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Short, medium and long-term performance of Initial Public Offerings in South Africa: JSE Alt-X versus JSE Main Board: the post-JSE Alt-X evidence (2004-2007)

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SHORT, MEDIUM AND LONG-TERM PERFORMANCE OF INITIAL PUBLIC OFFERINGS IN SOUTH AFRICA: JSE ALT-X VERSUS JSE MAIN BOARD: THE POST JSE ALT-X EVIDENCE (2004 - 2007)

by

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DECLARATION

I, Bothwell Manikai declare that the research work reported in this dissertation is my own, except where otherwise indicated and acknowledged. It is submitted for the degree of Master of Management in the University of the Witwatersrand, Johannesburg. This thesis has not, either in whole or in part, been submitted for a degree or diploma to any other universities.

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Signature of candidate Date

ABSTRACT

This study has been prompted by the recent introduction of the JSE Alternative Exchange in South Africa, an alternative listing platform for smaller companies compared to the more established JSE Main Board Exchange. This new era has led to information asymmetry among current and prospective investors regarding the risk-return profile of the companies listed on the relatively new JSE Alternative Exchange and how this profile relates to the profile of firms listed on the long established JSE Main Board Exchange. In an attempt to fill the above information gap, this study sheds light on the short, medium and long-term performances of initial public offerings of companies listed on the JSE Alternative Exchange vis-a-vis that of JSE Main Board Exchange. This information is relevant for investment and financing decision making, principally for investors, venture capitalists and entrepreneurs.

The findings of this research appear to be contrary to expectations and to corporate finance theory. The results indicate that on average, initial public offerings by larger JSE Main Board companies outperform the smaller JSE Alternative Exchange companies on a nominal and risk-adjusted bases in the short-medium and long-term. It must be noted however that the differences in performance are not statistically significant. On the other hand, in line with documented evidence in the literature, it was found that the risk of returns on the smaller capitalisation JSE Alternative Exchange companies was indeed higher than that of the JSE Main Board companies. A similarity identified between the average performances of the two listing platforms is that, the returns for companies decreased overtime between the short and long-term. This may be partly due to the impact of the 2007 economic recession.

DEDICATION

I dedicate this thesis and my Master's degree to my family without whose assistance, support and love, I would not have achieved such a great milestone in my life:

- My late parents, Isaac C. Manikai and Jeritha Manikai for their vision, sacrifice and unconditional love;
- My wife Sibongile and daughter, Ropafadzo Ailet Pearl Manikai for your love, support, understanding and late nights away from you;
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1 INTRODUCTION

1.1 Context of the study

As a result of the need to provide an additional exit method for venture capital investors, improve access to capital, liquidity and the profile of small companies which could not meet Johannesburg Securities Exchange (JSE) Main Board listing requirements, the JSE Alternative Exchange (JSE Alt-X) was formed in 2003. The JSE Alt-X was formed to provide small to medium sized companies a public listing option without conditions which are as stringent as the ones for the JSE Main Board. The fact that initial public offerings (IPOs) are the most lucrative exit mechanism for venture capital investors (Gerke and Mager, 2006), among other mechanisms, has led to a significant increase in IPOs and public listings to-date.

Studies on the long-term performance of IPOs have been conducted in many countries globally (25 countries by Loughran et al, 1994). There has been empirical evidence of short-run underpricing, market timing around periods of high stock market levels and long-run underperformance. A lot of literature is available on IPOs in leading economies such as the USA, Japan, UK and Germany (Young and Zaima, 1988; Gompers and Lerner, 2001; Loughran et al, 1994; Gerke and Ferdinand, 2006). A fair degree of work has been done on long-term post-listing IPO performance for different periods in South Africa as well (M'kombe, 2000 [for period 1980 to 1998]; Boles, 2001 [for period 1997 and 1998] and Moodley, 2009 [for the period 1998 to 2007]).

Moodley's (2009) work focused more on whether the value of the premium offered by IPOs on the close of trade on the first day of issuance indicates the aftermarket performance of IPOs between 1998 and 2007 on the JSE in South Africa, with the consideration of various role players in the market-place and their respective objectives. A study on the aftermarket performance of IPOs by small capitalisation companies on the JSE between 1997 and 1998 by Boles (2001) sought to understand the factors that affected the aftermarket performance of small capitalisation companies listed on the JSE during the period. M'kombe (2000) in his study on aftermarket price performance of IPOs on the JSE for the period 1980 to 1998 sought to establish if IPOs provide abnormal returns, if returns depend on investment holding period and the IPO process characteristics.

This research seeks to develop on these works, with a particular focus on comparing the short, medium and long-term performance of IPOs of companies listed on the JSE Main Board and JSE Alt-X between January 2004 and June 2007. In this study the short-term is defined as the first 30 calendar days from listing, the medium term is the period up to 365 days from the listing date and the long term is the period of 2 years from the listing date. This will be useful to investors in decision making regarding investing in IPOs as well as managing short, medium and long-term return expectations on both JSE listing platforms. It will also assist venture capitalists and entrepreneurs with information regarding return and financing benefits of IPOs.

The JSE Alt-X is used as a case in point. The JSE Alt-X was introduced in 2003 to facilitate the listing of smaller companies in an environment of less strict listing rules compared to the JSE Main Board. Table 1 below depicts a summarised comparison of the listing criteria for the two listing platforms (Firer et al, 2008):

Criteria	**JSE Main Board**	**JSE AltX**
Minimum capital	R25 million	R2 million
Minimum number of shares	25 million	Not prescribed
Profit history	Satisfactory three year audited profit history	Projected profit for next two years
Public shareholders: - % of each class of shares - Number of ordinary shareholders - Number of preference shareholders	 20% 500 50	 10% 100 Not prescribed
Minimum listing price	100 cents	Not prescribed

Table 1: JSE listing criteria

The JSE AltX thus caters for a segment of the market which would normally have found it difficult to list on the JSE Main Board. These may be perceived as riskier IPOs. This study will provide evidence on how they perform on a nominal as well as risk-adjusted return bases compared to JSE Main Board IPOs.

1.2 Purpose of the study

The objective of this study is to analyse the short, medium and long-term performance of JSE Alt-X IPOs in South Africa between 2004 and 2007. This is done in comparison to the larger JSE Main Board IPOs in order to establish which one offers higher nominal and risk-adjusted returns to investors and to establish any similarities or differences between IPOs on the two JSE listing platforms.

1.2.1 *Research questions*

The following research questions, accordingly, flow from the mentioned essence of the study:

Primary research question:

1. Do JSE Main Board IPOs outperform JSE Alt-X IPOs in the short, medium or long-term on a nominal return basis?

Secondary research questions:

1. Do JSE Main Board IPOs outperform JSE Alt-X IPOs in the short, medium or long-term on a risk-adjusted basis?
2. Does JSE Alt-X IPO return performance resemble or differ from that of JSE Main Board in the short, medium and long term?

1.2.2 *Hypotheses*

i. H_0: The JSE Main Board IPOs perform the same as JSE Alt-X IPOs in short, medium or long-term on a nominal return basis; H_0: $u_{1,t}=u_{2,t}$.
ii. H_a: JSE Main Board IPOs do not perform the same as JSE Alt-X IPOs in the short, medium or long-term on a nominal return basis.

The primary research question is addressed by the hypothesis or significance test and the secondary research questions are addressed by other empirical evidence presented in the results chapter 4 of this study.

1.3 Problem statement

The relatively recent introduction of the JSE Alt-X Exchange has meant that there is insufficient information about the short, medium and long-run nominal or risk-adjusted return performance of the stocks listed thereon compared to the long established JSE Main Board Exchange. This hampers informed decision making by relevant stakeholders including investors, venture capitalists and entrepreneurs. Therefore, the study that attempts to provide this vital missing set of information would be an important endeavour.

1.4 Significance of the study

The study fills a gap in that it gives investors, venture capitalists, entrepreneurs and other relevant stakeholders a new informative perspective on short, medium and long-term nominal and risk-adjusted return offered by JSE Alt-X IPOs (small capitalisation companies) compared to JSE Main Board (predominantly larger capitalisation companies) IPOs.

1.5 Limitations

i. The study focuses mainly on South Africa's JSE IPOs.

ii. The study focuses on IPOs, with limited reference to other listing techniques.

iii. The study is for a limited time period of January 2004 to June 2007, for up to 2 years per IPO counter. This may therefore reflect the impact of the financial market crisis which coincidentally is deemed to have started in July 2007.

iv. There are limitations in the availability of data for the entire period of analysis for all IPO counters. Some counters are excluded for lack of data.

v. Dividends as a measure of investment performance and trading costs are ignored.

vi. Holding Period Return (HPR) performance was based on daily closing prices and average HPR from date of listing are calculated for short, medium and long term periods, respectively.

1.6 Outline of the study

The study's outline is as follows:

i. Firstly, this preceding introduction provides a background and review of IPOs in South Africa, the JSE Alt-X and JSE Main Board Exchanges.
ii. Secondly, follows the literature review and a summary of its apparent findings. This includes the review of publications including journals, theses and papers reflecting the work that has already been conducted on post-IPOs in South Africa and internationally. This assisted in highlighting the identified areas which need further research work or the gap that exists in this area of research.
iii. Thirdly, the paper lays out the research methodology utilised in the analysis of the data and information of the study, including the significance testing.
iv. Fourth, this next section covers results of the study.
v. Finally, conclusions are drawn from the empirical results obtained with respect to the initial objectives of the study.

2 LITERATURE REVIEW

This chapter contains a summary of the literature review around listings, post IPO performance and related issues in South Africa and internationally. The literature review is used to gain further understanding of various segments of the broad research area of IPOs. The review is instrumental in identifying the specific area of IPOs which requires further research. The review covers the following thematic segments of IPOs:

- IPO among competing going public mechanisms;
- Objectives and attributes of a successful IPO;
- IPO listing processes, contractual mechanisms and characteristics;
- Factors affecting post IPO performance;
- Short to long-term IPO aftermarket performances.

2.1 IPO among competing going-public mechanisms

An IPO is a company's first equity issue to the public (Firer et al, 2008). The fact that IPOs are the most lucrative exit mechanism for venture capital investors (Gerke and Mager, 2006), among other mechanisms, has led to a significant increase in IPOs and public listings to-date. A study by Gleason et al (2005), details other methods of going public besides the popular traditional IPO, namely reserve takeover or reverse merger and self-underwritten IPO. Some of the justifications given for pursuing the above methods of going public instead of the conventional IPO include strong criticism for potential for conflict of interest in terms of biased allocation of shares and the extent of underpricing by underwriting investment banks. It is not essential to engage an underwriting investment bank if alternative methods are utilised to go public. A reverse takeover or reverse merger entails the reverse acquisition of a public listed company by a private company. Under the self-underwritten IPO, the listing firm can manage the underwriting of their own IPO.

According to Gleason et al (2005), *"A reverse takeover is a technique that allows a privately held company to obtain a listing on a public exchange without doing an IPO. The private firm (called the target) is acquired by a publicly traded firm, referred to as the vehicle, or the 'acquirer', or the shell. Following the acquisition, the management of the privately held company usually replaces the management of the vehicle, and the surviving entity is the new public firm, previously the private 'target'. As the public*

firm, the target can raise capital through public markets, but the transaction itself does not raise capital for the firm, in contrast to most IPOs (whether self-underwritten or not). The primary reason that the firm uses the technique is to go public. Thus the reverse takeover process is a corporate combination (i.e., an acquisition) rather than an IPO. The private firm's management seeks an appropriate public vehicle, arranges for the public vehicle to make a bid where payment is in stock or cash and stock, completes the transaction, and files for a corporate combination with the Securities Exchange Commission, as in any other acquisition."

Some of the reasons why a reverse merger can be preferred to a traditional IPO (Gleason et al, 2005) are that:

- it can be completed in a shorter period of between one and six months compared to six to eighteen months for the traditional IPO;
- it is a simple way of going public;
- can be significantly cheaper because of no need for underwriting and can be done by less expensive boutique financial advisors;
- the advantage of knowing accurate valuations before transaction conclusion;
- the method can avoid the disadvantages associated with market sentiment;
- it involves less regulatory scrutiny such as less stringent requirements for provision of extensive financial information.

However, to the contrary, the following factors work against reverse takeovers:

- Lack of the underwriter's share price stabilisation leads to greater price volatility (Ritter, 1987);
- The companies that go public through reverse takeovers tend to have high gearing, low profitability and low balance sheet liquidity. They also exhibit lower share liquidity, high volatility and relatively lower institutional ownership (Gleason et al, 2005);
- Firms are generally small and likely to fail within two years of going public. The returns to the acquiring vehicle firm can be significantly positive at the expense of the private firm shareholder value (Gleason et al, 2005).

According to Gleason et al (2005), self-underwritten IPOs are IPOs where the issuing firm underwrites its own shares. The firm's management would manage the new issue as broker-dealer, markets the issue using roadshows and determines the offer price to be considered by investors. Self-underwritten IPOs usually take the form of

best efforts contracts and are associated with small issues of up to US$1 million. The advantages include reduction of offer cost and elimination of uncertainty about securing a firm commitment offer. Management may also be able to secure a higher offer price than the underwriting investment banker would from sophisticated institutional investors. The disadvantages include the burden on and opportunity cost of required managerial resources. Furthermore, the firm forgoes the expert marketing ability of underwriting investment banker to key institutional investors, certifications effect which endorses the offer and the aftermarket performance stabilisation.

According to Firer et al (2008), in addition to the going-public methods discussed above, there are three other JSE issue methods namely introduction, private placing and preferential offer. An introduction is the quickest and easiest of entry onto the JSE. It is utilised when the issuer does not need to raise capital through the issue and if it already has the required shareholder spread. Once the company has received approval from the JSE Listings Committee, the company is introduced to the JSE and the listing of its shares is done. The only document required is a simple pre-listing statement containing the salient information about the company. Private placing is an offer for unissued or issued but not yet listed shares to selected investors through a private arrangement and not to the public. This takes place immediately before the shares are listed on the JSE. A preferential offer is when a company makes a preferred offer to its associates, directors, employees or selected institutions. It is similar to private placing in that specific investors are offered a certain number of shares which the company wishes to allocate to them.

The conventional IPO as the most popular listing method is discussed in detail below.

2.2 Objectives and attributes of a successful IPO

There are various reasons why firms may opt to go public. In the same vain, there are also various benefits for doing so by use of IPOs. Some of the major objectives and benefits of IPOs include the following (Young and Zaima, 1998):

- IPOs are a key additional source of equity capital for business ventures;
- They are an exit mechanism for venture capitalists and entrepreneurs;
- Taking a company public improves its profile as a listed firm is required to maintain certain governance, financial reporting and disclosure standards stipulated by stock exchange authorities.

- Going public also diversifies the ownership structure of the company which improves the liquidity of its shares.
- When a firm is listed and its profile is improved, it becomes easier to borrow funds from debt capital markets and to return to the public equity market to fund organic and acquisitive growth without straining internal cashflows.
- Information about the company becomes readily available for use by stakeholders in decision making.

Reilly and Hatfield (1969) suggested that a successful offer achieves the following for key stakeholders:

- The required equity level that was sought by the issuing corporation;
- Protection of the reputation of the underwriting investment bank. This is achieved by optimising between the success of the capital raised for the issuing firm and leaving sufficient money on the table to secure future investor interest and participation;
- For investors, pricing of the IPO is done in order to allow for sufficient money to be left on the table so as to ensure long-term performance of the IPO.

2.3 Listing process, IPO contractual mechanisms and characteristics

According to Firer et al (2008), the JSE procedure for listing (without raising capital) or public offer (which involves the raising of capital) is as follows:

- Firstly, approval is sought from by board of directors of the company;
- Then, the submission of documents that contain disclosure of operating and financial details to the JSE Listing division through a JSE approved sponsor.
- This is followed by a formal application by the issuer, the proposed prospectus (where capital is sought from the public) or pre-listing statement (in the case of listing without raising capital), confirmation statements from reporting accountants and attorneys are then submitted to the JSE twenty-one days before they are published in the press.
- The pre-listing statement is then published, starting with the JSE Securities Services News Service, then in the press in two official languages including English. This includes details of the company, nature and history of operations, prospects, directors' details, all its listing professional advisors, details of all its classes of shares, issue price and last day of subscription.
- The offer is normally open to the public for three weeks.

There are principally two contractual mechanisms of going public namely firm commitment and best efforts methods (Ritter, 1987). The firm commitment offer refers to an issue wherein the issuing firm sells the entire issue to the underwriter, who then attempts to resell it (Firer, 2008). The underwriting investment bank will take-up all shares unsold during the offer (Swanepoel, 1999). On the other hand, the best efforts offer is an IPO where the underwriter does not take-up shares unsold during the offer, but will do its best to sell all shares on offer (Swanepoel, 1999). It is therefore characterised by uncertainty since its success is entirely dependent on the degree of market take-up. The listing process under the firm commitment approach (in USA) is as follows (Ritter, 1987 and Gleason et al, 2005):

- It starts with the registration of the listing statement describing the issuing firm and the proposed offer with the SEC, the securities regulatory authority;
- then the issuance of a preliminary prospectus by issuing firm and underwriting investment bank including investor canvassing and expressions of interest by potential investors;
- regulatory approval of the offer is granted;
- pricing meeting to decide on offer price and number of shares to be sold;
- the final prospectus is issued and then;
- underwriting of offer by the underwriting investment bank. This also involves the underwriting investment bank providing a guarantee to deliver the net proceeds after commissions to the issuing firm regardless of whether the offer was fully subscribed or not.

The listing process under the best efforts approach is as follows (Ritter, 1987):

- It starts with the registration of the listing statement describing the issuing firm and the proposed offer with the securities regulatory authority;
- Then the agreement between the issuer and investment bank on the offer price as well as the minimum and maximum number of shares to be issued;
- regulatory approval of the offer follows;
- Thereafter, the investment bank circulates the prospectus and makes best efforts to sell the shares to investors;
- If the minimum number of shares is not subscribed for during a specified period, normally 90 days, the offer is withdrawn and the issuer does not receive any money.

Table 2 below gives a comparison of characteristics of firm commitment and best efforts approaches (Ritter, 1987):

Firm Commitment	**Best Efforts**
1. Suitable for larger (by sales and book value) and more established firms	1. Suitable for smaller and growing firms
2. Less information asymmetry	2. More information asymmetry
3. Larger offers	3. Smaller offers
4. Offer costs are lower due to economies of scale	4. Offer costs higher due to indirect costs of underpricing
5. Valuations are relatively more certain	5. Valuations are relatively uncertain
6. Lower initial returns	6. Higher initial returns
7. Less underpricing	7. More underpricing
8. Offer take-up and success is guaranteed by underwriter	8. Uncertain take-up, offer can be withdrawn if minimum is not reached
9. Investment bank bears ultimate risk	9. Issuing firm bears ultimate risk

Table 2: Characteristics of listing contracts

According to Loughran et al (1994), IPO contractual mechanisms vary depending on the stage of information acquisition process at which the offer price is set and the basis of allocation of shares namely pro-rata and discriminatory (price or quantity) methods. Contractual mechanisms are characterised by the following attributes (Loughran et al, 1994):

- Whether there are binding institutional constraints / regulatory restrictions / governmental influence on offer price setting or ;
- Contracts which are voluntary in nature. These are characterised by the degree of information availability for setting the offer price and the possibility of share allocation discrimination.

The study by Loughran et al (1994, Table 2) revealed a tendency for older and more established firms to deliver lower returns than younger and less established firms. Returns and therefore the degree of underpricing are also generally higher for issuers which set offer prices prior to acquiring adequate information (mainly best efforts IPOs) about the demand for the offer than those which are set with more information (mainly firm commitment IPOs). Loughran et al (1994) argue that some issuers target a wide ownership structure by offer underpricing in order to achieve the

objective of high liquidity. This differs from the adverse selection proposition by Ritter (1987). The main features exhibited by the listing contracts observed by Loughran et al (1994) are uniform offer pricing, underpricing and discretionary share allocation unless prohibited by regulation.

It must be noted that since this study entails the comparison of the predominantly larger JSE Main Board IPOs to predominantly smaller JSE AltX IPOs, the validity of some of the above mentioned IPO characteristics will therefore be tested.

2.4 Factors affecting IPO performance

In the section below, we discuss venture capital involvement, offer pricing, market timing and information asymmetry as some of the key factors that affect aftermarket return performance of IPO shares.

2.4.1 *Venture Capital Involvement*

The involvement of venture capitalists in a listing firm prior to and post listing has influence on the aftermarket performance of IPOs in the short and long term. Brav and Gompers (1997) found that venture backed IPOs outperform non-venture backed IPOs. Bessler and Kurth (2007) argued that venture capitalists possess key adverse selection (screening) and moral hazard (monitoring) abilities that positively impact on initial and long-term returns and therefore the value of the firm. Swanepoel (1999) in a study on the influence of venture capitalists on small capitalisation IPOs confirmed that venture capitalists shareholding and involvement indeed have got influence especially in terms of reducing the level of underpricing and the information effect to other investors prior to and post listing. Lower underpricing means that the issuing company can raise more capital per share and even though short-term returns may be relatively low, the long-term investors would benefit from expected longer term performance. Venture capital certification is selective as venture capitalists take to leading underwriters, only prospective issuers for which their private information is favourable (de Carvalho, 2001). According to Swanepoel (1999), large shareholding (within the 10% to 60% range) before the IPO is viewed by other investors through the certification hypothesis as a backing of the company by the venture capital firm and implied to mean sound financial management of the company. If this position were to be maintained post-listing, this reassures other

investors of the venture capital firm's confidence of the listing firms' future prospects. However, a substantial exit by the venture capitalists especially shortly after listing is viewed negatively by the market to mean offloading or exiting of a poor quality investment through the IPO (Swanepoel, 1999; Bessler and Kurth, 2007). Gompers and Lerner (1998) also observed that venture backed-IPOs significantly outperform before the exit and significantly underperform after the exit of the venture capitalist. Lock-up periods for pre-IPO venture capitalist or other shareholders affect performance in that, strong outperformance is evident during the lock-in period and significant underperformance once it has expired (Bessler and Kurth, 2007).

It must however be noted that findings by Swanepoel (1999) do not mean that venture backed firms are less risky, automatically receive interest from more investors or it is better to take a venture-backed firm public but there was a strong tendency towards them. It may be advisable for a small company looking to list to first seek venture capital investment and therefore also leverage off the venture capitalists' business networks and management experience to corporatize the company and increase firm value ahead of listing.

2.4.2 *Offer Pricing*

Moodley (2009) in his work on Post Listings Performance of IPOs in SA discussed the importance of and differences that occur over IPO offer price or price range. The study highlights that the difficulty of pricing an IPO is due to the following reasons among others:

- The non-existence of a universally acceptable valuation method;
- Current valuation methods require subjective assumptions and
- That pricing is done in order to satisfy different stakeholders who have diverging objectives principally the issuing firm, the underwriting investment bank and investors.

According to Loughran et al (1994), generally, pricing of offers is done to achieve more objectives besides proceeds maximisation such as, efforts to increase the number of shareholders and thus share liquidity, tax avoidance and politically motivated pricing.

A study by Prasad et al (2006) concluded that underpricing is due to:

- A deliberate motive to deliver return benefit to investors for taking risk in these predominantly risky IPOs;
- Information asymmetry leading to uncertainty over the true value of the shares or the company;
- The secondary market seeing upside value in the share and their demand increasing the share price even above expected levels;
- Regulatory factors may distort accurate IPO pricing.

Underpricing is a factor which can affect the long-run IPO performance. Loughran and Ritter (2001) concluded that IPO underpricing has increased over time internationally. However, Loughran et al (1994) found that:

- Short-run underpricing was evident in all 25 countries considered in the study albeit at varying degrees of between 4% for France and 80% for Malaysia. The study revealed high initial returns with subsequent daily returns in the aftermarket tending to decline towards zero.
- The degree of underpricing is significantly related to the contractual mechanism utilised, characteristics of listing firms and institutional constraints. Countries with most listing firms which are more established (relatively large, with long operating histories) and whose listing mechanisms have auction-like features tend to have lower initial average returns. On the contrary, higher institutional constraints such as regulatory influence on offer pricing mainly in emerging markets, discretionary listing mechanisms and countries with predominantly speculative start-ups going public are associated with higher average initial returns;
- The reduction in regulatory influence in IPO pricing in the 1990s in East Asia was expected to result in less IPO underpricing than the 1980s.

Benveniste and Wilhelm (1990) analysed the impact of discretionary allocation and price discrimination on IPO pricing. The analysis of a contract in which the listing price is set using information from investors established that regular investors provide the issuing firm or investment banker with valuations of the issue. This information is then used in setting the offer pricing. According to Benveniste and Wilhelm (1990), in order to encourage the regular investors to share valuation information, some IPOs are underpriced. However, the degree of underpricing per IPO varies depending on the acquisition and use of investor valuation information and demand for the offer as well as the ability of the investment banker to effect price and/ quantity discrimination.

2.4.3 *Market Timing and Information Asymmetry*

There has been empirical evidence of market timing around periods of high stock market levels and long-run underperformance (Loughran et al, 1994). Fourteen of the fifteen countries analysed over periods of at least eighteen years by Loughran et al (1994) provided evidence of positive correlations between IPO activity and stock market levels. According to Loughran et al (1994), the following are some of the reasons for the above trend:

- Business cycles present firms with better investment opportunities in some periods than others. In periods of high investment opportunities, firms are expected to raise external predominantly equity capital including through IPOs to capitalise on positive net present value growth opportunities and for stock prices to be high;

- Private firms would time the market to take advantage of the opportunity to raise equity capital at a lower cost than at other times.

Based on information from eight countries, Loughran et al (1994) also suggest that high IPO volume periods tend to be associated with lower long-term return performance. A study by Schultz (2002) revealed that long-run underperformance is very likely to be observed ex-post even in an efficient market. The premise is that more firms issue equity at higher than stock prices even though they cannot predict future returns and ex-post, issuers seem to time the market because there are usually more offerings at market peaks than when stock prices are low (Schultz, 2002).

This brings an interesting question about long-run underperformance; that is, do IPOs underperform in the long-run because IPOs usually timed during bull markets rather than bear markets are overpriced? Is the underperformance a result of the fact that IPOs are increasingly getting riskier since the 1990s? According to Loughran et al (1994), if market timing is successfully done by listing companies when cost of equity is relatively low, post-listing investor returns should subsequently be low. Peristiani (2003) argues that companies taken public by top underwriters or funded by venture capital exhibit higher relative volatility and lower likelihood of survival. The riskiness of IPO shares (dominated by high growth technology, internet and dotcom issuers) relative to shares of nonissuing peer group increased by about 30% in the

1990s (Peristiani, 2003). However, in line with documented corporate finance theory, Barry and Brown (1984) argue that older and more established firms have less information asymmetry and therefore lower risk of aftermarket returns compared to younger and less established firms. The study suggests that smaller firms have more information asymmetry and therefore higher risk. In accordance with the small firm effect, past studies including Banz (1981) and Reinganum (1981) suggest that small capitalisation firms earn significantly higher risk-adjusted returns than larger capitalisation firms. This study will test this phenomenon in the South African context after the introduction of the JSE AltX.

2.5 Short and long-term IPO aftermarket performance

The study by Moodley (2009) was premised on the assumption that primary market investors enjoy the premium offered by IPOs upon listing but secondary market investors do not benefit from that premium. The study focused on secondary market investors and was aimed at assessing if the magnitude of the initial premium could be used to determine the one year aftermarket performance of IPOs between 1998 and 2007 on the JSE. Moodley (2009) established that even though the IPOs over the period offered a mean premium of 28.39% to primary investors, the correlation between the value of initial premium and the one year aftermarket performance was -10.51%. As a result, Moodley (2009) concluded that there is little predictive power between the value of the initial premium and the long-term performance as measured by one year aftermarket performance. A strong negative relationship was noted. Moodley's (2009) global and extensive literature review of works by many authors led to the conclusion that long-run underperformance has been evident in most markets and that the initial day premium was not a proxy for long-term performance.

According to Michacly and Shaw (1994) and Carter and Manaster (1990), IPO underpricing is lower for issuers which engage reputable underwriting investment banks and whose operating as well as stock performance is better on an aftermarket basis. Bharat and Kini (1994) found that the operating performance of IPO firms declined post listing. The study attributed this to increased agency costs, manipulation of financial statements prior to listing and timing the market to ensure that listing coincides with periods of unsustainably good operating performance. Loughran et al (1994, Table 7) examined initial and three-year post-IPO return performance in seven countries. High average buy-and-hold nominal returns were

earned in Japan of 110%, Korea of 58%, Sweden of 73% and UK of 56%. Other countries had lower returns namely Germany of 24%, Singapore of 23%, USA of 8% and Finland of -22% and for Brazil the information was not available. However, holding-period returns, adjusted for the market index or matching firm were negative for Brazil, Finland, Germany, Singapore, UK and USA. Based on information from nine countries, the study also concluded that IPOs tend to generate lower long-term returns especially for riskier or less established compared to more established issuing firms and with greater degree of market timing.

M'kombe (2000) in his work on aftermarket price performance of IPOs on the JSE for the period 1980 to 1998 sought to answer the following questions:

- Do shares that list on the JSE yield abnormal risk-adjusted returns?
- Are the returns received after investing in IPOs on the JSE dependent on the holding period of the investment?
- Do certain characteristics of the IPO process influence post listing returns?

After applying risk adjusted models, M'kombe (2000) found that JSE IPO returns were significantly less than expected buy-and-hold returns. The difference between the expected returns and actual returns increased for longer investment horizons for the JSE. Similar results have been found for London Stock Exchange, New York Stock Exchange and the Brazilian Stock Exchange (M'kombe, 2000). The study also found that IPO characteristics such as listing price and capital raised can influence aftermarket performance share price performance and returns.

M'kombe's (2000) study concluded the following about performance, that:

- The effect of initial premia and thus the IPO underpricing did not significantly influence the aftermarket performance. It was inferred that superior short-term IPO performance cannot be used to predict long-term performance but that long-run underperformance of initially high premia IPOs can be attributable to price correction;
- The listing price had influence on IPO aftermarket performance. IPOs priced between 200 and 499 cents least underperformed the Capital Asset Pricing Model (CAPM) expected returns. IPOs priced below 100 cents were perceived to be risky and their performance was not commensurate with that risk level even though they had the highest initial premia. IPOs priced from

500 cents were found to have been overpriced and delivered the least long-term returns.

- In terms of market timing, that 1, 3 and 5 year buy-and-hold periods for hot issue period IPOs delivered lower performance than cold issue period IPOs. This was partly because hot issues had a higher proportion of low priced risky shares which even though they had high initial premia, they had consistently low returns in the long-term. Research on the JSE revealed that this is because hot issue IPO market take-up is premised mainly on speculation and less on fundamentals. Some research in the USA displayed similar characteristics as well.
- That the number or volume of shares issued had no influence on aftermarket performance.
- For investment horizons of up to 5 years on a buy-and-hold basis, it was concluded that IPOs that raised between R25 million and R75 million performed better than IPOs that raised other amounts.

The study by Boles (2001) revealed among others, the following facts about IPO performance in South Africa:

- significant increase in IPOs on the JSE between 1997 and 1998 most of which were significantly overpriced;
- 90% of the 155 listings were small capitalisation companies of less than R1 billion market capitalisation and 70% of less that R250 million;
- Initial premium was higher for smaller capitalisation issuers;
- However, evidence reflected that the 155 small-capitalisation IPO companies performed poorly in the aftermarket of 2.7 years as compared to the JSE's all share, financial & industrial, mid and small capitalisation indices;
- The study by Boles (2001) was meant to identify factors that affected the performance of small capitalisation companies listed on the JSE for the 2 years up to end of 1998.

Boles' (2001) study found that even though they could not identify the causal factors for abnormally high initial premia, industry practitioners were of the view that the following were key reasons for IPO activity:

- The IPO cycle, a self-fulfilling process where the success of small capitalisation IPOs led to increasingly more small-capitalisation IPOs.
- IPO market role players also influenced IPO activity over the period.

Boles (2001) concluded from empirical evidence and various global literatures that:

- High volume, small capitalisation IPOs experience abnormal initial premia. This is attributable to information asymmetry. Furthermore, there is no significant relationship between initial premium and aftermarket performance;
- On average the aftermarket performance of small, low book/market value IPOs floated during periods of high IPO volumes underperform but it may take time to manifest itself;
- IPOs underwritten by reputable investment banks and those backed by venture capitalists tend to outperform comparable IPOs;
- Stockbroking analysts tend to be overoptimistic in assessing IPOs;
- Investors act overconfidently and invest irrationally in IPOs;
- Management develop inflated perceptions of the value of their firms during bull markets.

A study by Young and Zaima (1988) on the aftermarket performance of small firm IPOs concluded that there is no positive relationship between the risk profile of small firm IPOs and aftermarket returns. Evidence presented in the study suggested that less established, younger firms revealed higher initial underpricing and variance of returns than older, more established firms. To the contrary, the same study established that average aftermarket holding period return for more established firms was higher than for less established firms. This observation was made for holding periods of three weeks (0% return for younger and 4% for older firms), one year (-32% return for younger and 26% for older firms) and eighteen months (6% return for younger and 36% for older firms) from the closing price of the first day of trade. The number of firms which experienced negative aftermarket returns continued to be statistically significant even up to the 18 months horizon. It is therefore possible for investors to capitalise on this performance trend by subscribing for the IPO and disposing of the shares during initial trade.

Young and Zaima (1988) on the aftermarket performance of small firm IPOs concluded that:

- If entrepreneurs planning to publicly list younger, less established firms based the decision on aftermarket performance of their stock, they would probably not have many financial alternatives utilising corporate stock thereafter;

- Investors in small firm public offers may also be disappointed by the poor aftermarket performance of younger firms. However, these results may imply efficient offer pricing of small firm IPOs as returns were not significant;
- The relationship between risk measured using age as a proxy and return was found not to exist. On the contrary, aftermarket performance of older and more established firms was found to be favourable and;
- Finally, the study concluded that entrepreneurs and investors should not base superior aftermarket return expectations solely on specific industries.

Many studies reveal global IPO long-run underperformance. The above results and conclusions are consistent with the study by Ritter (1991) of poor long-run stock performance. Based on a sample of 1526 USA IPOs listed between 1975 and 1984, Ritter (1991) found that IPO shares underperformed market indices over three years (and even over more than three years) and surrogate firms by industry and size (Yi, 2001). Furthermore, Yi (2001) concluded that IPOs with positive earnings at listing performed better than those that had negative earnings. These findings suggested over-optimism by investors especially for firms which had negative pre-listing earnings. Yi (1992) and Loughran (1993) supported the same phenomenon of underperformance which continued for periods of at least 6 years for IPOs made between 1967 and 1987. The nominal average holding returns over the period were however positive over the 3 year horizon but monthly returns were mostly negative if adjusted for applicable indices (Ritter, 1991).

Gompers and Lerner's (2001) study concluded that the relative performance of the IPO sample depends on the method of examining performance. The event-time buy-and-hold abnormal returns methodology suggests that the sample underperforms but cumulative abnormal returns method suggests superior performance. Calendar-time analysis between 1935 and 1976 showed that IPOs provided returns as much as the market (Gompers and Lerner, 2001).

3 METHODOLOGY

3.1 Data

Data and information for the study are mainly in the form of historic share price performance of JSE listed IPOs and long-term bond interest rates. As such, most data was procured from information sources which were deemed to be reliable and independent such as the JSE Information Services, I-Net Bridge and BMF McGregor. Share data was corroborated between the various information sources named above to ensure accuracy and reliability. Information on the South African R157 bond interest rates sourced from I-Net Bridge and BMF McGregor were verified through the South African Reserve Bank (Research Department).

3.2 Methodology

The method of analysis is the panel data analysis, which is suitable to analyse a cross-section of many variables and over different periods of time. Since this study involved the analysis of two samples of IPO daily share price data from the JSE Main Board and the JSE AltX over a period of up to two years, panel data analysis was found to be suitable. Quantitative data analysis methods are utilised in this study, where the raw share price and long-term bond interest rate (as an indicator of the risk-free rate) data procured from the JSE, I-Net Bridge and McGregor were converted into Microsoft Excel format for ease of manipulation.

Once in Microsoft Excel format, manipulation of raw data to extract information was done as follows:

i. Firstly, IPO closing share price and long term bond interest rates for the R157 bond data were listed in order of date from the first day of listing until the most recent prices available for each share (and corresponding dates for the R157 bonds) starting with the earliest listed IPO share;
ii. Secondly, all the above IPO closing share prices, listed according to date were combined on a worksheet for the entire population of IPOs for the JSE Main Board and JSE AltX, respectively;
iii. Thirdly, the analysis period was chosen from the launch of the JSE AltX Exchange and to avoid contamination of results, the cut-off date

was guided by the start of the global financial crisis. This resulted in representative samples of IPO shares listed since the debut of the JSE AltX in 2004 to end of June 2007. For comparative purposes, the above sample period was used for the JSE Main Board and the JSE AltX exchanges. This resulted in a sample of 36 IPOs from a population of 76 IPOs for the JSE AltX and a sample of 40 IPOs from a population of 82 IPOs for the JSE Main Board. IPOs with inadequate data, data discrepancies and outliers were excluded, resulting in final samples of 35 and 33 for the JSE AltX and the Main Board, respectively;

iv. Daily Holding Period Returns (DHPR) were then calculated for each of the sample IPOs to reflect performance using the following formula:

$$DHPR_i = \frac{\text{Closing Price on Day } t - \text{Closing Price on Listing Date}}{\text{Closing Price on Listing Date}}$$

Where: t is the number of calendar days from date of listing

i is the IPO share listed on JSE Main Board or AltX

v. Average DHPR were calculated for the short-term (up to 30 calendar days from date of listing), medium-term (up to 1 year from date of listing) and long-term (up to 2 years from date of listing), using the formula below:

$$\text{Average DHPR} = [\sum DHPR_i] / n$$

Where n = number of returns data per holding period per IPO share

The average DHPR was calculated per sample IPO share and then the simple mean for the entire JSE Main Board and AltX samples, respectively, to enable comparison between the two samples and therefore the performance of the IPOs on the two listing platforms.

vi. The standard deviation of the DHPR was calculated for the short-term, medium-term and long-term using the Microsoft Excel built-in formula.

vii. The South African Government's R157 bond interest rates were used as a proxy for the risk-free rate of return (R_f). The effective mean risk-free rate was calculated for the short, medium and long-term;

viii. The Sharpe Ratio was used to calculate the risk-adjusted return performance of each IPO on the two JSE platforms. The formula for the Sharpe Ratio is given below:

$S_i = (DHPR_i - R_f) / SD_i$

Where: S_i *is the Sharpe Ratio of sample* IPO_i

SD_i *is the standard deviation of* $DHPR_i$

It must be noted however that the Sharpe Ratio maybe misleading if its value is negative. Increased risk in such case may lead to a higher value for the Sharpe Ratio and therefore comparison of performance of different IPOs or the samples for the two platforms in such instance may be inaccurate. To address this weakness, the Sharpe Ratio was used concurrently with the inverse of the Coefficient of Variation (CV).

ix. The Coefficient of Variation (CV) and its inverse were calculated for each sample IPO. The CV gives the risk borne per unit of return and its inverse gives the return achieved per unit of risk undertaken. Their values reflect the risk-adjusted return profile of an IPO as given in the formula below:

$CVi = SD_i / Average\ DHPR_i$

The inverse of CV was utilised to provide emphasis on risk-adjusted return and CV was utilised in order to compare the risk profiles of JSE Main Board and AltX IPOs.

x. Significance testing was done on the null hypothesis at 5% level of significance, using the t-test to check the significance of the data and the results. The t-test (using the test statistic for a test of the difference between two population means) was found to be most suitable because IPO returns are parametric and the test involved the difference between two means.

It was assumed that:

- IPO returns are normally distributed since according to corporate finance theory namely the random walk theory (Fama, 1965), share prices (and therefore their returns) follow a random-walk;

- Returns of JSE Main Board and AltX sample IPOs are independent of each other;
- This study and the hypothesis below test the mean returns of two populations, namely, the JSE Main Board and AltX;
- The populations variances although unknown were assumed to be unequal since the standard deviation of returns of the JSE Main Board IPO sample were found to be different from that of the JSE AltX sample as presented in the results section (Table 3 and Annexure A).

The null hypothesis tested using the above methodology is given below:

H_0: $u_{1,t}=u_{2,t}$; the JSE Alt-X IPOs perform the same as JSE Main Board IPOs in short, medium or long-term on a nominal return basis. In this case, $_t$ represents short, medium and long-term respectively.

4 RESULTS AND DISCUSSION

This section presents the analyses and discussion of the results from the methodology applied as explained in Chapter 3. The results of the performance evaluation methodology utilised through a combination of the nominal mean return and risk adjusted return for the JSE AltX and the JSE Main Board are summarised in this chapter.

4.1 Results

A detailed tabular analysis of the return performance of all JSE AltX and JSE Main Board sample IPOs in the short, medium and long-term is presented in Annexure A. The IPO returns utilised were tested at 5% significance level and found to be statistically significant. Table 3 below summarises the comparative performance of the two listing platforms on an aggregate basis:

JSE AltX & MAIN BOARD COMPARATIVE IPO PERFORMANCE SUMMARY						
	30-Day	Short-term				
	30-Day Mean Return	*Standard Deviation*	*30-Day Mean Risk-Free Rate*	*Sharpe Ratio*	*Coefficient of Variation (CV)*	*CV Inverse*
AltX	3.2%	24.9%	0.2%	0.12	7.86	0.13
Main Board	6.5%	27.0%	0.2%	0.23	4.13	0.24
	1 Year	Medium-term				
	1-Year Mean Return	*Standard Deviation*	*1-Year Mean Risk-Free Rate*	*Sharpe Ratio*	*Coefficient of Variation (CV)*	*CV Inverse*
AltX	18.6%	54.3%	8.2%	0.19	2.93	0.34
Main Board	31.1%	44.4%	8.2%	0.52	1.42	0.70
	2-Year	Long-term				
	2-Year Mean Return	*Standard Deviation*	*2-Year Mean Risk-Free Rate*	*Sharpe Ratio*	*Coefficient of Variation (CV)*	*CV Inverse*
AltX	20.6%	73.8%	8.4%	0.17	3.58	0.28
Main Board	40.4%	66.6%	8.3%	0.48	1.65	0.61

Table 3: JSE Alternative Exchange and Main Board Comparative IPO Performance

Regarding the nominal and risk adjusted performance, three calendar periods were considered, namely 30 days (short-term), 1 year (medium term) and 2 years (long-term) in measuring the return performance. Analyses were done on a nominal mean return and risk adjusted basis using the Sharpe Ratio. This was complemented by the inverse of the coefficient of variation. The coefficient of variation and standard

deviation were used to reflect the risk profiles of the newly listed companies and therefore that of the listing platforms.

For all the periods under consideration, the results in Table 3 above show that the JSE Main Board IPOs performed better than the JSE AltX IPOs as measured by both DHPR mean return as well as on a risk-adjusted basis as measured by the Sharpe Ratio as follows:

- In the short-term, the nominal average DHPR for the JSE Main Board IPOs was 103% higher than the JSE AltX IPOs. On a risk adjusted basis, the JSE Main Board IPOs outperformed JSE AltX IPOs by 92%. Over the same period, the risk per unit of return as measured by coefficient of variation was 90% higher for the JSE AltX IPOs compared to the JSE Main Board IPOs.

- In the medium-term, the average return performance for JSE Main Board IPOs was still superior to that of the JSE AltX by 67% on a nominal basis and 174% on a risk-adjusted basis as measured by the Sharpe Ratio. The risk-per-unit of return was higher for the JSE AltX by 106% than the JSE Main Board.

- In the long-term, the JSE Main Board IPOs on average performed 96% better than the JSE AltX on a nominal return basis. On a risk adjusted basis, JSE Main Board IPOs outperformed the JSE AltX IPOs by 182% on average. The risk-per-unit of return was 117% higher for the JSE AltX IPOs than the JSE Main Board IPOs.

It is noteworthy that the above results appear not to summarily support corporate finance theory where it is expected that higher risk financial securities would be compensated by relatively higher returns. An example is the small firms effect where smaller-capitalisation firms are expected to earn significantly higher risk-adjusted returns than larger capitalisation firms (Ban, 1981 and Reinganum, 1981). We however, conducted a hypothesis test at 95% confidence interval which did not reject the hypothesis that returns from JSE Main Board IPOs equal JSE AltX IPO returns in the short, medium or long-term on a nominal return basis. The results of the significance testing are summarised in Tables 4 (i) to 4(iii) below.

t-Test: Two-Sample Assuming Unequal Variances		
Short-term (30 Day)	**Main Board**	**Alt-X**
	Variable 1	***Variable 2***
Mean	0.065276847	0.031642764
Variance	0.072678812	0.0618042
Observations	33	35
Hypothesized Mean Difference	0	
df	65	
t Stat	0.533926639	
P(T<=t) one-tail	0.29760682	
t Critical one-tail	1.668635976	Accept
P(T<=t) two-tail	0.595213639	
t Critical two-tail	1.997137908	Accept

Table 4(i) - Hypothesis Test: H_0: $u_{1,t}=u_{2,t}$ for the short-term

t-Test: Two-Sample Assuming Unequal Variances		
Medium-term (1 Year)	**Main Board**	**Alt-X**
	Variable 1	***Variable 2***
Mean	0.293331593	0.185592194
Variance	0.196928986	0.294843399
Observations	33	35
Hypothesized Mean Difference	0	
df	65	
t Stat	0.898088993	
P(T<=t) one-tail	0.186226404	
t Critical one-tail	1.668635976	Accept
P(T<=t) two-tail	0.372452808	
t Critical two-tail	1.997137908	Accept

Table 4(ii) - Hypothesis Test: H_0: $u_{1,t}=u_{2,t}$ for the medium-term

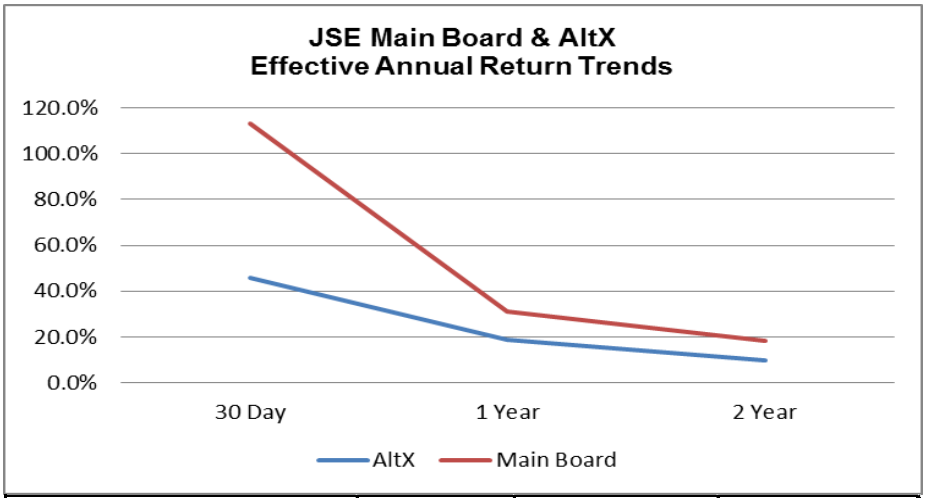
t-Test: Two-Sample Assuming Unequal Variances		
Long-term (2 Year)	**Main Board**	**AltX**
	Variable 1	***Variable 2***
Mean	0.40405777	0.206253425
Variance	0.442921888	0.543968842
Observations	33	35
Hypothesized Mean Difference	0	
df	66	
t Stat	1.162271905	
P(T<=t) one-tail	0.124655346	
t Critical one-tail	1.668270514	Accept
P(T<=t) two-tail	0.249310691	
t Critical two-tail	1.996564419	Accept

Table 4(iii) - Hypothesis Test: H_0: $u_{1,t}=u_{2,t}$ for the long-term

However, in line with documented in corporate finance theory, JSE AltX IPO results support the fact that smaller IPO returns are relatively riskier than IPO of larger and more established ones.

The above results of this study also support findings by Young and Zaima (1988) that, average aftermarket returns for more established firms (assumed to be the larger JSE Main Board IPOs in this study) are higher than less established firms (assumed to be smaller JSE AltX firms in this study). In the study of the aftermarket performance of small firm IPOs, Young and Zaima (1988) rejected the hypothesis of a positive relationship between small firm IPO risk and post-listing returns. The results of this study therefore support findings by Young and Zaima (1988).

A resemblance was observed between the two that, over time, the effective annual return for the short-term, medium-term and long-term decreased for both the JSE Main Board IPOs and the JSE AltX IPOs as depicted in Figure 1 below:



Effective Annual Return	30 Day	1 Year	2 Year
AltX	45.9%	18.6%	9.8%
Main Board	113.0%	31.1%	18.5%

Figure 1: JSE Effective Annual Return Trends

The above results support conclusions of Moodley's (2009) study that there is little predictive power between the value of the initial premium and the long-term performance as measured by one year aftermarket performance. The study was premised on the assumption that IPO primary market investors realise higher returns than secondary market investors. The results of this study also support M'kombe's (2000) findings that short-term IPO performance cannot be used to predict long-term performance. It is evident from Figure 1 above that effective annual returns decreased over time for both listing platforms albeit it at a faster rate for the JSE Main Board IPOs between the short and medium term. These results support the finding by Loughran et al (1994) that, IPOs tend to generate lower long-term returns.

They also support Boles' (2001) conclusion that, there is no significant relationship between initial premia and aftermarket performance. However, it must be noted that the 2 year period performance analysis for all JSE IPOs listed from July 2005 as shown in Annexure A, included an element of the impact of the 2007 recession which is estimated to have started from July 2007.

5 CONCLUSION

The aim of this study was to establish the short, medium and long-term return performance of smaller capitalisation JSE AltX IPOs in comparison to the performance of larger JSE Main Board IPOs. This was done on nominal and risk-adjusted bases by analysing daily share price data of two samples of 35 JSE AltX IPOs and 33 JSE Main Board IPOs for the period between January 2004 and June 2007. The study furthered the work that has been done on aftermarket performance of IPOs in South Africa by other authors, including Moodley (2009), Boles (2001) and M'kombe (2000). As part of the literature review, reference was made to studies in the research of IPOs performance in South Africa and internationally. This was done based on the broad themes of IPO listing processes among competing going public mechanisms, IPO contractual mechanisms and characteristics, attributes of a successful IPO, factors affecting IPO performance as well as research on short-run and long-run post-listing performance of IPOs. Previous research work on IPOs in South Africa did not focus on the JSE AltX IPO performance and as such this study attempted to fill that knowledge gap. Nominal IPO performance was measured using daily holding period returns and risk-adjusted return using the Sharpe Ratio concurrently with the inverse of the coefficient of variation. The returns data were found to be statistically significant. The risk profile of each IPO share and the listing platforms were measured using the standard deviation and coefficient of variation.

Our findings were not summarily in support to corporate finance theory which asserts that riskier securities are expected to deliver higher returns compared to less riskier ones. The results revealed that even though JSE AltX IPO returns were riskier on average as expected by corporate finance theory, they generated lower nominal and risk-adjusted returns than larger JSE Main Board IPOs which would normally be expected to be less risky and therefore generate relatively lower returns. The above findings were consistent over the short, medium and long-term. A similarity between the JSE AltX and Main Board IPO performance was identified in that the effective annual average daily holding period returns decreased over time from the short-term to the long-term. The decline was more pronounced between the short to medium-term and for the Main Board IPOs. It must be noted that the 2007 economic recession might be a contributory factor to the poor long-term IPO performance since the period coincided with part of the research period. Finally, a hypothesis test at 5% level of significance did not reject the hypothesis that JSE AltX and Main Board IPOs

have similar performance in the short, medium and long-term. These results mean that even though the JSE Main Board IPOs outperform JSE Alt-X IPOs in the short, medium and long-term, the difference in performance was not statistically significant.

Based on the above findings, it is therefore recommended that investors do not invest merely on the assumption that riskier IPOs provide higher returns. There is need for due diligence based on a variety of factors which affect IPO performance such as the objectives of the IPO (Boles, 2001), the pricing (Loughran and Ritter, 2001) of the offer, to establish if there is likelihood of mispricing as well as timing the market (M'kombe, 2000) pre and post-listing operating performance (Yi, 2001). According to Moodley (2009), primary investors are more likely to earn higher returns than secondary investors. It is therefore advisable for investors to make best efforts to subscribe for the IPO at listing. It is also important for the investor to reconcile investment objectives and horizon to the above factors.

In this study, we focused on the relative performance of JSE AltX and JSE Main Board IPOs in the short, medium and long-term. Interesting further studies may also be conducted in the area of the impact of small (JSE AltX) and large (JSE Main Board) company IPOs performance around economic cycles in emerging markets such as South Africa. In other words, research to assess the impact of economic crises such as the 2007 recession and booms on IPO performance and activity seem worthwhile.

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ANNEXURE A

(i) JSE AltX IPO Post Listing Performance

JSE AltX - IPO POST LISTING PERFORMANCE			30-DAY (SHORT-TERM)					
Issuer Code	*Issuer*	*Listing Date*	*30-Day Mean Return*	*Standard Deviation*	*30-Day Mean Risk-Free Rate*	*Sharpe Ratio*	*Coeffient of Variation (CV)*	*CV Inverse*
XAN	XANTIUM TECHNOLOGY HOLDINGS LIMITED	2004/08/20	-14.8%	5.4%	0.22%	-2.77	-0.37	-2.73
MKX	MILKWORX LIMITED	2004/09/27	31.0%	6.0%	0.21%	5.14	0.19	5.18
DTP	DATAPRO GROUP LIMITED	2004/10/18	8.3%	6.1%	0.21%	1.34	0.73	1.37
YBA	YOMHLABA RESOURCES LIMITED	2004/11/29	3.2%	10.2%	0.20%	0.29	3.22	0.31
ACH	ARCH EQUITY LIMITED	2004/12/10	15.0%	5.3%	0.20%	2.81	0.35	2.84
ACD	ALLIANCE DATA CORPORATION LIMITED	2005/03/30	-7.4%	8.7%	0.21%	-0.88	-1.16	-0.86
ENL	ENALENI PHARMACEUTICALS LIMITED	2005/06/10	30.0%	18.0%	0.20%	1.66	0.60	1.67
CMO	CHROMETCO LIMITED	2005/08/12	-10.1%	6.5%	0.20%	-1.58	-0.64	-1.55
WLL	WELLCO HEALTH LIMITED	2005/09/22	-8.8%	11.0%	0.21%	-0.81	-1.26	-0.79
ACC	ACC-ROSS HOLDINGS LIMITED	2006/02/16	-39.7%	10.6%	0.19%	-3.79	-0.27	-3.77
WEA	W G WEARNE LIMITED	2006/02/21	27.2%	14.2%	0.19%	1.91	0.52	1.92
ESR	ESOR LIMITED	2006/03/14	-11.0%	3.1%	0.19%	-3.63	-0.28	-3.56
PSV	PSV HOLDINGS LIMITED	2006/04/21	4.4%	3.6%	0.20%	1.15	0.83	1.20
SAN	SANYATI HOLDINGS LIMITED	2006/06/02	-14.7%	4.7%	0.20%	-3.15	-0.32	-3.11
TAS	TASTE HOLDINGS LIMITED	2006/06/21	-5.6%	5.1%	0.21%	-1.13	-0.92	-1.09
DLG	DIALOGUE GROUP HOLDINGS LIMITED	2006/09/19	0.5%	3.4%	0.21%	0.10	6.36	0.16
GDN	GOODERSON LEISURE CORPORATION LTD	2006/09/26	-5.2%	4.7%	0.21%	-1.13	-0.92	-1.09
BFS	BLUE FINANCIAL SERVICES LIMITED	2006/10/12	119.6%	41.7%	0.20%	2.86	0.35	2.87
MYD	MYRIAD MEDICAL HOLDINGS LIMITED	2006/10/17	7.2%	3.7%	0.20%	1.89	0.52	1.94
IPS	IPSA GROUP PLC	2006/10/19	5.3%	6.2%	0.20%	0.82	1.17	0.85
WKF	Workforce Holdings Limited	2006/11/21	-1.3%	4.3%	0.20%	-0.35	-3.33	-0.30
CEL	CELCOM GROUP LIMITED	2006/11/22	-2.7%	6.8%	0.20%	-0.43	-2.48	-0.40
SIC	Safic Holdings Limited	2006/11/23	-7.4%	5.4%	0.20%	-1.41	-0.73	-1.37
ATR	Africa Cellular Towers Limited	2006/11/29	-5.7%	7.9%	0.20%	-0.74	-1.40	-0.71
SUL	SAB&T Ubuntu Holdings Limited	2006/11/30	-15.6%	6.9%	0.20%	-2.29	-0.44	-2.26
TFX	Top Fix Holdings Limited	2006/12/06	5.3%	4.9%	0.20%	1.04	0.93	1.08
IFC	IFCA TECHNOLOGIES LIMITED	2006/12/08	-11.8%	3.4%	0.20%	-3.57	-0.28	-3.51
IMU	Imuniti Holdings Limited	2006/12/12	-9.1%	7.1%	0.20%	-1.31	-0.78	-1.29
RAR	RARE HOLDINGS LIMITED	2007/02/23	-11.3%	5.6%	0.20%	-2.03	-0.50	-2.00
AET	ALERT STEEL HOLDINGS LIMITED	2007/03/01	24.7%	2.2%	0.20%	11.38	0.09	11.47
TLM	TELEMASTERS HOLDINGS LIMITED	2007/03/12	10.4%	4.2%	0.20%	2.42	0.41	2.47
RLF	ROLFES TECHNOLOGY HOLDINGS LIMITED	2007/05/23	5.8%	3.8%	0.20%	1.50	0.64	1.56
ANS	Ansys Limited	2007/06/07	4.9%	6.6%	0.20%	0.70	1.37	0.73
IWE	Interwaste Holdings Limited	2007/06/14	1.6%	4.2%	0.20%	0.33	2.66	0.38
FPF	Finbond Property Finance Limited	2007/06/15	-11.6%	6.2%	0.20%	-1.93	-0.53	-1.89
	AVERAGE		***3.2%***	***24.9%***	***0.2%***	***0.12***	***7.86***	***0.13***

	JSE AltX - IPO POST LISTING PERFORMANCE		1-YEAR (MEDIUM-TERM)					
Issuer Code	*Issuer*	*Listing Date*	*1-Year Mean Return*	*Standard Deviation*	*1-Year Mean Risk-Free Rate*	*Sharpe Ratio*	*Coeffient of Variation (CV)*	*CV Inverse*
XAN	XANTIUM TECHNOLOGY HOLDINGS LIMITED	2004/08/20	-7.4%	9.2%	8.45%	-1.73	-1.24	-0.81
MKX	MILKWORX LIMITED	2004/09/27	129.5%	220.5%	8.32%	0.55	1.70	0.59
DTP	DATAPRO GROUP LIMITED	2004/10/18	11.4%	19.2%	8.25%	0.17	1.67	0.60
YBA	YOMHLABA RESOURCES LIMITED	2004/11/29	-15.2%	9.5%	8.13%	-2.47	-0.62	-1.61
ACH	ARCH EQUITY LIMITED	2004/12/10	63.9%	54.6%	8.09%	1.02	0.85	1.17
ACD	ALLIANCE DATA CORPORATION LIMITED	2005/03/30	-18.2%	14.7%	7.90%	-1.78	-0.81	-1.24
ENL	ENALENI PHARMACEUTICALS LIMITED	2005/06/10	149.2%	103.0%	7.74%	1.37	0.69	1.45
CMO	CHROMETCO LIMITED	2005/08/12	-45.4%	18.1%	7.83%	-2.94	-0.40	-2.50
WLL	WELLCO HEALTH LIMITED	2005/09/22	-40.1%	15.6%	7.91%	-3.08	-0.39	-2.57
ACC	ACC-ROSS HOLDINGS LIMITED	2006/02/16	-74.6%	12.8%	8.04%	-6.48	-0.17	-5.85
WEA	W G WEARNE LIMITED	2006/02/21	86.1%	58.0%	8.05%	1.35	0.67	1.48
ESR	ESOR LIMITED	2006/03/14	32.0%	49.4%	8.06%	0.49	1.54	0.65
PSV	PSV HOLDINGS LIMITED	2006/04/21	-12.7%	7.1%	8.09%	-2.92	-0.56	-1.78
SAN	SANYATI HOLDINGS LIMITED	2006/06/02	49.1%	42.6%	8.10%	0.96	0.87	1.15
TAS	TASTE HOLDINGS LIMITED	2006/06/21	16.7%	27.5%	8.11%	0.31	1.64	0.61
DLG	DIALOGUE GROUP HOLDINGS LIMITED	2006/09/19	41.5%	31.6%	8.06%	1.06	0.76	1.31
GDN	GOODERSON LEISURE CORPORATION LTD	2006/09/26	11.9%	12.0%	8.06%	0.32	1.01	0.99
BFS	BLUE FINANCIAL SERVICES LIMITED	2006/10/12	154.9%	30.4%	8.04%	4.83	0.20	5.10
MYD	MYRIAD MEDICAL HOLDINGS LIMITED	2006/10/17	0.8%	4.5%	8.04%	-1.63	5.88	0.17
IPS	IPSA GROUP PLC	2006/10/19	43.0%	30.7%	8.04%	1.14	0.72	1.40
WKF	Workforce Holdings Limited	2006/11/21	10.7%	7.8%	8.04%	0.34	0.73	1.37
CEL	CELCOM GROUP LIMITED	2006/11/22	-7.3%	19.8%	8.05%	-0.77	-2.72	-0.37
SIC	Safic Holdings Limited	2006/11/23	64.2%	42.7%	8.05%	1.31	0.67	1.50
ATR	Africa Cellular Towers Limited	2006/11/29	43.4%	33.7%	8.06%	1.05	0.78	1.29
SUL	SAB&T Ubuntu Holdings Limited	2006/11/30	-20.7%	9.5%	8.06%	-3.02	-0.46	-2.18
TFX	Top Fix Holdings Limited	2006/12/06	55.5%	24.8%	8.07%	1.91	0.45	2.23
IFC	IFCA TECHNOLOGIES LIMITED	2006/12/08	-21.4%	9.6%	8.07%	-3.07	-0.45	-2.23
IMU	Imuniti Holdings Limited	2006/12/12	-69.2%	25.5%	8.07%	-3.02	-0.37	-2.71
RAR	RARE HOLDINGS LIMITED	2007/02/23	12.2%	18.9%	8.23%	0.21	1.55	0.64
AET	ALERT STEEL HOLDINGS LIMITED	2007/03/01	6.9%	26.0%	8.25%	-0.05	3.76	0.27
TLM	TELEMASTERS HOLDINGS LIMITED	2007/03/12	-14.6%	14.0%	8.30%	-1.63	-0.96	-1.04
RLF	ROLFES TECHNOLOGY HOLDINGS LIMITED	2007/05/23	15.2%	14.8%	8.60%	0.44	0.98	1.02
ANS	Ansys Limited	2007/06/07	54.4%	33.9%	8.69%	1.35	0.62	1.60
IWE	Interwaste Holdings Limited	2007/06/14	-21.8%	21.1%	8.74%	-1.45	-0.97	-1.03
FPF	Finbond Property Finance Limited	2007/06/15	-34.6%	19.6%	8.74%	-2.22	-0.57	-1.77
	AVERAGE		***18.6%***	***54.3%***	***8.2%***	***0.19***	***2.93***	***0.34***

JSE AltX - IPO POST LISTING PERFORMANCE			2-YEAR (LONG-TERM)					
Issuer Code	*Issuer*	*Listing Date*	*2-Year Mean Return*	*Standard Deviation*	*2-Year Mean Risk-Free Rate*	*Sharpe Ratio*	*Coeffient of Variation (CV)*	*CV Inverse*
XAN	XANTIUM TECHNOLOGY HOLDINGS LIMITED	2004/08/20	-9.5%	9.6%	8.30%	-1.85	-1.01	-0.99
MKX	MILKWORX LIMITED	2004/09/27	137.8%	191.5%	8.12%	0.68	1.39	0.72
DTP	DATAPRO GROUP LIMITED	2004/10/18	5.5%	19.0%	8.03%	-0.13	3.44	0.29
YBA	YOMHLABA RESOURCES LIMITED	2004/11/29	-15.1%	6.7%	8.04%	-3.46	-0.44	-2.26
ACH	ARCH EQUITY LIMITED	2004/12/10	134.7%	103.7%	7.96%	1.22	0.77	1.30
ACD	ALLIANCE DATA CORPORATION LIMITED	2005/03/30	20.6%	63.2%	7.98%	0.20	3.07	0.33
ENL	ENALENI PHARMACEUTICALS LIMITED	2005/06/10	149.2%	103.0%	7.98%	1.37	0.69	1.45
CMO	CHROMETCO LIMITED	2005/08/12	-47.4%	18.1%	7.96%	-3.07	-0.38	-2.63
WLL	WELLCO HEALTH LIMITED	2005/09/22	-59.6%	24.0%	7.99%	-2.82	-0.40	-2.48
ACC	ACC-ROSS HOLDINGS LIMITED	2006/02/16	-60.1%	18.4%	8.12%	-3.71	-0.31	-3.27
WEA	W G WEARNE LIMITED	2006/02/21	135.9%	70.2%	8.13%	1.82	0.52	1.94
ESR	ESOR LIMITED	2006/03/14	127.8%	109.9%	8.18%	1.09	0.86	1.16
PSV	PSV HOLDINGS LIMITED	2006/04/21	-8.0%	14.0%	8.27%	-1.16	-1.74	-0.57
SAN	SANYATI HOLDINGS LIMITED	2006/06/02	85.8%	54.3%	8.38%	1.43	0.63	1.58
TAS	TASTE HOLDINGS LIMITED	2006/06/21	7.5%	31.1%	8.44%	-0.03	4.15	0.24
DLG	DIALOGUE GROUP HOLDINGS LIMITED	2006/09/19	10.2%	44.6%	8.57%	0.04	4.37	0.23
GDN	GOODERSON LEISURE CORPORATION LTD	2006/09/26	5.2%	15.9%	8.57%	-0.21	3.07	0.33
BFS	BLUE FINANCIAL SERVICES LIMITED	2006/10/12	244.0%	105.0%	8.58%	2.24	0.43	2.32
MYD	MYRIAD MEDICAL HOLDINGS LIMITED	2006/10/17	-10.9%	15.7%	8.58%	-1.24	-1.44	-0.69
IPS	IPSA GROUP PLC	2006/10/19	50.8%	35.9%	8.58%	1.17	0.71	1.41
WKF	Workforce Holdings Limited	2006/11/21	-10.9%	31.8%	8.62%	-0.61	-2.91	-0.34
CEL	CELCOM GROUP LIMITED	2006/11/22	-32.0%	29.6%	8.63%	-1.37	-0.92	-1.08
SIC	Safic Holdings Limited	2006/11/23	63.8%	36.6%	8.29%	1.52	0.57	1.75
ATR	Africa Cellular Towers Limited	2006/11/29	68.9%	55.5%	8.63%	1.09	0.81	1.24
SUL	SAB&T Ubuntu Holdings Limited	2006/11/30	-18.2%	9.6%	8.48%	-2.79	-0.52	-1.91
TFX	Top Fix Holdings Limited	2006/12/06	12.1%	52.1%	8.63%	0.07	4.32	0.23
IFC	IFCA TECHNOLOGIES LIMITED	2006/12/08	-46.1%	27.1%	8.63%	-2.02	-0.59	-1.70
IMU	Imuniti Holdings Limited	2006/12/12	-82.0%	22.2%	8.63%	-4.09	-0.27	-3.70
RAR	RARE HOLDINGS LIMITED	2007/02/23	7.6%	17.7%	8.61%	-0.06	2.34	0.43
AET	ALERT STEEL HOLDINGS LIMITED	2007/03/01	-13.7%	29.3%	8.61%	-0.76	-2.13	-0.47
TLM	TELEMASTERS HOLDINGS LIMITED	2007/03/12	-25.9%	16.5%	8.61%	-2.10	-0.64	-1.57
RLF	ROLFES TECHNOLOGY HOLDINGS LIMITED	2007/05/23	-17.0%	36.9%	8.65%	-0.70	-2.17	-0.46
ANS	Ansys Limited	2007/06/07	10.4%	58.5%	8.66%	0.03	5.61	0.18
IWE	Interwaste Holdings Limited	2007/06/14	-41.8%	25.6%	8.66%	-1.97	-0.61	-1.63
FPF	Finbond Property Finance Limited	2007/06/15	-57.3%	26.9%	8.66%	-2.45	-0.47	-2.13
	AVERAGE		***20.6%***	***73.8%***	***8.4%***	***0.17***	***3.58***	***0.28***

(ii) JSE Main Board IPO Post Listing Performance

JSE MAIN BOARD - IPO POST LISTING PERFORMANCE			30-DAY (SHORT-TERM)					
Issuer Code	*Issuer*	*Listing Date*	*30-Day Mean Return*	*Standard Deviation*	*30-Day Mean Risk-Free Rate*	*Sharpe Ratio*	*Coefficient of Variation (CV)*	*CV Inverse*
BCX	BUSINESS CONNEXION GROUP LIMITED	2004/05/24	-3.6%	4.1%	0.22%	-0.93	-1.15	-0.87
PTG	PEERMONT GLOBAL LIMITED	2004/09/09	7.0%	5%	0.21%	1.39	0.70	1.44
LEW	LEWIS GROUP LIMITED	2004/10/04	2.5%	5%	0.21%	0.45	2.03	0.49
SPP	THE SPAR GROUP LIMITED	2004/10/18	2.4%	3%	0.21%	0.67	1.37	0.73
MOZ	METOZ HOLDINGS LIMITED	2004/11/08	7.7%	8%	0.21%	0.89	1.09	0.92
MVG	MVELAPHANDA GROUP LIMITED	2004/12/06	-3.4%	2%	0.20%	-1.72	-0.62	-1.62
AQP	AQUARIUS PLATINUM LIMITED	2004/12/08	-1.6%	6.7%	0.20%	-0.26	-4.29	-0.23
CSL	CONSOL LIMITED	2005/02/28	-7.9%	2.5%	0.20%	-3.20	-0.32	-3.12
NCA	NEW CORPCAPITAL LIMITED	2005/06/27	-2.7%	3.0%	0.20%	-0.98	-1.10	-0.91
VMK	VERIMARK HOLDINGS LIMITED	2005/07/11	1.4%	2.5%	0.20%	0.50	1.71	0.58
AER	AMALGAMATED ELECTRONICS CORP LTD	2005/08/29	9.6%	4.8%	0.20%	1.98	0.50	2.02
MMH	MIRANDA MINERAL HOLDINGS LIMITED	2005/12/19	143.4%	75.2%	0.19%	1.90	0.52	1.91
SXR	SXR URANIUM ONE INC	2005/12/19	-7.4%	3.5%	0.19%	-2.17	-0.47	-2.12
IFH	IFA HOTELS AND RESORTS LIMITED	2006/02/27	13.5%	4.0%	0.19%	3.36	0.29	3.41
ELD	ELAND PLATINUM HOLDINGS LIMITED	2006/03/29	-2.5%	4.1%	0.19%	-0.66	-1.64	-0.61
WGR	WITWATERSRAND CONS GOLD RESOURCES	2006/04/24	35.2%	17.6%	0.20%	1.98	0.50	2.00
ACT	AFROCENTRIC INVESTMENT CORP LIMITED	2006/05/15	24.8%	39.4%	0.20%	0.62	1.59	0.63
MML	METMAR LTD	2006/05/22	-6.0%	7.8%	0.20%	-0.79	-1.30	-0.77
JSE	JSE LIMITED	2006/06/05	-15.7%	3.4%	0.20%	-4.69	-0.22	-4.63
GBG	GREAT BASIN GOLD LIMITED	2006/10/27	20.3%	5.3%	0.20%	3.80	0.26	3.84
AFT	AFRIMAT LIMITED	2006/11/07	5.8%	2.4%	0.20%	2.37	0.41	2.45
KIO	KUMBA IRON ORE LIMITED	2006/11/20	1.9%	3.5%	0.20%	0.48	1.86	0.54
ZED	ZEDER INVESTMENTS LIMITED	2006/12/01	0.4%	1.9%	0.20%	0.12	4.47	0.22
PZG	Pamodzi Gold Limited	2006/12/11	-3.2%	2.0%	0.20%	-1.74	-0.61	-1.64
TAL	TIGER AUTOMOTIVE LIMITED	2006/12/11	-6.2%	2.4%	0.20%	-2.74	-0.38	-2.65
ARQ	Anooraq Resources Corporation	2006/12/19	16.9%	23.5%	0.20%	0.71	1.39	0.72
ASO	AUSTRO GROUP LIMITED	2007/02/01	7.6%	3.1%	0.20%	2.36	0.41	2.42
SOH	SOUTH OCEAN HOLDINGS LIMITED	2007/02/28	-7.0%	1.8%	0.20%	-3.99	-0.26	-3.88
RBX	RAUBEX GROUP LIMITED	2007/03/20	11.3%	8.5%	0.20%	1.31	0.75	1.34
KEL	KELLY GROUP LIMITED	2007/04/03	2.0%	0.8%	0.20%	2.30	0.39	2.55
CBH	COUNTRY BIRD HOLDINGS LIMITED	2007/05/03	-4.6%	2.7%	0.20%	-1.78	-0.58	-1.71
EPS	EASTERN PLATINUM LIMITED	2007/05/21	-16.3%	3.0%	0.20%	-5.59	-0.18	-5.52
HLM	HULAMIN LIMITED	2007/06/25	-10.2%	8.3%	0.21%	-1.25	-0.81	-1.23
	AVERAGE		***6.5%***	***27.0%***	***0.2%***	***0.23***	***4.13***	***0.24***

JSE MAIN BOARD - IPO POST LISTING PERFORMANCE			1 YEAR (MEDIUM-TERM)					
Issuer Code	*Issuer*	*Listing Date*	*1-Year Mean Return*	*Standard Deviation*	*1-Year Mean Risk-Free Rate*	*Sharpe Ratio*	*Coefficient of Variation (CV)*	*CV Inverse*
BCX	BUSINESS CONNEXION GROUP LIMITED	2004/05/24	13.5%	14.4%	8.97%	0.31	1.07	0.94
PTG	PEERMONT GLOBAL LIMITED	2004/09/09	40.3%	17%	8.37%	1.88	0.42	2.37
LEW	LEWIS GROUP LIMITED	2004/10/04	23.8%	13%	8.29%	1.20	0.54	1.84
SPP	THE SPAR GROUP LIMITED	2004/10/18	21.2%	14.0%	8.25%	0.93	0.66	1.52
MOZ	METOZ HOLDINGS LIMITED	2004/11/08	33.7%	14.3%	8.29%	1.78	0.42	2.36
MVG	MVELAPHANDA GROUP LIMITED	2004/12/06	-5.8%	6.9%	8.11%	-2.02	-1.19	-0.84
AQP	AQUARIUS PLATINUM LIMITED	2004/12/08	42.2%	37.5%	8.11%	0.91	0.89	1.12
CSL	CONSOL LIMITED	2005/02/28	-0.4%	8.7%	7.96%	-0.96	-21.14	-0.05
NCA	NEW CORPCAPITAL LIMITED	2005/06/27	-22.2%	15.4%	7.75%	-1.94	-0.69	-1.44
VMK	VERIMARK HOLDINGS LIMITED	2005/07/11	18.6%	13.3%	7.77%	0.81	0.71	1.40
AER	AMALGAMATED ELECTRONICS CORP LTD	2005/08/29	17.2%	14.7%	7.86%	0.63	0.86	1.17
MMH	MIRANDA MINERAL HOLDINGS LIMITED	2005/12/19	184.5%	65.6%	7.98%	2.69	0.36	2.81
SXR	SXR URANIUM ONE INC	2005/12/19	55.5%	42.2%	7.98%	1.12	0.76	1.31
IFH	IFA HOTELS AND RESORTS LIMITED	2006/02/27	-21.5%	13.3%	8.05%	-2.21	-0.62	-1.61
ELD	ELAND PLATINUM HOLDINGS LIMITED	2006/03/29	25.0%	50.9%	8.07%	0.33	2.04	0.49
WGR	WITWATERSRAND CONS GOLD RESOURCES	2006/04/24	36.3%	25.6%	8.09%	1.10	0.70	1.42
ACT	AFROCENTRIC INVESTMENT CORP LIMITED	2006/05/15	5.2%	51.1%	8.10%	-0.06	9.91	0.10
MML	METMAR LTD	2006/05/22	69.9%	55.7%	8.10%	1.11	0.80	1.26
JSE	JSE LIMITED	2006/06/05	95.5%	69.8%	8.10%	1.25	0.73	1.37
GBG	GREAT BASIN GOLD LIMITED	2006/10/27	40.9%	25.5%	8.03%	1.29	0.62	1.60
AFT	AFRIMAT LIMITED	2006/11/07	19.6%	7.1%	8.03%	1.62	0.36	2.75
KIO	KUMBA IRON ORE LIMITED	2006/11/20	55.5%	43.0%	8.04%	1.10	0.77	1.29
ZED	ZEDER INVESTMENTS LIMITED	2006/12/01	12.0%	5.1%	8.06%	0.77	0.42	2.36
PZG	Pamodzi Gold Limited	2006/12/11	-8.0%	11.0%	8.07%	-1.47	-1.37	-0.73
TAL	TIGER AUTOMOTIVE LIMITED	2006/12/11	-2.9%	10.6%	8.07%	-1.03	-3.66	-0.27
ARQ	Anooraq Resources Corporation	2006/12/19	121.3%	84.5%	8.08%	1.34	0.70	1.44
ASO	AUSTRO GROUP LIMITED	2007/02/01	58.7%	23.7%	8.16%	2.13	0.40	2.48
SOH	SOUTH OCEAN HOLDINGS LIMITED	2007/02/28	-9.3%	8.8%	8.25%	-1.98	-0.95	-1.05
RBX	RAUBEX GROUP LIMITED	2007/03/20	80.4%	40.2%	8.27%	1.79	0.50	2.00
KEL	KELLY GROUP LIMITED	2007/04/03	3.5%	8.0%	8.38%	-0.61	2.33	0.43
CBH	COUNTRY BIRD HOLDINGS LIMITED	2007/05/03	-6.2%	14.0%	8.49%	-1.05	-2.25	-0.44
EPS	EASTERN PLATINUM LIMITED	2007/05/21	-1.2%	20.8%	8.58%	-0.47	-17.66	-0.06
HLM	HULAMIN LIMITED	2007/06/25	-28.7%	8.7%	8.61%	-4.31	-0.30	-3.32
	AVERAGE		***31.1%***	***44.4%***	***8.16%***	***0.52***	***1.42***	***0.70***

JSE MAIN BOARD - IPO POST LISTING PERFORMANCE			2 YEARS (LONG-TERM)					
Issuer Code	*Issuer*	*Listing Date*	*2-Year Mean Return*	*Standard Deviation*	*2-Year Mean Risk-Free Rate*	*Sharpe Ratio*	*Coefficient of Variation*	*CV Inverse*
BCX	BUSINESS CONNEXION GROUP LIMITED	2004/05/24	49.2%	45.1%	8.37%	0.91	0.92	1.09
PTG	PEERMONT GLOBAL LIMITED	2004/09/09	57.7%	22.4%	8.13%	2.21	0.39	2.58
LEW	LEWIS GROUP LIMITED	2004/10/04	46.6%	29.0%	8.11%	1.33	0.62	1.61
SPP	THE SPAR GROUP LIMITED	2004/10/18	47.2%	29.8%	8.10%	1.31	0.63	1.58
MOZ	METOZ HOLDINGS LIMITED	2004/11/08	33.7%	14.6%	8.29%	2.30	0.43	2.31
MVG	MVELAPHANDA GROUP LIMITED	2004/12/06	7.2%	15.0%	8.04%	-0.06	2.09	0.48
AQP	AQUARIUS PLATINUM LIMITED	2004/12/08	162.3%	148.7%	8.04%	1.04	0.92	1.09
CSL	CONSOL LIMITED	2005/02/28	17.2%	22.6%	8.00%	0.41	1.31	0.76
NCA	NEW CORPCAPITAL LIMITED	2005/06/27	-41.6%	24.2%	7.93%	-2.04	-0.58	-1.72
VMK	VERIMARK HOLDINGS LIMITED	2005/07/11	-10.4%	31.0%	7.93%	-0.59	-2.98	-0.34
AER	AMALGAMATED ELECTRONICS CORP LTD	2005/08/29	4.6%	19.4%	7.97%	-0.17	4.24	0.24
MMH	MIRANDA MINERAL HOLDINGS LIMITED	2005/12/19	173.9%	51.3%	8.03%	3.23	0.30	3.39
SXR	SXR URANIUM ONE INC	2005/12/19	101.6%	67.7%	7.96%	1.38	0.67	1.50
IFH	IFA HOTELS AND RESORTS LIMITED	2006/02/27	-24.9%	12.4%	8.15%	-2.68	-0.50	-2.02
ELD	ELAND PLATINUM HOLDINGS LIMITED	2006/03/29	154.1%	165.1%	8.12%	0.88	1.07	0.93
WGR	WITWATERSRAND CONS GOLD RESOURCES	2006/04/24	84.6%	58.6%	8.28%	1.30	0.69	1.45
ACT	AFROCENTRIC INVESTMENT CORP LIMITED	2006/05/15	-15.6%	42.0%	8.33%	-0.57	-2.69	-0.37
MML	METMAR LTD	2006/05/22	133.1%	76.4%	8.34%	1.63	0.57	1.74
JSE	JSE LIMITED	2006/06/05	153.2%	79.5%	8.39%	1.82	0.52	1.93
GBG	GREAT BASIN GOLD LIMITED	2006/10/27	64.9%	40.7%	8.60%	1.38	0.63	1.59
AFT	AFRIMAT LIMITED	2006/11/07	-1.0%	25.4%	8.61%	-0.38	-24.78	-0.04
KIO	KUMBA IRON ORE LIMITED	2006/11/20	97.7%	68.4%	8.62%	1.30	0.70	1.43
ZED	ZEDER INVESTMENTS LIMITED	2006/12/01	2.0%	17.3%	8.63%	-0.38	8.75	0.11
PZG	Pamodzi Gold Limited	2006/12/11	-37.7%	34.4%	8.63%	-1.35	-0.91	-1.10
TAL	TIGER AUTOMOTIVE LIMITED	2006/12/11	1.6%	13.6%	8.17%	-0.48	8.26	0.12
ARQ	Anooraq Resources Corporation	2006/12/19	125.8%	99.8%	8.62%	1.17	0.79	1.26
ASO	AUSTRO GROUP LIMITED	2007/02/01	30.0%	44.8%	8.65%	0.48	1.49	0.67
SOH	SOUTH OCEAN HOLDINGS LIMITED	2007/02/28	-32.7%	28.1%	8.61%	-1.47	-0.86	-1.16
RBX	RAUBEX GROUP LIMITED	2007/03/20	72.0%	45.4%	8.62%	1.40	0.63	1.59
KEL	KELLY GROUP LIMITED	2007/04/03	-17.1%	24.1%	8.62%	-1.07	-1.41	-0.71
CBH	COUNTRY BIRD HOLDINGS LIMITED	2007/05/03	-34.0%	30.0%	8.63%	-1.42	-0.88	-1.14
EPS	EASTERN PLATINUM LIMITED	2007/05/21	-30.9%	40.7%	8.65%	-0.97	-1.32	-0.76
HLM	HULAMIN LIMITED	2007/06/25	-40.9%	16.3%	8.67%	-3.05	-0.40	-2.52
	AVERAGE		***40.4%***	***66.6%***	***8.33%***	***0.48***	***1.65***	***0.61***