Divestiture: Strategies Missing Link

The Impact Of Divestitures On Companies Share Price And Operating Performance For Companies Listed On The JSE.

A Research Proposal Submitted

By

Pascal Lugisani

Research Proposal

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Abstract

The backdrop of this study is derived from a paper by Dranikoff et al (2002). To illustrate their point, Dranikoff et al argue that farm owners actively and continuously prune dead and weak branches from their farm tress in order to keep them healthy. However, in comparison, Dranikoff argues that executives spend a lot of time acquiring business (planting trees and growing them) but rarely devote any attention to divesting them. As a consequence, their empirical findings indicate that the executives end up selling the business often too late and at a low price, sacrificing shareholder value.

This study investigates company’s portfolio restructuring activities. Specifically, the study aims to analyse company’s listed on the Johannesburg Securities Exchange (JSE) Stock Exchange. As in the analogy of a farmer, do these company’s keep planting trees and growing them? If they keep growing, is there any evidence that executives engage in pruning activities, to what extent and the overall impact of those activities.

Overall, divestitures have been researched across varying fields of study. Researchers have investigated the topic from a Strategic, Finance and Operational perspective. Their findings have returned varying results respectively. On their impact on company’s share price, these studies have indicated both positive and negative (although on a less regular basis) impact.
Declaration

I declare that this research project is my own work. It is in partial fulfilment of the requirements for the degree of Masters in 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.

Pascal Pheeha Lugisani

Key Words:

Divestiture: Separate from
CAAR: Cumulative Average Abnormal Return
Variance: Inconsistency
Acknowledgements

This research project would not have been possible without the efforts of my supervisor Ralph Gunn. You consistently believed in me and the guidance you gave was most appreciated.

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To Kerry Chipp for all the contributions you have made in my life, thank you and may God bless you and your family.

To Dave Thuysen at Ernest and Young, Mc Gregor BFA and Takalani and everyone at the JSE, thank you for all the information provided.

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Chapter I – Problem Definition

'We all have dreams, but in order to make dreams into reality, the heights by great men reached and kept were not attained by sudden flight. But they, while their companions slept, were toiling upward in the night'.

Henry Wordsworth Longfellow.

Overview

The Johannesburg Securities Exchange (JSE)

The Johannesburg Securities Exchange (JSE) was established in 1887. By the end of 1990 the Exchange had 668 listed companies. The Johannesburg Securities Exchange (JSE) Top 40 changes its constituencies on a quarterly basis (Muller and Joan, 2008). However, not all listed companies make it into the index. The main benefit to a company being included in an index is the visibility that inclusion in an index brings to that company.

Within that context, firm value is composed of assets already in place and the value of its future growth opportunities (Stowe and Xing, 2005). Stowe and Xing (2005) state that the present value of growth opportunities, on average, accounts for more than 50% of companies' market value. Therefore, growth opportunities are an important component of firm value. Therefore, a Top 40 inclusion should create share price upside by luring new investors to the counter.
Do Firms Keep Growing?

Mergers and acquisitions play both an expansionary and contraction role in the restructuring of an industry (Andrade and Stafford, 2002). Industry ‘expansion’, similar to internal investment, adds to the capital stock of a firm or industry. The ‘contraction’ style of mergers facilitates the consolidation and reduction of the firm’s asset base. The results from their study reveals that from the point of view of the acquiring firm, the first order effect of mergers is a net addition to the firm’s stock of assets.

Andrade and Stanford (2002) further reveal that during the 1970's and 1980, excess capacity (mainly as a result of increased diversification activity) drove industry consolidation through mergers. The period prior to this saw many companies engage in diversification in the belief that it created increased firm value. However, many studies that investigated the principle of diversification concluded otherwise. Further, the study reveals that in the 1990's those industries with strong growth prospects, high profitability and near capacity experienced the most intense merger activity.

Martin and Sayrak (2001) reveal that the twentieth century closed with record-breaking levels of mergers and acquisitions with their worldwide total value exceeding US$ 2.3 trillion in 1999. Martin and Sayrak (2001) further reveal that much of this activity was strategic as firms merged and acquired firms from different industries in an effort to position themselves for entry into new and emerging markets.

Currently, Tarbous (2010) argue that widespread worries about sovereign debt in Europe have dramatically slowed down sovereign Initial Price Offerings (IPO) issuance in recent months. Further, the worldwide equity capital markets activity dropped 49% within three months to June 2010, the lowest level since February 2009. It is upon this backdrop that this paper is going to investigate divestiture activities for companies listed on the Johannesburg Securities Exchange (JSE) stock exchange.
Divestitures

Divestitures are defined as the parent company’s disposal and sale of assets, facilities, product lines, subsidiaries, divisions and business units (Moschieri and Mair, 2008). Further, Divestiture may be defined as a reduction in a firm’s asset base (Kiymaz and College, 2006). There are two forms of divestiture, voluntary and involuntary. This paper will focus on the former. Corporate or Voluntary divestiture may further be broken down into carve-outs, spin-offs, sell-offs and management buy-outs (MBO). The study will be based on those companies whose activity involves relinquishing both ownership and control within that particular unit (sell-offs).

Organisations pursue divestitures for more than just financial objectives. Moschieri and Mair (2008) state that divestitures activities occur based on a backdrop of strategic purposes, as a consequence of organisation behaviour and/or for financial purposes. Strategic scholars argue divestiture from an agency- theory perspective, Transactional Cost Economics (TCE), Resource Based View (RBV) and the evolutionary theory to make sense of divestitures (Moschieri and Mair, 2008).

The organisational behaviour point of view scholars have tried to ascertain whether divestitures create an environment with better governance and incentive system, a better distribution of decision rights and delegation of authority. Secondly they have tried to establish whether the ownership and governance structure of the parent company may act as an antecedent of divestiture. Lastly, from a process perspective, whether management’s involvement has any effect on the outcomes of divestitures.

Literature on the finance perspective on divestiture focuses on three specific areas (Moschieri and Mair, 2008). The effects of divestiture on the performance of the parent company, the organisational statuses of the parent company post the divestiture exercise and financial antecedents of divestiture on the parent company (performance of the parent company).
Research Title

The Impact Of Divestitures On Companies Share Price And Operating Performance For Companies Listed On The JSE.

Problem Definition

This study will attempt to analyse the impact of divestitures on companies listed on the Johannesburg Securities Exchange (JSE) stock exchange. Specifically, do these companies keep growing? Further, when do they start divesting some of their business units, processes or shares? How does this impact on the firms share price and operating performance during the divestiture process or announcement? Lastly, do investors react differently during the announcement period between cash based divestitures and those where no cash consideration announced.

Research Aim

The aim of the study to provide an analysis of the extent to which managers use active portfolio balancing as a strategic tool for business growth, specifically divestiture. Dranikoff et al (2002) state that some executives understand the value of a well-planned divestiture program. Within the South African context little studies have been done with regards to divestitures (Bhana, 2006). Further the study investigates the strength of this relationship through variance analysis (i.e. the relation ship between divestiture announcement and share price reaction). A Combination of factors is evident during the period in which a divestiture or sell-off is announced. Presence on its own does not equate or measure to effect or effectiveness. Ultimately, this will give rise to the need for a correlative inquiry into this relationship.
Chapter 2 - Literature Review

Referenced Evidence of the Need For This Research

In their research article (Moschieri and Mair, 2008) state that research on divestitures is becoming a central topic in several fields of research (including strategic management, finance and organisational behaviour). Yet our understanding of divestiture is still limited. Further (Moschieri and Mair, 2008) maintain that it is still not clear whether divestitures are a reflection of the economic cycle, are a means to correct or reverse previous strategic decisions or a proactive strategic option.

**Strategic Decision: Do firms keep growing?**

Moschieri and Mair (2008) state that divestiture is recognised as a tool of corporate strategy. They further encourage Nees’s (1978) conceptual work on the management of divestitures and the maximization of its outcome thereof (stating that organisations when exercising their divestiture options should establish a business policy committee, follow a zero based strategy and formulate a ‘divisions exchange market’).

Hanson and Song (2000) study the relation between two internal control mechanisms, managerial stock ownership and board of directors, and the wealth consequence of the decision to divest assets. The cross sectional regression analysis from this study shows that the divesting firm’s managerial ownership and board structure influence gains to the selling firm’s shareholders.
**When do they start divesting parts of their business?**

Divestitures (Kiymaz and College, 2006) are starting to be recognised as a way to create and preserve shareholder’s wealth. This ultimately minimizes the reasoning where divestitures were recognised as an element of failure. The number of divestitures (Kiymaz and College, 2006) had increased from 2,057 in 1993 to 3,134 in 1998; the value of these transactions had increased from $76 to $300 billion.

Denis and Shome (2005) investigated 130 large downsizing. They state that downsizing is most accomplished by selling assets. Their study reveals that the decision to downsize is negatively correlated to operating performance at both the firm and industry level. Further, they state that downsizing is positively correlated to the firms debt level and level of diversification. Consequently, following downsizing activities; divesting firms have lower debt ratios, are more focused and experience statistically significant increases in operating performance.

**How do Divestitures Impact the firms Share Price?**

**Positive effect**

Studies in the finance literature have focused on the stock market reaction to announcement of the divestitures' operation and consequent variation in stock prices (Moschieri and Mair, 2008). Bhana (2006) investigated the effects of voluntary sell-offs on shareholder wealth on both selling and buying South African firms. Bhana concludes that the investigated sell-offs have indeed created value as predicted by literature.

In their study Kiymaz and College (2006) investigated the impact of a sell-off announcement on both divesting and acquiring firms. The finding indicates that both divesting and acquiring firms experience statistically significant wealth gains during sell-off announcements. Further the study reveals that for the matched sample, only the divesting firm continues to experience wealth gains over time.
Previous studies have provided insight into how individual factors contribute to the reaction of the share’s performance towards divestiture. Bhana (2006) says Alexander et al. (1984), in their research, found that the announcement of a voluntary corporate sell-off has a slightly positive impact on the stock returns of a firm. Bhana, further, establishes that this is consistent with the previous work of Boudreaux (1975), Kummer (1978), Magiera & Grunewald (1978), and Miles & Rosenfeld (1983).

Dranikoff et al (2002) mention a Mckinsey and corporation study that investigated 200 largest US companies from 1990-2000. The study found that companies that actively manage their portfolios through acquisitions and divestitures create substantially more shareholder value than those that passively hold their business.

The South African corporate structure is characterised by the propensity for absolute control, reflective of numerous pyramid companies, cross holdings and low voting shares and divisions that have no correlation to the business core activities. Hirschey and Zaima (1989) find larger wealth effects for sell-offs by firms with higher insider ownership.

**Negative Effect**

Moschieri and Mair (2008) in their investigation find that there was a general consensus about the positive effect of divestitures on companies share price. However, they suggest that empirical evidence does suggest otherwise when it came to involuntary divestiture (i.e. those based on forced legislature or judicial reasons). Negative parent stock price movements surround these forms of divestitures announcements.
Motives

In their article Dranikoff et al (2002) state that executives spend most of their time creating and acquiring business but rarely devote attention to divesting them. By the time the particular business is sold, it may already be too late to attain maximum benefit from that transaction.

Dranikoff et al (2002) state that some executives understand the value of a well-planned divestiture programme. They argue further that managers can use divestitures to strengthen and rejuvenate their companies if they use divestiture as a vital strategic tool. Secondly, the recent economic crisis has seen an increase in corporate spin-offs. Lastly, divestitures are often linked to anti-trust lawsuits concerns. Thus motivation for divestiture can be economical and cyclical.

Firms may have several motives for divestures. Mehta and Khan (1996) argue that firms undertake voluntary divestiture when they suffer from inadequate profitability, poor discretionary cash flow or excessive operating and financial leverage. Further they state that a candidate for divestiture with low operating risk is divested through a sell-off. Thus divestiture can either be strategic, operational or simply based on funding objectives (Bhana, 2006).
Kaiser and Stouraitis (1995) mention the following as potential sources of sell-offs benefits:

1. Strategic Fit, which involves moving an asset from a lower value to a high value user. The idea is that the assets being sold are of a higher value to the acquiring firm than the divesting firm.
2. ‘Un-diversity’- Firms that have diversified into areas where there are little or no synergies at all will eventually have to sell-off those investments in order to maintain synergies amongst their unit investments.
3. Focus Management- the authors maintains that maybe good management may be able to manage anything, however they are most valuable when they manage what they know best.
5. Management Wage Flexibility- a common problem faced by business is managing salary competition across divisions. This can be addressed by separating divisions with such discrepancies.
6. Decision-making and flexibility- large firms are synonymous of divisional or unit managers complaining about the lack of manoeuvring space. They identify market opportunities, however more often than not are unable to pursue them rewardingly.
7. Tax and regulatory factors often play a role in the structure and manner in which divestitures are based.
8. Bondholder wealth expropriation means that for firms with risky debt outstanding; selling off debt reduces the percentage split from returns used to service debt. Consequently management now has a bigger share of the pie to work from.
9. Change in economic environment- an asset may have been acquired so that the overall firm may benefit from synergies created. However, the changing economic environment (for example the reduced cost factors) may lead to the redundancy of that particular unit.
10. Takeover defence- divestitures can also be used as a strategy to deter hostile takeovers.
11. Raising cash- raising cash may be required for a variety of potential reasons; therefore selling of unwanted assets may be used as a form of raising capital.
Further reasons as to why firms engage in divestiture may arise due to managements need to focus on the companies’ key or core competencies. Secondly, the firm may require cash flow for a specific purpose and lastly the value of the assets for sale might be less within the group in compared to its position as stand-alone asset.

Chapter 3 - Research Hypothesis

Research Hypothesis

Several studies have identified specific factors (i.e. voluntary announcement, control and timing) as positive influences on the firms share price from divestiture activity. These studies were focused on a one-factor model using the following linear equation, represented as follows:

\[ AR_{jt} = R_{jt} - (\alpha_j + \beta_j R_{mt}) \]

where \( AR_{jt} \) is the abnormal return for security \( j \) on day \( t \), \( R_{jt} \) is the actual return for security \( j \) on day \( t \); \( R_{mt} \) is the rate of return on the market portfolio represented by the JSE all share index on day \( t \), and \( \alpha \) and \( \beta \) are the market model coefficients for company \( j \) (Bhana, 2006).

Upon this backdrop, this study will examine the discrepancies in announcement day excess returns for the selling firms engaged in voluntary sell-offs. Further, the study will isolate factors behind the difference in share price responses. The two factors to be used are the relative size of the divestiture and whether the transaction price (cash price) is announced. The study will seek to test the following hypothesis for companies on the JSE over the period (2005-2009):
Hypothesis 1:

The alternative hypothesis states that cumulative average abnormal returns around the announcement dates for shareholders of the divesting company are significantly greater than zero or positive. Consequently, returns from those firms that engage in divestitures activities are different from cumulative average abnormal returns around the announcement dates of divestitures for the average return of the companies on the JSE.

The null hypothesis states that cumulative average abnormal returns around the announcement dates for shareholders of the divesting company are not significantly greater than zero or positive. Consequently, returns from those firms that engage in divestitures activities are not different from cumulative average abnormal returns around the announcement dates of divestitures for the average return of companies on the JSE.

Ha: CAARd - CAARav ≠ 0
H0: CAARd – CAARav = 0

Hypothesis 2:

The alternative hypothesis states that divestitures with an announced cash consideration of at least R100m experience Abnormal returns that are greater than those without an announced cash consideration. Cash based divestitures experience return on assets for the divesting firm during the divestiture announcements window that exceeds the returns from divestitures without announced cash consideration.

The study seeks to provide an analysis into the daily movements of the share price over the specified period (2005-2009). In order to investigate patterns within this range, a Two Sample T-test and ANOVA tests were run.
The null hypothesis states that divestitures with an announced cash consideration of at least R100m do not experience Abnormal returns that are greater than those without an announced cash consideration.

Ha: CBd - CBnd > 0
Ho: CBd – CBnd < 0

**Hypothesis 3:**

Is there a link between the day in which divestiture announcement are made and share price performance. Hypothesis 3 (alternative hypothesis) supposes that the impact of announcements on share price performance depends on the day in which the announcement was made (pre or post).

The null hypothesis states that the impact of announcements on share price performance does not depend on the day in which the announcement was made (pre or post).

Ho: CAAR_{day} = 0
Ha: CAAR_{day} ≠ 0
Chapter 4 - Research Methodology

Methodology

The aim of this study is to study divestiture activities (active portfolio management) within the JSE from 2005 to 2009. To implement the research design, the analysis includes companies identified from the Earnest and Young study on divestitures. The event window or measurement period is four days prior and three days after the announcement day. The study examines the portfolio activity for the respective companies and its share price reaction, during that very period. The data is gathered from the JSE, Mc Gregor BFA historical pricing and Ernest & Young’s M&A research information database. The data is then analysed for significance using NCSS statistical techniques.

Population and Sampling

The population consists of all listed firms on the JSE securities exchange. The sample consists of all voluntary sell-offs reported on the JSE over the past five years.

Criteria

The price of the transaction had to be disclosed with the sell-off announcement. The sell-off had to be a non-financial firm. The divesting firm must not be involved in another divestiture or any other corporate restructuring during the year the announcement was made. Further, firms were also categorised based on whether (during the announcement days) the divestiture would be cash based.

Research Body: Quantitative analysis, preferably a survey conducted within a defined sample.
Size
The sample size contained in this study is 60. However in a similar case study by Bhana (2006) a total of 58 transactions or companies were included within the sample.

Data Collection, Data Analysis and Data Management

Data Collection Process:

The data that collected and analysed will consist of the following information for each selected unit of analysis:

- A comprehensive list of companies on the JSE.
- A comprehensive list of companies that undertook a divestiture exercise (Ernest & Young 2009 report).
- Prior to the divestiture: the transaction value, market capitalisation of the divesting firm and the share price of the divesting firm four days before the divestiture announcement.
- After the divestiture: the share price of the divesting firm three days after the announcement is made and the market capitalisation of the divesting firm around the “event window”.

A list was obtained from Ernest & Young’s Mergers and Acquisition Annual Publication. This list consists of both the seller and acquirer companies. Companies that exercised more than one Sell-off transaction (during the year in consideration) were removed from the list. Further the selling company’s JSE code should be available (i.e. pricing and listing requirements are available).

The data was categorised initially as a summed total sample and as annual data. Consideration was further given if the transaction had a cash value of at least R100m. The daily share prices of the companies were downloaded from the Mc Gregor BFA.

The following formulae was used in calculating the Cumulative Abnormal Return w.r.t this analysis:
AR_{jt} = R_{jt} - (\alpha_{jt} + \beta_{j} R_{mt}), where AR_{jt} is the abnormal return for security j on day t, R_{mt} is the actual return for security j on day t; R_{mt} is the rate of return on the market portfolio represented by the JSE all share index on day t, and \alpha and \beta are the market model coefficients for company j (Bhana, 2006).

In order to calculate the Abnormal Returns (AR), it was necessary to calculate the normal and expected returns. This calculation was done initially for the share price reaction to the divestiture exercise for each day (-4:3). The same exercise was also done for the market data obtained from the JSE/Mc Gregor BFA.

The next step was to calculate the abnormal return for that share on the specified day:

Share betas were then obtained for the respective companies. The expected return calculation above was then used in the following formulae to determine the Abnormal Return (AR).

\[ AR = \text{Expected return on share}_{(t-1)} - [\text{Company Beta}_{(t-1)} \times \text{Expected return on the Market}]. \]

A summed annual total of all the companies Abnormal Return for each day were obtained. These were summed up to obtained the Cumulative Average Abnormal Return (CAAR). The Abnormal Return data is then analysed on NCSS to determine Statistical results for the respective analysis:

One Sample and Paired T-Test

The procedure is used to compare the mean (or median) of a single group to a target value. To accomplish this, the procedure calculates the one-sample t-test and the paired t-test.

One Way Analysis of Variance (ANOVA)

The one-way analysis of variance compares the means of two or more groups to determine if at least one group mean is different from the others. The F-ratio is used to determine statistical significance. The tests are non-directional in that the null hypothesis specifies that all means are equal and the alternative hypothesis simply states that at least one mean is different.
Kruskal-Wallis Test Assumptions

The assumptions of the Kruskal-Wallis test are:

- The variable of interest is continuous (not discrete). The measurement scale is at least ordinal.
- The probability distributions of the populations are identical, except for location. Hence, we still require that the population variances are equal.
- The groups are independent.
- All groups are simple random samples from their respective populations. Each individual in the population has an equal probability of being selected in the sample.

<table>
<thead>
<tr>
<th>Table 1: Data required and potential sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Required</strong></td>
</tr>
</tbody>
</table>
| Transaction History of the largest companies in the JSE (2005 – 2009) | - Transaction list on the JSE securities exchange (obtained)  
  - McGregor’s BFA.Net database  
  - Ernest & Young database on divestitures. |
| Companies were listed in 2004.              |                                               |
| They are still trading independently in 2010. |                                               |
| Divestiture transaction history of those companies within the same period (2005-2009) | - McGregor’s BFA.Net database  
  - Ernest & Young database on divestitures. |
| Analyse the financial performance of the parent as well as the divested business. | - Transaction list on the JSE securities exchange. |

Potential Research Limitations

The research that will be conducted will have the following limitations:

- The sample chosen is limited to companies that are listed on the JSE top 40, therefore the results of the study will not be representative of all divestitures within the South African environment.
- The study looks at divestitures form a ‘finance’ point of view. Other factors such as strategic management and organisational behavioural factors that may influence the process are not considered.
Further this study does not consider divestiture from a proactive strategic option.

Divestitures by unlisted companies are also not considered. Further the study does not consider divestitures from other stock exchanges.

The research is limited to a time period of ten years. This may ultimately be not long enough to consider the cyclical effects of the economy around divestitures.

There are some limitations when using Statistical tests. Sample sizes may range from a few to several hundred. If your data are discrete with at least five unique values, you can assume that you have met the continuous variable assumption. Perhaps the greatest restriction is that your data come from a random sample of the population. If you do not have a random sample, your significance levels will be incorrect.
Chapter 5 - Results

The following chapter seeks to present the consolidated research findings. Descriptive and analytical data are used to present the findings. The objective is to test the hypothesis as defined in chapter three.

5.1 Hypothesis 1

Hypothesis 1 supposes that there is a link between divestiture announcement and share price performance. The study seeks to provide an analysis into the daily movements of the share price over the specified period (2005-2009). In order to investigate patterns within this range, sample t-test were run, yielding interesting results.

The analysis was once again conducted four days prior and three days post the announcement day.

The initial step of the data analysis is to determine the Cumulative Average Abnormal Return (CAAR) over the period (2005-2009). Table 1 illustrates the Annual Average Abnormal Return for the period. The AAR method calculates the abnormal return relative to the previous days returns, the market return and the share Beta.

Table 1 illustrates the Cumulative Average Abnormal Return. An examination of the CAAR at a point in time indicates the cumulative return on the portfolio of divestiture activities from 2005-2009 periods as 5.816463.

Table 1 CAAR (2005-2009)

<table>
<thead>
<tr>
<th></th>
<th>Day -4</th>
<th>Day -3</th>
<th>Day -2</th>
<th>Day -1</th>
<th>Day + 1</th>
<th>Day + 2</th>
<th>Day + 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR 2005</td>
<td>0.00567</td>
<td>1.999979</td>
<td>-0.01177</td>
<td>2.000005</td>
<td>-0.00187</td>
<td>2.000075</td>
<td>0.004409</td>
</tr>
<tr>
<td>AAR 2006</td>
<td>0.003903</td>
<td>1.999929</td>
<td>7.17E-05</td>
<td>2.000256</td>
<td>0.010704</td>
<td>1.999958</td>
<td>0.002077</td>
</tr>
<tr>
<td>AAR 2007</td>
<td>0.014592</td>
<td>2.000004</td>
<td>-0.0053</td>
<td>1.999949</td>
<td>0.008863</td>
<td>1.999852</td>
<td>-0.0011</td>
</tr>
<tr>
<td>AAR 2008</td>
<td>0.004283</td>
<td>1.999836</td>
<td>0.005359</td>
<td>2.000581</td>
<td>0.018704</td>
<td>2.000055</td>
<td>-0.00285</td>
</tr>
<tr>
<td>AAR 2009</td>
<td>0.017532</td>
<td>1.999942</td>
<td>0.019891</td>
<td>2.000375</td>
<td>0.003795</td>
<td>2.000247</td>
<td>-0.00675</td>
</tr>
<tr>
<td>CAAR</td>
<td>0.008742</td>
<td>1.942016</td>
<td>1.942389</td>
<td>3.875937</td>
<td>3.883277</td>
<td>5.81665</td>
<td>5.816463</td>
</tr>
</tbody>
</table>
Figure 1 illustrates the Cumulative Average Abnormal Return. The CAAR over that period does not intercept zero at any point. This means that investing in firms that engage in divestiture activities might be yield positive returns for an investor.

![Cumulative Average Abnormal Return](image1)

Figure 2 illustrates the Average Abnormal Return (AAR) for each year. The figure is self-explanatory. However, this is a graphical illustration of the sum yearly total of the Average Abnormal Returns per annum. Evident in this figure is an increased AAR activity throughout the period.

![Yearly Average Abnormal Return](image2)
In order to illustrate the point further, statistical analysis within the period was conducted.

One Way Analysis of Variance (ANOVA)

The one-way analysis of variance compares the means of two or more groups to determine if at least one group mean is different from the others. The F-ratio is used to determine statistical significance. The tests are non-directional in that the null hypothesis specifies that all means are equal and the alternative hypothesis simply states that at least one mean is different. The results are as follows:

Analysis of Variance Report examines the following hypothesis:

H0: All medians are equal.
Ha: At least two medians are different.

Response: Day_1, Day_2, Day_3, Day__1, Day__2, Day__3, Day__4

Tests of Assumptions Section

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Test</th>
<th>Prob</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skewness Normality of Residuals</td>
<td>2.8215</td>
<td>0.004780</td>
<td>Reject</td>
</tr>
<tr>
<td>Kurtosis Normality of Residuals</td>
<td>6.7043</td>
<td>0.000000</td>
<td>Reject</td>
</tr>
</tbody>
</table>

The results:

Rejects H0 at a 5% degree of significance.

Analysis of Variance Report

Response: Day_1, Day_2, Day_3, Day__1, Day__2, Day__3, Day__4

Kruskal-Wallis One-Way ANOVA on Ranks

Hypotheses

H0: All medians are equal.
Ha: At least two medians are different.
Test Results

<table>
<thead>
<tr>
<th>Method</th>
<th>DF</th>
<th>Chi-Square (H)</th>
<th>Prob Level</th>
<th>Decision(0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Corrected for Ties</td>
<td>6</td>
<td>298.5408</td>
<td>0.000000</td>
<td>Reject H0</td>
</tr>
<tr>
<td>Corrected for Ties</td>
<td>6</td>
<td>298.5409</td>
<td>0.000000</td>
<td>Reject H0</td>
</tr>
</tbody>
</table>

Number Sets of Ties 1
Multiplicty Factor 24

The results:

Rejects H0 at a 5% degree of significance.

Box Plot

The box plot shows three main features about a variable: its centre, its spread, and its outliers.

Figure 5 reveals the daily divestiture activities features (centre, spread and outliers). What becomes evident is that day –3, day –1 and day 2 all reveal little data spread amongst the variable’s central value. Common theme amongst the variables may mean predictability.
Expected Mean Squares Section

<table>
<thead>
<tr>
<th>Source</th>
<th>Term</th>
<th>Denominator Expected Term Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>DF</td>
<td>Fixed?</td>
</tr>
<tr>
<td>A (...)</td>
<td>6</td>
<td>Yes</td>
</tr>
<tr>
<td>S(A)</td>
<td>399</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: Expected Mean Squares are for the balanced cell-frequency case.

Analysis of Variance Table

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>Prob</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>DF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (...)</td>
<td>6</td>
<td>396.0735</td>
<td>66.0122581426.11</td>
<td>0.000000*</td>
</tr>
<tr>
<td>S(A)</td>
<td>399</td>
<td>0.3234698</td>
<td>8.107012E-04</td>
<td></td>
</tr>
<tr>
<td>Total (Adjusted)</td>
<td>405</td>
<td>396.3969</td>
<td>8.107012E-04</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>406</td>
<td>396.3969</td>
<td>8.107012E-04</td>
<td></td>
</tr>
</tbody>
</table>

T-test conclusion:

The results state that there is a link between divestiture announcement and share price performance. However, the results further reveal that there is no link between the day in which the announcement were made.

Cash Consideration compared to one Without a Cash Consideration.

Hypothesis 2

Hypothesis 2 supposes that the impact of an announcement with a cash consideration is different from an announcement without a cash consideration on share price performance. The study seeks to provide an analysis into the daily movements of the share price over the specified period (2005-2009). In order to investigate patterns within this range, Two Sample T-test and ANOVA tests were run.

The one-way analysis of variance compares the means of two or more groups to determine if at least one group mean is different from the others. The analysis was once again conducted four days prior and three days post the announcement day.

C1- With Cash Consideration
C2- Without Cash Consideration
The following consideration seeks to present an analysis of divestitures With a Cash Consideration compared to one Without a Cash Consideration. Table 2 illustrates the Annual Average Abnormal Return (with cash) per period. Further the table illustrates the Cumulative Average Abnormal Return. The overall CAAR for the period is 6.018684.

### Cash Consideration

Table 2 CAAR (2005-2009) with Cash Consideration

<table>
<thead>
<tr>
<th>Day</th>
<th>Day –4</th>
<th>Day –3</th>
<th>Day –2</th>
<th>Day -1</th>
<th>Day +1</th>
<th>Day +2</th>
<th>Day +3</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR 2005</td>
<td>0.000216</td>
<td>2.000026</td>
<td>-0.00569</td>
<td>1.999994</td>
<td>7.62E-05</td>
<td>2.000062</td>
<td>-0.00484</td>
</tr>
<tr>
<td>AAR 2006</td>
<td>0.003903</td>
<td>1.999929</td>
<td>7.17E-05</td>
<td>2.000256</td>
<td>0.010704</td>
<td>1.999958</td>
<td>0.002077</td>
</tr>
<tr>
<td>AAR 2007</td>
<td>0.019521</td>
<td>1.999979</td>
<td>-0.00645</td>
<td>1.999908</td>
<td>0.00806</td>
<td>1.999766</td>
<td>0.007129</td>
</tr>
<tr>
<td>AAR 2008</td>
<td>-0.00039</td>
<td>1.999809</td>
<td>0.020257</td>
<td>2.000607</td>
<td>0.02449</td>
<td>2.000013</td>
<td>0.011723</td>
</tr>
<tr>
<td>AAR 2009</td>
<td>0.012848</td>
<td>1.999913</td>
<td>0.007978</td>
<td>2.000583</td>
<td>-0.01467</td>
<td>2.000526</td>
<td>-0.00466</td>
</tr>
<tr>
<td>CAAR</td>
<td>0.006039</td>
<td>2.005981</td>
<td>2.007987</td>
<td>4.00819</td>
<td>4.016008</td>
<td>6.016015</td>
<td>6.018684</td>
</tr>
</tbody>
</table>

Figure 3 illustrates the Average Abnormal Return (AAR) for each year. This is a graphical illustration of the sum yearly total of the Average Abnormal Returns per annum. Evident in this figure is an increasing AAR activity throughout the period, decreasing in 2009.
Without Cash Consideration

Table 3 illustrates the Annual Average Abnormal Return (with cash) for the period. Further the table illustrates the Cumulative Average Abnormal Return. The overall CAAR for the period is 6.017648.

Table 3 CAAR (2005-2009) without Cash Consideration

<table>
<thead>
<tr>
<th>Day</th>
<th>Day -4</th>
<th>Day -3</th>
<th>Day -2</th>
<th>Day -1</th>
<th>Day +1</th>
<th>Day +2</th>
<th>Day +3</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR 2005</td>
<td>0.005522</td>
<td>0.624962</td>
<td>-0.00786</td>
<td>0.625009</td>
<td>-0.00193</td>
<td>0.625032</td>
<td>0.007734</td>
</tr>
<tr>
<td>AAR 2006</td>
<td>0.003738</td>
<td>0.333233</td>
<td>-0.00843</td>
<td>0.333398</td>
<td>0.006357</td>
<td>0.333241</td>
<td>-0.00088</td>
</tr>
<tr>
<td>AAR 2007</td>
<td>0.001578</td>
<td>0.666685</td>
<td>-0.001</td>
<td>0.666677</td>
<td>0.00349</td>
<td>0.666674</td>
<td>-0.00365</td>
</tr>
<tr>
<td>AAR 2008</td>
<td>0.004723</td>
<td>0.714219</td>
<td>-0.00348</td>
<td>0.714625</td>
<td>0.002189</td>
<td>0.714184</td>
<td>-0.00499</td>
</tr>
<tr>
<td>AAR 2009</td>
<td>0.013677</td>
<td>1.399968</td>
<td>0.017498</td>
<td>1.4002</td>
<td>0.008197</td>
<td>1.400089</td>
<td>-0.00535</td>
</tr>
<tr>
<td>CAAR</td>
<td>0.015118</td>
<td>2.015016</td>
<td>2.012193</td>
<td>4.01253</td>
<td>4.019885</td>
<td>6.019863</td>
<td>6.017648</td>
</tr>
</tbody>
</table>

Figure 4 illustrates the Average Abnormal Return (AAR) for each year. This is a graphical illustration of the sum yearly total of the Average Abnormal Returns per annum. When one examines the figure closely, no pattern is immediately evident. The analysis reveals patterns that are not consistent with those above. The figure illustrates that 2009 has the highest AAR and 2006 ranked the least. The activities within this period may be considered volatile.

Figure 4
Two-Sample Test Report

This procedure calculates the two-sample t-test, the Mann-Whitney U test, of data contained in two variables (columns).

Tests of Assumptions Section

- The assumptions of the Mann-Whitney U test are:
  - The variable of interest is continuous (not discrete). The measurement scale is at least ordinal.
  - The probability distributions of the two populations are identical, except for location.
  - The two samples are independent.

Both samples are simple random samples from their respective populations. Each individual in the population has an equal probability of being selected in the sample.

Database

Descriptive Statistics Section

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error of Mean</th>
<th>95.0% LCL</th>
<th>95.0% UCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>7</td>
<td>3.439843</td>
<td>2.230069</td>
<td>0.8428869</td>
<td>1.377374</td>
<td>5.502313</td>
</tr>
<tr>
<td>C2</td>
<td>7</td>
<td>3.444608</td>
<td>2.227214</td>
<td>0.8418078</td>
<td>1.384778</td>
<td>5.504437</td>
</tr>
</tbody>
</table>

Note: T-alpha (C1) = 2.4469, T-alpha (C2) = 2.4469

Confidence-Limits of Difference Section

<table>
<thead>
<tr>
<th>Variance</th>
<th>Mean Difference</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>95.0% LCL</th>
<th>95.0% UCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal</td>
<td>-4.764148E-03</td>
<td>2.228642</td>
<td>1.191259</td>
<td>-2.600295</td>
<td>2.590767</td>
</tr>
<tr>
<td>Unequal</td>
<td>-4.764148E-03</td>
<td>3.151776</td>
<td>1.191259</td>
<td>-2.600296</td>
<td>2.590767</td>
</tr>
</tbody>
</table>

Note: T-alpha (Equal) = 2.1788, T-alpha (Unequal) = 2.1788

Equal-Variance T-Test Section

<table>
<thead>
<tr>
<th>Alternative Hypothesis</th>
<th>T-Value</th>
<th>Prob Reject H0 at .050 (Alpha=.050)</th>
<th>Power (Alpha=.010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference &lt;= 0</td>
<td>-0.0040</td>
<td>0.996875 No</td>
<td>0.010000</td>
</tr>
<tr>
<td>Difference &lt; 0</td>
<td>-0.0040</td>
<td>0.498437 No</td>
<td>0.010006</td>
</tr>
<tr>
<td>Difference &gt; 0</td>
<td>-0.0040</td>
<td>0.501563 No</td>
<td>0.009905</td>
</tr>
</tbody>
</table>

C1- With Cash Consideration
C2- Without Cash Consideration
Two-Sample Test Report

Database

Median Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Median</th>
<th>95.0% LCL</th>
<th>95.0% UCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>7</td>
<td>4.00819</td>
<td>6.039427E-03</td>
<td>6.018684</td>
</tr>
<tr>
<td>C2</td>
<td>7</td>
<td>4.01253</td>
<td>1.511824E-02</td>
<td>6.019863</td>
</tr>
</tbody>
</table>

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians

<table>
<thead>
<tr>
<th>Variable</th>
<th>Whitney U</th>
<th>Sum Ranks</th>
<th>of W</th>
<th>of W</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>20</td>
<td>48</td>
<td>52.5</td>
<td>7.826238</td>
</tr>
<tr>
<td>C2</td>
<td>29</td>
<td>57</td>
<td>52.5</td>
<td>7.826238</td>
</tr>
</tbody>
</table>

Number Sets of Ties = 0, Multiplicity Factor = 0

Exact Probability Approximation Without Correction Approximation With Correction

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Prob</th>
<th>Reject H0</th>
<th>Prob</th>
<th>Reject H0</th>
<th>Prob</th>
<th>Reject H0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diff&lt;&gt;0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Level at .050</td>
<td>Z-Value</td>
<td>Level at .050</td>
<td>Z-Value</td>
<td>Level at .050</td>
<td>Z-Value</td>
</tr>
<tr>
<td>Diff&lt;&gt;0</td>
<td>0.620047</td>
<td>No</td>
<td>-0.5750</td>
<td>0.565299</td>
<td>No</td>
<td>-0.5111</td>
</tr>
<tr>
<td>Diff&lt;0</td>
<td>0.310023</td>
<td>No</td>
<td>-0.5750</td>
<td>0.282649</td>
<td>No</td>
<td>-0.5111</td>
</tr>
<tr>
<td>Diff&gt;0</td>
<td>0.689977</td>
<td>No</td>
<td>-0.5750</td>
<td>0.717351</td>
<td>No</td>
<td>-0.6389</td>
</tr>
</tbody>
</table>

Plots Section

Histogram of C1

Histogram of C2
Two-Sample Test Report

Database

- Normal Probability Plot of C1
- Normal Probability Plot of C2
- Box Plot
The Daily Average Abnormal Return.

Hypothesis 3

Hypothesis 3 supposes that the impact of announcements on share price performance depends on the day that the announcement was made (pre or post). The study seeks to provide an analysis into the daily movements of the share price over the specified period (2005-2009). In order to investigate patterns within this range, sample t-test were run, yielding interesting results.

The analysis was once again conducted four days prior and three days post the announcement day.

Within Figure 6, the Annual Average Abnormal Returns are categorised per day. The figure provides an indication of the daily activity flow for the above-mentioned sample. Specifically the figure illustrates some form of arbitrage on days –3, -1 and 2.

Table 4 provides Daily Average returns over the period. The results to the study are consistent with the above-mentioned feedback (figure 6).

<table>
<thead>
<tr>
<th>Day</th>
<th>AR-4</th>
<th>AR-3</th>
<th>AR-2</th>
<th>AR-1</th>
<th>AR 1</th>
<th>AR 2</th>
<th>AR 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR</td>
<td>0.008742</td>
<td>1.933273</td>
<td>0.000373</td>
<td>1.933548</td>
<td>0.00734</td>
<td>1.933374</td>
<td>-0.00019</td>
</tr>
</tbody>
</table>
The T-test below provides an analysis into the daily statistical deviation of the share price on day t-1 prior to the announcement and t+1 post the announcement. The result confirms the timing announcement influence on companies share price from divestiture activities.

The following results (marked in Blue) provide the mean from the case sample.

The following results (days marked in Red) reject H0 at a 5% level of significance.

The following results (days marked in Yellow) do not reject H0 at a 5% level of significance.

**One-Sample T-Test Report**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Day__4</th>
</tr>
</thead>
</table>

**Descriptive Statistics Section**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Mean</th>
<th>Deviation</th>
<th>Std Error of Mean</th>
<th>95.0% LCL Mean</th>
<th>95.0% UCL Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day__4</td>
<td>58</td>
<td>9.043654E-03</td>
<td>2.612519E-02</td>
<td>3.430406E-03</td>
<td>2.174385E-03</td>
<td>1.591292E-02</td>
</tr>
</tbody>
</table>

T for Confidence Limits = 2.0025

**T-Test For Difference Between Mean and Value Section**

<table>
<thead>
<tr>
<th>Alternative Hypothesis</th>
<th>T-Value</th>
<th>Prob Reject H0 at .050</th>
<th>Power (Alpha=.05)</th>
<th>Power (Alpha=.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day__4&lt;&gt;0</td>
<td>2.6363</td>
<td>0.010779 Yes</td>
<td>0.736216</td>
<td>0.493552</td>
</tr>
</tbody>
</table>

**Sample T-Test Report**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Day__4</th>
</tr>
</thead>
</table>

**Plots Section**

- [Histogram of Day__4](#)
- [Normal Probability Plot of Day__4](#)
One-Sample T-Test Report

Variable Day__3

Descriptive Statistics Section

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Mean</th>
<th>Deviation</th>
<th>Error of Mean</th>
<th>of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day__3</td>
<td>58</td>
<td>1.999938</td>
<td>3.319857E-04</td>
<td>4.359186E-05</td>
<td></td>
</tr>
</tbody>
</table>

T for Confidence Limits = 2.0025

Alternative Hypothesis Prob Reject H0 Power Power
Day__3<>0  45878.70920.000000 Yes 1.000000 1.000000

One-Sample T-Test Report

Variable Day__3

Plots Section

Histogram of Day__3

Normal Probability Plot of Day__3
One-Sample T-Test Report

Variable  Day__2

Descriptive Statistics Section

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Mean</th>
<th>Deviation</th>
<th>Error of Mean of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day__2</td>
<td>58</td>
<td>3.857918E-04</td>
<td>4.191995E-02</td>
<td>5.50436E-03</td>
</tr>
</tbody>
</table>

Alternative Hypothesis

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>T-Value</th>
<th>Level at .050</th>
<th>Power (Alpha=.05)</th>
<th>Power (Alpha=.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day__2&lt;&gt;0</td>
<td>0.0701</td>
<td>No</td>
<td>0.050544</td>
<td>0.010173</td>
</tr>
</tbody>
</table>

One-Sample T-Test Report

Variable  Day__2

Plots Section

Histogram of Day__2

Normal Probability Plot of Day__2
One-Sample T-Test Report

Variable  Day__1

Descriptive Statistics Section

| Variable | Count | Mean   | Deviation | Error of Mean of Mean
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Day__1</td>
<td>58</td>
<td>2.00</td>
<td>9.99E-04</td>
<td>1.312017E-04</td>
</tr>
</tbody>
</table>

T for Confidence Limits = 2.0025

<table>
<thead>
<tr>
<th>Alternative Hypothesis</th>
<th>T-Value</th>
<th>Prob</th>
<th>Reject H0</th>
<th>Power (Alpha=.05)</th>
<th>Power (Alpha=.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day__1&lt;&gt;0</td>
<td>15245.40390.000000</td>
<td>Yes</td>
<td>1.000000</td>
<td>1.000000</td>
<td></td>
</tr>
</tbody>
</table>

One-Sample T-Test Report

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Database

Variable  Day__1

Plots Section

Histogram of Day__1

Normal Probability Plot of Day__1
One-Sample T-Test Report

Variable Day_1

Descriptive Statistics Section

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Mean</th>
<th>Deviation</th>
<th>Error of Mean</th>
<th>of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day_1</td>
<td>58</td>
<td>7.593075E-03</td>
<td>3.928711E-02</td>
<td>5.158651E-03</td>
<td>2.736945E-03</td>
</tr>
</tbody>
</table>

T for Confidence Limits = 2.0025

T-Test For Difference Between Mean and Value Section

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Hypothesis</th>
<th>T-Value</th>
<th>Prob Reject H0</th>
<th>Power (Alpha=.05)</th>
<th>Power (Alpha=.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day_1&lt;&gt;0</td>
<td>1.4719</td>
<td>0.146545</td>
<td>No</td>
<td>0.304368</td>
<td>0.125855</td>
</tr>
</tbody>
</table>

One-Sample T-Test Report

Variable Day_1

Plots Section

Histogram of Day_1

Normal Probability Plot of Day_1

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One-Sample T-Test Report

Variable Day_2

Descriptive Statistics Section

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Mean</th>
<th>Deviation</th>
<th>Error of Mean of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day_2</td>
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<td>2.000041</td>
<td>5.448828E-04</td>
<td>7.154661E-05</td>
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T for Confidence Limits = 2.0025

T-Test For Difference Between Mean and Value Section

<table>
<thead>
<tr>
<th>Alternative Hypothesis</th>
<th>T-Value</th>
<th>Prob Reject H0</th>
<th>Power (Alpha=.05)</th>
<th>Power (Alpha=.01)</th>
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</thead>
<tbody>
<tr>
<td>Day_2&lt;&gt;0</td>
<td>27954.3856</td>
<td>0.000000</td>
<td>Yes</td>
<td>1.000000</td>
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</table>

One-Sample T-Test Report

Variable Day_2

Plots Section

Histogram of Day_2

Normal Probability Plot of Day_2
One-Sample T-Test Report

Variable Day_3

Descriptive Statistics Section

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count</th>
<th>Mean</th>
<th>Deviation</th>
<th>Error of Mean of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day_3</td>
<td>58</td>
<td>-1.935146E-04</td>
<td>4.111225E-02</td>
<td>5.398303E-03</td>
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</tbody>
</table>

T for Confidence Limits = 2.0025

T-Test For Difference Between Mean and Value Section

<table>
<thead>
<tr>
<th>Alternative Hypothesis</th>
<th>T-Value</th>
<th>Prob</th>
<th>Reject H0</th>
<th>Power at .050 (Alpha=.05)</th>
<th>Power (Alpha=.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day_3&lt;&gt;0</td>
<td>-0.0358</td>
<td>0.971529</td>
<td>No</td>
<td>0.050142</td>
<td>0.010045</td>
</tr>
</tbody>
</table>

One-Sample T-Test Report

Variable Day_3

Plots Section

T-test conclusion:

The results finding reveal that there is some form of arbitrage w.r.t specific days pre or post divestiture announcements. This however will depend on the day in consideration pre or post the announcement.
Chapter 6 - Result Analysis

Introduction

This chapter interprets and discusses the findings from the study. The foundation to the discussion is based on the hypothesis set in Chapter 3 and the literature review in Chapter 2. Key concerns with regards to the results are also discussed.

Hypothesis 1:

The alternative hypothesis states that cumulative average abnormal returns around the announcement dates for shareholders of the divesting company are different from the cumulative average abnormal returns around the announcement dates of divestitures of the average return of the companies on the JSE.

The null hypothesis states that cumulative average abnormal returns around the announcement dates for shareholders of the divesting company are not different from the cumulative average abnormal returns around the announcement dates of divestitures of the average return of the companies on the JSE.

Ha: CAARd - CAARav ≠ 0
H0: CAARd – CAARav = 0

Table 5

| CAAR  | 0.008742 | 1.942016 | 1.942389 | 3.875937 | 3.883277 | 5.81665 | 5.816463 |

The cumulative abnormal return of the period illustrates that the assumption (based on the null hypothesis) which states that the returns from companies that engage in divestiture activities are not different from those of the average return from companies listed on the JSE stock exchange should be rejected at a 5% level of confidence.
This finding is consistent with previous studies as indicated in chapter 2 of the study. In their study Kiymaz and College (2006) investigated the impact of a sell-off announcement on both divesting and acquiring firms. The finding indicates that both divesting and acquiring firms experience statistically significant wealth gains during sell-off announcements.

Moschieri and Mair (2008) in their investigation find that there was a general consensus about the positive effect of divestitures on companies share price. However, they suggest that empirical evidence does suggest otherwise when it came to involuntary divestiture (i.e. those based on forced legislature or judicial reasons).

This study is consistent with the study conducted by Bhana (2006). However, the study was conducted over a 180 days prior and posts the divestiture announcement. In this instant, other market factors could have influenced the share price movements. Further, not many studies have been investigated within the South African environment.

The study reveals (figure 2) that over the period, markets experience increased divestiture activity. The returns throughout the period, as stated on the graph have shown increasing and positive abnormal returns in time. However, the reasons for the above observation cannot be explained by through this study. This calls for suggestions for further studies into the reasoning.

Hypothesis 2:

The alternative hypothesis states that divestitures with a cash consideration of at least R100m experience abnormal returns that are greater than those without a cash consideration. Cash based divestitures experience return on assets for the divesting firm during the divestiture announcements window that exceeds the returns from divestitures without an announced cash consideration.

The study seeks to provide an analysis into the daily movements of the share price over the specified period (2005-2009). In order to investigate patterns within this range, Two Sample T-test and ANOVA tests were run.
The null hypothesis states that divestitures with a cash consideration of at least R100m do not experience Abnormal returns that are greater than those without a cash consideration.

Ha: CBd - CBnd > 0
Ho: CBd – CBnd < 0

Observations

Table 6 CAAR (2005-2009) with Cash Consideration
| CAAR    | 0.006039 | 2.005981 | 2.007987 | 4.00819 | 4.016008 | 6.016015 | 6.018684 |

Table 7 CAAR (2005-2009) without Cash Consideration
| CAAR    | 0.015118 | 2.015016 | 2.012193 | 4.01253 | 4.019885 | 6.019863 | 6.017648 |

Exact Probability Approximation Without Correction Approximation With Correction

Table 8

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Prob</th>
<th>Reject H0</th>
<th>Prob</th>
<th>Reject H0</th>
<th>Prob</th>
<th>Reject H0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis</td>
<td>Level</td>
<td>at .050</td>
<td>Z-Value</td>
<td>Level</td>
<td>at .050</td>
<td>Z-Value</td>
</tr>
<tr>
<td>Diff&lt;0</td>
<td>0.620047</td>
<td>No</td>
<td>-0.5750</td>
<td>0.565299</td>
<td>No</td>
<td>-0.5111</td>
</tr>
<tr>
<td>Diff&lt;0</td>
<td>0.310023</td>
<td>No</td>
<td>-0.5750</td>
<td>0.282649</td>
<td>No</td>
<td>-0.5111</td>
</tr>
<tr>
<td>Diff&gt;0</td>
<td>0.689977</td>
<td>No</td>
<td>-0.5750</td>
<td>0.717351</td>
<td>No</td>
<td>-0.6389</td>
</tr>
</tbody>
</table>

From the above observation, divestitures with at least R100m cash consideration announced do not yield abnormal returns that are greater than those without an announced cash consideration.
However figure 7 and 8 yield interesting observations. Although both presentations show an increasing trend over time, figure 7 below (with Cash Consideration) follows a linear pattern.

Figure 7

![Bar chart showing Divestiture Activities with Cash Consideration of Atleast R100m for years AAR 2005 to AAR 2009.

Average Abnormal Return
- Year: AAR 2005
- Average Abnormal Return: 5.94
- Year: AAR 2006
- Average Abnormal Return: 5.96
- Year: AAR 2007
- Average Abnormal Return: 5.98
- Year: AAR 2008
- Average Abnormal Return: 6.02
- Year: AAR 2009
- Average Abnormal Return: 6.04

Figure 8 below (without Cash Consideration) follows a volatile pattern throughout the period. The background to the above observation is beyond the purpose of this study. However, studies looking into this topic could investigate the observation.

Figure 8

![Bar chart showing Divestiture Activities with Cash Consideration of Atleast R100m for years AAR 2005 to AAR 2009.

Average Abnormal Return
- Year: AAR 2005
- Average Abnormal Return: 5.94
- Year: AAR 2006
- Average Abnormal Return: 5.96
- Year: AAR 2007
- Average Abnormal Return: 5.98
- Year: AAR 2008
- Average Abnormal Return: 6.02
- Year: AAR 2009
- Average Abnormal Return: 5.98
Hypothesis 3:

Is there a link between the day in which divestiture announcement are made and share price performance. Hypothesis 3 supposes that the impact of announcements on share price performance depends on the day in which the announcement was made (pre or post the announcement day).

The null hypothesis states that the impact of announcements on share price performance does not depend on the day in which the announcement was made (pre or post).

Ha: $\text{CAAR}_{\text{day}} = 0$
H0: $\text{CAAR}_{\text{day}} \neq 0$

Table 9

<table>
<thead>
<tr>
<th>Day</th>
<th>AR-4</th>
<th>AR-3</th>
<th>AR-2</th>
<th>AR-1</th>
<th>AR 1</th>
<th>AR 2</th>
<th>AR 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR</td>
<td>0.008742</td>
<td>1.933273</td>
<td>0.000373</td>
<td>1.933548</td>
<td>0.00734</td>
<td>1.933374</td>
<td>-0.00019</td>
</tr>
</tbody>
</table>

The above results are a backdrop to the third hypothesis. The results suggest that observation day AR –3, 1 and 2 show returns that are significantly larger than zero. The result could mean that as information flows through, investors react positively to the possible announcement of a divestiture or sell-off.

Further, the reaction throughout the period further suggests cumulative positive returns in time. This may further suggest that investors react consistently throughout the period; pre and post the announcement date. However, the reason for this observation requires further investigation.

The T-test and the above table also show the following observation. Based on the study, negative average abnormal returns were experienced on day AR3. This could be an indication that investors react favourably to divestiture announcement overall.

The study also reveals, however, that based on investors activities each days reaction is not necessarily the same as the other observation days. This point is indicated, within the study, from the analysis that investigates whether two or more median observations are different from each other.
Chapter 7 – Conclusion

The study was based on those companies whose involves relinquishing both ownership and control within that particular unit (sell-offs). The study investigated the effects of divestitures on the performance of the parent company for the period 2005-2009. We examined the discrepancies in announcement day excess returns for the selling firms engaged in voluntary sell-offs.

A Combination of factors is evident during the period in which a divestiture or sell-off is announced. The study isolated several factors behind the difference in share price responses. The two factors to be used are the relative size of the divestiture and whether the transaction price (cash- at least R100m) price is announced. Presence on its own, however, does not equate or measure to effect or effectiveness.

According to the research, shareholders of divesting companies earn statistically significant positive or negative Abnormal Returns pre or post the announcement date. However, this study revealed that a total CAAR of 5.816463 was observed for the event window considered.

The conclusion supports the questions around the effects of divestiture on the performance of the parent company. Based on the findings of a significant CAAR value around the event window, it is concluded that divestitures, on average, are positive Net Present Value project. Consequently, shareholders should invest in companies that engage in continuous active portfolio management.

Management should consider their motives for not engaging in divestiture exercises or active portfolio management. More so managers may show sentiment towards a particular asset or process. Their decision not to divest that particular asset may be influenced via their previous relationship with the unit or process. If they allow their actions to be driven by such sentiment, this may not be in the shareholder’s best interest. However, future research should investigate key contributors towards this particular behaviour.
As with most international studies, this study found that CAAR’s of cash-funded divestitures were positive, and statistically significant. In addition, cash-funded divestitures were compared to non cash-funded divestitures. The CAAR of cash-funded divestitures was not statistically different from those without a cash consideration over the shorter 4-day and 3-day event windows.

Is it important to consider announcing the cash component of the divested unit? The study investigated cash-funded announcements of at least R100m and above. The results reveal that the activity does not lead to a position of arbitrage for the particular share in consideration. However, future research can test the hypothesis with an improved sample size.

Lastly, the study primarily investigated the intra-day patterns or trends that are available based on such activities. The results shows us that on day –3, -1 and 2 there were positive abnormal returns for the period. This could indicate investor’s reaction to the information flow pre and post the announcement day. However, this finding immediately sets the scene for further research into the topic.

Negative average abnormal returns were also experienced for specific days. This indicates that there could be a possibility of an overall negative CAAR. However, as indicated above, most studies have not found this to be the case.

Recommendation For Future Research:

Changes in the current economic environment and its impact on divestiture activity- an asset may have been acquired so that the overall firm may benefit from synergies created. However, the changing economic environment (for example the reduced cost factors) may lead to the redundancy of that particular unit.
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