan Stanley survey of investor views of the corporate redeployment of cash) that almost 60% of investors identified clear preference for either share re-buybacks or dividend increases rather than reinvestment of cash by the company in M&A activity. The distinct preference for the return of cash to shareholders highlights the reluctance on the part of investors to entrust executives with the decisions to deploy cash in M&A activity (Mamdani and Noah, 2004). There is, however, little doubt that acquisition capabilities are a vital component of sustainable long term growth of profitability for any company (Mamdani and Noah, 2004).

2.6 The Developed versus the Developing World

A distinction between acquisitions made by companies domiciled in the Developed World and those domiciled in the Developing World is important to make. The reason for this that much of the research carried out in the Developed World comes to conclusions which are inconsistent with the prevailing conclusions arrived at by researchers in the Developing World (Vaziri, 2011, Wong and Cheung, 2009; Ma *et al*, 2009 and Pangarkar and Lie, 2004). Wong and Cheung (2009) took this further and stated that the results of M&A studies in the Developed World are valid for the

Developed World but are not valid for the Developing World. One of the primary reasons for this is that the institutional environment of the Developing World is far different from that in the Developed World (Wong and Cheung, 2009). Wong and Cheung further stated that for Developing World an announcement regarding an acquisition is taken to constitute good news for shareholders of acquiring companies but is not taken as good news for shareholders of target companies, which underscores the fundamental difference between the effects of M&As on acquirer and target shareholders in the Developed World and their counter-parts in the Developing World.

By way of example, against the backdrop of the Indian stock market (as is the case in South Africa) not many studies have been performed on the effect of M&As on the value of shareholders of acquiring firms (Kumar and Paneerselvam, 2009). Kumar and Paneerelvam's (2009) study found that there are positive abnormal gains for companies involved in M&A in the immediate period surrounding the announcement date. They further found that the accumulative abnormal gains in the study were higher for acquiring companies compared to target companies in all time windows surrounding the acquisition date. This is in stark contrast to the Developed World studies. The results of their study further indicated that M&A on average is value creating activity for both the acquirer companies and target companies.

It is trite to state that South Africa is a Developing World country which is faced with the anomaly of having financial markets and institutions which are more akin to those which prevail in the Developed World. Accordingly, an interesting observation to take away from this study will be whether the results are aligned with the results of studies conducted in the Developed or the Developing World.

2.7 The short term and long term effects on acquiring company share price

For reasons mentioned in chapter 1 above, a further important distinction to make in the process of assessing the impact of M&A transactions on the share price of acquiring companies is the distinction between short term and long term effects of M&As.

Andrade *et al* (2001) stated that from the company perspective M&As represent extra ordinary events which often enable the company to double its size in a short period of time. Accordingly, measuring the value creation which results from M&As and

determining how this value creation is distributed amongst merger participants are two central objectives in M&A research (Andrade *et al*, 2001).

The majority of international studies contemplated for the purposes of this research focused on the short term effects of acquisitions on share price performance of the acquiring company. Only a limited number of these studies contemplated the long term effects. In an effort to explain why most research has tended to focus on the short term (or pre-acquisition) effects of M&As, Andrade *et al* (2001) explained that the share price of a company should almost immediately adjust to include the effects of the M&A announcement in an efficient market.

The short term effects on acquiring company share price

Clearly one of the primary objectives of all companies is the maximisation of shareholder wealth. The appropriate test of the success of a M&A transaction is the effect of the transaction on the company share price (Kumar and Panneerselvam, 2009). According to Kumar and Panneerselvam (2009), in an efficient market, the investor would expect that the future benefit of a M&A would be fully reflected in the share price of a company by the date of the transaction.

According to Andrade *at al* (2001), the evidence on whether M&As create value for shareholders which is the most statistically reliable is that evidence which emanates from traditional short window event studies; where the average abnormal stock market reaction at the announcement date is used to gauge whether there has been value creation or destruction in the hands of the shareholders of the acquiring company. In efficient markets share prices adjust quickly after an M&A announcement, which incorporates any expected changes in value (Andrade *et al*, 2001 and Uddin and Boateng, 2009). Importantly, Andrade *et al* stated that the entire wealth effect of a M&A transaction should be incorporated into the company's share price by the time uncertainty is resolved, in particular, by the date of merger or acquisition completion. Therefore, the following short term two event windows are commonly used:

(a) the three days immediately surrounding the dates of the merger announcement; and

(b) a longer window period beginning a few days prior to the announcement and ending at the close of the merger process (Andrade, 2001).

In so far as the short term effects are concerned for the Developed World, the evidence of the impact on the shareholders of acquiring companies is fairly inconsistent (Hassan *et al*, 2007, Raj and Forsyth, 2004 and Fuller *et al*, 2002). A number of studies report a statistically significant positive cumulative abnormal return ("CAR") in the short term for shareholders of the acquiring company (Conn, Cosh, Guest and Hughes, 2005 and Goergen and Renneboog, 2004). However, a significantly larger number of studies report a statistically negative CAR in the short term for shareholders of the acquiring company (Al-Sharkas and Kabir Hassan, 2010, Kiymaz and Baker, 2008 and Hussan *et al*, 2007). And a number of studies report no significant change in CARs for the shareholders of the acquiring company in the short term (Delaney and Wamuziri, 2004).

As to the short term effects for the Developing World, the research by Ma *et al* (2009) for ten emerging Asian markets which included a sample of 1 477 M&A transactions over the six year period between 2000-2005 concluded that stock markets could expect positive CARs in the share price performance of acquirer companies – which is not in line with the conclusions of most studies in the Developed World. Ma *et al's* research was validated by Vaziri (2011), who found that in China, Hong Kong and Taiwan shareholders could expect large CARs in the short term.

A study conducted by Pangarkar and Lie (2004) on the performance of acquiring companies in Singapore concluded that, as an average, acquiring companies experienced positive CARs in the short term. This is in line with the conclusions drawn by Ma *et al* (2009) and Vaziri (2011) and is similarly inconsistent with a large number of studies in the Developed World.

In relation to the short term effects for South Africa, Smit (2005) and Mushidzhi and Ward (2004) concluded that shareholders of acquiring companies do not earn CAR in the short term.

The long term effects on acquiring company share price

History has shown that senior executives and investors are wise to be sceptical about big mergers and acquisitions (Agrawal *et al*, 2011). Indeed, there have been many high profile failures which demonstrate that big deals can destroy significant value for shareholders (Agrawal *et al*, 2011). At the same time, large transactions can also

create significant value for shareholders of the acquirer company, even if it takes some time for that value to be created (Agrawal *et al*, 2011). Agrawal *et al* (2011), in a recent study which analysed M&A transactions that were worth 30% or more of the acquiring company's market capitalisation, found that half of the deals created above average returns to shareholders when measured over the longer term period after the deals completion date.

Conventional wisdom has suggested that the announcement period stock price reaction to a merger or acquisition fully impounds the information effects of mergers (Andrade *et al*, 2001). However, recent long term event studies which measure abnormal returns over a longer period cast doubt on the interpretation of this conventional wisdom and suggest that longer term event studies are more appropriate for the purposes of measuring the impact of M&A activity on the share price performance of acquiring companies (Wimberley and Negash, 2004). According to these recent long term event studies, investors often fail to assess and quickly understand the full impact of corporate announcements, the implication of which is that inferences based on the announcement period event windows are often flawed (Wimberley and Negash, 2004).

Whilst economic theory clearly states that markets are efficient and as a result adjusts quickly to reflect the long term impact of certain events, long term event studies are still important because a number of researchers have found that short term abnormal returns do not fully capture the effects of the market's reaction to a particular event and that the reaction is often delayed to some extent (Agrawal *et al*, 1992). Smit (2005) stated that long term event studies have however been the subject of major criticism. He further stated that the reason for this is that the results appear to have a wide range due to the lower accuracy of expected normal returns. Andrade *et al* (2001) confirm that the three year expected returns can often range from between 30 to 65%, which makes it difficult to estimate whether an abnormal return of say 15% is statistically significant. Smit added to this when he stated that additional market information over and above the announcement of the M&A transaction (for example information in the form of interim and annual results) also impacts share price performance. Smit further stated that this results in high levels of noise when attempting to determine the impact of M&As on share price performance from a long term perspective.

However, in spite of these problems it is still important to make an effort to consider the long term effects of M&As, in particular because the short term abnormal returns do

not always fully capture the effects of the market reaction to an event (Wimberley and Negash, 2004).

While the majority of existing research focuses on share price returns immediately surrounding the announcement dates of the M&A, a smaller body of research exists which examines long run post acquisition returns (Dutta and Jog, 2009). The majority of these long term studies are based on US data and have concluded that acquiring firms experience significant negative abnormal returns over a one to three year period after the M&a activity (Dutta and Jog, 2009). According to Andrade *et al* (2001) a large number of these long term studies resort to different methodological choices and a variety of factors may affect the conclusion drawn by these studies. In addition, Dutta and Jog (2009) stated that a large number of these studies are based on overlapping US data and as a consequence have suffered from data mining biases.

Agrawal and Jaffe (2000) concluded that, having reviewed a significant number of prior influential studies, these studies showed significant evidence of abnormal underperformance of shares following M&As in the longer term.

Dutta and Jog (2009) have performed a study on the long term abnormal returns of Canadian acquiring firms. In this study they used a comprehensive sample of 1300 acquisitions during the period 1993 to 2002. Contrary to what is usually reported in the US studies, Dutta and Jog did not find any significant negative long term abnormal returns for Canadian acquirers.

As for the long term effects in the Developed World on the whole, Hussan *et al* (2007) has suggested that the evidence of the impact on the shareholders of acquiring companies is also fairly inconsistent but, on the whole, suggests negative cumulative abnormal returns. In addition other research studies conducted in this field have suggested that during the three year post-acquisition period, the occurrence of negative cumulative abnormal returns for shareholders of acquirer companies is not unusual (Andre, Kooli and L'Her, 2004 and Andrade *et al*, 2001).

In so far as the long term effects are concerned for the Developing World, Vaziri (2011) found that M&A transactions in China, Hong Kong and Taiwan are typically associated with large positive cumulative abnormal returns. This is the only study which was noted that deals with the long term (and short term) effects in countries of the Developing World.

In relation to the long term effects for South Africa, Kyei (2008) concluded that shareholders of acquiring companies do not earn cumulative abnormal returns in the long term. Wimberley and Negash (2004) concluded that shareholders would be better placed not to be long term investors in M&A active firms. Wimberley and Negash further concluded that the optimal time to for shareholders to sell their shares is after seven months from the announcement date of the proposed acquisition.

Importantly there is also a prevailing argument that long run returns to acquiring companies in the Developed World may be vulnerable to various sources of research design bias – underscoring the need to ensure an appropriate research design is constructed for similar studies (Brown and da Silva Rosa, 1998). It has specifically been suggested that there are 3 primary reasons why the results which purport to measure long run abnormal returns to acquiring companies may be inaccurate (Andrade *et al* 2001), namely:

(a) there is an inherent difficulty in measuring normal returns against which the acquirer company's returns should be measured;

(b) control measures for non-market events in the form of results announcements;

(c) the complexities of comparing share price performance against peer companies not involved in M&A activity.

Kumar (2009) stated that acquiring firms often experience a positive movement in their share price in the short term period after the transaction announcement but less than the normal market return during the long term post-acquisition period. This could be explained by the proposition that abnormal increases in share prices around the announcement period or in the short term period after the acquisition are a consequence of investors overestimating the future efficiency gains from the acquisition (Brown and da Silva Rosa, 1998). It has been contended that shareholders of acquiring firms will gain from efficiency enhancing acquisitions but stand to lose value where acquisitions are motivated for non-efficiency enhancing acquisitions; which gives credence to the proposition that share prices may adjust in the event that efficiency gains have been overestimated (Uddin and Boateng, 2009). This lends further credence to the motivation to study the effects of acquisitions on the share price performance of acquirer from both a long term and a short term perspective.

According to Subeniotis, Kroustalis, Tampkoudis and Poulios, (2011) the true value of a M&A transaction can only be observed after at least 100 days from the closing date of the transaction. In addition it takes approximately one year after the M&A event for the integration plans to be executed, at which point management should then be handed to the operating managers who are then responsible for achieving the performance of the new entity (Subeniotis *et al*, 2011).

2.8 Expected returns, abnormal returns, cumulative abnormal returns and above average cumulative abnormal returns

Andrade *et al* (2001) stated that as M&A transactions occur in waves and appear to cluster in industries; it is often difficult to determine what the expected returns should be. Andrade *et al* further stated that one of the most difficult components in the process of evaluating the effect of M&As is determining what the expected return should be – in this regard refer to paragraph 2.13.

Smit (2005) identified that the impact of events is represented as the abnormal return (AR) of the share that is being studied; in particular it is the difference between the actual and the expected return. Smit further stated that most studies focus on average cumulative abnormal return (ACAR). The daily AR for each share selection is calculated over the event window in order to obtain the cumulative abnormal return (CAR). The average of the CARs is then calculated for the entire sample of a particular event window. This is known as the ACAR. As described by Smit, the difference between AAR and ACAR is that the AAR is the average of the ARs of the shares for a particular trading day and that the ACAR is calculated by accumulating the AR for each share over the event window to arrive at the CAR and then calculating the average of the CAR.

Table 1 is a summary of selected research findings of short term and long term ACARs to acquiring firms, comparisons with which will be drawn against this study in chapter 6.

Table 1: ACAR summary

Study	Period	Event Window	Sample size	ACAR
Mushidzhi and Ward (2004)	1998-2002	[-1;+1]	57	0.31%
Mushidzhi and Ward (2004)	1998-2002	[-10;+10]	57	-0.55%

Wimberley and Negash (2004)	1989 – 1998	[0;1 year]	609	2.2%
Wimberley and Negash (2004)	1989 – 1998	[1 year;2 year]	609	-9.2%
Wimberley and Negash (2004)	1989 – 1998	[2 year; 3 year]	609	-3.5%
Wimberley and Negash (2004)	1989 – 1998	[0;3 year]	609	-10.5%
Smit (2005)	2000-2002	[-10;+10]	20	4.35%%
Smit (2005)	2000-2002	[-5;+5]	20	3.79%
Smit (2005)	2000-2002	[-2;+2]	20	0.98%*
Smit (2005)	2000-2002	[-1;+1]	20	-0.02%
Kyei (2008)	2000-2002	[-10;378]	17	1.37%
Kiymaz and Baker (2008)	1989-2003	[-1-;+10]	1400	-2.14%***
Dutta and Jog (2009)	1993-2002	[-1;+1]	1300	0.013***
Dutta and Jog (2009)	1993-2002	[-2;+2]	1300	0.016***
Ma *et al* (2009)	2000-2005	[0;+1]	1477	0.96%***
Ma *et al* (2009)	2000-2005	[-1;+1]	1477	1.28%***
Ma *et al* (2009)	2000-2005	[-2;+2]	1477	1.7%***
Al-Sharkas and Kabir Hassan (2010)	1980-2000	[-1;+1]	785	-0.33%**
Al-Sharkas and Kabir Hassan (2010)	1980-2000	[-5;+5]	785	-0.09%**
Al-Sharkas and Kabir Hassan (2010)	1980-2000	[-10;+10]	785	-0.88%**
Guest *et al* (2010)	1985 - 1996	[0; 21]	300	1.5%***
Guest *et al* (2010)	1985 - 1996	[0; 3 years]	300	27.68%***

* statistically significant at the 10% level

** statistically significant at the 5% level

*** statistically significant at the 1% level

As is apparent from the above table 1, these studies have different event windows, periods of study and conclusions. As noted by Smit (2005), this may have the effect of

causing a significant amount of uncertainty of the value creating impact on M&A transactions in the hands of shareholders of acquiring companies.

2.9 Target company shareholders vs acquirer company shareholders

The shareholders of target firms are clearly winners in the M&A process (Andrade *et al*, 2001). According to Andrade *et al* (2001) the average three day abnormal return for target firms was approximately 16%, which had been seen to rise to as much as 24% over the longer window period. The evidence on value creation in the hands of shareholders of the acquiring firm is not so clear (Andrade *et al*, 2001) – as evidenced in table 1. M&As do appear to create value for shareholders overall, but it would appear that the announcement period gains from the merger process accrues almost entirely to the shareholders of the target firm (Andrade *et al*, 2001).

2.10 Share funded vs cash funded acquisitions

Managers of acquiring companies are more likely to motivate for stocked financed mergers when they consider the share price in the acquiring company is overvalued by the stock market than when overvalued (Raj and Forsyth, 2004). Consequently it is important to distinguish between the stock funded mergers and cash funded mergers before making a final determination on the value effects of M&As for shareholders, in particular for shareholders of the acquiring company (Andrade *et al*, 2001).

According to Benoit *et al* (2010), studies on the USA market unanimously agreed that cash offers for acquisitions are allied to higher returns for acquiring companies than offers that are settled with shares or a combination of cash and shares. They then highlighted that studies in the European market show that offers made with shares sometimes have a positive effect on shareholder returns.

Many transactions during the fifth M&A wave of the late 1990s involved shares as the method of payment and these shares were normally very richly valued (Savor and Lu, 2009). The positive correlation between the market value of shares and merger activity has been documented previously and seems to be especially strong for deals which include payment by shares (Savor and Lu, 2009). One possible interpretation of this evidence is that executives of acquiring companies try to time the market by paying with shares when they believe the shares to be overvalued (Savor and Lu,

2009). Shleifer and Vishny (2003) suggest that overvalued companies entertain share funded acquisitions in an effort to acquire hard assets at an effective discount – which is commonly referred to as the market timing theory of acquisitions.

One of the principle predictions of the market timing theory is that the long term shareholders of the acquirer company benefit from the bid as, importantly, the only requirement is that the chosen target company is less overvalued than the acquirer company (Savor and Lu, 2009). Savor and Lu (2009) provided a famous example of the market timing theory, namely the America Online ("AOL") share funded acquisition of Time Warner. Notwithstanding the fact that AOL paid a 48% premium and the fact that the AOL share price dropped by 17.5% on announcement of the deal, the deal is widely regarded to have been a tremendous benefit to AOL's long term shareholders. This benefit was not derived from the synergies of the deal but rather because AOL's equity was overpriced at the time. Whilst this singular example clearly does not constitute proper support for the theory, and whilst the existing body of evidence does not support the hypothesis that share funded acquisitions are in the interests of long term shareholders (note: multiple reference to be inserted here) it is clearly those companies that are most overvalued that have the most significant incentive to make an acquisition before the market discovers its overvalued shares (Savor and Lu, 2009). Savor and Lu stated that once the fact that the shares of the acquiring company are overvalued is taken into account, it would not be unusual to expect the share price of an acquiring company to decrease after the announcement date. Savor and Lu further state that rather than disproving the market timing theory, the subsequent decrease in the share price of the acquiring company is actually in line with the fundamental principle of the market timing theory.

Al-Sharkas and Kabir Hassan (2010) indicated that acquiring shareholders experience better returns with cash funded transactions over share funded transactions. Raj and Forsyth (2004) indicated the same and the primary reason which they offered for this is that an offer to fund an acquisition with shares could indicate that the shares of the company are overvalued. Conversely, Mushidzhi and Ward (2004) studied the impact of forty nine acquisitions between 1998 and 2002 by companies listed on the JSE and concluded that there is no significant difference for shareholders of acquiring companies between cash funded or share funded acquisitions.

This lack of consensus invites further study into the effects of cash versus share funded acquisitions on the share price of acquiring companies because the method of payment has been found to affect share price performance (Shekhar and Torbey, 2005). Accordingly, the method of payment in M&A transactions is directly linked to this study.

2.11 Leading causes of merger and acquisition failure

There are many advantages of corporate mergers, such as: economies of scale and scope; cost reduction; administrative and financial synergies; tax advantages and diversifications (Subeniotis *et al*, 2011). However, it must be accepted that the success of large mergers and acquisitions are not always a given and often incorporate significant risk. In this regard, it has been fairly widely noted that almost as many as 50% of all mergers and acquisitions do not achieve their original objectives (Subeniotis *et al,* 2011). According to Subeniotis *et al* (2011), there are a number of reasons for these findings which relate to the legal, operational, financial and human factors which come into play post the M&A process. Management employees and shareholders of the acquiring and target companies often have conflicts of interest that lead to M&A failure (Subeniotis *et al,* 2011).

Kode *et al* (2003), identified that the following two leading causes of M&A failure – which may explain (to some extent at least) why the majority of research studies contemplated for the purposes of this paper have concluded that acquisitions do not result in abnormal increases to the shareholders wealth (including the share price) of acquiring companies:

(a) the significant premium often paid for target companies; and

(b) failure on the part of management to properly plan for the integration of the organisations.

According to Jayesh (2012), there are multiple reasons why M&A activity often fails to create value in the hands of shareholders of acquiring companies. These include:

(a) size issues - a mismatch in the size between the acquiring company and the target company has often been found to lead to poor acquisition performance;

(b) diversification - not many firms have the ability to successfully manage a diversified business);

(c) previous acquisition experience - while previous experience is not mandatory for success, many unsuccessful acquirers often have little or no previous acquisition experience);

(d) unwieldy and inefficient - a large number of conglomerates approved to be inefficient and unwieldy and have subsequently been wound up;

(e) poor organisation or fit - this influences the ease with which two organisations can be integrated during implementation and mismatch of fit often leads to the failure of M&As;

(f) poor strategic fit - a merger will often only yield the desired results if there is a strategic fit between the target company and the acquiring company;

(g) striving for bigness - whilst size is no doubt an important element for success in business, a concern with size often leads to many acquisitions that do not create value for shareholders;

(h) over paying - in a competitive bidding environment, an acquiring company may tend to pay more premium than the target is worth;

(i) poor cultural fit;

(j) poorly managed integration;

(k) hubris hypothesis: in terms of this hypothesis, offered by Roll (1986), the management of the acquiring company can have the tendency of overvaluing the target simply because they over estimate their intrinsic ability to create additional value once they take control of the target company. In terms of this hypothesis, the prediction is that around the takeover period, the combined value of both target and acquiring firms will fall slightly, the value of the acquiring company should decrease, and the value of the target company should increase;

(l) incomplete and inadequate due diligence - a lack of a proper detailed due diligence can often negatively impact on the investment as the management of

the acquiring company doesn't have a clear picture of the nature of the asset that has been purchased;

(m) a failure to get the financials audited;

(n) a failure to take immediate control;

(o) incompatibility of partners;

(p) merger between equals - often a merger between two equals does not work;

(q) over leverage;

(r) inadequate attention to people issues and expecting results too quickly.

2.12 Determining the success of mergers and acquisitions

In determining the success of a M&A transaction, the following three questions should be posed (Bruner, 2004): (i) did the share price rise? In other words are the shareholders better off than they were before the merger; (ii) did the company's returns exceed a benchmark? In other words are shareholders better off compared to a comparable investment of equal risk; (iii) are the shareholders better off after the merger or acquisition than they would have been if the deal had not taken place? Bruner (2004) stated that this test is what economists commonly refer to as opportunity cost, or should a deal not take place, lost opportunity cost. The majority of evaluations of the successive merger and acquisitions attempt to answer questions 1 and 2 listed above (Bruner, 2004).

According to Bruner (2004), in answering questions 1 and 2 above four methodologies are employed:

(a) event studies - these studies contemplate the abnormal returns to shareholders over the period which surrounds the announcement date of a transaction. The actual return for one day is simply the change in share price and any dividends paid, divided by the closing share price of the immediately preceding day. The abnormal return is then the actual return less a benchmark of what investors required as a return on investment for that particular day. Usually the benchmark is the return required by the capital asset pricing model (CAPM) or otherwise the return on a large market index, such as the JSE but there are a

number of other models which are discussed in paragraph 2.13 below. These studies are deemed to be forward-looking on the basis of the assumption that share prices are simply the present value of expected future cash flows to shareholders. These studies appear to have dominated the field for the past 40 years;

(b) accounting studies - these studies scrutinise the annual financial reports of acquiring companies both before and after the merger or acquisitions for the purpose of determining how financial performance has changed. The primary focus of these studies covers net income, return on equity or assets, earnings per share, leverage and the liquidity of the company;

(c) surveys of executives - these present a sample of executives with a standard set of questions and aggregate across the results to identify generalisations from the sample; and

(d) clinical studies – which focus on one transaction or on a small sample in significant depth and usually their insights from field interviews with executives and industry observers. As a form of inductive research, by going into the detail and factual background of a transaction, researchers frequently induce new insights.

2.13 Event study as a measure of abnormal share price returns

The event study method has made a significant contribution to strategic management research by exploring the financial impact of various corporate announcements. The event is frequently a release of information to market participants through the media about corporate acquisitions (Park, 2004).

Event studies assess and examine whether specific events create abnormal returns to shareholders. The abnormal returns are the differences between the estimated returns and the observed returns derived from a particular share return model (Park, 2004).

In studying the short term and long term impact of acquisitions on the share prices of acquiring companies event study methodology has been widely used to identify and then measure above average returns (Vaziri, 2011, Guest *et al*, 2010, Uddin and Boateng, 2009, Kiymaz and Baker, 2008, Thaver, 2009, Hussan *et al*, 2007 and Wimberley and Negash, 2004).

In this study therefore, event study methodology will be utilised to determine whether there is a statistically significant difference between the actual share price returns of the acquiring companies and the returns which are expected over the event window – which is termed Average Cumulative Abnormal Returns.

Smit (2005) confirmed that the first stage in the event study methodology is to assess and determine the expected return. According to Mushidzhi and Ward (2004) expected returns can be calculated through the application of any of the following four models, which are summarised as follows:

(a) Mean Adjusted Model – in terms of which the acquiring company's share price returns are expected to be the same as the returns before the estimation period;

(b) Market Model – in terms of which the calculations of the acquiring company's expected share price returns over the event window are adjusted to provide for the risk of the company relative to the market;

(c) Market Adjusted Model – in terms of which the acquiring company is expected to generate the same returns as the market over the event window;

(d) Control Portfolio Model – in terms of which the acquiring company is grouped with a portfolio of companies and the expected return of the acquiring company will be the same as those achieved by the portfolio companies over the event window.

Significant weaknesses in respect of the Mean Adjusted Model and the Market Adjusted Model were identified by Smit, (2005). Consequently they are removed from consideration for the purposes of this study. These weaknesses include the fact that share prices do not necessarily reflect a linear trend, particularly in the case of illiquid shares and because past share price performance is not necessarily a good predictor of expected returns (Smit, 2005).

Both the Market Model (Al-Sharkas and Kabir Hassan, 2010, Wong and Cheung, 2009, Soongswang, 2009, Kiymaz and Baker, 2008 and Hussan *et al*, 2007) and the Control Portfolio Model (Thaver, 2009, Kyei, 2008, Smit, 2005 and Wimberley and Negash,

2004) have been widely used. The merits of these two models were explored in more detail in order to determine the most appropriate model to be used.

Whilst the Market Model has been used extensively it is also been criticised by researchers such as Fama and French (1992). According to Smit (2005), whilst the Market Model cannot be rejected in its entirety, the more recent arguments against its use do appear to be persuasive. Consequently the market model was not used in this study.

The most appropriate model for use therefore appears to be the Control Portfolio Model. Smit (2005) stated, with reference to the Control Portfolio Model, that the control portfolio can be constructed on a number of bases, in particular:

(a) the acquiring companies industry;

(b) companies of similar size;

(c) companies with similar deters;

(d) companies with a similar book to market equity ratio; or

(e) companies with similar price earnings ratio.

With reference to Wernerfelt and Montgomery (1988), Smit (2005) found that the industry effects are the significant determinant in firm performance, that company effects play a small role and that a market share effects play virtually no role, which makes the Control Portfolio Model the more appropriate model than either the Mean Adjusted Model, the Market Model or the Market Adjusted Model. Smit further stated that the use of a control portfolio based on the acquirer company industry is particularly important for long term event studies because of the findings that M&A activity cluster in industries and occur in waves.

2.14 Conclusion to the literature review

This literature review provides a detailed background into M&A activity by *inter-alia* identifying the fact that M&A transactions often do not (as they should) create

shareholder value and listing possible reasons why M&A transactions could result in the destruction of shareholder value.

This study seeks to determine whether, as a general rule, M&As create shareholder value and whether this value translates into ACARs to the share price of the acquiring company. On the basis of this literature review, it would appear that in the Developed World the majority of M&As either result in positive or negative returns which are not statistically significant in both the long and the short term. Recent studies conducted in the Developing World and contemplated for the purposes of this study do not draw the same conclusions. Given the limited amount of research conducted in South Africa (a Developing World country with Developed World financial markets) and the limited research (both recent or otherwise) covering both the long term and short terms effects of large transactions on share price performance, this further study (which also takes the recent results of studies conducted in the Developing World into consideration – something that no other South African study was found to have taken into consideration) will make a positive contribution to this field of research.

CHAPTER 3: RESEARCH HYPOTHESIS

As is evident from the literature review in chapter 2, this proposed study forms the primary (and partial) focus of a large number of prior studies spanning the last few decades of the 20th and first decade of the 21st Century (Al-Sharkas and Kabir Hassan, 2010, Hassan *et al*, 2007, Guest *et al*, 2010, Kumar, 2009, Andre Khooli and L'Her, 2004, Andrade *et al* 2001, Brown and da Silva Rosa, 1998 and Agrawal *et al*, 1992). Notwithstanding this significant level of focus, researchers still do not appear to be completely in agreement on the issue of the effect of takeovers on the share price performance of acquiring companies (Uddin and Boateng, 2009 and Raj and Forsyth, 2004).

However, on the whole, the by far the majority of prior studies contemplated for the purposes of this proposal and a vast body of other available academic research demonstrated that in most instances M&A transactions do not give rise to positive abnormal returns to shareholders of acquirer firms in both the long term and the short term (Bogan and Just, 2009). The majority of these prior studies also take place in the context of the Developed World and are at odds with the conclusions of previously identified recent research conducted in the Developing World. This recent research demonstrates a prevalence of positive abnormal returns to shareholders of acquirer firms in both the long term and the short term. Whilst South Africa is a Developing world country, its financial institutions and markets are commonly regarded to be synonymous with the Developed World. Accordingly, the assumption made for the purposes of this proposal is that those results prevalent in the Developed World should be applicable to the South Africa African markets.

As mentioned, it is proposed that this study be extended to contemplate the method of payment because the method of payment has been found to affect share price performance (Shekhar and Torbey, 2005).

This leads to the following set of hypotheses:

Hypothesis 1

The null hypothesis states that the share price of acquiring companies shows no positive ACAR around the announcement dates of large acquisition ("$ACAR_{PA}$"). The alternative hypothesis states that the share price of acquiring companies shows $ACAR_{PA}$.

Ho: $ACAR_{PA} = 0$

H_A: $ACAR_{PA} \neq 0$

The following two event windows will be used to test this hypothesis:

(a) the 3-day event window [-1, +1], commencing on the day before [t-1] and finishing on the day after [t+1] the announcement date for the full sample (including share funded acquisitions and cash funded acquisitions); and

(b) the 21-day event window [-10, +10], commencing on the 10^{th} day before [t-10] and finishing on the 10^{th} day after [t-10] the announcement date for the full sample (including share funded acquisitions and cash funded acquisitions).

These short term event windows were used as they were common to a number of the studies contemplated for the purposes of this study and in respect of which comparisons were made for the purposes of chapter 6 (Andrade et at, 2001, Mushidzhi and Ward, 2004, Smit 2005, Dutta and Jog, 2009, Ma *et al*, 2009 and Al-Sharkas and Kabir Hussan, 2010).

Hypothesis 2

The null hypothesis states that the share price of acquiring companies shows no positive CAAR over the post-announcement longer term period ("$ACAR_{LT}$"). The alternative hypothesis states that the share price of acquiring companies shows $ACAR_{LT}$.

Ho: $ACAR_{LT} = 0$

H_A: $ACAR_{LT} \neq 0$

In this regard, Professor Mike Ward of the Gordon Institute of Business Science, University of Pretoria, was consulted and it was understood that the event window commencing on the announcement date [t0] and finishing on the 228th day after the announcement date [t228] would be a sufficient longer term period to rely on for this purposes of this hypothesis.

Hypothesis 3

The null hypothesis states that the share price of acquiring companies shows no persistent quarterly ACAR over the longer term post announcement period ("$ACAR_{QT}$"). The alternative hypothesis states that the share price of acquiring companies shows $ACAR_{QT}$.

Ho: $ACAR_{QT} = 0$

H_A: $ACAR_{QT} \neq 0$

As described in chapter 4, this will cover 64 day [0;63], 127 day [0;126] and 190 day [0;189] event windows.

Hypothesis 4

The null hypothesis states that ACAR of cash funded acquisitions ("$ACAR_{PACFAD}$") and share funded acquisitions ("$ACAR_{PASFAD}$") of acquiring companies in the period around the announcement date are not significantly different. The alternative hypothesis states that the $ACAR_{PACFAD}$ and $ACAR_{PASFAD}$ are significantly different.

Ho: $ACAR_{PACFAD} = ACAR_{PASFAD}$

H_A: $ACAR_{PACFAD} \neq ACAR_{PASFAD}$

The event windows will be the same as those used for hypothesis 1.

Hypothesis 5

The null hypothesis staes that ACAR of cash funded acquisitions ("$ACAR_{LTCFAD}$") and share funded acquisitions ("$ACAR_{LTSFAD}$") of acquiring companies over the longer term post announcement period are not significantly different. The alternative hypothesis states that the $ACAR_{LTCFAD}$ and $ACAR_{LTSFAD}$ are significantly different.

Ho: $ACAR_{LTCFAD} = ACAR_{LTSFAD}$

H_A: $ACAR_{LTCFAD} \neq ACAR_{LTSFAD}$

The event window will be the same at that used for hypothesis 2.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

In this chapter, details of the methodology, together a defence of the methodology used by this study will be provided. This chapter will also: define the unit of analysis, the population of relevance and the sampling method and size of the sample; and describe the research design, data collection process and the data analysis approach. It will also identify the research limitations of this study.

4.2 Unit of Analysis

The unit of analysis was singular large M&A transactions, in particular those transactions where the purchase price was more than 20% of the market capitalisation of acquiring companies listed on the JSE as at the announcement date, which took place over the 10 year period from 1999 to 2008.

4.3 Population of relevance

The population of relevance comprised all large acquisitions executed by companies listed on the JSE between 1999 and 2008 (both years inclusive). For the purposes of this study an acquisition was deemed to be large if it was a Category 1 or Category 2 transaction as defined in the Listing Requirements of the JSE. These are all those transactions where the purchase price of the target company is 20% or more of the market capitalisation of the acquiring company. The reason for this is that it is more probable for economic gains in the post-acquisition period to be identified and measured when the target company is large in relation to acquiring company (Healy, Palepu and Ruback, 1992). A further reason for this is that there is a positive statistically significant relationship between Average Cumulative Abnormal Returns to acquiring companies and the relative size of the target company (Loderer and Martin, 1990 and Fuller *et al*, 2002).

As was the case with Smit's (2005) study, the population of relevance was sourced from Ernst and Young's annual review of mergers and acquisitions in South Africa, subject to the following selection criteria:

(a) the transaction constituted a large acquisition – as defined above;

(b) the transaction description met one the following requirements:

(ba) acquisition of a related business;

(bb) merger of a related business;

(bc) hostile takeover;

(bd) tender offer for shares;

(be) unconditional offer for shares;

(c) the acquiring company remained listed on the JSE for at least 12 months after the acquisition and was listed for at least 12 months prior to the acquisition for the purposes of ensuring that the share price and financial information prior to the merger or acquisition was accessible;

(d) the acquiring company was not simply a cash shell (in other words, if the company's only assets were cash or cash equivalents) prior to the merger or acquisition;

(e) the acquiring company did not make any large acquisitions or disposals, nor did it undertake any significant restructure in the 12 month period prior to or the 12 month period after the merger or acquisition in order to remove the impact of confounding events.

It is important to note that the Ernest and Young data base (which incidentally has not been updated since 2009), does not include any information regarding the market capitalisation of the acquiring company and nor does it identify whether the merger or acquisition was a large transaction (as defined above). Accordingly, as was required by the Smit (2005) study, the following process was followed in order to ascertain which M&As met the relevant selection criteria:

(a) the Ernest and Young data base for the period 1999 – 2008 was exported into Excel (which was kindly provided courtesy of Professor Michael Ward from the Gordon Institute of Business);

(b) all transactions which met any of the following descriptions were then extracted: acquisition of related business; hostile takeover; merger of related businesses; tender offer for shares or unconditional offer for shares;

(c) the market capitalisation of the acquiring company as at the announcement date of the proposed transaction was then sourced from McGregor's BFA database;

(d) the transaction size relative to the market capitalization of the acquiring company as at the announcement date of the transaction was then calculated;

(e) all mergers and acquisitions for which the size of the transaction relative to the market capitalization of the company was 20% or more as at the announcement date of the transaction were then highlighted;

(f) the Ernest and Young data base for the period 1999 – 2008 was then further reviewed for the purposes of identifying any confounding effects such as large acquisitions, disposals or other events undertaken by the acquiring companies highlighted in terms of paragraph (e) above;

(g) acquiring companies that were cash shells before the announcement date were then eliminated;

(h) those acquiring companies that were not listed on the JSE at least 12 months before and 12 months after the announcement date were removed.

4.4 Research Design

This study:

(a) comprised deductive research – which is described as a research approach which requires the researcher to test theoretical propositions through the

application of a research strategy designed for the performance of this test (Saunders and Lewis, 2012);

(b) adopted an archival research strategy – which used historic records and documented information as the primary source of data (Saunders and Lewis, 2012);

(c) used event study to analyse the share price performance of acquiring companies listed on the JSE (refer to chapter 2 for a discussion on event study methodology). As mentioned, the event date was the date of the announcement of the relevant acquisition event – as is typically the case (Uddin and Boateng, 2009);

(d) was a quantitative study which was causal in nature. In particular, the causal approach was adopted to determine whether a causal relationship exists between the share price performance of companies and the large acquisitions which these companies make.

According to Mc Williams and Seagal (1997), the most important research design issue is the length of the event window which is used in an event study. Uddin and Boateng (2009) suggest that, when deciding the length of the event window, one should ensure that the window is short enough so as to enable it to increase the power of the test while at the same time also ensuring that it is long enough to capture the full effect of the event in question. In following this argument this study: (i) utilised a 21 day event window [-10, +10] to a three day window [-1, +1] around the announcement date to address the short term effects – as identified in chapter 3 above; and (ii) used an event window of just under 12 months from the announcement date to assess the long term effects – as explained in chapter 3 above.

4.5 Sampling method and size

From a total number of 11 062 mergers and acquisitions over the 10 year period from 1998 to 2008 that are documented in the Ernest and Young data base, just 39 transactions met the relevant selection criteria recorded in paragraph 4.3 above. Whilst this judgemental sample is significantly larger than the Smit (2005) and Kyei (2008) study (which included only 20 and 14 companies respectively in the population of

relevance), it is smaller than the number which it was initially hoped would comprise the population of relevance. Consequently, each of the 39 transactions (which are recorded in Appendix 1) were studied rather than selecting a random sample from this relatively small population of relevance. Due to the fact that a sample was selected judgmentally and not randomly, there was a consequential limitation on the statistical inferences which can be made due to the fact that random sampling is a pre-requisite for the Central Limit Theorem (Zikmund, 2003).However, as was the case with the Smit study, this limitation was merely noted rather than imposed on the research methodology – which is in accordance with the precepts of a number of other studies contemplated for the purposes of this research report (Agrawal *et al*, 1992 and Healy *et al*, 1992).

4.6 Data collection

Data was collected on all the acquisitions of listed South African companies over a ten year period between 1999 and 2008, subject to the selection criteria recorded above, from the following secondary sources of data:

(a) McGregor's BFA research domain; and

(b) Ernst and Young's annual review of mergers and acquisitions in South Africa.

These secondary sources of data provided:

(a) the required database of acquisitions;

(b) the market capitalisation of acquiring companies as at the announcement date;

(c) the purchase price of the target companies;

(d) the share price of the acquiring company before and after the announcement date; and

(e) whether the purchase consideration was facilitated by shares or cash.

4.7 Data analysis approach

In line with the Smit (2005) study, to test the research hypotheses, statistical inference was determined by using one sample and two sample t-tests; which measured whether the share price performance as a result of the acquisition was significantly different to zero at the 5% confidence interval (and, were noted in some cases, at the 10% confidence interval).

The first step in the data analysis process was to identify the expected return (Guest *et al*, 2010 and Smit, 2005). As discussed above, the Control Portfolio Model was used to identify the expected returns. This study used the methodology of Ward and Muller (2008), who expanded on the methodology of Mordant and Muller (2003) in order to deliver greater accuracy in terms of size, as a means of constructing the control portfolios to determine expected returns (Thaver, 2009). Accordingly, all equations and notations recorded in this paragraph 4.7 below were those utilised by Mordant and Muller and Ward and Muller.

As indicated by Smit (2005), the Control Portfolio Model used by Mordant and Muller (2003) included the price-to-book value, the reciprocal of book-to-market equity ratio and the size of the company. As further indicated by Smit, Mordant and Muller stated that the 'resource effect' is substantially similar to that of the book-to-market effect and the size effect due to the fact that these effects provide a better explanation of the returns than the typically traditional asset pricing models. Smit identified that the 'resource effect' is founded on the understanding that a significant portion of securities listed on the JSE are highly sensitive to commodity prices. So, Ward and Muller (2008), in building on Mordant and Muller's eight factor Control Portfolio Model, used a 12 factor Control Portfolio Model to find the expected returns. This 12 factor model included the effect of particular selections price-to-book value ratio, the size of the company and the resource effect.

Ward and Muller's (2008) 12 factor model is distinguishable from Mordant and Muller's (2003) eight factor model in one respect only: it extended the division of companies listed on the JSE into large and small companies – as did Mordant and Muller – and then created a further variable for medium sized companies. This new variable then had the effect of adding four additional control factors, as recorded in Table 1 below:

Table 1: classification of control portfolios

Control Portfolio Name	Resource or Non-Resource	Value or Growth	Small, Medium or Large
NVS	Non Resource	Value	Small
NVM	Non Resource	Value	Medium
NVL	Non Resource	Value	Large
NGS	Non Resource	Growth	Small
NGM	Non Resource	Growth	Medium
NGL	Non Resource	Growth	Large
RVS	Resource	Value	Small
RVM	Resource	Value	Medium
RVL	Resource	Value	Large
RGS	Resource	Growth	Small
RGM	Resource	Growth	Medium
RGL	Resource	Growth	Large

Ward and Muller (2008) stated that the classification of these control portfolios was determined as follows:

(a) the size of a company was measured in terms of its market capitalisation. All companies listed on the JSE were then ranked in descending order of market capitalisation. The 40 companies with the largest market capitalisation then constituted the large capitalisation portfolio – which essentially replicated the JSE's ALSI40 Index. Companies with a market capitalisation which ranked between 41 and 100 then constituted the medium capitalisation portfolio, with the remaining companies constituting the small capitalisation portfolio;

(b) each company was classified as a value or growth company in terms of its price-to- book value ratio. The price-to-book value ratios were then calculated and ranked. The median price-to-book value ratio were then determined. The resultant effect of which was that all companies with price-to-book ratios above the median were then classified as growth companies and the remainder were classified as value companies;

(c) the broad JSE sector groupings were then used to determine whether companies represented a resource company or not. All mining and non-mining resource companies were classified as resources while the balance were classified as non-resource companies.

Ward and Muller (2008) then identified that;

> Each company listed on the JSE was placed in one of these twelve control portfolios on the basis of each company's characteristics. The control portfolios then were rebalanced on a quarterly basis to ensure that any changes in share characteristics (such as price-to-book ratios, market capitalisations, new listings and de-listings) were closely tracked over time. De-listed shares were included up to the date of the termination of any listing, after which the share price returns of the de-listed companies were then assumed to be zero until the end of the relevant quarter. De-listed shares were then excluded from the next quarter's rebalancing of control portfolios. On a similar basis, the share price returns of newly listed shares were then included in the next quarter when the control portfolios were rebalanced. Daily equal-weighted indices were then formulated for each of the twelve control portfolios from the log returns of all the stocks in that particular group in terms of the following equation.

$$Rit = \log [Pit/Pit\text{-}1] \qquad \textbf{(Equation 1)}$$

where:

Rit = the equal weighted share return for portfolio i for day t; and

Pit = the equal weighted share value of portfolio i at the end of day t.

As recorded in Smit (2005) and Kyei (2008) (with reference to Ward and Muller (2008) and Mordant and Muller (2003)):

(a) at the beginning of each month the control portfolios were rebalanced to ensure that each portfolio continued to be a correct measurement of the share price returns of that control portfolio as a result of changes in price-to-book value ratios, market capitalisations, new listings and delistings;

(b) the log function share price returns (per equation 1) of those companies which were delisted from the JSE were recorded as the actual log-function share price returns of the relevant company until the termination date of the listing, after which date the share price returns of said company were then treated as missing data items until the last day of the month in which the listing was

terminated. These delisted shares were then excluded from the following month at which point the control portfolios were rebalanced. In the same vein, the share price returns of new listed companies were treated as missing data until the date of listing, after which date the actual log-function share price returns (per equation 1) of the relevant company were included in the returns of the relevant control portfolio;

(c) the daily return of each portfolio was the equal weighted average log-function share price return (per equation1) of each share in a particular portfolio for a particular day. Companies with zero share price returns were excluded (and therefore treated as missing data items) from the calculation of the average share price return of each control portfolio for each day to eliminate the distorting effects of thin trading on the average daily return for each control portfolio;

(d) in following the approach in Mordant and Miller (2003), the daily log-function share price return (per equation1) for each selection was regressed for the 378 trading days (equivalent to 18 months with an average of 21 trading days per months) preceding the announcement date of the merger or acquisition against the daily returns of each of the twelve control portfolios to obtain a regression equation (per equation 2 below) for each selection. In those circumstances where the acquiring company was listed on the JSE for less than 18 months prior to the announcement date but for more than 12 months (per paragraph 4.3 above), the relevant acquiring company's share price returns were regressed over the attendant shorter period against the daily returns of each of the 12 control portfolios.

$$E(Rit) = \alpha i,t + \beta i,1SGNt + \beta i,2SGRt + \beta i,3SVNt + \beta i,4SVRt + \beta i,5MGNt + \beta i,6MGRt + \beta i,7MVNt + \beta i,8MVRt + \beta i,9LGNt + \beta i,10LGRt + \beta i,11LVNt + \beta i,12LVRt + \varepsilon it \quad \textbf{(Equation 2)}$$

where:

E(Rit) = the expected return on security *i* on day *t*;
$\alpha i,t$ = the alpha intercept term of security *i* on day *t*;
$\beta i,1 \ldots \beta i,12$ = the beta coefficients on each control portfolio return;

ε it = the error term;

SGNt…SGRt = the log-function share price returns on each of the twelve control portfolios set out in Table 1 on day t, calculated in terms of Equation 2.

(e) It is important to note that the announcement date for this research report, as was the case with Smit (2005) and Kyei (2008), was the date upon which the acquisition price was announced on the SENS (which is the JSE's electronic announcement platform). In this regard, it is also of relevance to note that the JSE typically requires all company announcements to be released on SENS prior to publication in the media. Whilst most companies had issued a cautionary announcement before the announcement of the purchase price, it is possible that part of the impact of the merger or acquisition had already been factored into the acquiring company's share price around the time of the cautionary announcement. Kyei identified that both Smit and Ward and Muller (2008) found positive Average Abnormal Returns on the third day prior to the announcement date of M&A activity. He further identified that Smit's finding was that these Average Abnormal Returns were statistically significant and further found this to be a strong indication that price sensitive information was leaked prior to the announcement date. Conversely, Muller and Ward found that these Average Abnormal Returns were statistically insignificant.

(f) The intercept and beta coefficients of equation 2 for the expected return for each selection then takes into consideration the possibility that the daily returns of each selection may be swayed by the returns of all listed companies and not only by the average returns of the control portfolio in which the selection is classified (Mordant and Muller, 2003 and Muller and Ward, 2008).

(g) Once the intercept and beta coefficients of the regression equation (per equation 3) for each selection has been determined, the expected return for each selection for each day of the event window was then calculated by introducing the average return for each of the 12 control portfolios for that day as the relevant variable of the matching control portfolio's beta coefficient in terms of equation 2. Six event windows were studied for the purposes of this report, in particular: the 229-day event window [0;228]; the 190-day event window [0;189]; the 127-day event window [0;126]; the 64-day event window [0;63]; the 21-day event window [-10;+10] and the 3-day event window [-1;+1].

(h) Once the expected return was calculated (per equation3), the abnormal return for each selection for each day in the event window was then be calculated; being the difference between the actual return for that selection for that day less the expected return for that selection for that day in terms of the following equation:

$$ARit = Rit - E(Rit) \qquad \textbf{(Equation 3)}$$

where:

ARit = the abnormal return of stock *i* in period *t;*
E(Rit) = the expected share price return of stock *i* in period *t* determined in terms of Equation 2;
Rit = actual return of stock *i* in period *t*

(i) The daily Abnormal Returns, when measured over a period of longer than a day and calculated in terms of equation 3, were then accumulated to obtain Cumulative Abnormal Returns for each selection for each event window, with reference to the following equation:

$$CARi,k,l = \sum_{t=k}^{l} ARit \qquad \textbf{(Equation 4)}$$

where:

CARi,k,l = the cumulative abnormal return for security i for the period from t = k to t = l; and
ARit = the abnormal return for security i for day t, as calculated in Equation 4

(j) After calculating the Cumulative Abnormal Returns for each selection for each of the six event windows, the Average Cumulative Return for each event window was calculated as the simple Average Cumulative Abnormal Return of the selections in the sample for that event window in accordance with the following equation:

$$ACARk,l = 1/n \sum_{t=k}^{l} CARi,k,l$$

(Equation 5)

where:

ACARk,l = the average cumulative abnormal return for all securities in the sample for the period from t = k to t = l; and
CARi,k,l = the cumulative abnormal return for each security i in the sample of a total of n securities for the period from t = k to t = l, as calculated in Equation 5

(k) Once the ACAR for each of the six event windows had been calculated, one- and two tailed t-tests were then carried out at the 5% level of confidence (unless stated otherwise) for the purposes of hypotheses 1 – 5, the results of which are recorded in chapter 5 below.

4.8 Research limitations

The research conducted in this study had the following limitations, which are similar to those of Smit (2005) and Kyei (2008):

(a) it took into consideration only those large acquisitions which took place over the ten year period between 1999 and 2008. Accordingly it is not representative of all acquisitions which have taken place on the JSE since its inception. The importance of this limitation is noted by Smit (2005) who identifies that the market for M&A transactions change over time and distinct waves;

(b) it completely ignored the distinction between acquisitions which were aimed at diversification and those which were aimed at enhancing value;

(c) the study covered multiple industries and in so doing ignored the possibility that acquisitions could possibly be value creating in certain industry sectors while at the same time value destroying in other industry sectors over different periods of time;

(d) given the criteria listed above, the population of relevance was relatively small;

(e) it covered a period of aggressive acquisition activity (in the form of the fifth and sixth merger waves described in chapter 2 above) which could potentially have resulted in acquiring companies paying abnormal premiums;

(f) it focused on large acquisitions only and therefor did not take into consideration the effects of all acquisitions; and

(g) it only considered acquisitions by companies listed on the JSE and disregarded all acquisitions made by unlisted companies.

4.9 **Data integrity**

The only data integrity error noted was in respect of 4 acquiring companies who had missing share price data. These companies were excluded from the control portfolio.

CHAPTER 5 – RESULTS

5.1 Introduction to the results

This chapter, which deals with the results of the research, identifies the extent to which the results provided evidence upon which to reject or not reject the hypotheses recorded in chapter 3 above.

This chapter starts by recording a description of the sample which was analysed. The extent of the analysis is then recorded and the results are then summarised. The results were then used as evidence to reject or not reject the null hypothesis and, in so doing, laid the foundation for chapter 6 below.

5.2 Description of the sample

The sample for this study comprised all M&As out of the 11 062 mergers and acquisitions which took place during the ten year period from 1998 to 2008; as identified in the Ernst & Young data base and which met those criteria recorded in paragraph 4 above.

Only 39 M&As met these selection criteria. Rather than treating the 39 acquisitions as a population of relevance and then from that population selecting a random sample, each of the 39 M&As in this judgemental sample were studied.

A summary of the sample is detailed in Table 2 below and Appendix 1 to the study contains relevant information on each of these mergers and acquisitions.

Table 2: summary of mergers and acquisitions which form the focal point of this study

Population size	11 062
Sample size	39
Frequency of year of occurrence	39
1999	3
2000	9
2001	3
2002	4
2003	6
2004	2
2005	4
2006	3
2007	2
2008	3
Method of payment	39
Frequency share-funded acquisitions	11
Frequency cash-funded acquisitions	28
Purchase consideration (R' million)	
Largest	R53 973.6
Smallest	R91.8
Mean	R6285.1
Relative size of acquisition (Transaction value as percentage of market capitalisation of the acquiring company)	
Largest	270%
Smallest	20%
Mean	49%%

5.3 Daily Average Abnormal Returns

It was not the purpose of this study to perform any hypothesis testing on average abnormal returns ("AARs"), but rather to perform such hypothesis testing only on average cumulative abnormal returns ("ACARs").

However, as Smit (2005) identified, an understanding of the AARs (shown in Table 3 below) is important because it does provide a better understanding of the ACARs which were tested in terms of hypotheses 1 to 5.

Panel A of Table 3 records the AAR as well as the median AR for each day over the entire event window [-10;+228], starting on the tenth day prior [t-10] and ending on the day following [t228] the announcement date as well as the standard t-statistic and the median abnormal return. Those results of statistical significance are marked in red (95% confidence level) and blue (90% confidence level).

The share-funded acquisitions column in Panel A incorporates all those acquisitions which were paid for in full through the issuance of shares in the acquiring company to the vendor of the target company, as well as acquisitions in respect of which the share

portion represented at least the majority portion of the total purchase price. Likewise, cash-funded acquisitions column in Panel A incorporates those acquisitions funded by cash in respect of which the purchase price was paid for in full in cash, as well as those acquisitions in respect of which the cash component of the purchase price was the majority portion of the purchase price.

From the contents of Panel A it was possible to create Panel B of Table 3 as a summary of the number of days for which positive AARs (together with the percentage for number of days of positive AARS) were observed during the entire event window and then to further break this down for each of the other event windows.

Panel C of Table 3 records the descriptive statistics for the average mean and median differences in daily AAR between cash- and share-fund acquisitions across each of the event windows. In this regard the AARs for acquisitions funded by cash for each day were subtracted from the AARs for acquisitions funded by shares for that particular day during the event window. None of the differences were significantly different to zero, which indicated that the mean daily AAR's for cash and share-funded transactions did not differ significantly over any of the event windows.

Table 3: Average Abnormal Returns for the for sample for the period

Panel A for different payment methods

Day	Full sample (n=39)			Cash-funded acquisitions (n=28)			Share-funded acquisitions (n=11)		
	Mean AR (%)	Median AR (%)	t-statistic: H_0: Mean AR = 0	Mean AR (%)	Median AR (%)	t-statistic: H_0: Mean AR = 0	Mean AR (%)	Median AR (%)	t-statistic: H_0: Mean AR = 0
t-10	0.37	-0.05	0.998	0.52	-0.12	1.043	-0.02	0.12	-0.053
t-9	3.66	0.50	1.167	4.72	0.36	1.081	0.95	0.65	2.175
t-8	-0.24	-0.24	-0.423	-0.38	-0.31	-0.526	0.13	0.26	0.178
t-7	0.09	-0.01	0.225	-0.05	-0.12	-0.111	0.44	0.93	0.503
t-6	0.03	0.24	0.092	0.32	0.65	0.751	-0.71	-0.31	-1.771
t-5	-0.19	-0.37	-0.443	-0.22	-0.25	-0.457	-0.10	-0.50	-0.115
t-4	-2.01	-0.76	-1.563	-2.61	-0.79	-1.481	-0.46	-0.71	-0.682
t-3	-0.02	0.12	-0.037	0.03	0.13	0.047	-0.14	0.12	-0.164
t-2	0.91	0.98	2.246	0.84	0.69	1.593	1.11	1.18	1.926
t-1	0.72	1.01	2.199	0.88	1.05	2.233	0.33	-0.11	0.541
t0	0.06	0.41	0.057	-0.19	0.58	-0.137	0.67	0.31	0.886
t1	0.04	0.50	0.084	-0.20	0.12	-0.366	0.65	0.66	0.871
t2	-0.53	0.54	-0.737	0.03	0.80	0.051	-1.95	-0.22	-0.885
t3	0.14	0.08	0.292	-0.20	-0.15	-0.388	1.02	0.16	0.903
t4	0.88	-0.02	0.614	2.05	0.29	1.132	-2.12	-0.28	-1.113
t5	-0.59	-0.36	-1.344	-0.86	-1.01	-1.507	0.11	-0.19	0.204

t6	1.07	-0.36	1.034	0.29	-0.41	0.352	3.05	-0.28	1.004
t7	-0.05	0.24	-0.116	-0.22	-0.34	-0.431	0.38	0.90	0.458
t8	0.16	0.08	0.370	-0.04	0.11	-0.075	0.65	-0.66	0.772
t9	0.41	0.23	0.937	0.28	-0.21	0.496	0.72	0.48	1.379
t10	-0.82	-0.53	-1.617	-1.12	-0.89	-1.726	-0.07	-0.28	-0.094
t11	0.99	0.94	2.591	0.78	0.93	1.717	1.53	1.56	2.127
t12	-0.14	0.44	-0.147	-0.78	0.01	-0.598	1.48	1.03	2.526
t13	0.92	0.27	1.738	0.36	0.40	0.998	2.33	0.26	1.454
t14	-0.73	-0.67	-0.694	0.36	-0.62	0.363	-3.52	-1.13	-1.326
t15	-0.08	-0.01	-0.166	-0.01	0.00	-0.019	-0.24	-0.17	-0.380
t16	2.19	0.03	0.817	3.13	0.04	0.836	-0.18	-0.01	-0.347
t17	0.24	0.20	0.668	0.17	0.63	0.362	0.40	0.12	1.101
t18	0.45	0.72	1.272	0.19	0.27	0.414	1.12	0.95	2.972
t19	0.37	0.38	0.890	0.53	0.39	0.982	-0.06	-0.15	-0.135
t20	-0.62	-0.26	-1.071	-0.75	0.30	-0.944	-0.30	-0.30	-0.668
t21	0.41	-0.08	0.733	-0.09	-0.29	-0.283	1.70	0.17	0.938
t22	-1.64	-1.12	-1.672	-1.93	-0.84	-1.435	-0.88	-1.16	-1.511
t23	0.65	0.13	0.893	1.42	0.58	1.523	-1.31	-0.26	-1.620
t24	0.23	0.29	0.492	0.02	0.26	0.028	0.76	0.57	1.901
t25	0.47	0.72	1.230	0.72	1.15	1.445	-0.17	-0.45	-0.377
t26	-0.74	-0.40	-1.680	-0.66	-0.55	-1.924	-0.92	0.31	-0.691
t27	0.70	0.36	2.122	0.94	0.90	2.270	0.09	0.14	0.183
t28	-0.18	-0.21	-0.591	0.05	-0.09	0.129	-0.76	-0.48	-1.455
t29	-0.25	-0.79	-0.697	-0.20	-0.95	-0.452	-0.36	-0.77	-0.648
t30	0.52	0.63	1.685	0.70	0.97	1.835	0.06	0.29	0.126
t31	1.28	0.66	2.639	1.15	0.69	2.580	1.59	0.57	1.196
t32	0.38	-0.06	0.740	0.99	0.15	1.665	-1.19	-1.21	-1.385
t33	-0.86	-0.48	-1.388	-0.78	-0.53	-1.150	-1.06	-0.24	-0.751
t34	0.86	0.56	1.872	0.72	0.49	1.255	1.23	1.24	1.597
t35	-0.69	0.24	-0.677	-1.30	-0.65	-0.943	0.88	1.31	1.424
t36	-0.55	-0.58	-1.916	-0.49	-0.59	-1.401	-0.71	-0.29	-1.358
t37	-0.07	-0.17	-0.176	-0.24	-0.40	-0.467	0.37	0.36	1.386
t38	0.30	0.01	0.722	0.05	-0.36	0.106	0.93	0.26	1.000
t39	0.20	0.07	0.564	0.42	0.32	0.988	-0.36	-0.39	-0.586
t40	0.33	0.16	0.629	-0.15	-0.25	-0.330	1.56	0.35	1.076
t41	-0.46	0.06	-0.454	-1.13	-0.03	-0.941	1.24	0.06	0.651
t42	0.01	0.22	0.040	-0.05	0.27	-0.129	0.18	-0.26	0.248
t43	-0.86	-0.28	-2.311	-0.68	-0.22	-1.482	-1.32	-0.89	-2.104
t44	0.02	-0.13	0.077	-0.11	-0.30	-0.312	0.38	0.17	0.602
t45	1.03	-0.46	0.700	1.55	-0.44	0.760	-0.29	-0.46	-0.494
t46	-1.63	-0.26	-2.132	-2.04	-0.46	-1.962	-0.59	0.08	-1.078
t47	-0.11	-0.26	-0.263	0.04	-0.19	0.075	-0.51	-0.89	-0.987
t48	-0.28	0.19	-0.525	0.53	0.34	0.997	-2.35	-1.36	-2.013
t49	0.49	0.10	0.628	1.02	0.06	1.094	-0.86	0.10	-0.598
t50	0.38	0.23	0.767	0.76	0.73	1.152	-0.58	-0.78	-1.269

t51	-0.30	-0.45	-0.748	-0.35	-0.53	-0.655	-0.16	-0.21	-0.398
t52	1.19	0.71	2.516	1.37	0.76	2.107	0.73	0.42	2.620
t53	-1.02	-0.83	-2.345	-1.52	-1.10	-3.043	0.25	-0.30	0.315
t54	0.71	0.14	1.525	1.09	0.75	1.861	-0.24	-1.00	-0.354
t55	-0.11	-0.09	-0.326	0.03	0.13	0.056	-0.46	-0.62	-1.284
t56	0.32	0.51	0.677	0.44	0.53	0.705	0.03	0.48	0.043
t57	0.71	0.53	1.531	1.14	0.74	1.947	-0.36	-0.82	-0.556
t58	0.68	0.10	1.173	0.79	0.03	0.995	0.39	0.71	0.971
t59	1.06	0.19	1.404	1.25	0.10	1.229	0.56	0.56	0.805
t60	0.99	0.36	1.431	0.72	0.81	1.306	1.68	-0.03	0.810
t61	-0.07	-0.23	-0.209	-0.06	-0.42	-0.131	-0.12	0.35	-0.192
t62	-0.39	0.00	-0.723	-0.26	-0.10	-0.532	-0.72	0.19	-0.479
t63	-0.21	-0.08	-0.725	-0.33	-0.44	-0.838	0.08	-0.07	0.226
t64	-0.49	-0.73	-1.067	-0.07	-0.18	-0.151	-1.56	-1.56	-1.529
t65	-0.25	-0.23	-0.410	-0.83	-0.25	-1.081	1.23	1.60	1.545
t66	0.22	-0.08	0.539	0.08	-0.11	0.157	0.57	0.71	0.922
t67	1.12	0.10	1.743	0.73	0.07	1.165	2.11	0.43	1.279
t68	0.21	-0.06	0.453	0.25	-0.69	0.407	0.11	0.48	0.199
t69	0.12	-0.07	0.290	0.61	0.15	1.136	-1.13	-0.97	-2.701
t70	-0.43	-0.68	-1.248	-0.61	-0.98	-1.337	0.00	-0.31	0.008
t71	0.08	0.25	0.196	0.16	0.30	0.302	-0.12	0.24	-0.203
t72	0.28	0.05	0.680	-0.21	-0.20	-0.447	1.54	1.04	2.197
t73	0.76	0.85	1.093	1.09	0.35	1.477	-0.10	1.10	-0.063
t74	-0.03	0.02	-0.087	-0.16	-0.16	-0.346	0.30	0.15	0.714
t75	-0.54	-0.18	-1.319	-0.26	0.08	-0.462	-1.26	-1.43	-4.694
t76	-0.47	-0.87	-1.149	-0.41	-0.95	-0.793	-0.63	-0.47	-0.947
t77	-0.04	0.01	-0.103	0.34	0.13	0.774	-0.99	-0.34	-1.417
t78	0.15	0.18	0.411	0.42	0.30	0.899	-0.53	-0.45	-1.131
t79	0.03	0.14	0.095	0.20	0.75	0.495	-0.40	-0.01	-0.740
t80	0.58	0.51	1.820	0.70	0.48	1.707	0.28	0.75	0.615
t81	-0.21	-0.26	-0.663	-0.20	-0.25	-0.578	-0.26	-0.38	-0.331
t82	0.27	0.29	0.704	0.02	0.19	0.056	0.89	0.41	1.118
t83	-0.73	-0.23	-2.271	-0.81	-0.22	-1.866	-0.51	-0.48	-1.874
t84	-0.22	-0.28	-0.364	0.27	-0.20	0.753	-1.47	-0.28	-0.746
t85	-0.52	-0.39	-1.809	-0.69	-0.49	-1.922	-0.07	-0.22	-0.158
t86	-0.02	-0.12	-0.063	-0.04	-0.27	-0.106	0.03	0.27	0.046
t87	-1.21	-0.19	-1.540	-1.31	-0.12	-1.203	-0.97	-0.52	-2.144
t88	0.04	-0.37	0.073	0.40	-0.20	0.628	-0.89	-0.76	-1.245
t89	0.68	0.31	1.034	0.14	0.32	0.380	2.03	-0.10	0.955
t90	0.16	0.50	0.407	-0.30	0.24	-0.653	1.35	1.53	1.943
t91	1.01	0.23	1.400	0.59	0.15	1.011	2.07	0.23	0.979
t92	-0.20	0.01	-0.606	0.06	0.22	0.169	-0.85	-0.69	-1.249
t93	-0.26	-0.21	-0.778	-0.20	-0.17	-0.473	-0.42	-0.38	-0.759
t94	-0.52	-1.13	-1.097	-0.72	-1.09	-1.826	0.00	-1.25	0.003
t95	-1.34	-0.04	-1.574	-1.77	-0.09	-1.517	-0.24	0.04	-0.497

t96	0.28	-0.21	0.595	0.29	-0.16	0.467	0.27	-0.21	0.423
t97	1.57	0.14	1.284	0.56	0.25	1.507	4.16	0.01	0.971
t98	0.19	0.17	0.466	0.77	0.53	2.014	-1.30	-0.75	-1.403
t99	-0.32	-0.05	-0.892	-0.21	0.07	-0.613	-0.59	-0.19	-0.627
t100	-2.17	-0.42	-1.926	-1.86	-0.22	-1.270	-2.95	-1.29	-1.980
t101	-0.03	0.07	-0.097	-0.13	-0.01	-0.296	0.22	0.43	0.577
t102	0.58	0.51	1.040	-0.17	-0.26	-0.331	2.50	1.30	1.830
t103	0.22	0.02	0.505	0.40	0.00	0.699	-0.23	0.45	-0.376
t104	0.09	-0.11	0.151	0.60	0.42	0.917	-1.21	-1.04	-1.057
t105	-0.05	-0.39	-0.123	0.09	-0.30	0.208	-0.40	-0.68	-0.577
t106	-0.09	-0.06	-0.221	-0.30	-0.22	-0.566	0.44	0.08	0.819
t107	-0.75	0.02	-1.189	-1.19	-0.32	-1.422	0.36	0.19	0.578
t108	0.62	-0.08	1.349	0.46	0.42	1.211	1.02	-0.27	0.758
t109	-0.22	-0.27	-0.333	0.44	0.16	0.631	-1.89	-1.28	-1.299
t110	0.04	-0.65	0.039	-0.19	-0.66	-0.123	0.63	1.48	0.778
t111	-0.52	-0.29	-1.625	-0.69	-0.47	-1.812	-0.09	0.75	-0.150
t112	0.22	-0.44	0.484	0.27	-0.42	0.471	0.10	-0.76	0.132
t113	-0.02	-0.51	-0.038	0.04	-0.58	0.053	-0.16	-0.31	-0.324
t114	-0.41	-0.22	-0.699	0.40	0.60	0.817	-2.45	-1.07	-1.586
t115	0.85	0.54	2.015	0.88	0.16	1.630	0.77	0.84	1.233
t116	0.48	0.26	0.920	0.89	0.21	1.352	-0.58	0.26	-0.830
t117	-0.13	0.14	-0.285	-0.04	0.22	-0.066	-0.35	-0.28	-0.591
t118	0.13	0.40	0.221	-0.09	0.35	-0.115	0.67	0.42	1.363
t119	0.62	-0.12	0.648	-0.26	-0.05	-0.486	2.85	-0.12	0.914
t120	-0.50	0.40	-0.633	0.10	0.34	0.157	-2.05	0.46	-0.899
t121	0.94	-0.05	1.044	1.36	-0.01	1.104	-0.13	-0.12	-0.214
t122	0.33	-0.01	0.808	0.39	-0.04	0.754	0.16	0.21	0.274
t123	0.37	0.03	1.061	-0.05	-0.21	-0.143	1.44	0.88	1.968
t124	0.08	0.02	0.232	0.12	0.52	0.296	-0.03	-0.06	-0.055
t125	-0.10	-0.22	-0.327	0.08	0.00	0.191	-0.55	-0.77	-2.833
t126	0.25	0.03	0.731	0.29	0.02	0.685	0.17	0.29	0.261
t127	0.11	-0.06	0.352	0.16	-0.14	0.424	-0.02	0.03	-0.046
t128	-0.86	-0.84	-2.583	-0.80	-0.89	-1.982	-1.01	-0.62	-1.662
t129	-0.43	-0.17	-0.637	-0.60	-0.07	-0.674	0.02	-0.17	0.023
t130	0.38	0.61	0.616	0.22	0.08	0.317	0.78	1.37	0.594
t131	0.32	0.01	0.950	0.02	-0.01	0.069	1.09	0.79	1.283
t132	-0.24	-0.10	-0.568	-0.21	-0.10	-0.409	-0.31	-0.49	-0.420
t133	0.43	0.16	1.483	0.38	0.01	1.105	0.56	0.70	0.987
t134	0.26	-0.23	0.470	0.52	-0.14	0.719	-0.41	-0.54	-0.686
t135	0.28	-0.64	0.547	0.66	-0.55	0.990	-0.68	-0.89	-1.140
t136	-0.16	0.27	-0.392	-0.30	0.18	-0.591	0.19	0.94	0.277
t137	0.27	0.20	0.589	-0.03	0.13	-0.054	1.02	0.72	1.198
t138	0.19	0.14	0.431	0.32	0.10	0.636	-0.16	0.14	-0.195
t139	-0.37	-0.46	-0.702	-0.14	0.09	-0.194	-0.95	-1.33	-1.818
t140	0.11	-0.07	0.286	-0.25	-0.35	-0.507	1.02	0.24	2.212

t141	0.10	-0.18	0.223	0.88	0.33	1.859	-1.88	-2.64	-2.138
t142	0.32	-0.06	0.781	0.20	0.13	0.426	0.60	-0.51	0.772
t143	-0.14	0.13	-0.427	0.02	0.04	0.045	-0.52	0.13	-0.838
t144	-0.18	-0.62	-0.602	-0.21	-0.63	-0.583	-0.12	0.20	-0.200
t145	0.47	-0.40	0.743	0.96	0.20	1.142	-0.78	-0.50	-1.420
t146	-0.55	-0.49	-1.515	-0.61	-0.59	-1.413	-0.38	0.18	-0.559
t147	0.45	-0.53	0.752	0.65	0.22	0.983	-0.08	-0.93	-0.062
t148	-0.09	-0.01	-0.276	0.09	0.00	0.213	-0.54	-0.44	-0.903
t149	-0.39	-0.66	-1.384	-0.31	-0.09	-0.838	-0.61	-0.98	-1.567
t150	-0.20	-0.60	-0.599	-0.31	-0.70	-0.803	0.10	-0.50	0.168
t151	0.17	-0.24	0.327	-0.02	-0.25	-0.055	0.68	0.01	0.418
t152	-0.77	-0.72	-1.898	-0.78	-0.56	-1.628	-0.76	-0.87	-0.933
t153	0.34	0.49	0.848	0.38	0.40	0.848	0.23	0.52	0.261
t154	0.09	0.06	0.204	-0.22	0.00	-0.498	0.89	0.30	0.825
t155	-0.53	-0.58	-1.181	-0.43	-0.67	-0.988	-0.80	-0.57	-0.667
t156	0.26	0.29	0.709	0.03	-0.35	0.063	0.84	0.66	2.693
t157	0.15	0.24	0.348	0.09	0.28	0.178	0.29	0.01	0.364
t158	0.14	0.20	0.402	0.07	0.26	0.176	0.31	-0.31	0.462
t159	0.53	0.68	1.548	0.48	0.73	1.125	0.64	-0.35	1.189
t160	0.17	-0.01	0.396	0.18	0.80	0.379	0.13	-0.36	0.143
t161	-0.21	-0.45	-0.644	-0.38	-0.70	-1.041	0.23	0.14	0.335
t162	0.16	0.00	0.307	0.49	0.11	0.711	-0.69	-1.32	-1.966
t163	0.37	0.39	0.844	0.57	0.35	0.954	-0.13	0.39	-0.348
t164	0.59	0.63	1.946	0.28	0.36	0.753	1.37	1.26	3.108
t165	-0.01	0.02	-0.029	-0.01	-0.08	-0.016	-0.02	0.15	-0.041
t166	0.18	0.10	0.348	0.17	0.21	0.249	0.23	0.00	0.276
t167	-0.09	-0.21	-0.157	0.13	0.14	0.279	-0.63	-1.75	-0.398
t168	1.12	0.97	1.531	1.55	1.10	1.562	0.03	0.78	0.056
t169	-0.09	-0.32	-0.285	0.35	-0.18	1.011	-1.19	-0.71	-2.616
t170	0.70	-0.45	0.754	0.85	-0.60	0.674	0.31	0.59	0.411
t171	-0.04	-0.37	-0.111	0.10	-0.25	0.220	-0.40	-0.37	-0.616
t172	-0.51	-0.07	-1.107	-0.66	-0.50	-1.160	-0.15	0.20	-0.181
t173	-0.19	-0.25	-0.504	0.00	0.00	-0.010	-0.67	-0.86	-0.741
t174	0.49	0.02	1.026	0.83	0.54	1.325	-0.36	-0.16	-0.662
t175	0.41	-0.71	0.296	1.09	-0.71	0.586	-1.30	-0.59	-0.905
t176	-0.01	0.43	-0.013	-0.07	0.39	-0.145	0.16	0.66	0.232
t177	0.15	0.32	0.288	-0.04	0.25	-0.065	0.64	0.35	0.917
t178	-0.55	0.33	-0.646	-1.10	-0.38	-0.950	0.85	1.05	1.607
t179	0.86	0.61	1.549	1.03	0.19	1.391	0.43	0.69	0.708
t180	-0.85	-0.54	-1.811	-0.85	-0.50	-1.382	-0.85	-0.60	-1.407
t181	-0.62	-0.29	-1.131	-1.11	-0.74	-1.665	0.64	0.35	0.756
t182	0.93	0.46	1.593	0.28	0.45	0.640	2.58	0.98	1.519
t183	-0.28	-0.02	-0.566	0.14	0.28	0.305	-1.35	-0.98	-1.068
t184	-0.16	0.03	-0.279	-0.21	-0.74	-0.275	-0.02	0.44	-0.045
t185	1.22	0.54	1.764	1.18	0.55	1.304	1.34	-0.28	1.435

t186	-0.32	0.33	-0.519	-0.54	-0.26	-0.651	0.25	0.42	0.487
t187	0.12	0.16	0.209	-0.16	-0.09	-0.233	0.83	1.21	1.003
t188	-0.03	0.19	-0.060	-0.11	0.21	-0.188	0.19	-0.37	0.315
t189	-0.26	-0.05	-0.731	-0.31	-0.04	-0.740	-0.13	-1.05	-0.183
t190	-0.49	-0.12	-0.732	-1.18	-0.50	-1.366	1.26	0.85	1.773
t191	-0.84	-0.34	-1.737	-0.85	-0.33	-1.374	-0.81	-0.34	-1.139
t192	0.03	-0.18	0.062	0.22	-0.02	0.334	-0.46	-0.28	-0.649
t193	0.19	0.22	0.373	0.04	0.19	0.065	0.55	1.10	1.049
t194	-0.33	-0.12	-0.666	-0.65	-0.13	-1.053	0.50	0.05	0.670
t195	-0.33	-0.58	-0.557	-0.34	-0.57	-0.452	-0.29	-1.17	-0.345
t196	0.84	0.18	1.617	0.35	-0.17	0.833	2.10	0.65	1.406
t197	-1.07	-0.81	-1.605	-1.08	-0.49	-1.204	-1.05	-1.05	-1.549
t198	-0.51	0.01	-1.037	-0.97	-0.20	-1.648	0.64	0.02	0.744
t199	-0.01	0.11	-0.029	0.04	0.00	0.082	-0.14	0.44	-0.215
t200	0.22	0.30	0.623	0.38	0.79	0.846	-0.17	0.05	-0.310
t201	-0.33	-0.26	-0.792	-0.44	-0.51	-0.861	-0.04	-0.18	-0.053
t202	0.65	0.35	1.390	0.52	0.33	0.848	0.97	1.04	1.753
t203	-0.12	0.06	-0.324	0.05	0.12	0.113	-0.57	-0.47	-1.060
t204	-0.06	-0.34	-0.105	-0.45	-0.49	-0.652	0.92	0.76	0.833
t205	0.49	0.44	1.130	0.80	0.36	1.511	-0.29	0.44	-0.381
t206	-0.52	-0.08	-0.600	-0.93	-0.19	-0.827	0.53	1.15	0.464
t207	0.81	0.26	1.071	1.02	0.58	0.998	0.27	0.10	0.398
t208	-0.46	-0.44	-1.299	-0.70	-0.78	-1.674	0.14	0.29	0.207
t209	-0.02	0.07	-0.053	-0.24	-0.62	-0.635	0.56	0.53	0.929
t210	0.32	0.15	0.741	0.53	0.31	0.900	-0.20	-0.05	-0.510
t211	-0.28	-0.30	-0.850	0.10	-0.31	0.305	-1.26	-0.11	-1.655
t212	0.10	-0.74	0.119	0.31	-1.03	0.266	-0.42	-0.73	-0.656
t213	-0.81	-0.65	-1.637	-1.19	-0.72	-1.905	0.18	0.84	0.263
t214	-0.05	0.11	-0.119	0.11	0.21	0.230	-0.45	-1.21	-0.646
t215	-0.26	0.11	-0.554	-0.10	0.03	-0.178	-0.66	0.11	-0.726
t216	0.01	-0.34	0.018	0.26	-0.32	0.401	-0.63	-1.11	-0.783
t217	-1.23	-0.29	-0.897	-1.71	-0.38	-0.897	-0.02	0.02	-0.041
t218	0.08	-0.01	0.172	-0.22	-0.19	-0.627	0.84	0.07	0.616
t219	0.30	-0.13	0.661	0.31	-0.06	0.575	0.25	-0.34	0.310
t220	0.00	-0.06	0.007	0.25	0.18	0.454	-0.62	-0.45	-0.991
t221	0.66	0.23	1.607	0.92	0.30	1.742	0.01	0.16	0.016
t222	-0.15	-0.23	-0.350	-0.21	-0.05	-0.355	-0.02	-0.60	-0.039
t223	-0.05	0.02	-0.154	0.12	0.18	0.311	-0.49	-1.26	-0.867
t224	-0.13	0.17	-0.413	-0.24	-0.19	-0.575	0.14	0.42	0.351
t225	0.17	0.06	0.445	0.24	0.03	0.498	-0.03	0.17	-0.074
t226	0.34	-0.14	0.685	0.77	0.05	1.228	-0.75	-0.40	-1.134
t227	0.62	0.78	1.387	0.88	0.69	1.921	-0.05	1.58	-0.043
t228	-0.28	-0.36	-0.679	0.06	0.31	0.123	-1.17	-0.98	-1.965

RED = significant at the 95% confidence level

BLUE = significant at the 90% confidence level

Panel B: Number of days of positive AAR and percentage of days of positive AAR

Time period	Number of days of positive AAR		
	Full sample	Share-funded acquisitions	Cash-funded acquisitions
[-1;+1]	3	1	3
[-10;+10]	13	10	13
[0;63]	37	35	33
[0;126]	70	70	62
[0;189]	104	104	94
[0;228]	121	126	110
Time period	% of days of positive AAR		
	Full sample	Share-funded acquisitions	Cash-funded acquisitions
[-1;+1]	100%	33%	100%
[-10;+10]	62%	48%	62%
[0;63]	58%	55%	52%
[0;126]	55%	55%	49%
[0;189]	55%	55%	49%
[0;228]	53%	55%	48%

Panel C: Difference between AARs of cash-funded acquisitions and AARs of share funded acquisitions

Time period	Mean difference (AAR cash-funded minus AAR share-funded) (%)	Median difference (%)	p-value for H0: mean AAR (cash) = mean AAR (share)
[-1;+1])	-0.39	-0.86	0.49
[-10;+10]	-0.04	-0.49	0.92
[0;63]	0.08	-0.06	0.66
[0;126]	0.04	0.12	0.75
[0;189]	0.04	0.04	0.64
[0;228]	0.02	0.05	0.76

Figure 1 illustrates the AAR for each day in the full period event window [-10;+228], commencing on the tenth day before [t-10] and finishing on the 228th day after [t228] the announcement date for the full sample (including share-funded acquisitions and cash-funded acquisitions). Figure 2 represents the t-statistics with reference to the critical t-values above and below which the null hypothesis that the mean daily AAR is equal to zero would be rejected

Figure 1 reflects daily abnormal returns ranging from 3.6% to -2.1% for the full sample selection. This figure is representative of the highest inter-day trading positive and negative daily returns for the full sample. In this regard, it is relevant to note that by far

the majority of daily returns fall within the 1% to -1% range, with limited, if any, discernible behavioural patterns and are statistically insignificant.

The t-values in figure 2 indicates that for the full period event window [-10;+228] for the full sample, that most of the daily average abnormal returns are statistically insignificant.

Figure 1: Average Abnormal Returns for the full sample for the period [-10;+228]

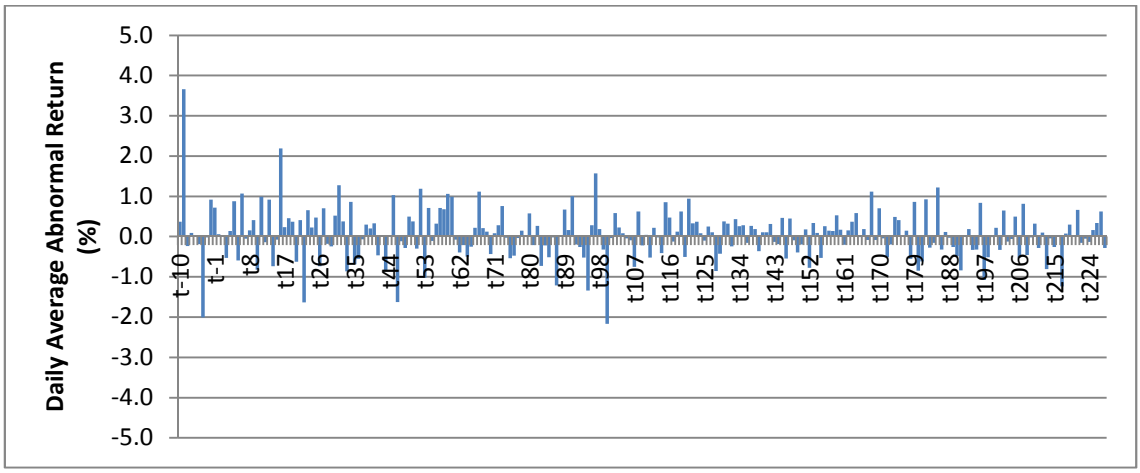


Figure 2: T-values for the daily Average Abnormal Returns for the full sample for the period [-10;+228] (Red lines indicate the critical t-values at the 95% confidence level)

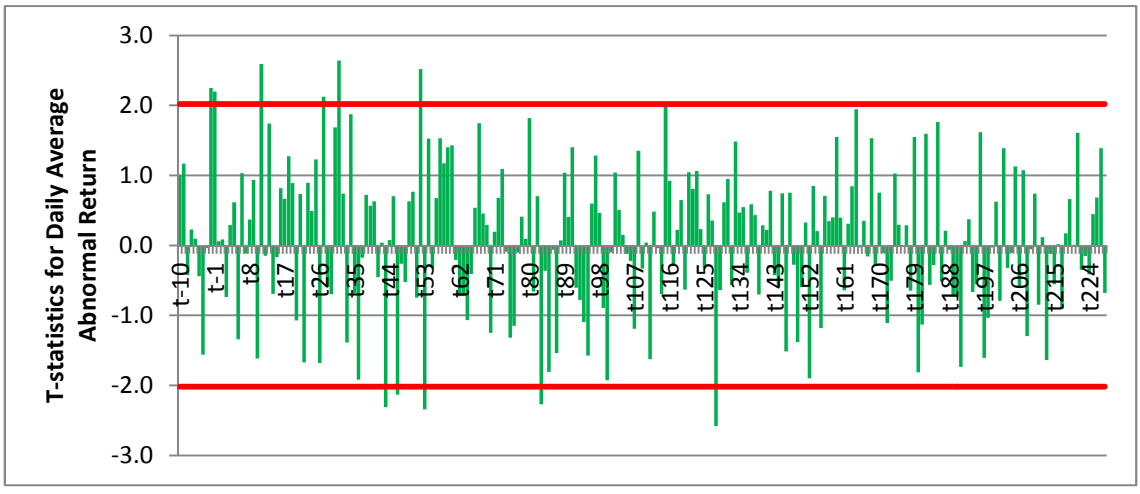


Figure 3 shows the AAR for each day in the full period event window [-10;+228], for cash funded acquisitions. While figure 4 represents the t-test curves against the critical t-test values above and below which a hypothesis test with the null hypothesis being that daily AAR is equal to zero would be rejected.

Figure 3 reflects daily abnormal returns ranging from 4.7% to -2.6% for cash funded acquisitions. This figure is representative of the peak positive and negative daily returns for the full sample. In this regard, it is relevant to note that by far the majority of daily returns fall within the 1% to -1% range, with limited, if any, discernible behavioural patterns and are statistically insignificant.

The t-values in figure 4 indicate that for the full period event window [-10;+228], that most of the daily average abnormal returns are statistically insignificant.

Figure 3: Average Abnormal Returns for cash-funded acquisitions for the period [-10;+228]

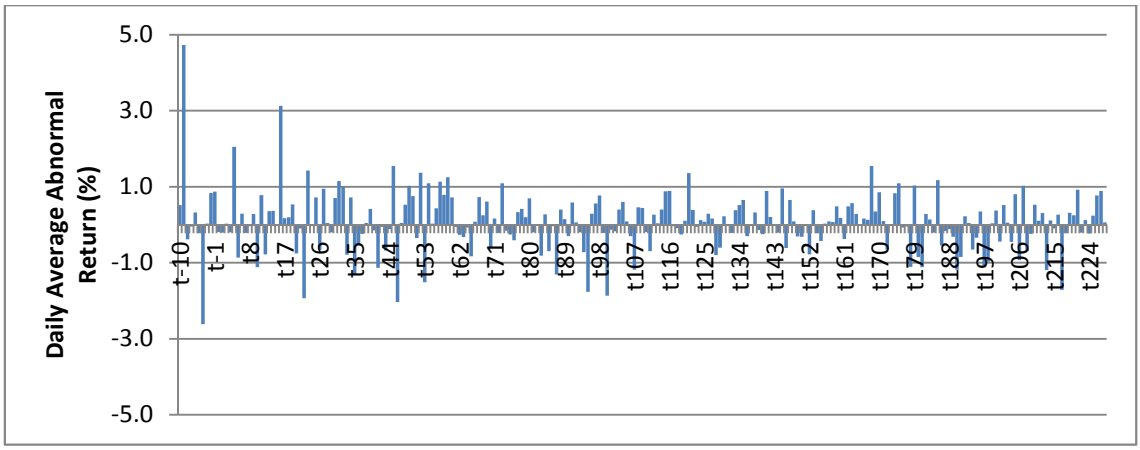


Figure 4: T-values of daily Average Abnormal Returns for cash-funded acquisitions for the period [-10;+228] full sample (Red lines indicate the critical t-values at the 95% confidence level)

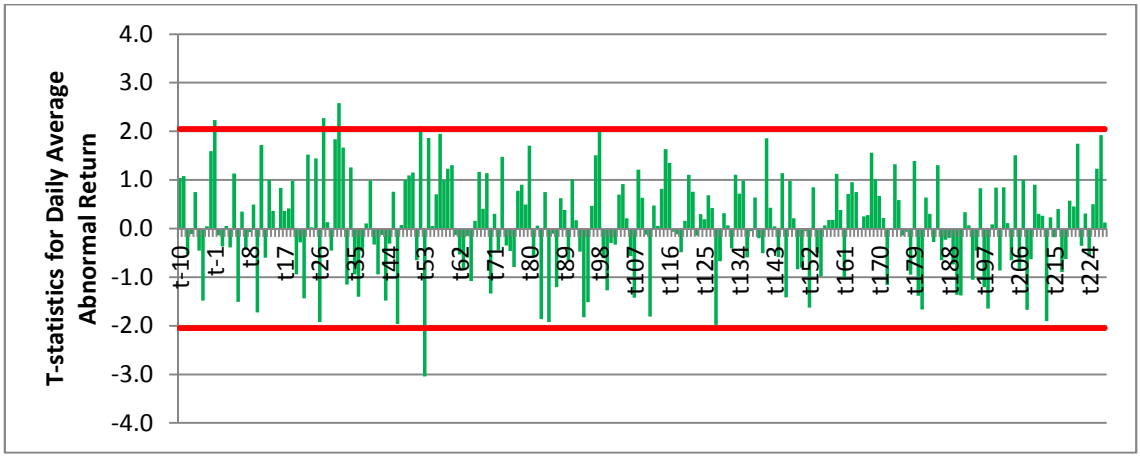


Figure 5 indicates the AAR for each day in the full period event window [-10;+228], commencing on the tenth day before [t-10] and finishing on the 228th day after [t+228] the announcement date for share funded acquisitions. While figure 6 represents the t-

test curves against the critical t-test values above and below which a hypothesis test with the null hypothesis being that daily AAR is equal to zero would be rejected.

Figure 5 reflects daily abnormal returns ranging from 4.1% to -2.9% for share-funded acquisitions. This figure is representative of the peak positive and negative daily returns for the full sample. In this regard, it is relevant to note that by far the majority of daily returns fall within the 1% to -1% range, with limited, if any, discernible behavioural patterns and are statistically insignificant.

The t-values in figure 6 indicates that for the full period event window [-10, +228], that most of the daily average abnormal returns are statistically insignificant.

Figure 5:Average Abnormal Returns for share-funded acquisitions for period[10;+228]

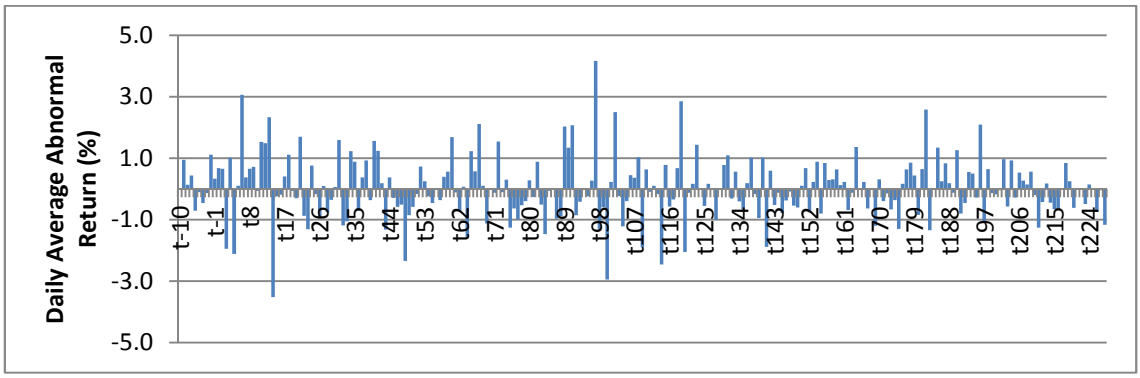


Figure 6: T-values of daily Average Abnormal Returns for share funded acquisitions for the period [-10;+224] full sample (Red lines indicate the critical t-values at the 95% confidence level)

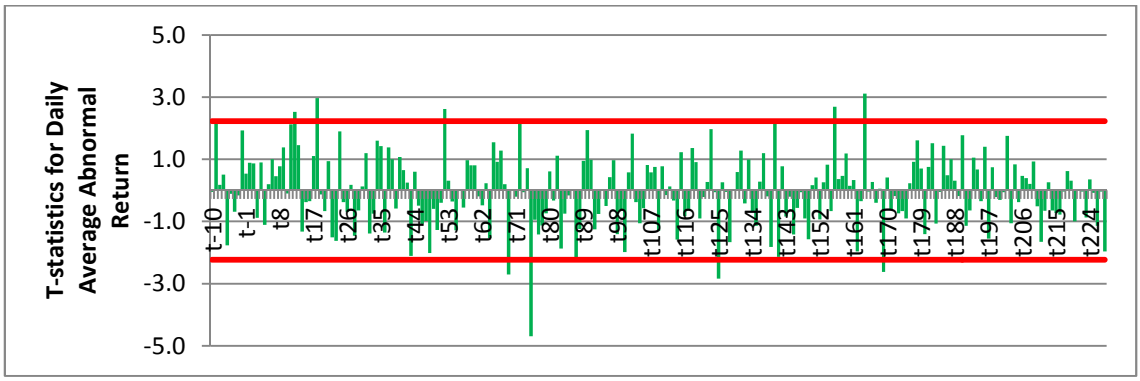


Figure 7 indicates the AAR for each day in the 21-day event window [-10, +10], commencing on the tenth day before [t-10] and finishing on the tenth day after [t+10] the announcement date for the full sample (including share-funded acquisitions and cash-funded acquisitions). While figure 8 represents the t-test curves against the

critical t-test values above and below which a hypothesis test with the null hypothesis being that daily AAR is equal to zero would be rejected.

Figure 7 reflects daily abnormal returns ranging from 3.4% to -2% for the full sample. This figure is representative of the peak positive and negative daily returns for the full sample. In this regard, it is relevant to note that by far the majority of daily returns fall within the 1% to -1% range, with limited, if any, discernible behavioural patterns and are statistically insignificant.

The t-values in figure 8 indicate that most of the daily average abnormal returns are statistically insignificant.

Figure 7: Average Abnormal Returns for the full sample for the period [-10;+10]

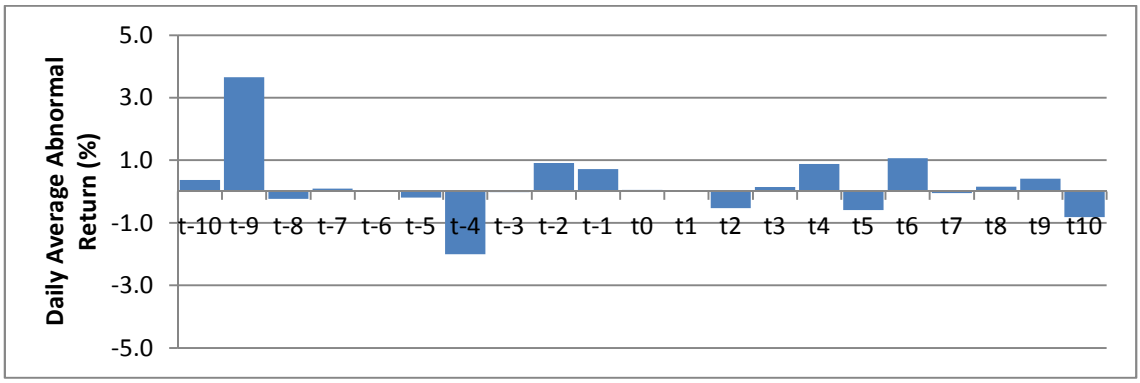


Figure 8: T-values of daily Average Abnormal Returns for full sample for the period [-10;+10] full sample (Red lines indicate the critical t-values at the 95% confidence level)

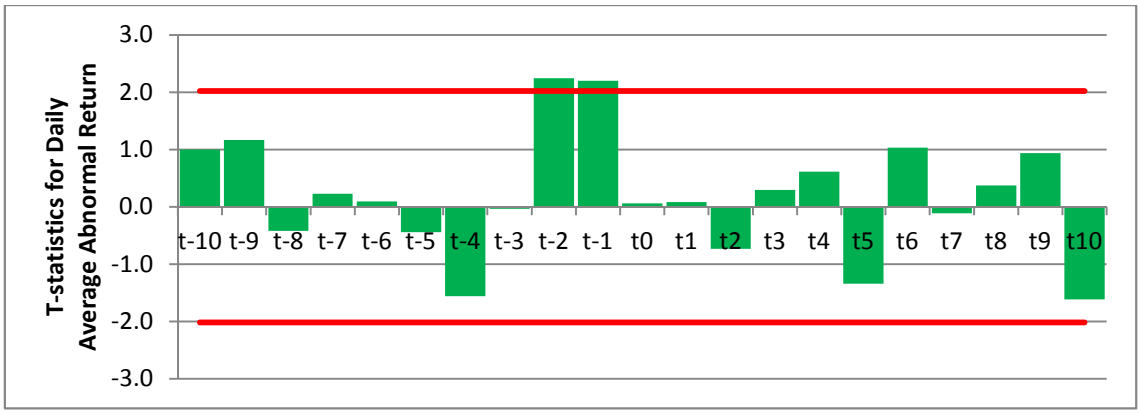


Figure 9 indicates the AAR for each day in the 21-day event window [-10, +10], commencing on the tenth day before [t-10] and finishing on the tenth day after [t+10] the announcement date for cash funded acquisitions – these then also cover the 3-day event window [-1;+1]. While figure 10 represents the T-test curves against the critical

T-test values above and below which a hypothesis test with the null hypothesis being that daily AAR is equal to zero would be rejected.

Figure 9 reflects daily abnormal returns ranging from 4.8% to -2.6% for cash funded acquisitions. This figure is representative of the peak positive and negative daily returns for the full sample. In this regard, it is relevant to note that by far the majority of daily returns fall within the 1% to -1% range, with limited, if any, discernible behavioural patterns and are statistically insignificant.

The t-values in figure 10 indicates that most of the daily average abnormal returns are statistically insignificant.

Figure 9: Average Abnormal Returns for cash-funded acquisitions for the period [10;+10]

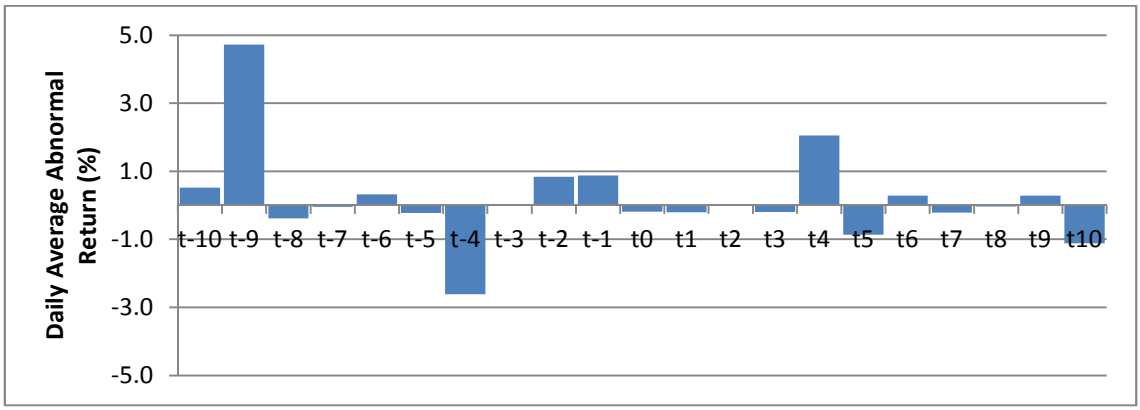


Figure 10: T-values of daily Average Abnormal Returns for cash-funded acquisitions for the period [-10;+10] full sample (Red lines indicate the critical t-values at the 95% confidence level)

Figure 11 indicates the AAR for each day in the 21-day event window [-10, +10], commencing on the tenth day before [t-10] and finishing on the tenth day after [t+10] the announcement date for share-funded acquisitions – these then also cover the 3-day event window [-1;+1]. While figure 12 represents the t-test curves against the

critical t-test values above and below which a hypothesis test with the null hypothesis being that daily AAR is equal to zero would be rejected.

Figure 11 reflects daily abnormal returns ranging from 3% to -2.2% for share-funded acquisitions. This figure is representative of the peak positive and negative daily returns for the full sample. In this regard, it is relevant to note that by far the majority of daily returns fall within the 1% to -1% range, with limited, if any, discernible behavioural patterns and are statistically insignificant.

The t-values in figure 12 indicates that most of the daily average abnormal returns are statistically insignificant.

Figure 11: Average Abnormal Returns for the share-funded acquisitions for the period [-10;+10]

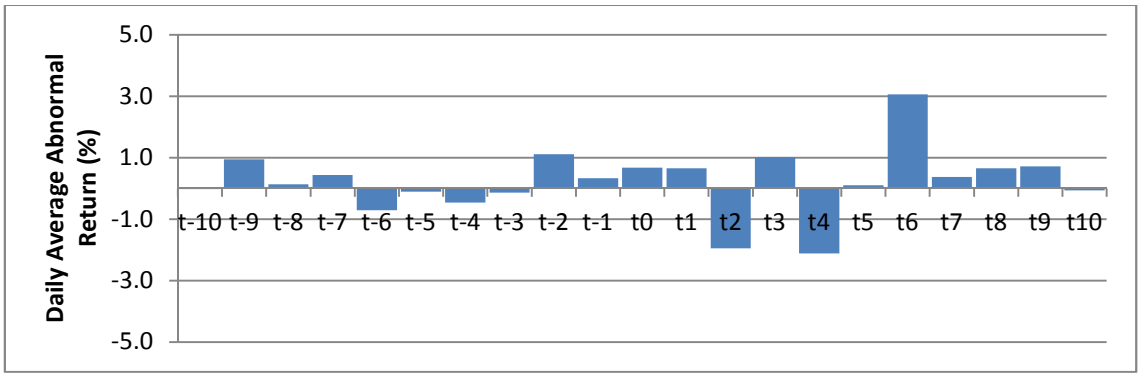
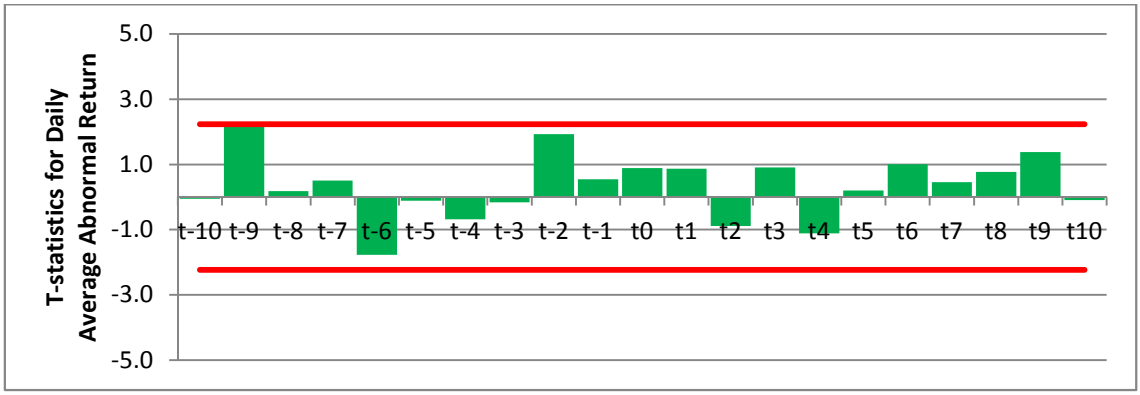


Figure 12: T-values of daily Average Abnormal Returns for share-funded acquisitions for the period [-10;+10] full sample (Red lines indicate the critical t-values at the 95% confidence level)



The univariate statistics for the daily AAR's are recorded in table 4, along with the p-value for the one-sample t-test for the null hypothesis that the mean AAR over each event window was equal to zero. Only the mean AAR for the [-1d;+1d] time period for

share-funded acquisitions was significantly greater than zero at the 95% confidence level.

Table 4: Daily Average Abnormal Returns

	Full sample (n=39)					
Time period	Mean AR (%)	Median AR (%)	Minimum AR (%)	Maximum AR (%)	Std.Dev.	p-value for H0: mean AR=0
[-1;+1])	0.27	0.06	0.04	0.72	0.39	0.35
[-10;+10]	0.19	0.06	-2.01	3.66	1.04	0.40
[0;63]	0.12	0.15	-1.64	2.19	0.70	0.17
[0;126]	0.07	0.06	-2.17	2.19	0.65	0.24
[0;189]	0.06	0.08	-2.17	2.19	0.59	0.13
[0;228]	0.04	0.04	-2.17	2.19	0.57	0.26
	Cash-funded acquisitions (n=28)					
	Mean AR (%)	Median AR (%)	Minimum AR (%)	Maximum AR (%)	Std.Dev.	p-value for H0: mean AR=0
[-1;+1])	0.16	-0.19	-0.20	0.88	0.62	0.69
[-10;+10]	0.18	-0.04	-2.61	4.72	1.36	0.54
[0;63]	0.15	0.03	-2.04	3.13	0.90	0.20
[0;126]	0.08	0.05	-2.04	3.13	0.77	0.25
[0;189]	0.08	0.04	-2.04	3.13	0.70	0.13
[0;228]	0.05	0.05	-2.04	3.13	0.70	0.28
	Share-funded acquisitions (n=11)					
	Mean AR (%)	Median AR (%)	Minimum AR (%)	Maximum AR (%)	Std.Dev.	p-value for H0: mean AR=0
[-1;+1])	0.55	0.65	0.33	0.67	0.19	0.038
[-10;+10]	0.22	0.33	-2.12	3.05	1.07	0.35
[0;63]	0.07	0.06	-3.52	3.05	1.11	0.62
[0;126]	0.04	-0.05	-3.52	4.16	1.17	0.69
[0;189]	0.04	-0.02	-3.52	4.16	1.06	0.64
[0;228]	0.03	-0.02	-3.52	4.16	1.00	0.69

5.4 Average Cumulative Abnormal Returns

When the daily abnormal returns of each selection were accumulated over the six different event windows, cumulative abnormal returns (“CARs”) were then obtained for each selection in the sample for each of these event windows.

The next step in the process was to work out the average of the different selections of CARS over each of the event windows for the purpose of calculating the ACARs. Descriptive statistics were then calculated for these ACARS, as indicated in Table 5. Table 5 is a recordal of the ACAR and the p-value (for the null hypothesis that the ACAR is not different to zero) for the six event windows.

Table 5: Average Cumulative Abnormal Return

	Full sample (n=39)		Cash-funded acquisitions (n=28)		Share-funded acquisitions (n=11)	
Time period	ACAR (%)	p-value for H0: ACAR=0	ACAR (%)	p-value for H0: ACAR=0	ACAR (%)	p-value for H0: ACAR=0
[-1;+1])	0.82	0.45	0.49	0.74	1.66	0.20
[-10;+10]	4.08	0.16	3.86	0.33	4.64	0.12
[0;63]	7.68	0.20	9.72	0.24	2.49	0.58
[0;126]	8.31	0.28	10.06	0.33	3.85	0.66
[0;189]	11.83	0.16	14.14	0.19	5.95	0.64
[0;228]	9.82	0.24	11.40	0.27	5.79	0.72

Figure 13 illustrates the ACAR for the 3-day event window commencing on the first day prior to the announcement date and ending on the first day after the announcement date [-1;+1] for the full sample, cash-funded acquisitions and share-funded acquisitions. The t-statistics for testing the null hypothesis that the daily ACARs for this 3-day event window were not different to zero are shown in Figure 14-16 for the full sample, cash-funded acquisitions and share funded acquisitions respectively.

Figure 13: ACAR for the period [-1;+1]

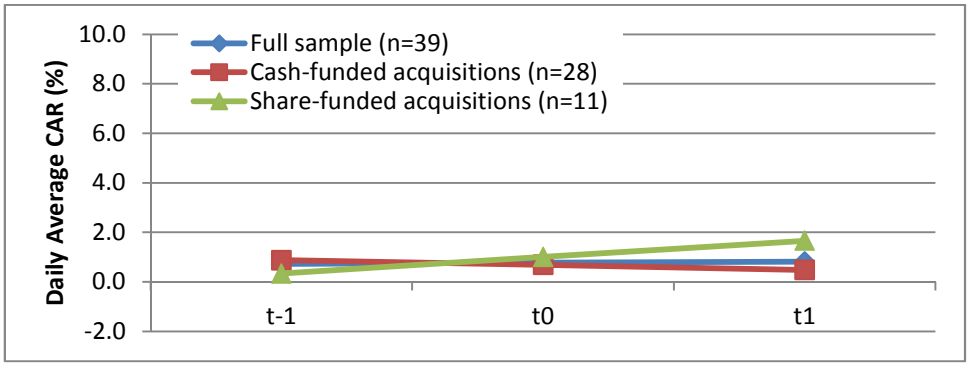


Figure 14: T-statistics for ACAR for the full sample for the period [-1;+1] - Red lines indicate the critical t-values at the 95% confidence level

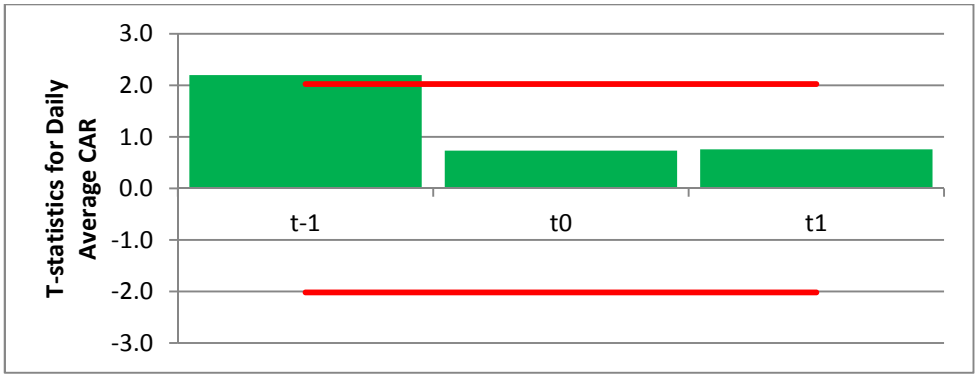


Figure 15: T-statistics for ACAR for cash-funded acquisitions for the period [-1;+1] - Red lines indicate the critical t-values at the 95% confidence level

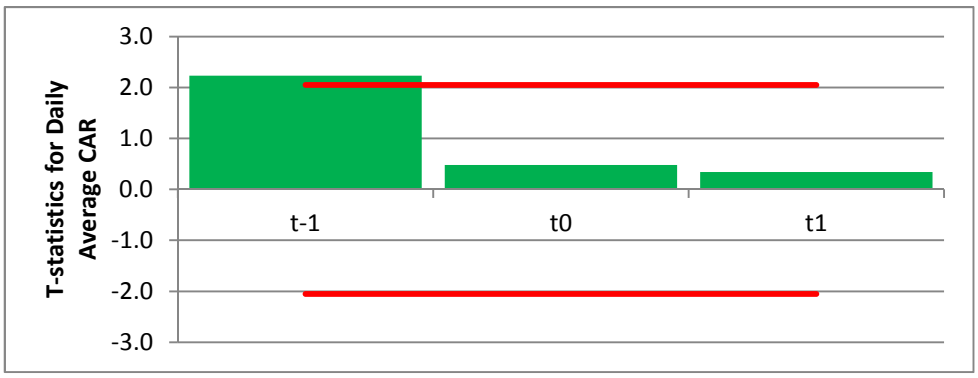


Figure 16: Figure 15: T-statistics for ACAR for share-funded acquisitions for the period [-1;+1] - Red lines indicate the critical t-values at the 95% confidence level

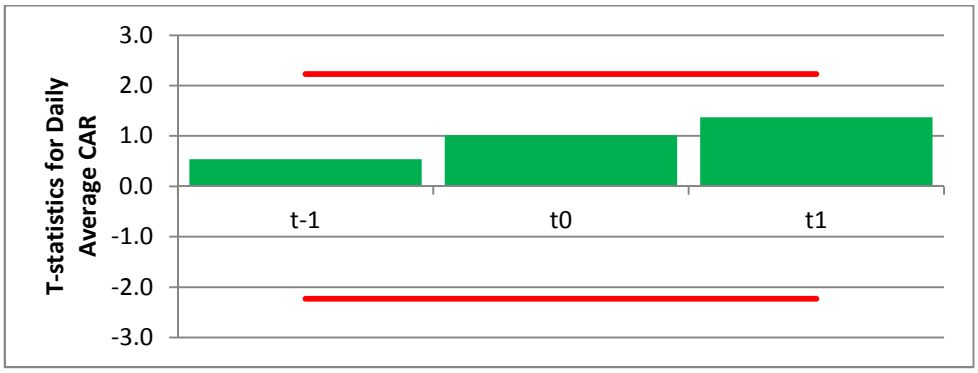


Figure 17 illustrates the ACAR for the 21-day event window commencing on the first day prior to the announcement date and ending on the first day after the announcement date [-10;+10] for the full sample, cash-funded acquisitions and share-funded acquisitions. Figures 18 -20 are t-test depictions of the percentage of significant ACARs for this 21-day event window for the full sample, cash-funded acquisitions and share-funded acquisitions.

Figure 17: ACAR for the period [-10;+10]

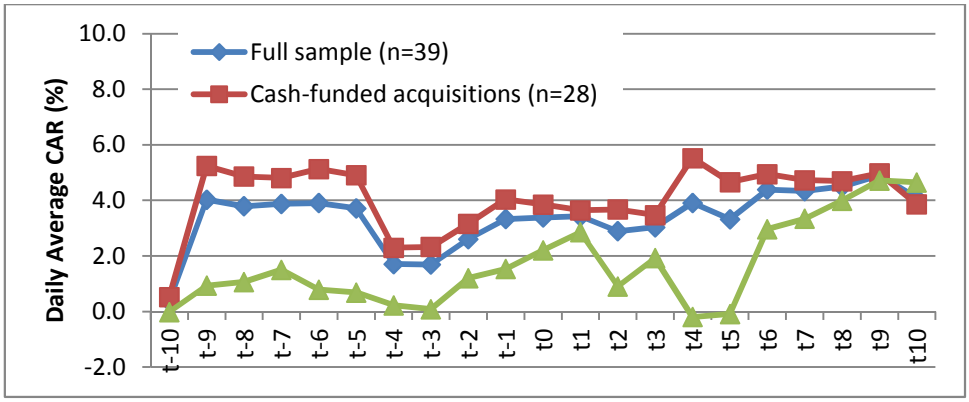


Figure 18: T-statistics for ACAR for the full sample for the period [-10;+10] - Red lines indicate the critical t-values at the 95% confidence level

Figure 19: T-statistics for ACAR for cash funded for the period [-10;+10] - Red lines indicate the critical t-values at the 95% confidence level

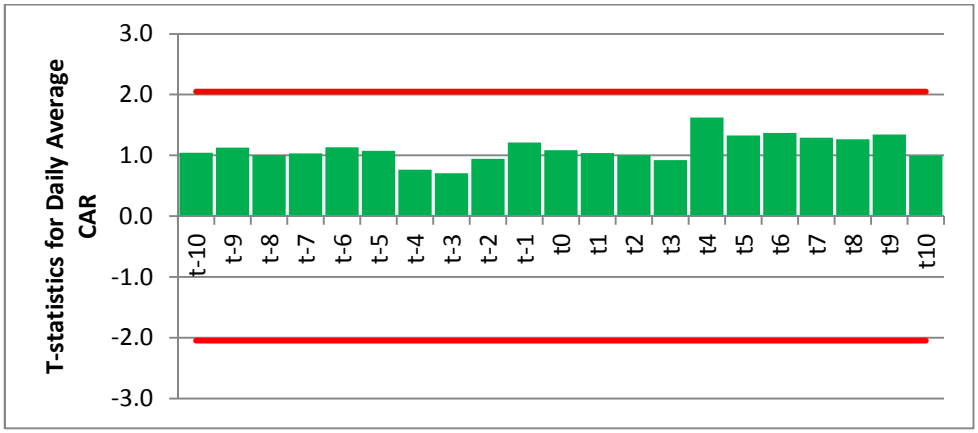


Figure 20: T-statistics for ACAR for share funded for the period [-10;+10] - Red lines indicate the critical t-values at the 95% confidence level

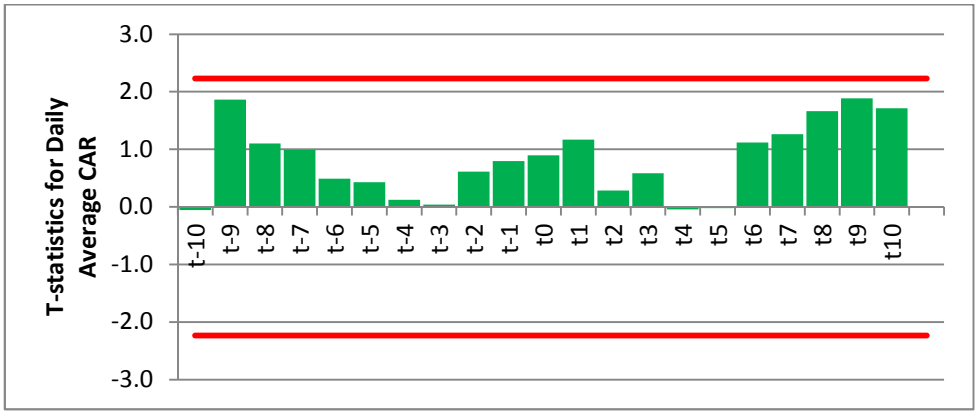


Figure 21 illustrates the ACAR for the 21-day event window commencing on the first day prior to the announcement date and ending on the first day after the announcement date [0;+228] for the full sample, cash-funded acquisitions and share funded acquisitions. Figures 22 -24 are t-test depictions of the percentage of significant ACARs for the full period for the full sample, cash-funded acquisitions and share-funded acquisitions.

Figure 21: ACAR for the period [0;+228]

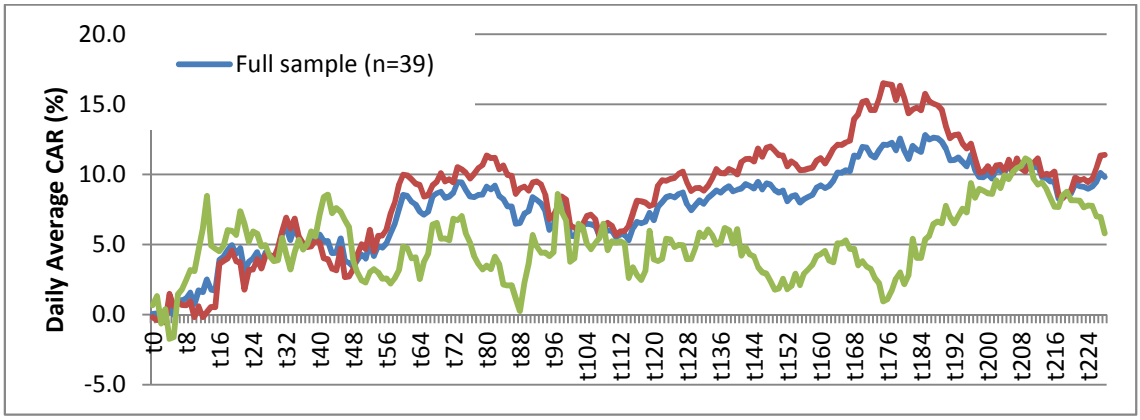


Figure 22: T-statistics for ACAR for the full sample for the period [0;+228] - Red lines indicate the critical t-values at the 95% confidence level

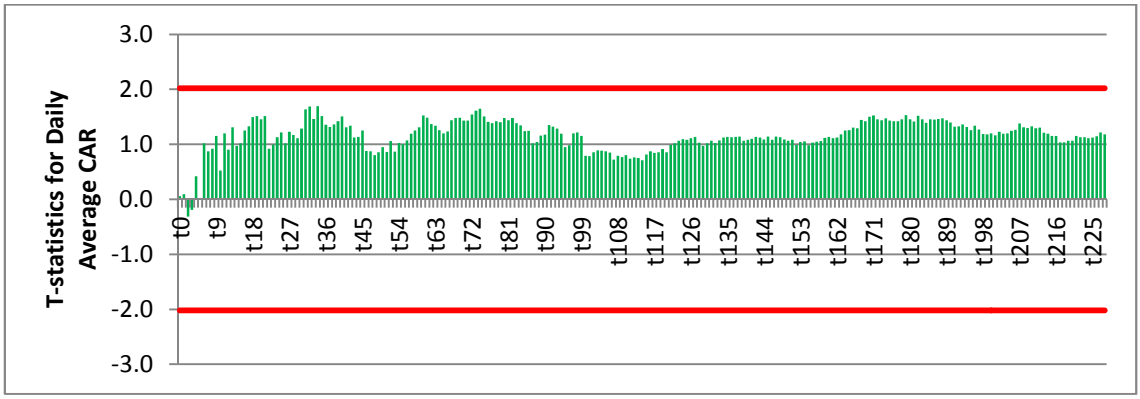


Figure 23: T-statistics for ACAR for cash funded sample for the period [-10;+228] - Red lines indicate the critical t-values at the 95% confidence level

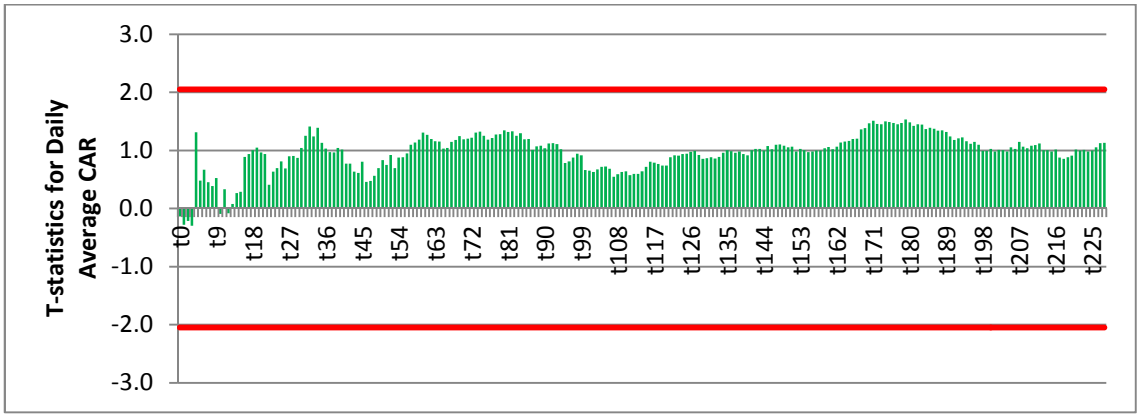
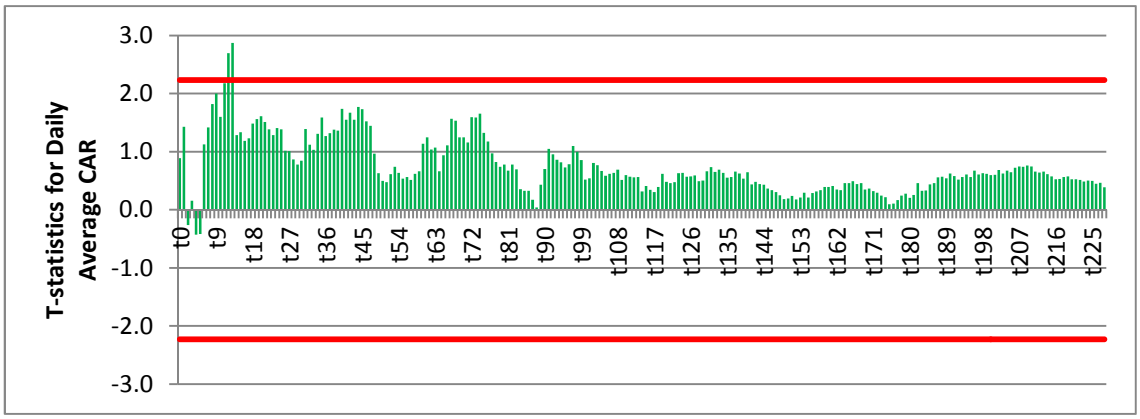


Figure 24: T-statistics for ACAR for share funded for the period [-10;+228] - Red lines indicate the critical t-values at the 95% confidence level



5.5 Hypothesis testing of ACARs for the full sample over the six event windows

5.5.1 Hypothesis 1

Before testing the hypothesis, the univariate characteristics of CAR[-1;+1] and CAR [-10;+10] were considered. The descriptive statistics are provided in table 6 below and the frequency distributions of these variables are shown in Figures 25 and 26.

Table 6

CAR	N	Mean	LCL for mean	UCL for mean	Median	Mini-mum	Maxi-mum	SD	Lower Quartile	Upper Quartile	z (skewness)	z (kurtosis)
[-1; +1]	39	0.8	-1.4	3.0	2.1	-31.2	13.7	6.7	-1.8	3.8	-6.92	16.77
[-1; +1] without Aveng Ltd	38	1.7	0.3	3.1	2.1	-6.6	13.7	4.3	-1.6	3.8	1.10	0.59
[-10; +10]	39	4.1	-1.7	9.9	3.1	-16.7	93.9	18.0	-3.4	8.6	8.51	20.84
[-10; +10] without Remgro Ltd	38	1.7	-1.7	5.1	2.6	-16.7	25.8	10.4	-3.4	8.6	0.18	-0.01

Notes on table 4:

1. LCL, UCL = 95% Lower and Upper Confidence Limit for the mean
2. z(skewness) and z(kurtosis) are normalised measures of the skewness and kurtosis, respectively. Significant values at the 99% confidence level are marked in red.

Figure 25: Frequency distribution for [-1;+1] - the outlier was Aveng Limited

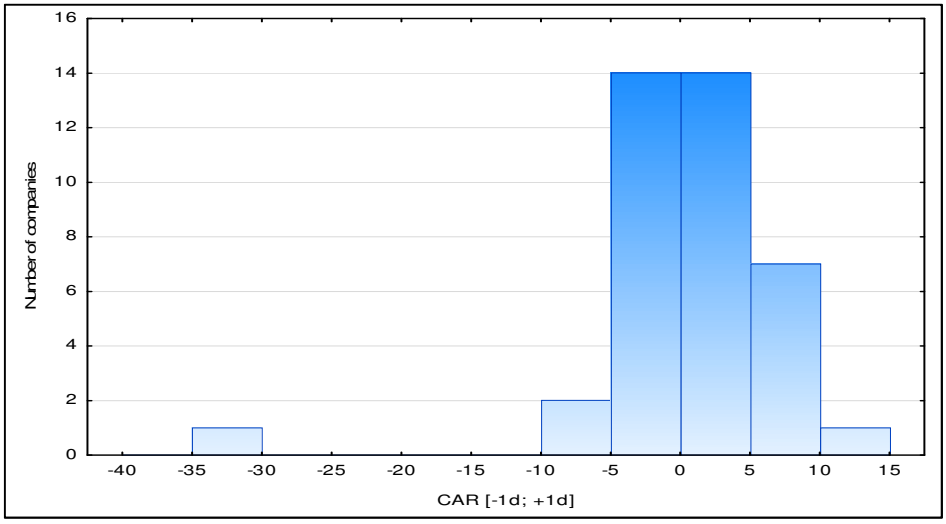
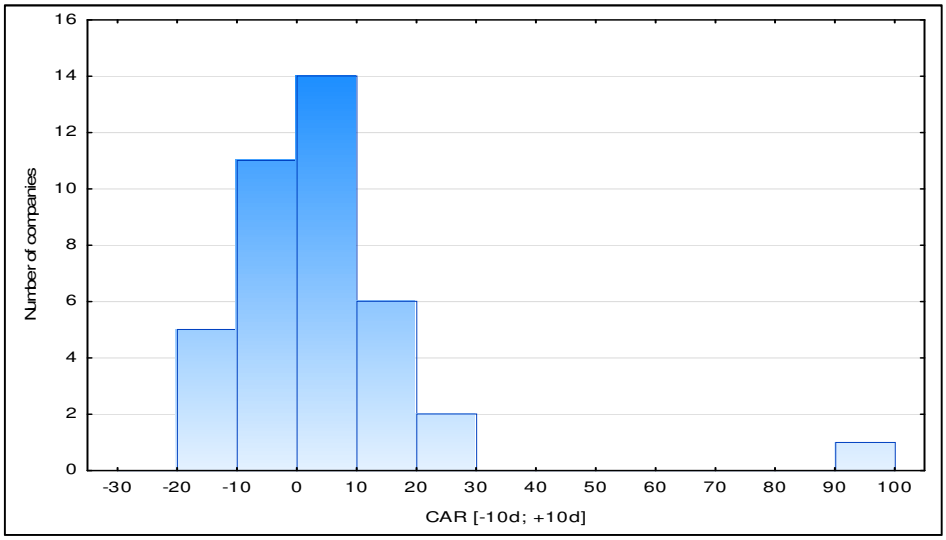


Figure 26: Frequency distribution for [-10;+10] - the outlier was Remgro Limited



In the case of CAR[-1;+1] the distribution of the data is very negatively skewed due to the presence of an outlier, Aveng Limited. By excluding Aveng from this variable, the resultant distribution does not show significant skewness and therefore meets the assumptions of the t-test. Similarly, in the case of CAR[-10;+10] the distribution of the data is very positively skewed due to the presence of an outlier, Remgro Limited. By excluding Aveng from this variable, the resultant distribution does not show significant skewness and therefore meets the assumptions of the t-test.

The hypotheses were then tested with and without inclusion of the outliers, in order to determine whether the outliers have any significant effect on the conclusions.

Hypotheses which relate to the testing of a mean against a fixed value were tested by means of the one-sample t-test. The results for this are recorded in table 7 below.

Table 7

	Mean	SD	N	t-value	df	p
CAR [-1; +1]	0.8	6.7	39	0.76	38	0.45
CAR [-1; +1] without Aveng Ltd	1.7	4.3	38	2.40	37	0.022
CAR [-10; +10]	4.1	18.0	39	1.42	38	0.16
CAR [-10; +10] without Remgro Ltd	1.7	10.4	38	1.02	37	0.32

Hypothesis 1a

H_0: The ACAR of the acquiring companies in the time period [-1;+1] is equal to zero, that is, ACAR[-1;+1] = 0

H_A: ACAR[-1;+1] ≠ 0

In retaining Aveng Limited, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [-1;+1] was not significantly different to zero (p=0.45). The ACAR [-1t;+1] in this case was 0.8±2.2%, where ±2.2% represents the 95% confidence interval for the mean.

However, by excluding Aveng Limited, the null hypothesis was rejected (p=0.022). Accordingly, it was concluded that the ACAR [-1t;+1] was significantly different to zero. The ACAR [-1t;+1] in this case was 1.7±1.4%.

Hypothesis 1b

H_0: The ACAR of the acquiring companies in the time period [-10;+10] is equal to zero, that is, ACAR[-10;+10] = 0

H_A: ACAR[-10;+10] ≠ 0

In retaining Remgro Limited, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [-10;+10] was not significantly different to zero (p=0.16). The ACAR [-10;+10] in this case was 4.1±5.8%.

Similarly, by retaining Remgro Limited, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [-10;+10] was not significantly different to zero (p=0.32). The ACAR [-10;+10] in this case was 1.7±3.4%.

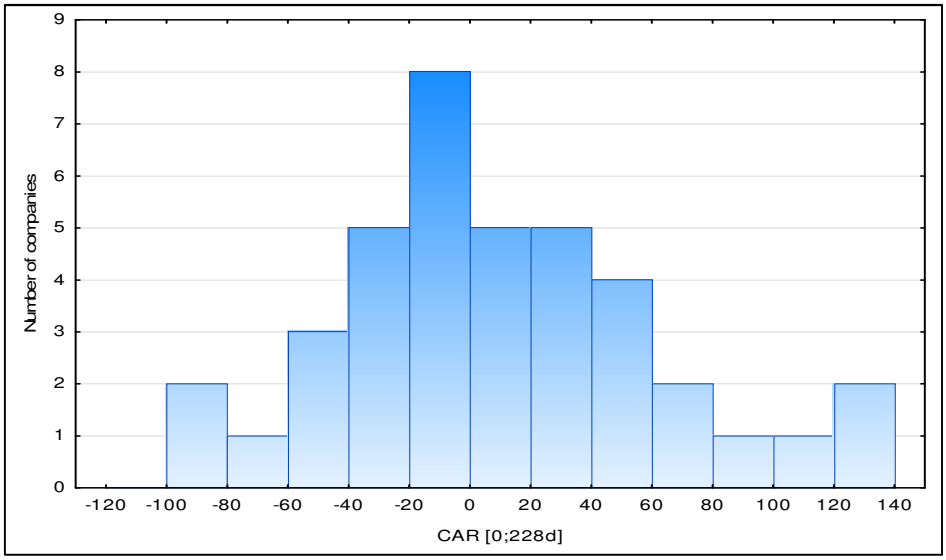
5.5.2 Hypothesis 2

The descriptive statistics are provided in table 8 below and the frequency distributions of these variables are shown in figure 27.

Table 8

	N	Mean	LCL for mean	UCL for mean	Median	Mini-mum	Maxi-mum	Lower Quartile	Upper Quartile	SD	z (skewness)	z (kurtosis)
CAR [0;228]	39	9.8	-7.0	26.6	0.2	-88.5	129.7	-24.4	41.0	51.8	1.20	0.21

Figure 27: Frequency distribution for [0;228]



This variable appeared to be normally distributed without significant skewness or outliers and thus met the assumptions for the one-sample t-test to test the hypothesis.

The results are given in table 9 below:

Table 9

	Mean	SD	N	t-value	df	p
CAR [0;228]	9.8	51.81	39	1.18	38	0.244

Hypothesis 2

H_0: The ACAR of the acquiring companies in the time period [0;228] is equal to zero, that is, ACAR[0;228] = 0

H_A: ACAR[0;228] ≠ 0

The null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [0;228] was not significantly different to zero (p=0.24). The ACAR [0;228] in this case was 9.8±16.8%.

Notwithstanding this conclusion, it is important to note the large spread of CAR [0;228]: the values range from -88% to +130%. So although on average, the CAR [0;228] was not significantly different to zero, some individual companies had very high (and some very low) CAR [0;228].

5.5.3 Hypothesis 3

The descriptive statistics are provided in table 10 below and the frequency distributions of these variables are shown in graphs 28 to 30.

Table 10

CAR	N	Mean	LCL for mean	UCL for mean	Median	Mini-mum	Maxi-mum	Lower Quartile	Upper Quartile	SD	z (skewness)	z (kurtosis)
[0;63]	39	7.7	-4.3	19.6	0.8	-38.0	181.5	-8.8	11.1	36.9	8.91	18.44
[0;63] without Illovo Sugar and Massmart Holdings	37	0.0	-4.8	4.8	0.8	-38.0	35.5	-8.8	8.1	14.3	-1.02	2.00
[0;126]	39	8.3	-7.2	23.8	1.6	-56.6	232.7	-19.0	20.0	47.8	7.73	16.50
[0;126] without Illovo Sugar and Massmart Holdings	37	-0.7	-8.8	7.4	0.7	-56.6	49.4	-19.0	15.1	24.2	-0.64	-0.02
[0;189m]	39	11.8	-4.8	28.5	1.5	-92.2	172.4	-19.1	30.1	51.3	2.59	2.52

Figure 28: Frequency distribution for [0;63] – the outliers were Illovo Sugar (117%) and Massmart Holdings (181%)

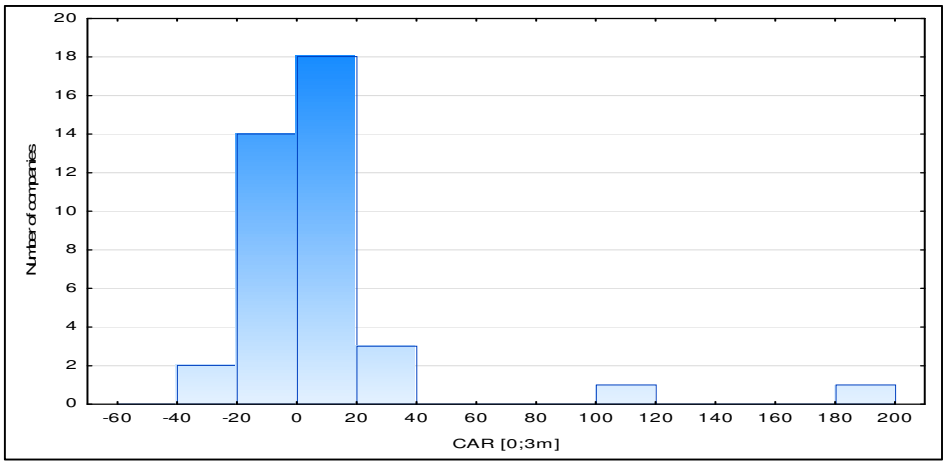


Figure 29: Frequency distribution for [0;126] – the outliers were Illovo Sugar (117%) and Massmart Holdings (181%)

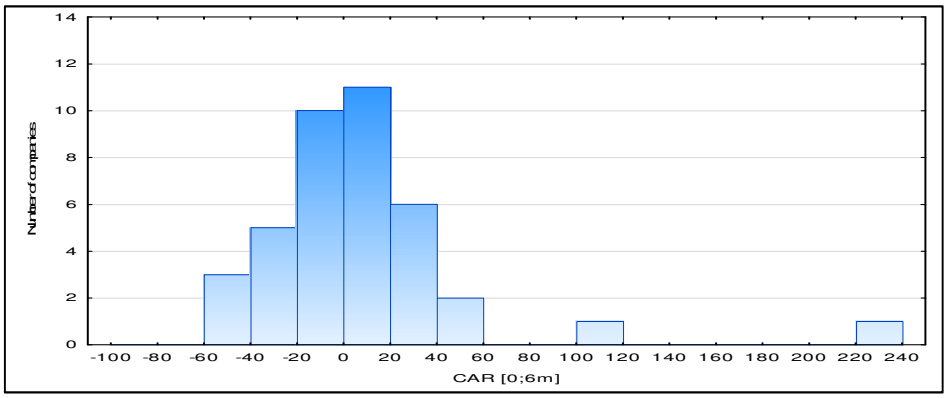
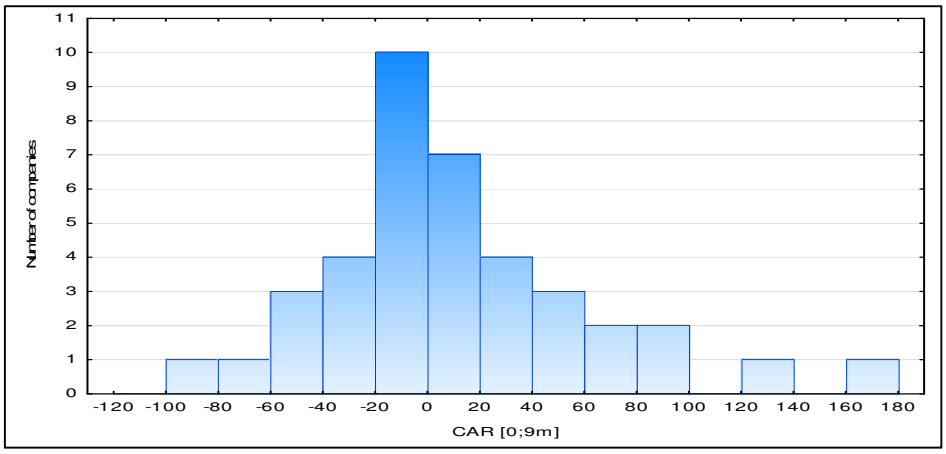


Figure 30: Frequency distribution for [0;189] – the outliers were Illovo Sugar (117%) and Massmart Holdings (181%)



In the case of CAR [0;36] and CAR [0;126] the distribution of the data is very positively skewed as a result of the presence of two outliers, namely: Illovo Sugar and Massmart Holdings. The exclusion of these companies from these variables results in distributions which do not show significant skewness and therefore meet the assumptions of the t-test. Although the same could be said of CAR [0;189], the skewness is only marginally significant and thus the potential outliers were not considered separately.

The hypotheses were then tested with and without inclusion of the outliers, by means of the one-sample t-test. The results are recorded in table 11.

Table 11

	Mean	SD	N	t-value	df	p
CAR [0;63]	7.7	36.9	39	1.30	38	0.20
CAR [0;63] without Illovo Sugar and Massmart Holdings	0.0	14.3	37	0.01	36	0.99
CAR [0;126]	8.3	47.8	39	1.09	38	0.28
CAR [0;126] without Illovo Sugar and Massmart Holdings	-0.7	24.2	37	-0.18	36	0.86
CAR [0;189]	11.8	51.3	39	1.44	38	0.16

Hypothesis 3a

H_0: The ACAR of the acquiring companies in the time period [0;3m] is equal to zero, that is, ACAR[0;63] = 0

H_A: ACAR[0;63] ≠ 0

In retaining the outliers, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [0;3m] was not significantly different to zero (p=0.20). The average CAR [0;3m] in this case was 7.7±12.0%.

Similarly, by excluding the outliers, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [0;63] was not significantly different to zero (p=0.99). The average CAR [0;63] in this case was 0.0±4.8%.

Hypothesis 3b

H_0: The ACAR of the acquiring companies in the time period [0;126] is equal to zero, that is, ACAR[0;126] = 0

H_A: ACAR[0;6m] ≠ 0

In retaining the outliers, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [0;126] was not significantly different to zero (p=0.28). The average CAR [0;126] in this case was 8.3±15.5%.

Similarly, by excluding the outliers, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [0;126] was not significantly different to zero (p=0.86). The average CAR [0;126] in this case was -0.7±8.1%.

Hypothesis 3c

H_0: The ACAR of the acquiring companies in the time period [0;189] is equal to zero, that is, ACAR[0;189] = 0

H_A: ACAR[0;189] ≠ 0

The null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [0;189] was not significantly different to zero (p=0.16). The average CAR [0;189] in this case was 11.8±16.6%.

5.4 **Hypothesis testing cash funded and share funded acquisitions**

5.4.1 Hypothesis 4

The descriptive statistics are provided in table 12 below and the frequency distributions of these variables are shown in figures 31 and 31.

Table 12

	Funding	N	Mean	LCL for mean	UCL for mean	Median	Mini-mum	Maxi-mum	Lower Quartile	Upper Quartile	SD	z (skewness)	z (kurtosis)
CAR [-1; +1]	Cash	28	0.5	-2.5	3.4	2.1	-31.2	13.7	-2.2	4.0	7.6	-5.77	12.22
CAR [-1; +1]	Share	11	1.7	-1.0	4.3	-0.5	-2.2	8.9	-1.8	3.6	4.0	1.10	-0.44
CAR [-1; +1] without Aveng Ltd	Cash	27	1.7	-0.1	3.4	2.2	-6.6	13.7	-1.4	4.3	4.4	0.77	0.89
CAR [-1; +1] without Aveng Ltd	Share	11	1.7	-1.0	4.3	-0.5	-2.2	8.9	-1.8	3.6	4.0	1.10	-0.44
CAR [-10; +10]	Cash	28	3.9	-4.1	11.8	3.2	-16.7	93.9	-6.7	8.6	20.6	6.86	14.88
CAR [-10; +10]	Share	11	4.6	-1.4	10.7	2.2	-4.0	25.8	-2.0	12.1	9.0	1.96	1.37
CAR [-10; +10] without Remgro Ltd	Cash	27	0.5	-3.8	4.8	3.1	-16.7	23.2	-8.2	8.6	10.8	-0.16	-0.64
CAR [-10; +10] without Remgro Ltd	Share	11	4.6	-1.4	10.7	2.2	-4.0	25.8	-2.0	12.1	9.0	1.96	1.37

Figure 31: Frequency distribution for [-1;+1] for cash and share funded acquisitions

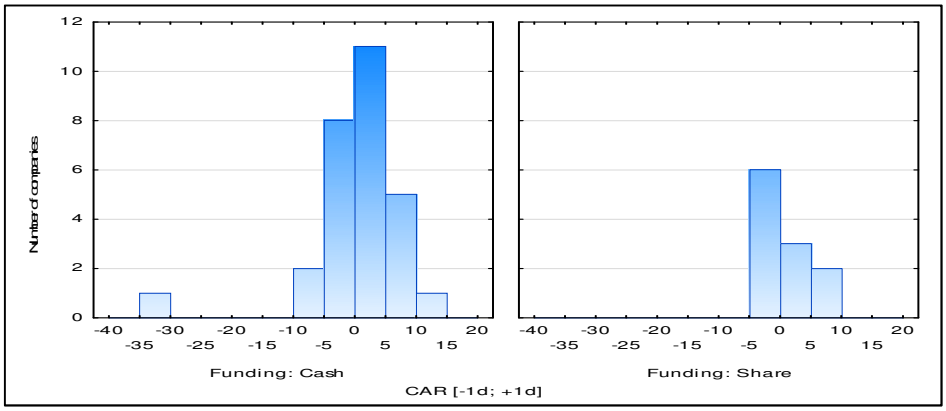
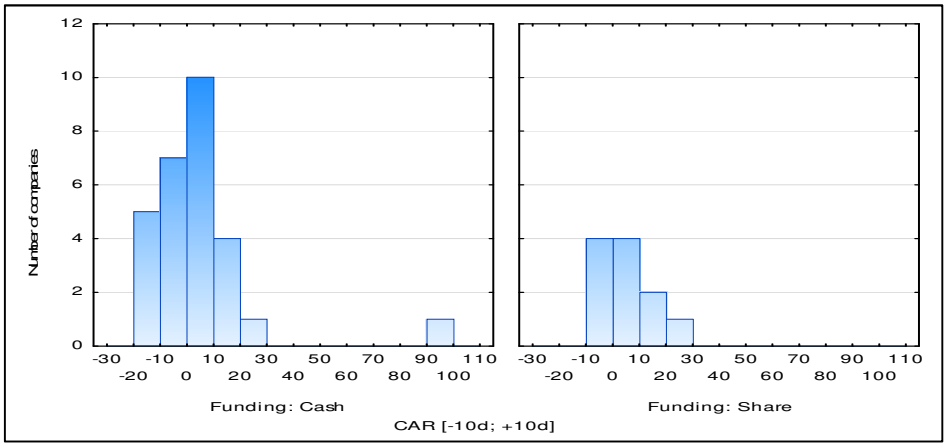


Figure 32: Frequency distribution for [-10;+10] for cash and share-funded acquisitions



As noted in the discussion on hypothesis 1, there are outliers in these variables. In retaining the outliers, the distributions of the affected groups were very skewed. This was problematic for the t-tests. However, removing these outliers had the effect of producing distributions which do not show significant skewness and therefore met the assumptions of the t-test. The tests for hypothesis 4 were conducted with and without the outliers. The results are recorded in table 13 and 14.

Hypothesis 4a

H_0: The ACAR of cash-funded acquisitions of the acquiring companies in the time period [-1;+1] is equal to zero, that is, $ACAR[-1;+1]_C = 0$

H_A: $ACAR[-1;+1]_C \neq 0$

Irrespective of whether or not the outliers were remove, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [-1;+1] for cash funded acquisitions were not significantly different to zero.

The ACAR [-1;+1] for cash-funded acquisitions was 0.5±2.9% (or 1.7±1.8% if the outlier was removed).

Hypothesis 4b

H_0: The ACAR of share-funded acquisitions of the acquiring companies in the time period [-1;+1] is equal to zero, that is, $ACAR[-1;+1]_S = 0$

H_A: $ACAR[-1;+1]_S \neq 0$

Irrespective of whether or not the outliers were remove, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [-1;+1] for share-funded acquisitions were not significantly different to zero.

The ACAR [-1;+1] for share-funded acquisitions was 1.7±2.7%.

Hypothesis 4c

H_0: The ACAR of cash-funded acquisitions of the acquiring companies in the time period [-10;+10] is equal to zero, that is, $ACAR[-10;+10]_C = 0$

H_A: $ACAR[-10;+10]_C \neq 0$

Irrespective of whether or not the outliers were remove, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [-10;+10] for cash funded acquisitions were not significantly different to zero.

The ACAR [-10;+10] for cash-funded acquisitions was 3.9±8.0% (or 0.5±4.3% if the outlier was removed).

Hypothesis 4d

H_0: The ACAR of share- funded acquisitions of the acquiring companies in the time period [-10;+10] is equal to zero, that is, $ACAR[-10;+10]_S = 0$

H_A: $ACAR[-10;+10]_S \neq 0$

Irrespective of whether or not the outliers were remove, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR for share-funded acquisitions were not significantly different to zero.

The ACAR [-10;+10] for share-funded acquisitions was 4.6±6.0%.

Table 13: One-sample t-test (Hypotheses 4a-d)

	Funding	Mean	SD	N	t-value	df	p
CAR [-1; +1]	Cash	0.5	7.6	28	0.34	27	0.74
CAR [-1; +1]	Share	1.7	4.0	11	1.37	10	0.20
CAR [-1; +1] without Aveng Ltd	Cash	1.7	4.4	27	1.94	26	0.06
CAR [-10; +10]	Cash	3.9	20.6	28	0.99	27	0.33
CAR [-10; +10]	Share	4.6	9.0	11	1.71	10	0.12
CAR [-10; +10] without Remgro Ltd	Cash	0.5	10.8	27	0.25	26	0.80

Hypothesis 4e

H_0: The ACAR of cash- and share-funded acquisitions of the acquiring companies in the time period [-1;+1] is not significantly different, that is, $ACAR[-1;+1]_C = ACAR[-1;+1]_S$

H_A: $ACAR[-1;+1]_C \neq ACAR[-1;+1]_S$

Irrespective of whether or not the outliers were remove, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [-1;+1] for cash- and share-funded acquisitions were not significantly different to each other

Hypothesis 4f

H_0: The ACAR of cash- and share-funded acquisitions of the acquiring companies in the time period [-10;+10] is not significantly different,
i.e. $ACAR[-10;+10]_C = ACAR[-10;+10]_S$

H_A: $ACAR[-10;+10]_C \neq ACAR[-10;+10]_S$

Irrespective of whether or not the outliers were remove, the null hypothesis could not be rejected. Accordingly, it was concluded that the ACAR [-10;+10] for cash- and share-funded acquisitions were not significantly different to each other.

Table 14: Two-sample t-test (Hypothesis 4e-f):

	N (Cash)	N (Share)	SD (Cash)	SD (Share)	F-ratio of Variances	p (Variances)	Type of t-test	t-value	df	p
CAR [-1; +1]	28	11	7.57	4.00	3.58	0.04	separate variances	-0.63	33.43	0.54
CAR [-1; +1] without Aveng Ltd	27	11	4.43	4.00	1.23	0.77	pooled variances	0.00	36	1.00
CAR [-10; +10]	28	11	20.59	9.00	5.23	0.01	separate variances	-0.17	36.40	0.87
CAR [-1d; +10] without Remgro Ltd	27	11	10.83	9.00	1.45	0.55	pooled variances	-1.11	36	0.27

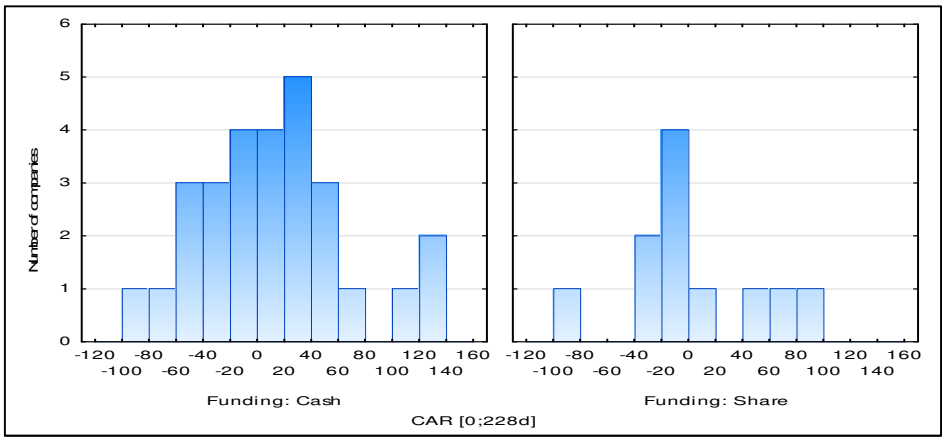
5.4.2 Hypothesis 5

The univariate characteristics of CAR [0; 228] for cash and share funded acquisitions were considered. The descriptive statistics are provided in table 15 below and the frequency distributions of these variables are shown in figure 33.

Table 15

	Funding	N	Mean	LCL for mean	UCL for mean	Median	Min	Maxi	Lower Quartile	Upper Quartile	SD	z skewness	z kurtosis
CAR [0;228]	All	39	9.8	-7.0	26.6	0.2	-88.5	129.7	-24.4	41.0	51.8	1.20	0.21
CAR [0;228]	Cash	28	11.4	-9.3	32.1	10.4	-83.2	129.7	-22.5	35.4	53.4	1.27	0.22
CAR [0;228]	Share	11	5.8	-27.7	39.3	-0.9	-88.5	93.3	-24.9	55.6	49.8	0.07	0.32

Figure 33: Frequency distribution for [0;228] for cash and share funded acquisitions



The groups appeared to be normally distributed without significant skewness or outliers and thus met the assumptions for the one- and two-sample t-tests to test the hypotheses. The results are recorded in table 16 and 17.

Hypothesis 5a

H_0: The ACAR of cash-funded acquisitions of the acquiring companies in the time period [0;228] is equal to zero, that is, $ACAR[0;228]_C = 0$

H_A: $ACAR[0;228]_C \neq 0$

The null hypotheses could not be rejected. Accordingly, it was concluded that the ACAR [0;228] for cash-funded acquisitions was not significantly different to zero (p=0.27). The average CAR [0;228] in this case was 11.4±20.7.

Hypothesis 5b

H_0: The ACAR of share-funded acquisitions of the acquiring companies in the time period [0;228] is equal to zero, that is, $ACAR[0;228]_S = 0$

H_A: $ACAR[0;228]_S \neq 0$

Table 16: One-sample t-test (Hypotheses 5a and 5b)

	Funding	Mean	SD	N	t-value	df	p
CAR [0;228]	Cash	11.4	53.4	28	1.13	27	0.27
CAR [0;228]	Share	5.8	49.8	11	0.39	10	0.71

The null hypotheses could not be rejected. The ACAR [0;228] for share-funded acquisitions was not significantly different to zero (p=0.71). The average CAR [0;228] in this case was 5.8±33.5%.

Hypothesis 5c

H_0: The ACAR of cash- and share-funded acquisitions of the acquiring companies in the time period [0;228] around the announcement date is not significantly different, that is, $ACAR[0;228]_C = ACAR[0;228]_S$

H_A: $ACAR[0;228]_C \neq ACAR[0;228]_S$

The null hypotheses could not be rejected. Accordingly, it was concluded that the ACAR [0;228] for cash and share-funded acquisitions was not significantly different (p=0.77). The average CAR [0;228] for cash-funded acquisitions was 11.4±20.7% while that for share-funded acquisitions was 5.8±33.5%.

Table 17: Two-sample t-test (Hypothesis 5c)

	N (Cash)	N (Share)	SD (Cash)	SD (Share)	F-ratio of Variances	p (Variances)	Type of t-test	t-value	df	p
CAR [0;228]	28	11	53.38	49.85	1.15	0.86	pooled variances	0.30	37	0.77

CHAPTER 6 – DISCUSSION OF RESULTS

6.1 Introduction

This chapter provides a discussion on the results recorded in chapter 5 and is broadly divided into sub-sections which address the results for AARs and ACARs. Each of these sub-sections is then further sub-divided into a discussion on the full sample and on share and cash-funded acquisitions. Where appropriate, these discussions make comparisons with the results of related research. This chapter then concludes with an overview of the results.

6.2 Average Abnormal Returns

On the basis of the results recorded in chapter 5 the AARs over the entire event window [-10;+228] for the full sample:

6.2.1 averaged 0.06% and peaked and troughed at 3.66% and -1.64% respectively– which is much higher than the average observed in Kyei's (2008) study of 0.0043%;

6.2.2 averaged 0.06% and peaked and troughed at 4.72% and -2.64% respectively for cash-funded acquisitions;

6.2.3 averaged 0.03% and peaked and troughed at 3.66% and -1.64% respectively for share funded acquisitions – indicating that cash funded acquisitions enjoyed better AARs than share funded acquisitions.

In all instances recorded in paragraphs 6.2.1 – 6.2.3, the average AARs over the entire event window are positive. They are, however, statistically insignificant at the 5% level of confidence. This net positive AAR is indicate of and creates an expectation for a net positive CAR.

Panel A of table 2 shows that statistically significant positive AARs were observed for:

6.2.4 six days for the full sample over the entire period of the study at the 95% confidence level;

6.2.5 a further seven days for the full sample over the entire period of the study at the 90% confidence level.

Similarly, panel A of table 2 shows that statistically significant negative AARs were observed for:

6.2.5 four days for the full sample over the entire period of the study at the 95% confidence level;

6.2.6 a further five days for the full sample over the entire period of the study at the 90% confidence level.

An interesting observation from this is that out of an event window of 229 days, a total of 13 days produced statistically significant positive AARs. This was offset to some extent by nine days of statistically significant negative AARs; creating the expectation that ACAR's would in all likelihood not be statistically different to zero.

Panel A of table 2 also shows for share funded acquisitions that there were a limited number of days of statistically significant positive and negative AARs, as follows:

6.2.7 five days of positive AARs and four days of negative AARs over the entire period of the study at the 95% confidence level;

6.2.8 a further nine days of positive AARs and nine days of negative AARs over the entire period of the study at the 90% confidence level.

Panel A of table 2 further shows for cash funded acquisitions that there were also a limited number of days of statistically significant positive and negative AARs, as follows:

6.2.7 four days of positive AARs and one day of negative AARs over the entire period of the study at the 95% confidence level;

6.2.8 a further nine days of positive AARs and nine days of negative AARs over the entire period of the study at the 90% confidence level.

It is interesting to note that the most significant AARs were noted in the two days immediately preceding the announcement date. This could be indicative of information

leakage prior to the announcement date (Ma *et al*, 2009). Otherwise, there appears to be no discernible trend in the AARs for either the full sample or for cash or share funded acquisitions over the full period.

The following interesting observations can be made from panel B of table 2:

6.2.9 the number of days of positive AARs exceeds the number of days of negatives AARs for each of the six event windows;

6.2.10 over the short term three day event window, each day resulted in a positive AAR – with the day immediately preceding the announcement dates recording a statistically significant AAR of 0.72% (again suggesting the possibility information leakage prior to the announcement date);

6.2.11 as the length of time of each event windows increased, the percentage number of days of positive AARs systematically decreased. This trend was similar for cash funded acquisitions but the reverse was true for share funded acquisitions. Whilst no other study could be found to support this view, a speculative explanation for this could be that the market initially considered the shares to be overvalued at the time of the announcement and this perception may have changed over time. This could form the basis for future research.

An interesting observation from Panel C is that share-funded acquisitions outperformed cash-funded acquisitions over the short term 3-day [-1;+1] and 21-day [-10;+10] event windows contrary to the signalling hypothesis which implies that share-funded acquisitions imply that the shares in the acquiring company are overvalued (Mushidzhi and Ward, 2004). In fact, over the 3-day event window [-1;+1], share funded acquisitions produced statistically significant AARs at the 5% level of confidence. For the remaining longer term windows cash funded acquisitions marginally outperformed share-funded acquisitions – as expected pursuant to the signalling hypothesis discussed by Mushidzhi and Ward (2004).

As evidenced in this paragraph 6.2, it appears that significant non-zero AAR's occurred only on isolated days during the analysis period. This is further illustrated in the plots of the daily AAR's as well as the t-values across the analysis period, as recorded in chapter 5.

Andrade *et al* (2001), Mushidzhi and Ward (2004), Smit (2005) Kyei (2008), and Ma *et al* (2009) are five of just a few studies which were noted that considered AARs. Of these studies, four concluded that there is no statistical evidence to suggest that M&A transactions either create value or destroy value for the shareholders of acquiring companies. Only Ma *et al* (a Developing World study) concluded that there is statistical significant evidence to suggest that M&As create value for the shareholders of acquiring companies.

In a study of 3688 M&A transactions between 1973 and 1998, Andrade *et al* (2001) found that the AAR for a 3-day event window [-1;+1] was -0.7% and -3.8% over the longer 21-day short term event window [-20;close]. These negative returns were not statistically significant. Accordingly, Andrade *et al* concluded that shareholders of acquiring companies neither gain value nor lose value from M&A transactions. However, Andrade *et al* did find statistically negative AARs of -1.5% for share funded transactions and statistically insignificant positive AARs for cash funded transactions – concluding that negative returns are limited to share funded transactions.

In their study of 57 M&A transactions between 1998 and 2002, Mushidzhi and Ward (2004) found, for each of the days in the 21-day event window [-10;+10] that the AARs of acquiring companies are insignificantly different from zero. They also found that, in respect of both cash-funded and share-funded acquisitions, the AARs are insignificantly different from zero.

Smit (2005), in his study of 20 M&A transactions between 2000 and 2002, found that no statistically significant AARs (which fluctuated between positive and negative) were found for any of the days in the 21-day event window [-10;+10], with the exception of significant positive AAR for t-3 in the case of share funded acquisitions – with a statistically significant AAR (at the 5% level of confidence) of 1.27%.

Kyei's (2008) study of 14 M&A transactions between 2000 and 2002 found that the AARs over the 389-day event window [0;388] to be statistically insignificantly positive. He also found the AARs for share-funded acquisitions averaged a higher positive return than those for cash-funded acquisitions.

In their study of 1 477 M&A transactions between 2000 and 2005, Ma *et al* (2009) found that the AARs for a 5-day event window [-2:+2] produced positive returns which were statistically significant for each day of the 5-day window. Ma *et al* did not draw a distinction between share and cash funded acquisitions.

In comparing the above five studies with this study, a few observations are noteworthy and appear to carry mixed signals with regards the signalling hypothesis referred to above. This study, together with Smit (2005) and Kyei (2008), found statistically insignificant positive AARs for the full sample for all event windows under consideration. Andrade *et al* (2001) found statistically insignificant negative AARs, while Mushidzhi and Ward (2004) found AARs of acquiring companies to be insignificantly different from zero.

Ma *et al* (2009) – the only Developed World study of the five under consideration – was the only study to find positive AARs which were statistically significant for each day of the 5-day event window [-2;+2].

In comparing cash and share funded acquisitions this study produced conflicting findings between the shorter 3-day and 21-day event windows and the 63-day, 126-day, 189-day and 229-day event windows – as noted above. While Smit (2005) and Andrade et al (2001) found cash funded acquisitions fared better than share funded acquisitions (albeit at statistically insignificant levels), Kyei (2008) and Mushidzhi and Ward (2004) concluded that there was no evidence to suggest that cash funded acquisitions performed any better than share funded acquisitions.

6.3 Average Cumulative Abnormal Returns of the full sample

Given the positive AARs, it was not surprising that these AARs yielded net positive ACARs over the six event windows. Table 4 indicates that, for the full sample contemplated for the purposes of this study:

6.3.1 no statistically significant ACARs were found to occur around the announcement dates of the acquisition. However, on closer analysis, once the outliers were removed (as contemplated in chapter 5):

6.3.1.1 statistically significant ACARs were observed for the three day event window [-1;+1] at the 95% confidence level (hypothesis 1 (a)). In this regard, this study recorded a statistically significant positive ACAR of 0.82%;

6.3.1.2 no statistically significant ACARs were observed for the 21 day event window [-10; +10] at the 95% confidence level (hypothesis 1 (b)). In this regard, this study recorded a statistically insignificant positive ACAR of 4.08%;

6.3.2 no statistically significant ACARs were found over the longer term post announcement period. In this regard, this study recorded a statistically insignificant positive ACAR of 9.82% for the 229 day event window [0;228] (hypothesis 2);

6.3.3 no statistically significant ACARs were found over the longer term post announcement period quarterly intervals. In this regard, this study recorded a statistically insignificant positive ACAR of:

6.3.3.1 7.68% for the 64 day event window [0;63] (hypothesis 3a);

6.3.3.2 8.31% for the 127 day event window [0;126] (hypothesis 3b);

6.3.3.3 11.83% for the 190 day event window [0;189] - this comes close to being statistically significant at the 90% confidence level.

As identified by Smit (2005), by far the majority of research conducted on the share price performance of acquiring companies has a somewhat different focus, different event windows, different period of study (which can influence the results based on the prevalence of merger waves) and different conclusions. He also identifies that some studies have found evidence of value creation and other have found evidence of value destruction. In Smit's study, he found no evidence of statistically relevant value creation or value destruction. He did however find positive ACAR of 4.35% over the 21-day event window [-10;+10] and negative ACAR of -0.02% over the 3-day event window [-1;+1]. Smit's results over the 21-day event window are very similar to the results of this study for the same event window. However, in stark contrast to Smit's study (which found negative ACARs), in this study statistically significant positive ACARs were observed for the 3-day event window [-1;+1] at the 95% confidence level.

Other than Smit's (2005) study, Mushidzhi and Ward's (2004) study, which is probably the most directly comparable to hypothesis 1 contemplated in this study, found statistically insignificant negative ACAR of -0.55% over the 21-day event window [-10;+10] and statistically insignificant positive ACAR of 0.31% over the 3-day event window [-1;+1] for the full sample. These results neither align with Smit's study nor this study. Accordingly, it is only possible to conclude that, in respect of these three South African studies there is no consensus as to whether shareholders of acquiring companies enjoy positive or negative returns over the short term 3-day and 21-day event windows. However, this study is the only study of the three which produced a statistically significant result. The results in Dutta and Jog's (2009) study support the results of the 3-day event [-1;+1] window recorded in this study. They found (over the

3-day window) statistically significant positive ACAR of 0.013% at the 1% level of confidence. In further support of the (albeit statistically insignificant) positive ACAR over the 21-day event window [-10;+10] found in this study, Al-Sharkas and Kabir Hassan (2010) found (over the 21-day event window) statistically significant positive ACAR of 4.74% at the 5% level of confidence.

In contrast to the (albeit statistically insignificant) positive ACAR of this study over the 21-day event window [-10;+10], Kiymaz and Baker (2008) found (over the 21-day event window) statistically significant negative ACAR of 0.013% at the 1% level of confidence. While Uddin and Boateng's (2009) study, which was based on a sample of 373 acquisitions in the United Kingdom over the period 1991-2003, found (over the 21-day event window) statistically insignificant negative ACARs. This observation is in contrast with this study but in support of Mushidzhi and Ward's (2004) study.

Wimberley and Negash's (2004) study and Kyei's (2008) studies are probably the most directly comparable to hypothesis 2 contemplated in this study; while Wimberley and Negash's study is the most comparable to hypothesis 3. In this regard, Kyei observed statistically insignificant positive ACARs over the longer term period, peaking at 4.69% for the full sample after 70 trading days. This study observed similarly statistically insignificant positive ACARs over the longer term period (albeit with a higher peak than the Kyei study). In contrast, Wimberley and Negash (in a three year event window study) found that ultimately over the longer term period shareholders of acquiring companies would experience statistically insignificant negative ACARs. However, over the first year of the three year event window, statistically insignificant positive ACARs were recorded. Wimberley and Negash also concluded that (in monitoring interim share price movements, as hypothesis 3 of this study sought to do) in order to maximise their returns shareholders should sell their shares in the acquiring company after seven months from the announcement date. In this study, a similar conclusion can be drawn after a nine month period.

On the other hand Vaziri (2011), in a study of six Asian countries with a sample size of 122 over the period 2001-2010, found statistically significant positive ACARs (at the 5% level of confidence) over a 471-day event window [-240;+230].

Guest *et al* (2009) was the only study considered for the purposes of this study who found statistically significant positive ACARs (at the 1% level of confidence) over a short term and a long term event window – as recorded in table 1. No other combined short term and long term study could be found to contrast with Guest *et al's* study. In this regard, it is interesting to note that this study similarly recorded positive ACAR's

over the short term and long term event windows (albeit at statistically insignificant levels with the exception of the 3-day event window).

An interesting observation is that when the event windows for hypothesis 3 were extended from the announcement date [t0] to 10 days prior to the announcement date [t-10] ([t-10] (being the starting point of the long term event window used in Kyei's (2008) study) the following interesting observations were made:

Table 18

	Full sample (n=39)		**Cash-funded acquisitions (n=28)**		**Share-funded acquisitions (n=11)**	
Time period	Mean ACAR (%)	p-value for H0: mean ACAR=0	Mean ACAR (%)	p-value for H0: mean ACAR=0	Mean ACAR (%)	p-value for H0: mean ACAR=0
[-1,+1]	0.82	0.45	0.49	0.74	1.66	0.20
[-10,+10]	4.08	0.16	3.86	0.33	4.64	0.12
[-10,63]	11.01	0.07	13.75	0.10	4.02	0.37
[-10,126]	11.63	0.14	14.09	0.17	5.38	0.57
[-10,189]	15.16	0.09	18.17	0.11	7.48	0.58
[-10,228]	13.15	0.14	15.43	0.16	7.32	0.65

BLUE- significant at the 90% level of confidence

The results in table 18 indicate statistically significant ACARs were found at the 90% confidence levels for two additional event windows, namely the 74-day event window [-10;+63] and the 200-day event window [-10;+189]. This could also be indicative of information leakage prior to the announcement date (Ma et al, 2009).

6.4 Average Cumulative Abnormal Returns of cash funded and share funded acquisitions

For cash-funded and share-funded acquisitions the following observations were made:

6.4.1 no statistically significant difference (at the 5% level of confidence) was observed between the ACAR's of share-funded and cash funded acquisitions for the 3-day [-1;+1] or the 21-day [-10;+10] event window (hypothesis 4). Although contrary to the signalling hypothesis highlighted in paragraph 6.2 above, share funded acquisitions performed better than cash-funded acquisitions over these two short term event windows. For both share-funded and cash-funded acquisitions the ACARs showed statistically insignificant positive returns;

6.4.2 no statistically significant difference (at the 5% level of confidence) was observed between the ACAR's of share-funded and cash funded acquisitions for the 229-day [0;228] event window. Although in line with the signalling hypothesis highlighted in paragraph 6.2 above, share funded acquisitions performed better than cash-funded acquisitions over this longer term event windows. For both share-funded and cash-funded acquisitions the ACARs showed statistically insignificant positive returns.

In comparing cash and share-funded acquisitions this study produced conflicting findings between the shorter 3-day and 21-day event windows and the 229-day event windows – as noted in paragraph 6.2 above. The observations and comparisons with other studies noted in paragraph 6.2 regarding cash versus share-funded acquisitions hold true for this paragraph 6.4 and accordingly will not be repeated.

6.5 **Conclusion**

From a population of relevance of 11 602, just 39 transactions met the relevant sample selection criteria recorded in paragraph 4.3 above. Whilst this is smaller number than was initially expected, this judgemental sample was still suitably sufficient to ensure the research objectives of this study were met.

In contrast with other South African studies (and line with studies conducted in the Developing World), this study observed statistically significant ACARs for the full sample for three day event window [-1;+1] at the 95% confidence level. On the other hand, no statistically significant ACARs were observed for the 21 day event window [-10;+10] or over the longer term post announcement period. However, statistically insignificant positive returns were observed for each of the six event windows.

This study produced mixed results in respect of cash versus share-funded acquisitions where, in contrast with the signalling hypothesis, share funded acquisitions performed better than cash-funded acquisitions over these two short term event windows. The converse was true over the longer term event windows.

CHAPTER 7 – CONCLUSION

The purpose of this study was to determine whether large acquisitions have the effect of creating or destroying shareholder value in both the short term and the long term *vis-à-vis* the share price performance of the acquiring company. A dual purpose of this study was to determine whether its results were consistent with similar studies conducted in the Developed World or the Developing World. In so far as it was possible to ascertain, this was the only South African study which addressed both the short term and long terms effects of large acquisitions on share price performance. It was similarly the only study which sought to consider the distinction between results of similar studies conducted in the Developed World versus the Developing World.

The literature review identified that the improvement of share price performance is one of the primary purposes of M&A activity. The literature review also showed that most of the studies conducted in this field were based in the Developed World, with only a comparatively small number having been conducted in the Developing World. While the observations of Developed World studies appeared to carry mixed results and lacked certainty, the majority of the findings suggested that the share price performance of acquiring companies either decreases or increases marginally or stays the same during the post announcement period of the acquisition. Put differently, in the main, these studies concluded that M&A transactions are on average zero net present value investments. The converse was true for those studies conducted in the Developing World. This presents an interesting case for further study; in particular a study into the reasons why the findings in the Developed World and the Developing World are so diametrically opposed.

The literature review further underscored the merits of both short term and long term event studies on the share price performance of acquiring companies and the importance of considering both the short term and long term effects; which this study sought to do.

This study found that the shareholders of acquiring companies do earn statistically significant positive ACARs during the 3-day window around the announcement date, a finding which contrasts with all of the South African studies contemplated for the purposes of this study. The fact that this finding is primarily attributable to the ACARs observed on the day prior to the announcement date may be indicative of insider

trading. This observation suggests the possible need for further future study on insider trading in JSE listed companies. For the remaining five event windows, this research found that the shareholders of acquiring companies do earn positive ACARs, but not at statistically significant levels.

An interesting observation which was uncovered in the discussion surrounding hypothesis 3 was, by extending the longer term event window from 229 days [0;228] to 239 days [-10;228], the ACAR's increased significantly. The significance of these increases to the longer term event windows can be found in the fact that statistically significant ACARs were found at the 90% confidence levels for two additional event windows, namely the 74-day event window [-10;+63] and the 200-day event window [-10;+189]. Again, this could be a signal of insider trading and may further suggest the need for other studies to be conducted in this regard.

The results of this study are neither consistent with the results of the Developing World or the Developed World. In fact the results of this study are inconsistent with the results of the other South African studies contemplated for the literature review. However, the results of this study were found to be consistent with the results of the Developing World over the short term 3-day window [-1;+1] and also consistent with the Developing World studies to the extent that it observed positive (albeit not statistically significant) ACARs over the remaining event windows. This is unlike the studies in the Developed World, which were found to be inconsistent as they produced a mix of positive and negative ACARs both at statistically significant and insignificant levels.

Perhaps the primary conclusion to be drawn from this study is that event studies which focus on share price performance remain inconclusive – for the Developed World at least. Certainly from a South African perspective, when all available studies were considered collectively, the conclusions were found to be inconclusive.

In terms of the short term event windows Mushidzhi and Ward (2004) noted statistically insignificant positive and negative ACARs over a number of short term event windows. Smit (2005) similarly noted the same, with the exception of a 5-day event window [-2;+2] where statistically significant positive returns were observed at the 10% level of confidence. Those long terms studies considered as part of this research observed statistically insignificant positive ACARs over the first year post the announcement date (Wimberley and Negash, 2004 and Kyei, 2008) but observed statistically insignificant negative returns beyond the first year post announcement period Wimberley and Negash (2004). This study concurred with the findings of Wimberley and Negash, in

particular that the optimal time to sell as a shareholder of the acquiring company would be during the third quarter after the announcement date of the M&A transaction.

In addition to the inconclusive nature of the event studies performed in South Africa, large variations of returns were recorded in the tables reflected in chapter 5. In other words, there were big winners and big losers at the hands of M&A transactions concluded in South Africa between 1999 and 2008. These large variations seem to suggest that each M&A transaction should be considered on the individual merits rather than by attempting to apply a general rule of statistically significant positive or negative returns. Accordingly, potential investors should understand and accept that a proposed M&A transaction is neither an indication of assured losses or gains in the long term – but rather an indication of huge losses or huge gains; which require serious risk assessment. From a short term perspective this study's observation of statistically significant ACARs over the 3-day event window (together with Smit's (2005) statistically significant observation over the 11-day event window at the 10 level of confidence), may suggest the availability of trading opportunities around the announcement date period. However, the investor community needs to decide whether these statistically significant results have practical relevance for the purposes of their trading mandates.

While the studies conducted in the Developing World appear to be fairly conclusive, this could be as a result of the fact that these studies are not in same mature stages of research as the Developed World studies. Accordingly, further research in the Developing World may be required in order to give credence to the *prima facie* conclusive nature of the current limited body of research.

The most significant contribution of this study is that it is one of a few, if not the only South African study, which considered both the short term and long terms impact of large acquisitions on the share price performance of acquiring companies. In addition, it is the only South African study which could be found that noted the distinction between studies conducted in the Developed World and the Developing World – which was found to be relevant because of South Africa's status as a Developing World country with the anomaly of having Developed World financial markets. In this regard, while the observations of the this study did not strictly align themselves with either the majority of studies conducted in the Developed World or the limited number of studies conducted in the Developing World, the similarity in the results of the short term effects recorded in this study did align with the observations found in the Developing World.

REFERENCE LIST

Agrawal, A. and Jaffe, J.F. (2000) The post-merger performance puzzle. *Advances in Mergers and Acquisitions,* 1, 119-156.

Agrawal, A., Jaffe, J.F. and Mandelker, G.N. (1992) The post-merger performance of acquiring firms: A re-examination of an anomaly. *Journal of Finance,* 67, 1605-1621.

Agrawal, A., Ferrer, C. and West, A. (2011) When big acquisitions pay off. *McKinsey Quarterly*, 3, 1-8.

Al-Sharkas, A. A. and Kabir Hassan, M. (2010) New evidence on shareholder wealth effects in bank mergers during 1980-2000. *Journal of Economics and Finance*, 34 (3), 326-348.

Andrade, G., Mitchell, M. and Stafford, E. (2001) New evidence and perspectives on mergers. *Journal of Economic Perspectives,* 15 (2), 103-120.

Andre, P., Kooli, M. and L'Her, J-F. (2004) The long run performance of mergers and acquisitions: Evidence from the Canadian stock market. *Financial Management*, 33 (4), 27-43.

Arugaslan, O., DeMello, J. and Yaman, D. (2012) Share structure and wealth effects of corporate takeovers. *The Journal of Applied Business Research,* 28 (4), 633-644.

Benoit, V. C., Xavier, B. and Alain, F. (2010) Takeovers and Bidders' Return Determinants on Announcement Dates. *Journal of Applied Business and Economics.* 11 (1), 89-104.

Bogan, V. and Just, D. (2009) What drives merger decision making behavior? Don't seek, don't find, and don't change your mind. *Journal of Economic Behaviour and Organisation,* 72 (3), 930-943.

Brewis, J. (2000) Most M&A deals fail to add value. *Corporate Finance*, 182, 8.

Brown, R. and da Silva Rosa, R. (1998) Research method and the long-run performance of acquiring firms. *Australian Journal of Management*, 23 (1), 23-38.

Bruner, R.F. (2005) Where M&A pays and where it strays: A survey of the research. *Journal of Applied Corporate Finance,* 16 (4), 63-76.

Bruner, R.F. (2004) *Applied Mergers and Acquisitions.* New York: John Wiley & Sons.

Conn, R.L., Cosh, A., Guest, P.M. and Hughes, A. (2005) The impact on UK acquirers of domestic, cross border, public and private acquisitions. *Journal of Business Finance and Accounting,* 32 (5), 815-870.

Delaney, F.T. and Wamuziri, S.M. (2004) The impact of mergers and acquisitions on shareholder wealth in the UK construction industry. *Engineering, Construction and Architectural Management*, 11 (1), 65-73. DOI: 10.1108/09699980410512674.

Dutta, S. and Jog, V. (2009) The long-term performance of acquiring firms: A re-examination of an anomaly. *Journal of Banking and Finance,* 33, 1400-1412.

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

Fuller, K., Netter, J. and Stegemoller, M. (2002) What do returns of acquiring firms tell us? Evidence from firms that make many acquisitions. *The Journal of Finance,* 7, 151-178.

Goergen M. and Renneboog, L. (2004) Shareholder wealth effects of European domestic and cross-border takeover bids. *European Financial Management Journal,* 10 (1), 9-45.

Guest, P. M., Bild, M. and Runsten, M. (2010) The effect of takeovers on the fundamental value of acquirers. *Accounting and Business Research,* 40 (4), 333-352.

Harford, J. (1999) Corporate cash reserves and acquisitions. *The Journal of Finance,* 7, 151-178.

Hassan, M., Patro, K.P., Tuckman, H. and Wang, X. (2007). Do mergers and acquisitions create shareholder wealth in the pharmaceutical industry? *International Journal of Pharmaceutical and Healthcare Marketing,* 1 (1), 55-78.

Healy, P.M., Palepu, K.G. and Ruback, R.S. (1992) Does corporate performance improve after mergers? *Journal of Financial Economics,* 21, 135-175.

Jarrell, G.A. and Poulson, A.B. (1989) The returns to acquiring firms in tender offers: Evidence from three decades. *Journal of Economic Perspectives*, 2 (1), 21-48.

Jayesh, C.N. (2012) Why do mergers and acquisitions quite often fail? *Advances in Management,* 5 (5), 21-28.

Kiymaz, H. and Baker, H.B. (2008) Short term performance, industry effects, and motives: Evidence from large M&A's. *Quarterly Journal of Finance and Accounting,* 47 (2), 17-44.

Kode, G.V.M., Ford, J.C. and Sutherland, M.M. (2003) A conceptual model for evaluation of synergies in mergers and acquisitions: A critical review of the literature. *South Africa Journal of Finance*, 50 (1), 185-222.

Kumar, R. (2009) Post-merger corporate performance: An Indian perspective. *Management Research News*, 32 (2), 145-157. DOI: 10.1108/01409170910927604.

Kumar, R. and Paneerselvam, S. (2009) Mergers, acquisitions and wealth creation: A comparative study in the Indian context. *IIMB Management Review,* 222-244. (September 2009).

Kursten, W. (2008) Synergies, shareholder value and exchange ratios in "value creating" mergers: Why shareholders should doubt management's pre-merger promises. *Managerial Finance,* 34 (4), 252-261. DOI: 10.1108/03074350810849288.

Kyei, K. (2008). The long-term impact of large acquisitions on the share price performance of acquiring companies listed on the JSE. MBA Thesis. Gordon Institute of Business Science, University of Pretoria.

Langford, R. and Brown, C. (2004) Making M&A pay: Lessons from the world's most successful acquirers. *Strategy and Leadership*, 32 (1), 5-14. ISSN 1087-8572.

Loderer, C. and Martin, K. (1990) Corporate acquisitions by listed firms: The experience of a comprehensive sample. *Financial Management,* 19 (4), 17-33.

Ma, J., Pagan. J.A. and Chu, Y. (2009) Abnormal returns to mergers and acquisitions in ten Asian stock markets. *International Journal of Business,* 14 (3), 235-250. ISSN: 1083-4346.

Mamdani, M. and Noah, D. (2004) Pathways to success in M&A. *Journal of Applied Corporate Finance.* 16 (4), 77-89.

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

Mitchell, M.L. and Mulherin, J.H. (1996) The impact of industry shocks on takeover and restructuring activity. *Journal of Financial Economics,* 41, 193-229.

Mordant, N. and Muller, C. (2003) Profitability of directors'share dealings on the JSE. *Investment Analysts Journal,* 57, 17-21.

Mueller, D.C. and Sirower, M.L. (2003) The causes of mergers: Tests based on the gains to acquiring firms' shareholders and the size of premia. *Managerial and Decision Economics,* 24, 373-391.

Mushidzhi, T.B. and Ward, M. (2004) Abnormal returns for cash vs share funded acquisitions. *Investment Analysts Journal,* 60. 17-30.

Pangarkar, N. and Lie, J.R. (2004) Research notes and commentaries: The impact of market cycle on the performance of Singapore acquirers. *Strategic Management Journal,* 25, 1209-1216. DOI: 10.1002/smj.434

Park, N.K. (2004) A guide to using event study methods in multi-country setting. *Strategic Management Journal,* 25, 655-668. DOI: 10.1002/smj.399

Raj, M. and Forsyth, M. (2004) Management motive, shareholder returns, and the choice of payment: Evidence from the UK. *American Journal of Business,* 19 (1), 23-29.

Ribeiro, H.R. (2010) The missing links of mergers and acquisitions waves. *The IUP Journal of Business Strategy,* 7 (3), 7-25.

Roll, R. (1986) The hubris hypothesis of corporate takeovers. *Journal of Business,* 59 (2), 197-216.

Savor, P.G. and Lu, Q. (2009) Do stock mergers create value for acquirers? *The Journal of Finance,* 54 (3), 1061-1097.

Saunders, M. and Lewis, P. (2012) *Doing research in business and management: An essential guide to planning your project*. Pearson Education Limited. Edinburgh Gate.

Shekhar, C. and Torbey, V. (2005) Takeovers, ownership and shareholder wealth: The Australian evidence. *Review of Accounting and Finance*, 4 (3), 101-119.

Shleifer, A. and Vishny, R. (2003) Stock market driven acquisitions. *Journal of Financial Economics,* 70, 295-311.

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, University of Pretoria.

Soongswang, A. (2009) Takeovers: Successful and unsuccessful bidders. *International Journal of Economic Perspectives*, 3 (3), 167-182. ISSN 1307-1637

Subeniotis, D.N., Kroustalis, I.G., Tampkoudis, I.A. and Poulios, M. (2011) Empirical examination of mergers and acquisitions: The U.S. economy in perspective. *Journal of Financial Management and Analysis,* 24 (2), 30-38.

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

Uddin, M. and Boateng, A. (2009) An analysis of short-run performance of cross border mergers and acquisitions: Evidence from the UK acquiring firms. *Review of Accounting and Finance,* 8, 431-453. doi: 10.1108/14757700911006967.

Vaziri, M.T. (2011) Stock price reaction to acquisitions in banking sector: An empirical analysis on selected Asia Pacific countries. *Journal of America Academy of Business,* 17, 51-61.

Ward, M. and Muller, C. (2008) The long-term share price reaction to black economic empowerment announcements on the Johannesburg securities exchange (August 30, 2008). Available at SSRN:http://ssrn.com/abstract=1261283

Wimberley, T. and Negash, M. (2004) The value creation effects of mergers and acquisitions: Evidence from the JSE securities exchange South Africa. *Investment Analysts Journal,* 59, 31-40.

Wong, A. and Cheung, K.Y. (2009) The effects of merger and acquisition announcements on the security prices of bidding firms and target firms in Asia. *International Journal of Economics and Finance,* 1 (2), 274-283.

Yang, S-Y., Lin, L., Chou, D-W. and Cheng, H-C. (2010) Merger drivers and the change of bidder shareholders' wealth. *The Service Industries Journal,* 30 (6), 851-871. DOI: 10.1080/02642060801911110.

Zikmund, W.G. (2003) *Business research methods.* 7th Edition. Ohio: Thomson South Western.

Appendix 1: Sample selection

ACQUIRER	TARGET	VALUE	ANNOUNCE DATE	MARKET CAPITALIZATION (MC)	% MC	CASH/SHARE
1999						
DIMENSION DATA HOLDINGS	EUROPEAN NETWORKING BUSINESSES	7000	16/11/1999	24234	29%	CASH
ILLOVO SUGAR	MONITOR SUGAR COMPANY	350	24/03/1999	1674	21%	CASH
STANDARD BANK INVESTMENT CORPORATION	LIBLIFE CONTROLLING CORPORATION	5595	09/02/1999	23837	23%	CASH
2000						
HARMONY G M CO LTD	RANDFONTEIN ESTATES ORD	862	06/01/2000	2892	30%	CASH
IDION TECHNOLOGY HLDGS	VISION SOLUTIONS INC.	393.8	01/03/2000	1340	29%	CASH
AVENG LTD	L T A LTD	1300	10/07/2000	2122	57%	CASH
REMGRO LTD	FIRSTRAND LTD	5677.7	06/12/2000	22719	25%	CASH
MUTUAL AND FEDERAL INSURANCE CO LTD	CGU HOLDINGS LTF	1211	30/06/2000	3852	31%	CASH
SASOL LIMITED	CONDEA	8178	11/12/2000	33168	25%	CASH
CHEMICAL SERVICES LIMITED	AECI COATINGS PTY LTD	275	26/09/2000	997	28%	CASH
GLOBAL TECHNOLOGY LTD	TREMENOS HOLDINGS	120	08/05/2000	233	52%	SHARE
INVICTA HOLDINGS LIMITED	BEARING MAN LIMITED	91.8	13/07/2000	243	38%	CASH
2001						
MASSMART HOLDINGS LTD",JUMBO CASH & CARRY (PTY) LTD"	TIGER BRANDS LTD ORD	490	30/05/2001	1568	31%	CASH
ATLAS PROPERTIES LTD	ADVENT PROPERTIES (PTY) LTD	402.3	27/07/2001	1275	32%	SHARE
SYCOM PROPERTY FUND LTD	RIVERWOODS OFFICE PARK	217.8	19/04/2001	858	25%	SHARE

ACQUIRER	TARGET	VALUE	ANNOUNCE DATE	MARKET CAPITALIZATION (MC)	% MC	CASH/SHARE
2002						
FIRSTRAND BANK LTD	RETAIL MORTGAGE BOOK	11900	14/03/2002	37300	32%	CASH
NEDCOR LTD	BOE LTD ORD	7619	22/04/2002	32639	23%	CASH
S A BREWERIES PLC	MILLER BREWING COMPANY	53943.6	30/05/2002	67271	80%	SHARE
JD GROUP LTD	PROFURN BUSINESSES	989	08/10/2002	1978	50%	SHARE
2003						
ALLIED TECHNOLOGIES LTD	NAMLTECH HOLDINGS LTD	522.5	06/05/2003	2367	22%	CASH
HARMONY GOLD MINING COMPANY LTD	AFRICAN RAINBOW MINERALS GOLD LTD	4900	05/05/2003	15107	32%	CASH
GROWTHPOINT PROPERTIES LTD	PROPERTIES	2500	29/05/2003	1836	136%	CASH
MVELAPHANDA RESOURCES LTD	SA GOLD MINING ASSETS	4100	10/06/2003	1479	270%	CASH
OMNIA HOLDINGS LTD	PROCHEM BUSINESS	541.6	05/06/2003	867	62%	CASH
ANGLOGOLD LTD	ASHANTI GOLDFIELDS COMPANY LTD	9847	01/08/2003	53470	20%	SHARE
2004						
NORTHAM PLATINUM LTD	KHUMAMA PLATINUM (PTY) LTD	460.3	12/02/2004	2776	20%	SHARE
ELLERINE HOLDINGS	RELYANT RETAIL LTD	1451	24/06/2004	2783	52%	SHARE
2005						
APEXHI PROPERTIES LTD	PRIMA BUSINESS	996.2	21/07/2005	2067	48%	SHARE
ENALENI PHARMACEUTICALS LTD	CIPLA MEDPRO HOLDINGS (PTY) LTD	1200	26/09/2005	694	172%	CASH
OLD MUTUAL PLC	FORSAKRINGSAKTIEBOLAGET SKANDIA	38000	31/08/2005	66544	57%	CASH
PEERMONT GLOBAL LTD	EMPERORS PALACE FORMERLY	870.3	30/03/2005	2508	35%	CASH

ACQUIRER	TARGET	VALUE	ANNOUNCE DATE	MARKET CAPITALIZATION (MC)	% MC	CASH/SHARE
	CAESARS GAUTENG					
2006						
MTN GROUP LTD	INVESTCOM LLC	33500	02/05/2006	100433	33%	CASH
GROUP FIVE LTD	QUARRY CATS	750	21/11/2006	4204	20%	SHARE
AMALGAMATED APPLIANCE HOLDINGS LTD	STEINHOFF AFRICA	1150	15/12/2006	1334	86%	SHARE
2007						
INVESTEC LTD	KENSINGTON GROUP	3960	31/05/2007	19950	20%	CASH
PEREGRINE HOLDINGS LTD	STENHAM GROUP LIMITED	2100	03/10/2007	4834	43%	CASH
2008						
TIGER BRANDS LTD	AVI LTD	8000	2008/11/17	24139	33%	SHARE
NASPERS LTD	TRADUS PLC	14754	2007/12/18	52973	28%	CASH
SAPPI LTD	M-REAL COATED PAPER BUSINESS	8900	2008/09/29	19364	50%	CASH

END OF REPORT