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The IPO performance of companies listed on the JSE alternative exchange

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2014-07-29
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The IPO performance of companies listed on the JSE alternative exchange

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

March, 2014

ABSTRACT

The listing of firms on stock exchanges does not only provide these firms with the opportunity to raise long-term equity capital, it also allows for investors to participate in the primary and secondary equity markets. Traditionally executed through Initial Public Offerings (IPOs), listings were previously reserved for large firms due to the requirements and costs involved. In response, the Johannesburg Stock Exchange (JSE) introduced the JSE Alternative Exchange (AltX) in 2003 as a parallel exchange market in order to also provide South African small and medium sized entities with an opportunity to access equity capital. This also allowed for investors to invest in small high-growth companies with the expectation of higher returns.

The aim of this research was to analyse the IPO performances of JSE AltX listings in order to establish the returns achieved by the initial IPO and the subsequent aftermarket participants. This research analysed the initial IPO returns attributable to the initial investors and the 1, 2 and 3 year aftermarket returns attributable to the aftermarket participants. Although various studies have been concluded on the investor returns for IPOs listing on the JSE, this report focused specifically on the AltX which has not been as extensively studied.

IPOs listing on the JSE AltX from April 2006 to December 2011 were analysed. It was found that during this period, the average initial market-adjusted return offered to the initial invertors was 21 per cent after the first day of trade. The average 1, 2 and 3 year aftermarket market-adjusted returns were -0.08, -0.33 and 3.36 per cent respectively. An analysis of the combined aftermarket market-adjusted returns for the same 1, 2 and 3 year post IPO periods yielded returns of 25.17, 20.03 and 25.67 per cent respectively. From the conducted study, the results indicate that there is existence of average positive abnormal initial returns on the JSE AtlX, and returns underperformance for the two years following that. The aftermarket returns are then positive 3 years post IPO date. Combined returns were found to be abnormal and positive throughout the 1,2 and 3 year periods post IPO.

DECLARATION

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

Thuthuka Mashaba

Signed at Parktown

On the ..... day of 2014

DEDICATION

This research is dedicated to my parents, Naboth and Thembeni Mashaba for their love and support. To my sister, Nomasonto Banganayi for always being there when needed the most.

ACKNOWLEDGEMENTS

I wish to extend my sincere thanks to;

- God, for guiding me and giving me the strength to see this through.
- Dr Thabang Mokoaleli-Mokoteli, my supervisor, for her guidance and patience.
- To my team at Web Perfections for their support.
- To my classmates for the times, knowledge and advice we shared.
- To all my friends and colleagues.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter formally introduces the research topic and is structured as follows; Section 1.2 presents the context of this study followed by Section 1.3, 1.4 and 1.5 which present the research problem, objectives of the study and the research questions respectively. Section 1.6 presents the research hypotheses while Sections 1.8 and 1.9 detail the gap in the current literature and the research structure respectively.

1.2 Context of study

An initial public offering (IPO) is a scenario where the stock of a firm is sold to the general public for the first time (Loughran, Ritter and Rydqvist, 1994). IPOs are usually executed through the local securities exchange where the firm is required to satisfy regulatory, governance, financial and the chosen security exchange's qualification requirements (Baker and Johnson, 1990). Sometimes referred to as a company's stock market launch, the result of an IPO is the transformation of a private firm into a public company (Ibbotson, 1975). In addition to being capital raising mechanisms for firms (Loughran and Ritter, 1995), IPOs are also considered the most profitable mechanism of exit for early investors (Gerke and Mager, 2006). This has contributed to the increase of IPOs in recent times.

In practice, IPOs do not only provide companies with an opportunity to raise external funding, they also present potential investors with a vehicle to earn superior returns (Ibbotson, Sindelar *et al*., 1994). Although in recent years, a large literature documenting the returns earned by investors during the IPOs of common stock has been developed in many countries (Loughram, Ritter and Rydqvist, 1994), the focus of many of these studies has been on the initial underpricing. The results of which indicate that the initial underpricing of IPO stock is a common phenomenon in the

stock markets studied, with only the magnitude of underpricing differing from one market to another (Levis, 1993; Aggarwal, Leal and Hernandez, 1993). Furthermore, the majority of studies have been in developed markets and include the equity markets of the United States (Ibbotson, 1975; Ritter, 1984, 1991; Tinic, 1988; Peavy, 1990), United Kingdom (Keasey and Short, 1992; Levis, 1993), Canada (Jog and Riding, 1987; Jog and Srivastava, 1994), Switzerland (Kunz and Aggarwal, 1994) and Australia (Lee *et al*., 1996a).

There are relatively fewer studies on IPOs in the equity markets of developing countries. Among them, Lee *et al*. (1996b) investigated IPOs in Singapore; Kazantzis and Levis (1995) in Greece; Kim *et al*. (1995) in Korea, Aggarwal *et al*. (1993) in Chile, Mexico and Brazil; and Dawson (1987) in Hong-Kong, Singapore and Malaysia. Although all of these studies also report the existence of the initial underpricing in these markets, little research seems to be available on the performance of small and medium sized companies listing through IPOs in emerging markets via way of alternative exchanges. There is also little information on the financial performance of these companies post their IPO listings.

This paper extends on the existing international literature on IPOs by examining the IPOs in the Alternative Exchange (AltX) of the Johannesburg Securities Exchange (JSE).

The JSE Alternative Exchange (AltX) is a division of the JSE Limited. It was launched in 2003 with the support of the South African Department of Trade and Industry (DTI) and operates as a parallel exchange market to the JSE's main board. According to the AltX (2003) and the JSE (2003), the JSE AltX;

- Caters for good quality small- and medium-sized high-growth companies that do not yet meet the more stringent requirements of listing on the JSE Main Board.
- Allows for small and medium sized companies to have access to investment capital.

- Provides companies qualifying for listing on the AltX but not yet on the JSE main board with a clear growth path to listing on the JSE main board in future.
- Provides a viable exit mechanism for initial shareholders such as venture capitalists.
- Provides an opportunity for investors to invest in small high growth companies with the expectation of high returns. These stocks have historically provided exceptional returns. A view supported by Theobald and Williams's (2007:32) findings which state that in March 2007, the price earnings ratio on the AltX exchange was 1.4 times that of the JSE main exchange.

Although the bulk of studies on the long-term performance of IPOs have been concentrated on the leading economies such as the USA, Japan, UK and Germany (Aggarwal and Rivoli,1990; Young and Zaima, 1988; Gompers and Lerner, 2001; Loughran *et al*, 1994; Gerke and Ferdinand, 2006), there has also been a fair amount of research covering the long-term post-listing performance of IPOs over different time periods in emerging markets (Dawson, 1987; McGuiness, 1992; Aggarwal *et al*., 1993; Kazantzis and Levis, 1995; Kim *et al*., 1995) and in South Africa (M'kombe, 2000; Lawson and Ward, 1998; Boles, 2001; and Moodley, 2009).

Within the South African context; Moodley (2009) investigated whether the value of the premiums offered by IPOs at the close of trade on the first day of issuance indicated the aftermarket performance of IPOs between 1998 and 2007 on the JSE. Moodley (2009) found that average initial returns were 28.39 per cent, and significantly different from zero. The correlation between the initial returns and the 1 year aftermarket performance was -10.51 per cent. Moodley (2009) went on to conclude that negative long-run aftermarket underperformance was therefore also a feature in JSE IPOs and that the positive abnormal returns experienced after the first day of trade are not a proxy for long-run aftermarket performance.

Lawson and Ward (1998) investigated the initial and aftermarket returns of newly listed shares on the JSE for the periods 1986 to 1995 and provided detailed and updated descriptive statistics of new listing between the periods of 1975 and 1995.

Their findings were that the average initial return of new listings was 27.2 per cent for the period. The returns were found to range from -81.82 per cent to 250 per cent.

For the aftermarket returns, Lawson and Ward (1998) found that investors who acquired the IPO shares at the close of the first day of trade did not participate in the initial returns. Although these investors on average experienced positive mean adjusted returns of 2.87 per cent after 1 year, these were found not to be statistically significant.

In his study on the aftermarket performance of IPOs by small capitalisation companies on the JSE between 1997 and 1998, Boles (2001) sought to understand the variables impacting the aftermarket performance of small capitalisation companies listed on the JSE during this period. Boles (2001 found that the smaller capitalisations listings experienced higher initial returns after the first day of trade than their larger counterparts. Over the long-run, Boles (2001) did however identify that the smaller capitalisation IPOs performed negatively over 32 months when compared to the All Share and to the small and mid-capitalisation indices within the JSE.

M'kombe (2000) in his study on aftermarket price performance of IPOs on the JSE investigated the presence of abnormal returns for the period 1980 to 1998 and tried to establish whether these returns are dependent on the investment holding period. M'kombe (2000) also investigated whether other factors had an influence on the aftermarket performance of these IPOs. The findings were that factor such as listing price and the amount of capital raised had an influence on the aftermarket performance of JSE IPOs. More specifically, the findings highlighted that IPOs priced below 100 (ZAR) cents were perceived to have more risk than higher priced IPOs. These also displayed the highest initial returns, which were however found to be below the expected (CAPM) performance based on their risk level. IPOs price from 200 cents to 499 cents showed the least levels of long run under performance. IPOs priced above 500 cents were found to be overpriced and returned the highest level on underperformance. M'kombe (2000) also identified that the number of shares

issued had no impact on aftermarket performance while the value of the capital raised did have an influence on the aftermarket performance of IPOs over a 5 year period.

These studies, along with their international counterparts by Kennedy, Sivakumar and Vetzal (2006), Ritter (1991) and others have shown consistent and empirical evidence of positive abnormal initial returns and that there is persistent evidence of long run under-performance. The difference in the various studies being the magnitude of the quantum within the different markets (Ritter, 1991). The market performance of IPOs listing on alternative exchanges such as the JSE AltX that are designed to cater for small and medium sized companies (AltX ,2013) is not as well documented, even less so within emerging markets such as South Africa.

The aim of this research is to add to the extant literature by investigating the performance of IPOs for small and medium sizes companies listed on the JSE AltX between April 2006 and December 2012. April 2006 was selected as the starting period because it coincides with when the JSE AltX Index (AltX Index) started trading. This allows for the AltX Index to be utilised as the benchmark for market adjusted returns.

1.3 Research Problem

The AltX was introduced in 2003 as a division of the JSE in order to allow for the provision of capital to smaller companies not yet able to list on the JSE Main Board (AltX, 2013). In addition, the companies listing on the AltX were to be provided with a clear growth path to eventually listing on the JSE's main board. According to the JSE (2003), the intention of the introduction of the AltX was not only the creation of an opportunity for smaller firms to get access to a type of long term investment capital that was previously only available to larger companies, but also to create an opportunity for investors to have the opportunity to invest in high growth companies with higher expected returns.

Due to the fact that the AltX has only been in existence since 2003, there is a lack of rich information on the market performances of its listing companies in comparison to the JSE main board which has been inexistence since 1897. Additionally, the nature, size and type of companies listed on the JSE AltX are of a different nature to those listed on the JSE main board; as per both the JSE Altx (2013), and the JSE (2013), the listing requirements for listing on the AltX are less stringent with no profit history (versus three years for JSE main board) or minimum pre-tax profit (versus R8 million pre-tax profit) required, and the financial and corporate governance reporting requirements for AltX listed companies are not identical and are considered less laborious in comparison to those of main board listed companies (AltX, 2012). The implication of this being that findings of studies evaluating market performance of JSE main board listed companies are therefore not directly transferable and applicable to the JSE AltX listed companies. Given this, a body of knowledge that is specific and relevant to the JSE AltX needs to be developed and maintained.

The results of this research will therefore provide stakeholders such as entrepreneurs, investors and market commentators with the relevant information for decision making when considering listing and or investing on the JSE AltX.

1.4 Objectives of study

The intention of this study is to review and analyse the market performance of IPOs listing on the JSE AltX. This study therefore intends to:

- Measure the initial market performance or underpricing of companies listing on the JSE AltX by way of IPOs.
- Measure the medium and long-run after market returns of companies listed on the JSE AltX by way of IPOs.

1.5 Research questions

Following on from the purpose of this study, this research intends to address the following research questions:

1. What is the level of initial (first day) returns experienced by investors investing at IPO stage of companies listing on the JSE AltX?
2. What level of aftermarket (post IPO) performance is experienced by investors over the medium (1 year) and long run (2 and 3 year) periods following IPO listing for JSE AltX companies?

1.6 Research Hypotheses

In order to give credence to the stated research questions, research hypotheses were developed to test the initial, medium and long run market performances of JSE AltX IPOs. The research hypotheses are:

I. Hypothesis 1: Initial Returns
   a. H_0: Newly listed JSE AltX IPOs perform the same as the market after the first day of trade.
   b. H_a: Newly listed JSE AltX IPOs do not perform the same as the market after the first day of trade.

II. Hypothesis 2: Aftermarket performance of IPOs 1 year after listing
   a. H_0: The returns of JSE AltX IPOs perform the same as the market 1 year after listing.
   b. H_a: The returns of JSE AltX IPOs do not perform the same as the market 1 year after listing.

III. Hypothesis 3: Aftermarket performance of IPOs 2 years after listing
   a. H_0: The returns of JSE AltX IPOs perform the same as the market 2 years after listing.

b. H_a: The returns of JSE AltX IPOs do not perform the same as the market 2 years after listing.

IV. Hypothesis 4: Aftermarket performance of IPOs 3 years after listing
   a. H_0: The returns of JSE AltX IPOs perform the same as the market 3 years after listing.
   b. H_a: The returns of JSE AltX IPOs do not perform the same as the market 3 years after listing.

V. Hypothesis 5: Combined returns of IPOs 1 year after listing
   a. H_0: The combined returns of JSE AltX IPOs perform the same as the market 1 year after listing.
   b. H_a: The combined returns of JSE AltX IPOs do not perform the same as the market 1 year after listing.

VI. Hypothesis 7: Combined returns of IPOs 2 years after listing
   a. H_0: The combined returns of JSE AltX IPOs perform the same as the market 2 years after listing.
   b. H_a: The combined returns of JSE AltX IPOs do not perform the same as the market 2 year after listing.

VII. Hypothesis 7: Combined returns of IPOs 3 years after listing
   a. H_0: The combined returns of JSE AltX IPOs perform the same as the market 3 year after listing.
   b. H_a: The combined returns of JSE AltX IPOs do not perform the same as the market 3 year after listing.

1.7 Gap in the literature

Raising equity capital and listing on a securities exchange is considered an important decision for any business (Jenkinson and Ljungqvist, 2001). This has attracted a fair amount of international research around IPOs and the movement of stock prices immediately after listing, and over the short, medium and long run periods post listing. The literature available displays sufficient depth for more developed economies while exhibiting less depth for developing and emerging market economies. There is even less research covering small and medium sized companies within these markets. From a South African perspective, studies by Lawson (1996), Moodley (2009), and Lawson and Ward (1998) had a strong JSE main board focus and do not directly review the JSE AltX. This study will contribute to the growth of information within this area with a further intention to increase the interest on the subject and suggest future research within an emerging market context.

1.8 Research structure

The research was approached as follows:

1. Chapter 1 formally introduced the research topic, the context of this study, research problem, objectives, questions, and the research hypotheses.
2. Chapter 2 addressed the literature review conducted to reflect the work that has already been concluded on the subject and highlights areas requiring development.
3. Chapter 3 captured the research approach and methodology that was employed for the analysis of the data collected.
4. Chapter 4 presents the results of the study.
5. Chapter 5 concludes this study and recommended further areas of research.

1.9 Chapter summary

The JSE Altx was introduced in 2003 to provide a platform for good quality high-growth companies that do not yet qualify for JSE main board listing. The target small and medium companies would benefit by gaining access to long term equity finance which was previously reserved for large corporates. For investors, the introduction of the AltX was also to provide them access to smaller higher risk and higher return investment options. With the AltX being considered relatively young, there are limited studies detailing the performance of IPOs post listing. Broadening this information will add benefit to investors, companies considering listing and market commentators when considering listing or investing in the AltX.

Chapter 2 below presents the literature review on the JSE AltX, initial IPO performances and the aftermarket performances of IPOs.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents the review of the extant literature relating to the initial and aftermarket performance IPOs. Section 2.2 and 2.3 discuss exchange listings and the reasons for listing respectively. Section 2.4 discusses the JSE listing requirements while Section 2.5 details the costs associated with an exchange listing. Section 2.6, 2.7 and 2.8 respectively discuss the market performance on IPOs, the initial IPO returns, and the aftermarket performance of IPOs. Section 2.9 discusses the performance of listing companies in the period following their listings.

2.2 Listing on a securities exchange

The decision to "go public" and have a company's shares quoted on a stock exchange is a very important decision in lifecycle of any company (Jenkinson and Ljungqvist, 2001). Traditionally, companies list on a securities exchange by way of an IPO where the shares listed are newly created shares, existing shares or a combination of both (Marco, Fabiano and Zingales, 1993). Where the shares listed during the IPO process are existing shares, the proceeds for the sales are attributable to the existing holders of those shares (Ibbotson, Sindelar *et al*., 1994). Where new shares are created for the IPO process, the proceeds of selling these shares will accrue to the listing company and thereby allowing the company to raise capital (Jenkinson and Ljungqvist, 2001).

According to Jenkinson and Ljungqvist (2001), a study of various countries concludes that the majority of organisations will raise external equity finance only once. This is usually being through the IPO approach. Jenkinson and Ljungqvist (2001) further add that after IPO, companies prefer to finance their operations through retained earnings and debt. A view supported by the pecking order theory, which is considered amongst the most influential theories of corporate leverage

(Frank and Goyalb, 2003) and states that organizations prefer to first finance their operations through retained earnings, then debt, and then equity as a last resort. Going public is however, considered an important aspect of raising finance for companies in a growth cycle (Ibbotson, Sindelar *et al*., 1994).

IPOs are also considered as one of the most lucrative exit strategies for the initial investors and entrepreneurs to cash-out by selling some of their equity to investors (Gerke and Manger, 2006). This means that the stock market is one of the primary markets for providing equity finance and therefore considered an important part of entrepreneurial and economic development, along with the performance of companies that have raised equity capital through the IPO process (Jenkinson and Ljungqvist, 2001).

2.3 Organisational reasons for listing

Gaining access to an alternative source of funding other than debt from banks is one of the most cited reasons as to why companies decide to go public (Jenkinson and Ljungqvist, 2001; Marco, Fabiano and Zingales, 1993). This is said to be particularly true for companies with large current investments, large future investments, high leverage and or high growth opportunities (Marco, Fabiano and Zingales, 1993). Listing also provides an exit strategy by providing a mechanism for the founder members, family holdings, private equity or venture capital providers to realise their investments at a market-related value (Zingales, 1995). That said, from the company's perspective, additional reasons documented to encourage listing are indicated below.

2.3.1 Reduction of borrowing costs

Listed firms have reduced borrowing costs due to having increased bargaining power with banks (Marco, Fabiano and Zingales, 1993). This is attributed to the fact that listing reduces the extra rents charged by banks arising from the privileged information they possess about the credit worthiness of their customers. This view is

supported by Rajan (1992) who adds that gaining access to the stock markets and disseminating information to a wider investor base allows companies to elicit outside competition to their lenders. This allows for a lower cost of credit, a larger supply of external finance, or both (Rajan, 1992). In their empirical study, Marco *et al*. (1993) also found that around the IPO date in the Italian market, the interest rates charged to companies on their short term credit fell as the number of banks willing to lend to them rose.

2.3.2 Liquidity and portfolio diversification

Where equity capital is successfully raised, opportunities for liquidity and portfolio diversification will arise and are often the motive for raising equity capital to begin with (Pagano, 1993). This is realised directly by divesting from the company and reinvesting in other assets (Pagano, 1993). Portfolio diversification can also be achieved indirectly by having the company raise fresh equity capital after the IPO and acquire stakes in other companies (Rajan, 1992).

2.3.3 Investor recognition

Kadlec and McConnell (1994) have found that where companies are already listed and take the decision to list on the New York Stock Exchange (NYSE), their stock yields are on average 5 per cent above normal returns. This according to Marco, Fabiano and Zingales (1993), is evidence that the price of a company's stock increases when the number of investors who are aware of the company increases. A view supported by Merton (1987).

2.3.4 Improved monitoring

The stock mark*et al*so provides improvement on corporate governance practices, accounting and reporting standards as required by the respective exchange regulators (Baker and Johnson, 1990). This is in addition to the managerial discipline

device of exposing managerial decisions to the market (Marco, Fabiano and Zingales, 1993).

2.3.5 Management motives

Although there is extensive research as to the organisational benefits of listing on an exchange, Baker and Johnson (1990) add that few academic studies examine the management motivations to list or to remain on an exchange once listed. Their findings are that the general motives of managers for listing are both economic and noneconomic in nature. Over and above the pursuance of economic benefits mentioned in earlier sections, Baker and Pettit (1982) examined all newly listed companies on the New York Stock Exchange (NYSE) and American Stock Exchange (AMEX) from 1975 to 1980. Their findings were that visibility and prestige were two most cited noneconomic motivations for pursuing exchange listing.

2.4 Listing on the JSE Securities Exchange

2.4.1 Listing requirement

There are various ways for a company to have its shares listed on a securities exchange (Jenkinson and Ljungqvist, 2001). In most instances, the company must first satisfy the minimum listing requirements set out by the exchange (Jenkinson and Ljungqvist, 2001), which differ from market to market. For the JSE Main Board and for the JSE AltX, the minimum listing requirements are detailed in Table 1 below.

Table 1: JSE and JSE AltX listing requirements

Listing Requirements	Main Board/Africa Board	AltX
Share capital	R25 million	R2 Million
Profit history	3 years	None
Pre-tax profit	R8 million	N/A
Shareholder spread	20%	10%
Number of shareholders	300	100
Sponsor/DA	Sponsor	Designated advisor
Publication in the press	Compulsory	Voluntary
Number of transaction categories	2 (threshold 25%)	2 (threshold 50%)
Annual listing fee	0.04% of average market capitalisation with a minimum of R33,545 and a maximum of R170,440.55 (including VAT).	R27,189.25 (including VAT)
Education requirements	N/A	All directors to attend Directors Induction Programme

(Johannesburg Stock Exchange, 2013)

Recalling that the AltX is intended for small and medium sized companies to have access to the equities market (AltX, 2013), notable differences in the listing requirements being that the listing requirements for the JSE Main Board are far more stringent than those for listing on the AltX. Where a main board listing requires a minimum share capital of R25 million, at least 3 years profit history and a minimum pre-tax profit of R8 million per annum, comparatively, listing for the AltX only requires a minimum share capital of R2 million and no requirements for profit history or a minimum pre-tax profit. Listing on the AltX can also be achieved at a lower cost than that of a main board listing and also required fewer procedural requirements.

2.4.2 Listing methods

According to the JSE (2013), listing on the JSE's main board or AltX can be achieved either through a front door or a back door listing approach.

The front door listing approaches are by far the most common listing approaches and are described by the JSE (2013) to occur by means of; an introduction, a public offer and private pacing in conjunction with the issuing of a pre-listing statement or a prospectus

An introduction listing approach best serves companies that already have an existing and wide spread shareholder base, and do not need to raise capital (JSE, 2013). This means there are no offers that need to be extended to the general public. This allows for reduced formalities, thus making the introduction approach the most economical and fastest means of listing (JSE, 2013). Once the listing company has obtained the approval of the listing committee, the company can then be introduced to the exchange and listing is considered complete (Firer, 2008). According the JSE (2013), a pre-listing statement does however, need to be produced by the listing company and must contain the salient information about the company.

The public offer approach may be executed via an offer for sale or an offer for subscription approach. In an offer for subscription, members of the public are invited to purchase, usually at a specified price, the un-issued shares of the listing company. The proceeds of which accrue to the company (JSE, 2013). Additionally, according to the JSE rules, all the shares offered must be taken up by the public or the under writers. This share take up is to happen before the shares can be traded on the secondary market (Lawson, 1996).

In an offer for sale approach, exiting shareholders extend an invite to subscribers to purchase their shares (JSE, 2013). The proceeds of the transactions will therefore accrue to the sellers of the equity (Lawson, 1996). There is an obligation for the listing company to publish a pre-listing prospectus for review by potential investors (JSE, 2013).This prospectus must be approved by and registered with the Registrar of Companies in order to allow for a wide spread shareholder participation (Lawson, 1996). This is to the benefit of the company as it allows for the creation of public interest and enables the achievement of a higher price by creating demand through the accessing of a larger market (JSE, 2013)

A private placing is an approach where the shares of a listing company are offered to selected parties and therefore offered or 'placed' to subscribers by way of private negotiations (JSE, 2013). Private placements with institutions also allow for more stable and long term shareholding in the listing company and therefore facilitate the raising of funds in the event that the company requires to raise additional capital in the future by way of a rights offer. The JSE (2014) stipulates that 30% of that shares offered via a private placing must be executed through the appointed sponsoring broker (JSE, 2013) who in turn placed places the stock with their clients (Lawson, 1996). This approach has been found to be suitable for specialised business with limited investor appeal and offers them the ability to privately negotiate prices, generate goodwill through placing with customers, suppliers and staff (JSE, 2013). This approach is also considered as relatively low cost.

On the other hand, a backdoor listing approach is where companies list on the stock exchange by utilising an existing company already listed on an exchange (Jenkinson and Ljungqvist, 2001). Back door listings can be achieved by way of a cash shell or a reverse listing (JSE, 2013).

A cash shell in this instance is defined as a company listed on the exchange and whose assets consist entirely or mostly of cash or shares after disposing of all, or a substantial part of its operations (JSE, 2013). A cash shell listing approach is therefore where a listed cash shell company acquires a viable business by way of cash or the issue of shares in the cash shell company.

A reverse takeover is the most common backdoor listing approach and occurs when a non-listed entity takes over a listed company (Lawson, 1996). In a reverse takeover, a compatible unlisted company will acquire the listed company with the purchase consideration being paid by the issue of new shares in the listed company. These new shares must be sufficient in number and value to ensure that the shareholders have a controlling interest in the listed company after the issue of new shares (JSE, 2013). Over and above the synergies that may arise from this approach, the reverse takeover approach results in easier pricing and by in large, avoids the normal listing requirements (Lawson, 1996).

2.4.3 Successful listing

According to Reilly and Hatfield (1969), a successful listing is one where the required level of equity has been raised, the pricing of the IPO is done correctly to appease both the organisation and the investors, and where the listing has been concluded in the required timelines allowing for the reputation of the organisation is maintained.

Depending on a number of factors required for consideration, including the complexity of the chosen listing approach, the JSE (2014) estimates that listing on the AltX would take between 8 and 12 weeks.

2.5 Costs of listing

Although there are numerous benefits to raising equity finance, listing on a stock exchange gives rise to two types of costs. These being direct costs and indirect costs (Baker and Johnson, 1990).

Direct costs are costs that can directly be attributed to the listing process. These include underwriting fees, selling commissions, legal and accountancy fees. There are also less quantifiable direct costs such as management's time and effort required to ensure the success of the IPO exercise (Ritter, 1987). Depending on the negotiated pricing approaches, the direct costs can be fixed or be a percentage of the equity raised (Reilly and Hatfield, 1969). Direct costs may present opportunities for economies of scale whereby the comparative costs reduce in relation to the amount of equity capital raised (Baker and Johnson, 1990). This does however imply that these costs weigh more heavily on small companies who lack the economies of scale (Ritter, 1987). Ritter (1987) further estimated that in the United States, the fixed costs equal approximately $250,000. A similar cost trend was also found to be existent in the Italian economy (Pagono, Panetta and Zingales, 1998). Internationally, variable costs can range from about 3.5 % in Italy (Pagano, Panetta and Zingales, 1998) to about 7 % in the US of the gross proceeds of the IPO (Ritter, 1987).

For JSE listings, the costs are estimated to be 3.1% of the capital raised to cover the underwriting, brokerage, creation duty and issue duty fees (Ward, 1995). This is exclusive of the other professional service fees such as attorney, merchant bank, secretarial, sponsoring brokers and prospectus preparation fees (Ward, 1995).

Over and above the initial direct costs, there are recurring annual costs such as auditing, certification, and dissemination of accounting information and stock exchange fees that will come into effect (Pagano, Panetta and Zingales, 1998).

Indirect costs can be primarily defined as those arising from adverse selection and underpricing (Leland and Pyle, 1977). Adverse selection states that investors are in most instances less informed than the parties issuing the equity about the true value of the shares being issued (Marco, Fabiano and Zingales, 1993). This information asymmetry has a negative impact on the average quality of the listing companies and thus the price at which their shares can be traded at (Leland and Pyle, 1977). This adverse selection cost is also found to be more profound when young and or small companies initially go public as they have limited track records and visibility (Chemmanur and Fulghieri, 1995). It also has an influence on the impact of the underpricing required to ensure that the shares can be sold (Rock, 1986).

Underpricing is one of the best known anomalies associated with the process of listing on a securities exchange. It is characterised by the frequent incidence of large initial returns accruing to investors in IPOs of common stock (Ibbotson, Sindelar *et al*., 1994). This is measured as the price change in the stock from the offering price to the market price at the close of the first day of trade (Ritter, 1991). The evidence is overwhelming regarding the presence of positive first-day underpricing for initial public offerings (IPOs) for almost every major capital market in the world (Kiymaz, 1989). In addition, according to Ibbotson, Sindelar *et al*., (1994), underpricing is considered a cost to the listing company because it is a lost opportunity as more capital could have accrued to the company instead of the initial IPO subscribers.

A number of reasons have been documented for the underpricing of common stock at IPO, these include the winner's curse hypothesis (Ritter, 1991), the costly

information acquisition hypothesis (Bradfield and Hampton, 1989), the signalling hypothesis (Ritter, 1991), and the regulatory constraint hypothesis (Pagano, Panetta and Zingales, 1998) to mention but a few

Other indirect costs of going public which are also more difficult to quantify include the loss of confidentiality: This premise is based on the view that the disclosure rules of stock exchanges force companies to unveil information whose secrecy may be crucial for their competitive advantage (Kiymaz, 1989).

2.6 Initial and aftermarket performance of IPOs

The market return of an IPO refers to the performance of the share price post IPO. The general approach being to compute the initial underpricing by comparing the first day's closing price to the IPO listing price, and then to compute the short, medium and long run returns exclusive of the first day of trading returns (Bradfield and Hampton, 1989).

There have been various studies examining post IPO underpricing and IPO market performances over the initial, short-run, medium-run and long-run periods. Many of which document evidence of initial underpricing and therefore initial positive average returns after the first day of trade (Aggarwal, Leal and Hernandez, 1993). Conversely, over the long run, the studies have found the returns to be negative (Aggarwal, Leal and Hernandez, 1993) and therefore implying over pricing of IPOs over the long run.

Table 2 below depicts some of the findings of research conducted on both initial and aftermarket IPO returns over various periods and for countries.

Table 2: Initial and long-run IPO returns

Period	Country	Sample size	Short run	Long run	Study
1966-1978	Australia	93	29.2	-6.5	Fin and Higham
1971-1983	Canada	100	11.0	-	Joe and Riding
1972-1975	USA	486	10.9	11.6	Reily
1973-1987	Singapore	66	27.2	-	Koh and Walter
1975-1984	USA	1526	14.3	-29.1	Ritter
1977-1987	Germany	97	21.5	-7.4	Uhlir
1977-1987	USA	1598	10.7	-13.7	Aggarwal and Rivoli
1978-1983	Hong Kong	21	13.8	-9.3	Dawson
1978-1983	Malaysia	21	166.7	18.2	Dawson
1978-1983	Singapore	39	39.4	-2.7	Dawson
1979-1984	Japan	106	51.9	-	Dawson and Hiraki
1979-1987	UK	20	22.2	-	Jenkinson and Mayer
1980-1988	UK	712	14.3	-30.6	Levis
1982-1987	Netherlands	46	5.1	-	Wessels
1983-1986	France	131	4.0	-	Husson and Jacquillat
1983-1989	Switzerland	42	35.8	-6.1	Kunz and Aggarwal
1984-1986	Korea	41	37.0	-	Kim and Lee
1985-1990	Korea	275	79.0	-	Krinsky, Kim and Lee
1986-1987	France	11	25.1	-	Jenkinson and Mayer
1998-2007	South Africa	177	28.39	-	Moodley

(*Modified from Lawson 1996 and Moodley ,2009)*

2.7 Initial IPO performance

The performances of common stock prices post IPO have been studied in several developed and developing markets (Lyn and Zychowicz, 2002). Initial IPO performance being the closing price of a stock on the day of listing in comparison to its list price (Aggarwal, Leal and Hernandez, 1993). Various studies have pointed to this initial performance to depict abnormal returns (Reilly and Hatfield, 1969; Jenkinson and Ljungqvist, 2001; Ritter, 2003).

US studies report the existence of initial underpricing (Ibbotson, 1975; Aggarwal and Rivoli, 1990; Ritter, 1991), with reported underpricing of up to 14.3 per cent Ritter (1991). Ibbotson, Sindelar and Ritter (1988), studied the initial returns of U.S stock

markets by reviewing 8 668 IPO from 1960 to 1987. They find that there is existence of initial day underpricing of on average of 16.37 per cent. In their follow up study of 1994, the same authors investigated 10626 IPOs between 1960 and 1993. The initial underpricing of 9 to 21.3 per cent was found to be evident for the periods under review. Their conclusion was that, over time, there remained a persistent existence of initial underpricing of 21.3 per cent from 1960 to 1969, 9 per cent from 1970 to 1979, 15.2 per cent from 1980 to 1989.

Australian IPOs were studied by Dimovski and Brooks (2004) based on IPOs listing in Australia from 1994 to 1999. Their findings were that although all the sectors showed abnormal initial returns, the degree varied from sector to sector. They found the average level of underpricing to be 25.6 per cent across the sectors from their period of study.

Various emerging market IPO performances have also been reviewed. Among these, Dawson (1987) investigates both short- and long-run performance of IPOs in Hong Kong, Singapore and Malaysia using the period 1978 to 1983. While Malaysian IPOs showed the most extreme case of initial IPO underpricing at a staggering 166.6 per cent, the average underpricing in Hong-Kong and in Singapore was 13.8 and 39.4 per cent respectively. A subsequent study of IPOs in Hong Kong of 80 listings between 1980 and 1990 was conducted by McGuiness (1992). The findings of this study were that the initial abnormal returns were 18 per cent for this period in comparison to the 13.8 per cent of Dawson's (1987) earlier study. In his study, McGuiness (1992) attributed the differing levels of underpricing to the prevailing market conditions, and the investor sentiments and doubts concerning the stock performance of the IPOs post listing. Similarly, subsequent studies by Lee *et al*. (1996a) of the initial returns for Singaporean IPOs during the period of 1973 to 1993 showed the persistence of initial returns. The study reflected underpricing of 30 per cent for the periods studied.

Aggarwal *et al*. (1993) examined the performance of 62 Brazilian IPOs during the 1980 to 1990 period, 36 Chilean IPOs for the 1982 to 1990, and 44 Mexican IPOs from the 1987 to 1990 period. The results indicated that the initial day returns were

78.5 per cent for Brazil, 16.3 per cent for Chile and a much smaller 2.8 per cent for Mexico.

Kazantzis and Levis (1995) investigate IPOs in Greece using a sample of 79 firms going public between 1987 and 1991. Their results depicted that Greek IPOs were on average underpriced by 48.5 per cent during this period.

Kim *et al*. (1995) examine Korean IPOs of 169 firms between 1985 and 1989. The results revealed that the Korean IPOs outperform seasoned firms with similar characteristics. Much of the over performance took place during the first month, and long-run performance of Korean IPOs is not statistically different from that of seasoned firms. Furthermore, it is the view of the researchers that the deregulation that took place in 1988 had reduced the initial underpricing, while having had no impact on long-run IPO performances.

In addition, there has been found to be a link between the size of a company and the level of initial underpricing observed where smaller offerings are on average underpriced by more than larger offerings. In their analysis, Ibbotson, Sindelar and Ritter (1994) found that for 2439 U.S. IPOs analysed between the years 1975-1984, on average, the initial return on IPOs with an offering price of less than $3.00 was 42.8 per cent. This was in comparisons to their findings that the average initial return for IPOs with an offering price of $3.00 or more was only 8.6 per cent. This is consistent with the earlier findings from Chalk and Peavy (1987).

2.8 Aftermarket IPO performance

The aftermarket performance of IPOs is the return of the IPO stock computed at a selected period after the IPO date and exclusive of the first day of trading returns. Aggarwal and Rivoli (1990) investigated U.S listings on a sample of 1,598 IPO stocks issued between 1997 and 1987. They found underperformance of 13.73 per cent (excluding the first day of trading results) over a period of 250 trading days. In his later study of the U.S IPO listings, Ritter (1991) using a sample of 1,526 IPOs issued between 1975 and 1984 found the post IPO performance to be as much as

29 per cent when the first trading day's returns are excluded. Ritter (1991) further observed that there was a relationship between the firm's age, the initial underpricing and the aftermarket performance of IPOs. Ritter's (1991) findings were that younger firms exhibited higher levels of initial underpricing and underperformance over the long term. A sentiment supported by various subsequent studies on the long-run performance of IPOs such as those by Aggarwal, Leal and Hernandez (1993), and Loughran and Ritter (1994). They all found evidence of long-run underperformance of IPO listings.

Uhlir (1989) conducted similar studies for the West German market and established that the underperformance for Western German IPOs was 7.46 per cent in their first 12 months of trading where first trading day's returns are excluded. Similarly, work by Levis (1993) on the long-run performance of IPO in the UK using data from 1980 to 1988 concluded that there is a gradual but steady decline in the returns over a period of 36 months following the first month of trading. The underperformance reported ranged from 11.38 per cent to 22.96 per cent depending on the benchmark index employed.

In their study of selected emerging markets, Aggarwal, Leal and Hernandez (1993) found that the three year market adjusted returns for Chile, Mexico and Brazil were negative 23.7 per cent, negative 19.6 per cent and negative 47 per cent respectively.

From a South African perspective, Lawson and Ward (1998) found that the risk adjusted returns of IPO issues from 1986 to 1995 showed that investors who invested during the IPO process experienced significant returns on average after 12 months of listing where initial returns are included. In addition, investors acquiring the shares post IPO in the secondary market did not derive significant excess returns. The broader JSE Securities Exchange All Share Index was used as the reference index for this study.

Moodley (2009), in his study of the South African market for IPOs issued from 1998 to 2007 found the underperformance to be 10.51 per cent after 12 months when excluding the initial returns from the first day of trading.

A review of the above in aligned with the general consensus that the long-run performance of post IPO returns is negative when the initial premiums from the first day of trading are excluded. In their study of underperformance in long-run stock returns following seasoned offering, Spies and Affleck-Graves (1995) conclude that the underperformance documented in various post IPO studies is not only an IPO phenomenon per se, but an effect that impacts public offerings in general. Ritter (1991) and Loughran and Ritter (1995) suggest that one of the causes of this phenomenon is due to the investors being systematically too optimistic when investing in companies issuing equity for the first time.

2.9 Combined returns

Combined returns refer to the combination of initial and aftermarket return accruing to the investors who purchased the IPO stock at the listing price (Ritter, 1991). The conclusion reached by Ibbotson *et al*. (1994) was that the positive abnormal returns achieved by the initial investors would be eroded over time as new listing were often followed by long-run underperformance. This according to Ward (1996) implies that investors who purchased the stock at listing price and maintain the stock for a period of time post IPO will therefore be at risk of losing the initial returns they gained after the first day of trade. Ward (1996) concluded that the combined returns are largely influenced by the level of initial returns earned on the first day of trading.

2.10 Organisation performance post IPO

Although pre-IPO companies have been found to exhibit high organisational financial performances prior to listing (Jain and Kini, 1994; Mikkelson, Partch and Shah, 1997), it has been found that earnings and return on capital tend to decline post IPO

(Loughran and Ritter, 1991). Reviews of the post IPO financial performance of listing organisations have found that there is;

- Reduction in profitability as documented by Pagano, Panetta and Zingales (1998) in the Italian market. This is consistent with findings by various authors in the United States (Degeorge and Zeckhauser, 1993; Jain and Kini, 1994; Mikkelson, Partch, and Shah, 1995).

- Reduction of debt observed in the US where older firms are more likely to use the funds raised to pay down debt than to finance growth (Mikkelson *et al*,. 1995). Reduction in investment and financial leverage. The effect also appears to persist beyond the first three years after the IPO (Pagano, Panetta and Zingales, 1998).

- Reduction in cost of bank credit which should reduce the credit cost and improve profitability (Pagano, Panetta and Zingales, 1998). Where the IPO was as a result of a carve-out, the findings are that in the three years after an IPO, the turnover of the controlling group is larger than normal, Zingales (1995a). No investment growth has been observed in European markets (Planell, 1995) and in Sweden (Rydqvist and Högholm (1995).

2.11 Chapter Summary

The decision to have a company's shares quoted on a stock exchange is a very important decision in lifecycle of any company (Jenkinson and Ljungqvist, 2001), with companies traditionally listing on a securities exchange by way of an IPO where the shares listed are newly created shares, existing shares or a combination of both (Marco, Fabiano and Zingales, 1993).The majority of listings is where newly created shares are listed and therefore allowing the listing companies to raise equity capital (Jenkinson and Ljungqvist, 2001).

In order to allow small and medium sized South African companies to also be able to gain access equity capital and have the benefits of listing, the JSE AltX was

introduced in 2003 (AltX, 2013). To achieve this and make it more accessible, the AltX has less laborious listing requirements in comparison to the JSE main board. Listing on the AltX can also be achieved at a lower cost than that of a main board listing and also required fewer procedural requirements (AltX, 2013). Additionally, the introduction of the AltX was also intended to provide investors with the opportunity to invest in good-quality small and medium sized companies with good growth opportunities (JSE, 2013).

From and investor's perspective, the performances of common stock prices post IPO have been studied in several developed and developing markets (Lyn and Zychowicz, 2002). In all the literature reviewed, initial performance has been found to be abnormally positive (Reilly and Hatfield, 1969; Jenkinson and Ljungqvist, 2001; Ritter, 2003). Emerging market IPOs were also shown to have some of the highest initial returns with Dawson (1987) finding average initial returns of 166 per cent in Malaysian IPOs and 39.4 per cent in Singapore. Aggarwal *et al*. (1993) found initial average returns of 78.5 per cent for Brazil IPOs. Over the long long-run, researchers including Aggarwal and Rivoli (1990), Ritter (1991), and Loughran and Ritter (1994) found returns to be negative after 12 months of trading in initial returns are excluded. From a South African perspective, Lawson and Ward (1998) found that investors acquiring the shares post IPO in the secondary market did not derive significant excess returns. Moodley (2009), in his study of the South African market for IPOs issued from 1998 to 2007 found the underperformance to be 10.51 per cent after 12 months when excluding the initial returns from the first day of trading.

The chapter (chapter 3) that follows describes the research methodology that was used to test the hypotheses derived from the research literature and as discussed in section 1.6 of this research.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design approach and methodology that were employed within this study. Section 3.2 discusses the research approach followed. Section 3.3 presents the data and the data sources utilised. Section 3.4 discusses the research design methodology that was followed.

3.2 Research approach

Both descriptive and quantitative research design approaches were employed for this study. Descriptive statistics were used to provide descriptions of the population and the final selected sample. Quantitative approaches were then used to analyse the IPO returns and to draw conclusions. The event study methodology was used as the primary quantitative methodology.

3.2.1 Event study methodology

The event study methodology was selected because it is considered a powerful tool that has been widely employed to assist researchers in assessing the financial impact of selected events (McWilliams and Siegel, 1997). Following on previous works and descriptions of the event study methodology by Fama, Fischer, Jensen and Roll (1969); Brown and Warner (1985), and McWilliams and Siegel (1997), the event study approach is the preferred method in determining whether the event being studied has resulted in abnormal stock price returns (Kothari and Warner, 2006).

The event study method has also grown in popularity due to its approach of circumventing the need for analysing accounting based measures of profit (McWilliams and Siegel, 1997) which according to Benson (2003) may not be good

indicators of the real performance or value of firms. This, according to Benson (2003) is because accounting information can be more easily manipulated by managers through the selection of the accounting procedures employed. The event study methodology allows for the use of stock market prices which are deemed to be better immunised against manipulation by managers (Benson, 2003; McWilliams and Siegel, 1997). This is because stock market prices are considered as being reflective of the true value of a firm based on the fact of taking into consideration the future cash flows of the firm (Benson 2003).

Furthermore, researchers mentioned in the literature review of this research such as Lawson and Ward (1998) and Moodley (2009) also used the event study methodology for measuring returns of South African IPOs on the JSE Main Board. Applying the methodology to this study will allow for better alignment and future comparison where desired.

3.3 Data and data sources

The research population comprises of all successful IPO listings recorded on the JSE AltX from its inception in April 2006 to December 2012 inclusive. The performance of the IPOs is adjusted to the performance of the broader JSE AltX by way of the JSE AltX Index. Thus, the JSE AltX Index serves as the benchmark for expected returns. Since the JSE AltX Index only started trading in April 2006 and was used as the market return proxy, IPOs prior to this date were excluded.

36 Months post IPO data was required to analyse the 3 year long-run aftermarket returns, making January 2011 the last IPO date for inclusion into the research sample used for analysing 3 year aftermarket returns. Within the qualifying sample, where a stock had post IPO trading data available for 12 months but not for 24 month, the stock was included in the sample for analysing initial returns and 12 month long-run aftermarket returns. Such stocks were therefore excluded from the sample for analysing 24 month long-run aftermarket returns. Similarly, where a stock

had post IPO trading data for 12 and 24 months but not for 36 months, it was included in the research samples for analysing initial returns, 12 and 24 month long-run aftermarket returns but excluded from the sample for analysing 36 month post IPO long-run aftermarket returns. The final sample selection approach is summarised in Table 3 below.

Table 3: Final research sample derivation approach

Sample selection approach	Number
ALTX Shares Listing by way of IPO	89
Less IPOs listing prior to April 2006	-27
Total IPOs considered	62
Less IPOs where the list price could not be verified	-2
Total IPOs used for analysing Initial Returns	60
Less IPOs suspended/delisting/moved to main board within 12 months of IPO	-4
Total IPOs included in analysing 12 Month after-market performance	56
Less IPOs suspended/delisting/moved to main board between 12 and 24 months of IPO	-7
Total IPOs included in analysing 24 Month after-market performance	49
Less IPOs suspended/delisting/moved to main board between 24 and 36 months of IPO	-8
Total IPOs included in analysing 36 Month after-market performance	41

The daily price data for the AltX stock was obtained from the JSE and from Bloomberg. Where there were data inconsistencies, the JSE data was taken as the authoritative data source.

IPO research data was primarily obtained from the JSE's information and data department by way of a direct request.

3.4 Research design

3.4.1 Calculating the initial returns

The initial returns were calculated as the percentage of the difference between the closing price of a stock on IPO date and the listing of the stock (Ritter, 1991) using the following formula:

$$IR = [(CP_{FD} - LP) / LP$$

Where:

- IR is the Initial Return
- CDFD is the closing price of the stock on the first day of listing in cents
- LP is the listing price of the stock in cents

The Initial Returns calculation as depicted above is a reflection of the first day closing price of the IPO in relation to the list price. It does not however give an indication of underpricing as it does not account for a standard for comparison or market-adjustment.

To determine the level of underpricing if any, market-adjusted initial returns needed to be calculated. This approach calculated the initial return by adjusting performance by the appropriate benchmark performance using the following formula:

$$UP = (CP_{FD} - LP) / LP] - [(M_t - M_{t,0}) / M_{t,0}]$$

Where:

- UP is the level of initial underpricing (market adjusted initial returns)
- CD_{FD} is the closing price of the stock on the first day of listing in cents
- LP is the listing price of the stock in cents

- M_t is the price at the end of the first day of trading using the JSE AltX (JALTX) Index as the Market price in cents
- $M_{t,0}$ is the closing price of the market a day prior to the IPO date using the JSE AltX (JALTX) Index as the Market price in cents

3.4.2 Calculating the aftermarket performance of IPOs

The event study methodology as prescribed by Fama, Fisher, Jensen and Roll (1969), Brown and Warner (1985) and others was used to analyse the aftermarket returns. In addition, it is further documented that the effectiveness of the event study method analytical technique is dependent on the assumptions that (a) the markets are efficient, (b) the event being measured was an unanticipated event, and (c) that there were no confounding events during the study period that could influence the findings (McWilliams and Siegel, 1997).

The first assumption of event studies is that the market is efficient and that the price of shares is inclusive of all the relevant information known to stakeholders (McWilliams and Siegel, 1997). Thompson and Ward (1995) deemed to be a semi-strong efficient market. This implies that the price of a stock is inclusive of all the information impacting and influencing the stock price of the firm as soon as this information becomes available (Hana, 1989). As part of the JSE, the JSE AltX was therefore considered to also be semi-strong efficient.

The unanticipated events assumption dictates that the market did not have prior knowledge of the event being measured (McWilliams and Siegel, 1997). This assumption is more applicable when applying the event study methodology to events such as corporate announcements and less so to IPOs as events.

The confounding effects assumption states that the effect of the event of study must be isolated from the other events (McWilliams and Siegel, 1997). Compounding events are considered to be activities such as the announcement of a merger or acquisition, introduction of a new prices, change in key executives etc. The acceptance of the first assumption that the market is a semi-strong efficient market

implies that any information affecting the listing pricing of the IPO would have already been taken into consideration and therefore effectively isolating the initial IPO pricing from confounding effects.

As there is no violation of the assumptions as specified by McWilliams and Siegel (1997), the event study methodology was deemed sufficient for this research.

Aftermarket performance, also known as aftermarket returns were then calculated as per the standard of taking the per cent difference between the closing price of a stock on the first day of trade (listing day) and the closing price at the end of the period being studied (Reilly and Hatfield, 1969; Jenkinson and Ljungqvist, 2001; Ritter, 2003; Dimovski and Brooks, 2004). The formula used is as follows:

$$AP_{it} = (CP_{it} - CP_{FD}) / CP_{FD}$$

Where:

- AP_{it} is the aftermarket performance of investment i at time t
- CP_{it} is the closing price of investment i in period t
- CD_{FD} is the closing price of the stock on the first day of listing in cents

3.4.3 Calculating abnormal returns

A variety of models have been proposed for calculating abnormal returns with the suggested models being the Mean-Adjusted Returns Model, Market-Adjusted Returns model, Market and Risk Adjusted Returns model and, the Multiple Index Model Adjusted Returns (Brown and Warner, 1980).

Mean adjusted returns take the normal return of a security to equal a constant K_i which is typically the mean return of the security being measured (Brown and Warner, 1980). The abnormal or excess return E_i is then the actual return less the constant and cam be stated as $E_{i\,t} = R_{i,t} - K_i$.

Market Adjusted Returns take the normal return to equal the relevant market index return $R_{m,t}$ (Kothari and Warner, 1997). The excess returns are then depicted as $E_{i\,t} = R_{i,t} - R_{m,t.}$

Market and Risk Adjusted Returns assume the that the normal returns are generated by a single index model and therefore introducing risk adjustments or stock betas β. Excess returns are therefore depicted as $E_{i\,t} = R_{i,t} - \beta\,(R_{m,t} - R_{f,t})$, where $R_{f,t}$ is the risk free rate of investments and β being the systematic risk coefficient for the investment and a given period.

Multiple Index Model Adjusted returns assume the normal returns to be as a result of multiple factors such as industry returns, company size, market returns and other factors and sources of covariance (Kothari and Warner, 1997). Abnormal returns are depicted as $E_{i\,t} = R_{i,t} - \alpha_i - \beta_{i,1}\, I_{i,1} - \ldots. - \beta_{i,m}\, I_{i,m,}$ where I represent each factor or index believed to influence the returns.

The Market-Adjusted Returns model was selected for the study. This is because according to Brown and Warner (1980), the Market-Adjusted Returns model is the most commonly used model as it avoids the errors and extra computations associated with the estimation of stock betas. Furthermore, Brown and Warner (1980, 1985) add that even though the Mean-Adjusted and Market-Adjusted models are relatively simple, they often yield results which are similar to those of their more sophisticated counterparts. Authors such as Bowman (1983) have also inconclusively discussed the usage of Risk Adjusted return models against simpler models such as the Mean-Adjusted model.

The excess or abnormal returns using the Market-Adjusted Returns Model were then calculated as follows:

$$E_{i\,t} = R_{i,t} - Rm_{t.}$$

Where:

- E_{it} is the excess return of investment i and time t
- R_{it} is the return on the investment i in period t
- R_{mt} is the market return in period t

3.4.4 Calculating Cumulative Abnormal Returns (CAR)

Cumulative Abnormal Return (CAR) was used for organising and grouping of the access returns as per Fama, Fisher and Roll (1969). Although there is no consensus as to the best method to use, Fama (1998) argues that the CAR approach results in less unauthentic rejections in comparison to the buy-and-hold returns (BAHR) approach. The CAR equation employed is as follows:

$$CAR_t = \sum_{t=1}^{T} \frac{1}{N} \times \sum_{i=1}^{N} E_{it}$$

Where:

- E_{it} is the excess return of investment i and time t
- T equals the total time period
- N equals the number of firms in the portfolio

The t-test was used to test the CAR mean returns of the AltX stocks againts the AltX Index as the selected benchmark. Significance testing was done on the null hypotheses at 5% level of significance.

3.4.5 Calculating combined returns

Combined returns are those returns earned where the purchase of a stock occurs at the IPO listing and therefore at the list price, and is held for a period of time post the first day of trade (Ritter, 1991).The combined returns are therefore the initial returns earned after the first day of trade, in addition to the aftermarket returns earned at a specified time post the IPO date. Combined returns are calculated as follows:

$$CR = (CP_{i,t} - LP) / LP$$

Where:

- CR is the level of the earned combined returns
- CPit is the closing price of investment i in period t
- LP is the listing price of the stock in cents

3.5 Chapter summary

This chapter detailed the data, data sources and methodology used in this study. After selection of the market-adjusted returns and the CAR methodology for organising and grouping access returns, the following chapter (Chapter 4) presents the research findings on the data collected.

CHAPTER 4 RESEARCH RESULTS

4.1 Introduction

This chapter presents the results of the analyses from the research methodology discussed in Chapter 3. Section 4.2 addresses the descriptive statistics of the research sample. Sections 4.3 and 4.4 address the findings for initial returns and aftermarket returns respectively. The chapter summary completed the chapter.

4.2 Descriptive statistics

Descriptive statistics were used to describe the nominal returns of the IPO stocks. Nominal returns being the stock returns that have not yet been adjusted against the market returns. Table 4 below presents the descriptive statistics of the pure initial and nominal aftermarket returns.

Table 4: Research sample descriptive statistics

	Initial returns	Yr 1 post IPO	Yr 2 post IPO	Yr 3 post IPO
Mean	0.2142	-0.1960	-0.4444	-0.5919
Standard Error	0.0808	0.0774	0.1028	0.0470
Standard Deviation	0.6256	0.5789	0.7198	0.3007
Skewness	4.0006	1.1786	4.9282	0.5064
Smallest(1)	-0.9198	-0.9455	-0.9733	-0.9733
Largest(1)	4.0625	1.7440	3.9520	0.1760
Count	60	56	49	41

The initial (first day) nominal returns on the sample of 60 IPOs analysed returned an average of 21.42 per cent and a standard deviation of 62.56 per cent. The standard error was 0.0808. The maximum nominal initial return was 406.25 per cent and the minimum -91.98 per cent. The returns were positively skewed which indicated that a larger portion of the returns were more than the sample mean.

The nominal and market unadjusted aftermarket returns one year post IPO displayed an average return of -19.60 per cent for the sample of 56 IPOs. The minimum return was -94.55 per cent and the maximum 117.86 per cent. The standard deviation was 57.89 percent and standard error 0.0774. The returns were also positively skewed with a skewness of 1.1786.

For the 49 IPOs that had sufficient data for two year post IPO returns analysis, the average nominal returns were found to be -44.44 percent with a standard deviation of 71.98 per cent. The minimum nominal return was -97.33 per cent and the maximum 395.20 per cent. The nominal returns were also positively skewed, implying that the bulk of the nominal returns were larger than the mean.

The sample of 41 IPOs displayed an average nominal aftermarket return of -59.19 per cent three years post IPO. The standard deviation was 30.07 per cent. The minimum nominal aftermarket return was -97.33 per cent and the maximum 17.60 per cent. The returns were marginally positively skewed with a skewness of 0.5064

4.3 Market-adjusted performance of IPOs on the first day of trading (Initial returns)

Table 5 below shows that, for the sample of 60 JSE AltX IPOs, the average market-adjusted initial return was calculated to be 21 per cent with a standard deviation of 62.42 per cent. The lowest market adjusted initial return was -93.46 per cent and the highest 403.53 per cent. The t value for a mean equals zero is 2.6061. This is greater than the calculated critical t value of 2.0010 with a p value of 0.0116 at five per cent significance level. The null hypothesis that newly listed JSE AltX IPOs perform the same as the market after the first day of trade was therefore rejected and the alternative hypothesis was accepted.

Table 5: Initial Returns

Test Variables	Test Results
Mean	0.21
Standard Deviation	0.6242
Median	0.1028
Count	60
Largest(1)	4.0353
Smallest(1)	-0.9346
t Stat from mean = 0	2.6061
P value	0.0116
t Critical value	2.001
Conclusion	**Reject H0**

It was therefore concluded that the market-adjusted initial returns were significantly different and greater than zero. The existence of underpricing or initial return premiums was therefore confirmed on the JSE AltX. This is in line with the various studies such as those by Ibbotson (1975), Dawson (1987), McGuiness (1992) and Aggarwal *et al*. (1993) which confirmed the existence of IPO underpricing in both developed and developing economies.

4.4 Market-adjusted aftermarket performance

Analysis of the aftermarket performance of JSE AltX IPOs was conducted to establish whether JSE AltX IPOs had returns that were no different to the market after one, two and three years post listing. The findings are summarised in Table 6 below.

Table 6: Aftermarket returns

	Yr 1 post IPO	Yr 2 post IPO	Yr 3 post IPO
Mean	-0.0008	-0.0033	0.0382
Standard Deviation	0.0582	0.0633	23.27
Count	56	49	41
Largest(1)	0.1437	0.2357	1.1730
Smallest(1)	-0.2275	-0.2333	-0.3364
t Stat at mean = 0	-1.0566	4.1310	6.5591
P value	0.2917	0.0000	0.0000
t Critical value	1.9695	1.9647	1.9631
Conclusion	**Accept H_0**	**Reject H_0**	**Reject H_0**

Table 6 shows that of a sample of 56 AltX IPOs still trading after 12 months post-listing, the average market-adjusted aftermarket return was calculated to be -0.08 per cent with a standard deviation of 5.82 per cent. The minimum observed return was -22.75 per cent and the highest 14.17 per cent. The t value for a mean equals zero is -1.0566 and is less than the calculated critical t value of 1.9695 with a p value of 0.2917 at five per cent significance level. The null hypothesis that the returns of JSE AltX IPOs perform the same as the market 1-year after listing was therefore accepted and the alternative hypothesis rejected.

In other words, the one year market-adjusted aftermarket returns were on average marginally negative, yet not statistically different from zero.

Utilising a sample of 49 AltX IPOs still trading after 24 months of listing, the average market adjusted aftermarket return was -0.33 per cent with a standard deviation of 6.33 per cent. The lowest and highest market-adjusted average returns were found to be -23.33 per cent and 23.57 per cent respectively for the period. The t value for a mean equals zero is 4.1310 and is greater than the calculated critical t value of 1.9647 with a p value of 0.000 at five per cent significance level. The null hypothesis stating that the returns of JSE AltX IPOs perform the same as the market 2 years after listing was therefore rejected and the alternative hypothesis accepted.

This means that the 2 year average market-adjusted aftermarket returns were on average slightly negative, and statistically different from zero at all levels. In relation to the expected negative average 12 month aftermarket IPO returns, the various studies have found the returns to be negative and to gradually decline in the long-run (Aggarwal, Leal and Hernandez, 1993). There is no conclusive time frame as to when the decline would seize and or reverse. Ritter (1991) estimated that the time frame is five years.

Utilising a sample of 41 AltX IPOs still trading after 3 years of listing, the average market-adjusted aftermarket return was 3.82 per cent. The t-value for a mean equals zero is 6.5591 and is greater than the calculated critical t-value of 1.9631 with a p-value of 0.000 at five per cent significance level. The null hypothesis stating that the returns of JSE AltX IPOs perform the same as the market 3 years after listing was therefore rejected and the alternative hypothesis accepted.

This means that the 3 year aftermarket returns were on average positive, and statistically different from zero at all levels. This result is in contrast to the prevailing literature such as Levis (1993) on the long-run performance of IPO in the UK using data from 1980 to 1988. Levis (1993) concludes that there is a gradual but steady decline in the returns over a period of 36 months following the first month of trading. The underperformance reported ranged from 11.38 per cent to 22.96 per cent depending on the benchmark index employed.

4.5 Combines returns

Combined returns are a combination of the market-adjusted initial returns and the market-adjusted aftermarket returns. The combined aftermarket returns are summarised in Table 7 below.

Table 7: Combined returns

	Year 1	Year 2	Year 3
Count	56	49	41
Mean	0.2517	0.2003	0.2567
Standard Deviation	0.6144	0.3573	0.4426
Minimum	-0.9340	-0.9341	-0.9498
Maximum	4.0187	1.5082	1.5254
t value	3.0653	3.9241	3.7142
P value	0.0034	0.0003	0.0006
t Critical value	2.0040	2.0106	2.0211
Conclusion	**Reject H_0**	**Reject H_0**	**Reject H_0**

In all three cases, the combined returns were both positive and significantly different from zero.

The average combined returns were 25.17 per cent 1 year after listing. The minimum combined return was -93.40 per cent and the maximum 401.87 per cent. The t-value for a mean equals zero was 3.0653 and is greater than the calculated critical t-value of 2.0040. At a p-value of 0.0034 at a five per cent significance level, the null hypothesis that combined returns of JSE AltX IPOs perform the same as the market 1 year post IPO was rejected in favour of the alternative hypothesis.

At 2 years post IPO, the average combined returns were 20.03 per cent. The minimum combined return was -93.41 per cent and the maximum 392.41 per cent. The t-value for a mean equals zero was 3.9241 and is greater than the calculated critical t-value of 2.0106 with a p-value of 0.0003 at five per cent significance level. The null hypothesis that combined returns of JSE AltX IPOs perform the same as the market 2 years post IPO was similarly rejected in favour of the alternative hypothesis.

Measured 3 years post IPO, the average combined returns were 25.67 per cent with the minimum combined return -94.98 per cent and the maximum 152.54 per cent. The t-value for a mean equals zero was 3.7142 and is greater than the calculated critical t-value of 2.0211 with a p value of 0.0006 at five per cent significance level.

The null hypothesis that combined returns of JSE AltX IPOs performed the same as the market 3 years post IPO was therefore also rejected in favour of the alternative hypothesis.

4.6 Chapter summary

This chapter tested the literature review based hypothesis for significance by using a combination of event study methodology, market-adjusted cumulative average returns and t-tests. The seven hypothesis tested were that (1) newly listed JSE AltX IPOs perform the same as the market after the first day of trade, (2) the aftermarket returns of JSE AltX IPOs perform the same as the market 1 year after listing, (3) the aftermarket returns of JSE AltX IPOs perform the same as the market 2 years after listing, (4) the aftermarket returns of JSE AltX IPOs perform the same as the market 3 years after listing, (5) the combined returns of JSE AltX IPOs perform the same as the market 1 year after listing, (6) the combined returns of JSE AltX IPOs perform the same as the market 2 years after listing, (7) the combined returns of JSE AltX IPOs perform the same as the market 3 year after listing. The t-tests were carried out at a 5 per cent significance level and were all found to be significant except for the hypothesis stating that the aftermarket returns of JSE AltX IPOs performed the same as the market 1 year after listing under the period of study. The other six hypotheses were therefore rejected and their alternative hypotheses accepted.

The concluding discussion on the research findings are discussed in Chapter 5 below.

CHAPTER 5: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to analyse the performance of initial and aftermarket returns of small and medium sized IPOs listing on the JSE Alternative Exchange. This was pursued utilising daily share price data and employed the market-adjusted returns model to compute both the initial and aftermarket excess returns. The JSE AltX Index, which started trading in April 2006, was used as the market proxy. The research sample therefore included IPOs issued on the JSE AltX between April 2006 and December 2012. During this period of study, a sample of 60 IPOs was utilised for computing the initial returns achieved after the first day of trade while sample sizes of 56, 49 and 41 IPOs where used for computing the 1 year, 2 year and 3 year aftermarket returns respectively. The same sample data was used to compute the combined returns. Previous studies on international IPOs (Aggarwal and Rivoli, 1990; Young and Zaima, 1988; Gompers and Lerner, 2001; Loughran *et al*, 1994; Gerke and Ferdinand, 2006) have found consistent and empirical evidence of short-run underpricing, and long run under-performance. Similar evidence has also been found to exist for South African JSE issued listings as established by M'kombe (2000), Lawson and Ward (1998), Boles (2001) and Moodley (2009). Since the JSE AltX has only been in existence since 2003 and had its first listing in 2004, it has not yet been studied in depth and thus this study attempts to start filling this gap.

This chapter outlines the conclusions and recommendations of this study. Section 5.2 presents the findings discussion. Section 5.3 provides the conclusions on the initial and subsequent performance of IPO and section 5.4 suggests future research to be pursued.

5.2 Findings discussion

The initial market-adjusted returns of IPOs issued on the JSE AltX from April 2006 to December 2012 were significantly different to zero and displayed an average return of 21 per cent. This was lower than the JSE main board initial returns of 27.2 per cent found by Lawson (1996) from 1986 to 1995, the 28.39 per cent found by Moodley (2009) from 1998 to 2007 IPOs, and the 32.1 per cent found by Barlow and Sparks (1986) for IPOs issued between 1972 and 1986. This study has therefore found empirical and supporting evidence of the existence of positive abnormal initial returns in the South African IPO market which is in line with international studies such as those by Ritter (1991), Dawson (1987), and Aggarwal *et al*. (1993).

Interestingly, the market-adjusted average initial return of 21 per cent for the AltX was found to be more in line with the 21.3 of US IPOs from 1960 to 1993 (Ibott, Sindelar and Ritter, 1994), 25.1 per cent from France for IPOs from 1986 to 1987 (Jenkinson and Mayer, 1988), 21.5 per cent for German IPOs between 1977 and 1987 (Uhlir, 1989), and the 22.2 per cent from UK IPOs from 1979 to 1987 (Jenkinson and Mayer, 1988). This is, however, different from initial returns experienced from selected emerging market economies such as Korea (79 per cent), Malaysia (166 per cent) and Singapore (39 per cent) as documented by Lawson (1996).

It is however important to note that there seems to be a relatively high degree of alignment between the initial returns found by the various South African studies of JSE main board IPOs such as the 28.29 per cent found by Moodley (2009), the 32.1 per cent by Barlow and Sparks (1986) and the 27 per cent by Lawson (1996). This research found initial returns of 21 per cent and thereby supporting the view expressed in the context of this study that results drawn from JSE main board studies are not necessarily transferable to the JSE AltX. This is also congruent with Manikai (2009) who compared the returns of JSE main board IPOs against those of the JSE Altx and found that the JSE Altx IPOs generated lower nominal and risk-adjusted returns when compared to those of the JSE main board.

The 1-year market-adjusted aftermarket returns for IPOs issued on the JSE AltX from April 2006 to December 2012 were not significantly different from zero and displayed an average return of -0.08 per cent. The lowest return was -22.75 per cent and the highest return 14.17 per cent for the period. Although slightly negative, the JSE AltX IPOs can be said to have performed in line with the market after 1 year of trading and therefore offering no significant abnormal returns when initial returns are excluded. This is in contrast to studies such as those by Lawson (1996) on JSE Main Board IPOs from 1986 to 1995 where statistically significant excess returns of positive 2.87 per cent on a risk-adjusted basis and 3.16 per cent on a mean adjusted basis were found. The positive returns found by Lawson (1996) are also more in line with other studies that also found positive average abnormal aftermarket returns after 12 months of trading. These include Dawson (1987) and Reilly (1978) who found positive returns of 18.2 per cent for Malaysian IPOs and 11.6 per cent for US IPOs (issued between 1972 and 1975) respectively.

Negative returns have also been reported in international studies which state that after market returns are on average negative and range from -2.7 per cent to -30.6 after 12 months of trading once the initial day's returns have been excluded (Aggarwal and Rivoli; 1990; Ritter, 1991; Levis, 1993; Loughran and Ritter 1994).

Comparatively, the combined average market-adjusted returns 1 year post-IPO were found to be significantly different from zero at positive 25.17 per cent. This is comparatively lower than the 36.2 per found by Ward (1996) for JSE main board IPO listings from 1986 to 1995. Since the largest contributor to combined returns are the initial returns (Ibbotson *et al*.,1994), it stands to reason that the JSE main board combined returns will be higher than those observed on the JSE AltX due to the fact that JSE main board IPOs have been shown to yield higher initial returns than AltX IPOs as detailed by Manikai (2009).

The 2-year aftermarket returns for IPOs issued on the JSE AltX from April 2006 to December 2012 were significantly different to zero and displayed an average market-adjusted return of -0.33 per cent. The lowest return was -23.33 per cent and the highest return 23.57 cent for the period. In line with and continuing from the

expected negative aftermarket 1 year IPO returns, various studies have found the returns to be negative and to further gradually decline in the long run (Aggarwal, Leal and Hernandez, 1993). There is no conclusive time frame as to when the decline would seize and or reverse as the IPOs converge to their intrinsic values (Miller 1977). Some studies such as Ritter (1991) have suggested this period to be 5 years.

At 2 years post IPO, the average combined returns were still found to be significantly different from zero at positive 20.03 per cent, a 5.14 per cent decline from the 1 year combined returns. This gives credence to the premise that aftermarket returns tend to gradually decline in the long run (Aggarwal, Leal and Hernandez, 1993).

The 3-year market-adjusted aftermarket returns for IPOs issued on the JSE AltX from April 2006 to December 2012 were significantly different to zero and displayed an average positive return of 3.36 per cent. The lowest return was -33.64 per cent and the highest return 117.30 per cent for the period. This is aligned to Boles (2001) who sought to understand the variables impacting the aftermarket performance of small capitalisation companies listed on the JSE between 1997 and 1998 and concluded that over the long-run, smaller capitalisation IPOs performed negatively over 32 months when compared to the JSE All Share and to the small and mid-capitalisation indices within the JSE. The view being that the trading performance of these companies improves from the 33rd month.

This result is in contrast to the prevailing literature and work by Levis (1993) on the long-run performance of IPO in the UK using data from 1980 to 1988 and concluding that there is a gradual but steady decline in the returns over a period of 36 months following the first month of trading. The underperformance reported by Levis (1993) ranged from -11.38 per cent to -22.96 per cent depending on the benchmark index employed.

In this study, the average combined returns were found to be 25.67 per cent with the minimum combined return being -94.98 per cent and the maximum being 152.54 per cent.

5.3 Conclusion

The results of this research lend support to previous studies that find that there is a prevalence of IPO underpricing in all markets which results the initial investors achieving high positive initial returns (Ritter, 1991), and that the only difference between the various markets is that the magnitude of the abnormal initial returns differ based on the various market factors (Ibbotson, 1975; Aggarwal and Rivoli, 1990; Ritter, 1991). The long-run performance of IPOs is however considerably less clear (Jenkinson and Ljungqvist, 2001).

In conclusion, the research hypothesis that newly listed JSE AltX IPOs perform the same as the market after the first day of trade was rejected as it was found that the AltX displays high initial returns in line with the research literature and expectations. These initial returns are found to be in line with those from more developed markets but less than those of the JSE main board. This was somewhat unexpected based on the view that the JSE AltX was introduced amongst other things, as an opportunity for investors to invest in small, high-growth companies with the expectation of high returns. The implication of this was that the initial returns were expected to have been comparatively higher than those of the JSE as the AltX is considered to be bearing higher investment risk (Maniaki, 2009) than the JSE Main board. Further support of this expectation is based on Ritter's (1991) observations that there was a relationship between the firm's age, the initial underpricing and its aftermarket IPO performance. Ritter's (1991) findings were that younger firms displayed higher levels of initial underpricing and underperformance over the long term.

With the exception of the hypothesis stating that the returns of JSE AltX IPOs perform the same as the market 1 year after listing, the remaining null hypotheses stating that the market-adjusted returns of JSE AltX IPOs performed the same as the market at 2 and 3 years post IPO list date were rejected. The corresponding

alternative hypotheses were therefore accepted. Similarly, the null hypotheses stating that the combined returns of the JSE AltX performed the same as the market at 1, 2 and 3 years post IPO list date were rejected and the corresponding alternative hypotheses accepted.

5.4 Recommendations and future research

5.4.1 Recommendations

Based on the findings listed in this research and taking into consideration the findings from previous studies, investors should aim to subscribe for IPO stocks at the list price prior to the stocks opening for trade. This will allow them to benefit from the initial abnormal returns. This approach should not however overshadow investment analysis fundamentals required to be performed before investment decisions.

Although the JSE AltX also returns position first day returns, these must be considered against the commensurate risk when compared to investments on the JSE main board that have been shown by other studies to yield higher returns at a lower risk.

For the initial investors, it must be noted that even when not disposing of their stocks after the first day of trade, the initial investors continue to benefit from positive combined returns which are largely driven by the abnormal positive initial returns received. Investors purchasing the IPO shares at the end of or after the first day of trade are excluded from participating in the abnormal initial returns and are going to experience negative returns for at least 2 year years post IPO date.

Companies listing on the JSE AltX must also take care when pricing their offerings to ensure the right balance of equity funding raised and full subscription. This will make sure that they raise maximum equity and do not leave “money on the table”.

5.4.2 Suggested future research

The JSE AltX has only been in existence since 2003 and is considered relatively young from a research perspective. Being an alternative exchange market in a developing economy also means it is also relatively under researched. This study has also shown that the findings of studies concluded for the JSE main board can be indicative but not directly applicable to the JSE AltX. Specific JSE AltX research will therefore have to be undertaken. This should include:

Investigating, understanding and quantifying the factors influencing the pricing and initial returns of JSE AltX listing. This is highlighted based on the findings that the AltX initial returns were comparatively lower than those of the JSE main board even though the AltX is considered to have a higher risk.

Similarly, since the AltX was introduced as a platform to provide equity capital to good-quality high-growth companies, the aftermarket performance of these listing should be investigated in order to understand the factors influencing the negative long-run after market performances.

Furthermore, future research must not only focus on the market returns of the AltX over the short, medium and long term periods, but must also investigate the financial (accounting) performance of these companies over the same periods. The benefit of such research will be to help identify how capital is employed by the small and medium companies listing on the AltX and also whether the AltX is achieving its objectives of providing a platform for growth to its listing companies.

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