

***Post-listing Performance of Initial Public
Offerings in South Africa***

Kuvasen Moodley

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ABSTRACT

Initial Public Offerings (IPO's) represent one of the vehicles used when a company lists on a particular stock exchange. The listing process amongst other things may involve an underwriter, and the role of the underwriter is two-fold. First, the underwriter has to ensure that the IPO is successful in terms of the requirements outlined by the listing company and, secondly the underwriter has to make certain that there is sufficient money on the table for investors to compensate them for the risk that they are undertaking in purchasing the unseasoned issues. This is one of the reasons cited in this research as to why the IPO's trade at a premium following the offering.

The primary market investors, defined as those investors who are invited to participate in the primary offering, enjoy the premium offered by the IPO upon listing, but the secondary market does not benefit from this premium. This research report was tailored for investors in the secondary market to gauge whether the magnitude of the premium could be used to determine the one year aftermarket performance.

IPO's from 1998 to 2007 were used for this research, which was a continuation of the studies done on South African IPO's until 1998. It was found that IPO's during the period of this study offered a mean premium of 28.39% to the primary investors, and that the correlation between the value of the initial premium and the one year aftermarket performance was -10.51%. From the above study the results indicate that there is little predictive power between the value of the initial premium and the one year aftermarket performance but it was interesting to note the negative relationship between the two variables.

DECLARATION

I, Kuvasen Moodley, declare that this research report is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Kuvasen Moodley

Date: 27 January 2009

DEDICATION

I would like to dedicate this piece of work to my wife, Narayani Pillay. Without her unwavering support I would not have been able to complete this report.

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1 INTRODUCTION

Private companies obtain a listing on various stock exchanges via a number of methods which could include: an initial public offering (IPO); a preferential offer; a private placing; an introduction; a backdoor listing; or a rights issue. Companies which follow the IPO route initially list their shares in the primary market and these listed shares are subsequently traded amongst investors in the secondary market.

Roell (1996) cited a few reasons for listing as set out below.

- New funds are required to grow the company.
- A listing gives the company market exposure.
- Diversification of the shareholder base: the negative impact of this is that the company becomes diluted.

By listing on the JSE Securities Exchange the newly listed company has to commit to disclosing financial information to the market and must offer its shareholders a competitive return on their investment or lose shareholder confidence. The process involved in listing a company would begin by obtaining board approval for the listing. The company would then have to make a formal application to the relevant stock market authority and would have to meet their requirements. Part of the requirements would be that the company must issue a Prospectus/Offer for Sale/Pre-Listing Statement which should provide details of the classes of shares on offer, together with the voting rights associated with these shares, the recommended issue price offer range and the last day of subscription for these shares.

The reason for an IPO having a share price offer range is because of the difficulty in pricing the IPO. The first difficulty in pricing of an IPO is the non-existence of a universally acceptable valuation method. Secondly, current evaluation methods require certain assumptions to be made regarding the future cash flows of the company, which brings in an element of subjectivity which cannot be eliminated. The third difficulty is to satisfy all the participants involved in the listing process. The different role players

include the listing firm, the underwriters who may be involved, and the investment community who are invited to participate in the offer.

The share price offer is a point of disagreement between the IPO firm, the underwriter and the investors. Reilly and Hatfield (1969) indicated that a successful offer for an IPO firm is one in which the IPO firm has achieved the required equity it set out to obtain. For the underwriter, their reputation is of utmost importance; and they need to balance the IPO firm's equity and leave sufficient money on the table to ensure investor participation in future IPO's. The culmination of all these difficulties in the opinion of Reilly and Hatfield (1969) has resulted in IPO's experiencing excessive abnormal returns on the first day of listing. These excessive abnormal returns are a reward to investors who take on the risk of investing in these previously unlisted companies.

This trend of underpricing has been documented by Reilly and Hatfield (1969), Guo (2005), Ritter (2003), Jenkinson and Ljungqvist (2001), and a number of other researchers, all of whom have been mentioned in the literature review. Studies done by Barlow and Sparks (1986), Lawson and Ward (1996), Bhana (1989) and M'kombe (1998) dealing with the South African IPO performance all showed evidence of underpricing regardless of the market conditions during the time periods investigated. Bradfield and Hampton (1988) showed that there was a significant correlation between the initial premium and the aftermarket returns and Lawson and Ward (1998) discovered that the aftermarket excess returns were positively correlated to the initial premium during the period 1986-1995.

This initial premium offered provides an opportunity for investors to achieve a quick gain at the close of the first day of trade.

1.1 Purpose of the study

Each of the stakeholders involved in the listing process, namely, the issuing company, the underwriters and the investors, require that their interests be fulfilled bearing in mind that each of these parties would use different measures when evaluating a successful listing.

The issuing company, according to Reilly and Hatfield (1969), considers a successful listing as one in which the desired amount of equity is raised from the offer to enable the company to meet its future objectives. In order to achieve this goal, the issuing company may involve underwriters especially if the company itself does not have knowledge and expertise in this arena. Reilly and Hatfield (1969) mentioned that for underwriters a successful listing is one in which the issuing company received the desired equity it set out to achieve, and there was sufficient money left on the table for investors to compensate them for the risk that they have undertaken in purchasing these unseasoned issues.

Reilly and Hatfield (1969) indicated that investors regard a successful listing as one in which sufficient money is left on the table and long-term performance of the IPO is ensured.

Considering these different role-players in the marketplace and their respective objectives, the purpose of the study has been to determine whether the value of the premium offered by IPO's, at the close of trade on the first day of issuance indicates the aftermarket performance of IPO's on the JSE Securities Exchange between the years 1998-2007.

1.2 Problem statement

1.2.1 Main problem

The objective of this research seeks to determine whether the value of the premium offered by IPO's at the close of trade on the first day following the issue, is an indicator of the first year aftermarket performance of the IPO's.

1.2.2 Sub-problems

The first sub-problem is to investigate whether there is a premium offered by IPO's at the close of trade on the **first day of listing**.

The second sub-problem is to determine the correlation between the value of the premium and the **first year aftermarket performance** of the IPO.

1.3 Significance of the study

It has been documented that the first day performance of IPO's on average experience abnormally superior gains, and investors could benefit from this phenomenon if they sold their shares immediately upon listing.

Not all investors, however, are permitted to participate in the IPO offering and these investors need to buy shares in the IPO's in the secondary market. IPO performance in the secondary market is to be investigated to give these disadvantaged investors an idea of the performance of their portfolios had these IPO's been included in their portfolio. The target audience for the research is the investment community at large, whether they are institutional investors or individuals participating on a casual basis.

Barlow and Sparks (1986), Bradfield and Hampton (1988), Lawson and Ward (1996), Bhana (1989) and M'kombe (1998) researched South African IPO performance from 1972 to 1998. The current study serves to investigate IPO activity and performance from 1998 to 2007, to continue the research compiled by the above-mentioned researchers.

1.4 Delimitations and limitations

1.4.1 Delimitations

The intention of this research has been to investigate whether IPO's offered a premium on the first day of listing and to investigate any correlation that existed between the value of the premium and the one year post listing performance. To this end the study has concentrated on the long-term performance of companies that went public using the **initial public offering method**, which meant that companies using other listing techniques have been excluded from the sample.

The research sample has included all IPO's which have met the criteria outlined in the section 3.3 regardless of the sectors in which they are listed.

IPO's that listed in 2007 have been used in the sample to determine the average initial premium only, as some of these stock issues did not have the one year post-listing performance and have not been considered for further statistical studies.

In order to calculate the abnormal performance index (API), the risk free rate, R_f and Beta (β), the coefficient of systematic risk have to be determined. The R157 government bond has been used as a proxy for risk-free and beta estimates for the research have been determined using the first 52 weeks of share price performance. Lawson and Ward (1998) indicated that this was not the ideal method to determine β , but it would suffice for research into IPO performance, since the company performance history was unavailable.

Companies that delisted from the JSE Securities Exchange were targets of takeover activity or were liquidated have been excluded from the sample. The reason for this is that there is no data available on these companies to allow for any statistical analysis to be carried out on these companies.

1.4.2 Limitations

A prerequisite to computing the one year post-listing performance of a company is that there must be a minimum share price history of one year. Any company which failed in achieving the one year post-listing anniversary performance has been excluded from the sample.

Dividend and trading costs have been ignored in the methodology employed as Lawson and Ward (1998) explained that trading costs reduce the returns one would receive by the product of the percentage cost of each trade, and the number of trades, and they state that the API methodology reduces the impact of these costs on the results.

Dividends from the new issues have been ignored, which complied with Lawson and Ward (1998); they indicated that the research results are affected to the degree that dividends from new issues varied from seasoned shares.

The one year anniversary price for the issues has been used to determine the abnormal performance index. Any abnormal share price fluctuations that presented themselves on

the one year anniversary date have not been investigated and the closing price for the issue is taken a day earlier.

1.5 Definition of terms

Performance has been calculated using the companies share price on the JSE Securities Exchange, which has been taken at the close of trade for the respective period under consideration.

R_{it} is defined as the return on investment i , which is time period specific.

R_{ft} is defined as the risk free rate of return, which is time period specific.

R_{mt} is defined as the market return, which is time period specific.

β_{it} is defined as the coefficient of systematic risk of the investment i , under consideration.

E_{it} is defined as the excess return on share i at time t .

T is the number of time periods being aggregated.

N is the number of firms in the portfolio.

BHARS is the buy and hold abnormal returns calculation method.

CARS is the cumulative abnormal returns calculation method.

IP is the initial premium of the IPO.

CP_{FD} is the first day closing price in cents.

LP is the listing price in cents.

AP is the aftermarket performance of the issue.

CP_x is the closing price of the IPO at the specified time period x in cents.

CR is the combined return percentage of the new issue.

μ_0 is defined as the average aftermarket return of IPO's at the close of trade day on the first day on which the IPO was issued.

2 LITERATURE REVIEW

2.1 Introduction

The literature reviewed was used to gain an understanding of the insights that other researchers in different countries around the world have accrued during their research on the post-listing performance of IPO's. The literature covers research on IPO's which include reasons behind the high premia offered by IPO's, IPO performance on the first day of trading and short- and long-term performance.

The literature finally investigated the various mathematical methods used in calculating IPO performance.

2.2 The short term post performance of IPO's

The literature review begins with the IPO process that must be followed as outlined by Wu (2005) and Hanley (1993). Both have described the process as starting with the completion of a preliminary prospectus. On completion this document must be filed with the relevant Securities and Exchange Commission, and one of the elements that must be contained in the preliminary prospectus is the "recommended share price offer range" (Hanley, 1993:233). This share price range must include the maximum, minimum, midpoint and the expected share price. This share price offer range, according to Wu (2005), should be representative of the final offer price, and factors such as market conditions and market demand must be taken into account when determining the offer price.

Following a successful listing, the share is listed on the relevant stock exchange. The share price at the close of trade on the first day of trading experiences abnormal first day returns, a fact which has been confirmed by Reilly and Hatfield (1969), Dimovski and Brooks (2004), Guo (2005), Ritter (2003) and Jenkinson and Ljungqvist (2001).

Reilly and Hatfield (1969) listed some reasons for the underpricing as set out below.

- The first is the lack of a common and definite evaluation technique when calculating the share price. Investors use various methods to calculate the share price, and the assumptions used in these methods vary.
- When the offer is underpriced, the issuing company will have a greater chance of its offer being over-subscribed. Over-subscribed shares can be sold quickly, which will also create demand in the secondary market, which will increase the share value. This will lead to a price increase in the secondary market.

Prasad, Vozikis and Ariff (2006) offer the following theoretical explanations for underpricing.

- Underpricing is a benefit for the investors who participate in these risky issues. Underpricing ensures that the offer is fully subscribed, which ensures that the offer is a success.
- The information asymmetry model explains that the degree of underpricing is related to the uncertainty of the value of the share in the aftermarket.
- Another explanation that has been given is the fact that the secondary market is eager to purchase the new offer and this demand for the offer results in the price of the issue increasing above its expected value.
- Another explanation is that Regulatory Policies are country specific.

The factors mentioned above drive the price of the issue and invariably contribute to the return at the close of trading on the first day of the issuance. Reilly and Hatfield (1969) wrote that the IPO offer prices are intentionally underpriced so that potential investors in these stocks could enjoy superior performance after listing.

The phenomenon of underpricing is not new as Guo (2005), Ritter (2003), Jenkinson and Ljungqvist (2001) have all confirmed that underpricing occurs in all markets and has occurred through long periods of time.

Yong and Isa (2003) researched initial returns of IPO's listed on the Kuala Lumpur Stock Exchange (KLSE) between 1990 and 1998. The results of their research revealed that

the initial returns averaged 94.91%. Prasad, Vozikis and Ariff (2006) found that underpricing of Malaysian IPO's was on average 118%.

Dimovski and Brooks (2004) investigated underpricing in the Australian market, where they examined IPO underpricing in each sector and discovered that, although all sectors showed evidence of underpricing, the degree of underpricing was different in each of the sectors reviewed. The average level of underpricing in the Australian market from 1994 to 1999 was 25.6%. Dimovski and Brooks (2004:179) have indicated that underpricing could be explained by factors such as "market sentiment, forecast dividend per share yields, underwriter options and share options".

Bhana (1989) investigated the South African (SA) market during the years 1985-1987, and evaluated the excess returns of IPO's which listed during this period. The excess returns were calculated for three time periods, one week, one month and one year after listing. The findings revealed an increase of 65.6% and 68.5% in the difference between the issue price and the share price following the first day of trading, on the Main Board (MB) and the Development Capital Board (DCB) respectively. This provided a clear indication that the IPO's were underpriced during this period, and Bhana (1989) attributed this underpricing to goodwill. It was also noted that the percentage price change of the issue during the first week, compared to the percentage change of the issue during the first month of trading, indicated that the majority of the price changes took place in the first week of the offering. Another observation made was that shares acquired in the secondary market did not offer any superior performance in comparison with the same shares in the primary market.

Lawson and Ward (1996) documented that the average initial premium on the JSE Securities Exchange between the periods 1986-1995, was higher when compared to the London Stock Exchange and the American Stock Exchange. In their study they identified that the initial returns of new issues averaged 27.2% between the periods 1986-1995, and the highest initial premium calculated was 250% and the lowest -81.8%. The average initial premium during 1986-1995 was 5.1% lower than that between 1973-1986 and 0.2% lower than that between 1975-1986.

McGuinness (1992) examined underpricing of IPO's in Hong Kong from 1980-1990 and found, from the 80 IPO's which formed part of this particular study, that the level of underpricing was 18%. McGuinness (1992) noted that these excess returns were a phenomenon that occurred on the first day of listing, and the excess returns on the first day disappeared subsequent to the listing date. McGuinness (1992) linked the level of underpricing to three factors. The first was the doubt over the share price in the secondary market; the second was when companies issued stock in the market for a second time; and the third was to market periods where it was discovered that the level of underpricing varied in bull and bear markets.

Chen, Firth and Kim (2000) studied IPO aftermarket performance from 1992 to 1995 in China on the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE). They found that, for A-Share IPO's, the mean initial excess return was 406.1% on the SHSE and 296.87% on the SZSE. The mean initial excess return for the B-Share IPO's on the SHSE was 21.29% and 58.69% on the SZSE. A-Shares and B-Shares are defined as shares that are owned by citizens of China only, and shares that are owned by foreigners respectively. Chen, Firth and Kim (2000) looked at possible reasons for the high initial returns on A-shares. They attributed the high levels of underpricing to the factors mentioned below.

- Companies and their underwriters price the share too low.
- Due to the inexperience of the secondary market, the shares are over-priced.
- In order to ensure that new issues are fully subscribed, the state deliberately underprices new issues.
- The extreme initial returns are used to offset the risk of investing in the unseasoned issues.

Leone, Rock and Willenborg (2007) have investigated the effect of disclosing information regarding the use of the capital raised by the IPO and the level of underpricing in the United States of America. Leone, Rock and Willenborg (2007) point out that part of the regulations outlined by the Securities and Exchange Commission in the USA, all companies which list must disclose information regarding the use of the funds that will be generated by the issue. Leone, Rock and Willenborg (2007) have found that the level of

underpricing is reduced by companies who disclose as much information as possible on the use of the funds generated from the offer. This method provides investors with greater confidence regarding the performance of the issue in the secondary market. The negative aspect of disclosing too much information is that outsiders may gain insight into the company's strategy and this may cause companies not to want to disclose too much of information regarding the use of funds generated by the offer.

Shaw (1994) confirmed that one of the reasons for the underpricing of IPO's was to compensate uninformed investors because of the risk involved in investing in these unseasoned issues. Shaw (1994) did not find any underpricing in instances where all investors had the same information concerning the offering. The results presented by Shaw (1994) were conclusive even when Shaw (1994) controlled for issue size, sector, the investment bank hired for the listing and the portion of shares allocated to the employees.

Table 1 shows the results of short-term IPO performance studies by various researchers throughout the world. It is evident from Table 1 that the short-term IPO performance calculated using the cumulative abnormal returns (CARs) method is positive and ranges from 4% to 166.67%.

Table 1: Short term IPO performance

INTERNATIONAL EVIDENCE OF IPOs				
Country	Study	Sample Period	Sample Size	CAR (%) Short run
Australia	Finn and Higham (1988)	1966-78	93	29.2
	Lee et al. (1993)	1976-89	266	22.9
Brazil	Aggarwal et al. (1993)	1980-90	62	78.5
Canada	Jog and Riding (1987)	1971-83	100	11
Finland	Keloharju (1993)	1984-89	80	8.7
France	Husson and Jacquillat (1990)	1983-86	131	4
Germany	Uhlir (1989)	1977-87	97	21.5
Hong Kong	Ljungqvist (1993)	1974-92	119	12.4
	Dawson (1987)	1978-83	21	13.8
	McGuinness (1992)	1980-90	80	17.6
Hungary	Dewenter and Malatesta (1997)	N.A	5	14.9
Italy	Cherubini and Ratti (1992)\	1985-91	75	27.1
Japan	Dawson and Hiraki (1985)	1979-84	106	51.9
	Hwang and Jayaraman (1992)	1975-89	182	45.5
Korea	Dhatt et al. (1993)	1980-90	347	78.1
	Kim and Lee(1990)	1985-88	99	48.6
Malaysia	Dawson (1987)	1978-83	21	166.67
	Isa (1993)	1980-91	132	80.3
	Aggarwal et al. (1993)	1987-90	44	2.8
Netherlands	Wessels (1989)	1982-87	46	5.1
New Zealand	Vos and Cheung (1993)	1979-91	149	28.8
Portugal	Alpalhao (1992)	1986-87	62	54.4
Singapore	Koh and Walter (1989)	1973-87	66	27
	Dawson (1987)	1978-83	39	39.4
	Hin and Mahmood	1976-84	45	N/A
Spain	Rahnema et al. (1992)	1985-90	71	35
Sweden	Loughran, Ridder and Rydqvist (1994)	1980-90	162	38.2
Switzerland	Kunz and Aggarwal (1994)	1983-89	42	35.8
Taiwan	Chen (1992)	1971-90	168	45
Thailand	Wethyavivorn and Koo-smith (1991)	1988-89	32	58.1
U.K.	Levis (1993)	1980-88	712	14.1
U.S.A.	Ritter (1991)	1975-84	1526	14.32
	Aggarwal and Rivoli (1990)	1977-87	1598	10.67
	Reilly (1977)	1972-75	486	10.9
	Ibbotson et al. (1994)	1960-92	10616	15.2

Adapted from 'Initial Public Offerings in Chile', Celis and Maturana (1998), p 10

2.3 Long-term IPO performance of IPO's

Long-term IPO performance has been investigated, and the following section examines the results of these long term performance studies.

Reilly and Hatfield (1969) investigated the long-term performance of unseasoned IPO's issued in the USA between December 1963 and June 1966, when the market was reported as being bullish. They defined long-term performance as the performance of the issue from the day of the offering to the Friday one year post-offering date. They noted that most of the issues during this period experienced increases in performance and attributed this to the fact that the market was bullish during the period under

investigation. They calculated that more than 50% of the new issues outperformed the market indicator, and defined outperformance as having taken place when the stock either gained more or lost less than the market indicator during the same period. They also found that the relative losses were 36% and the relative gains were 64% when compared to the National Quotation Bureau Over-the-Counter Industrial Average (OTC). This finding was validated when compared to the Dow Jones Industrial average (DJIA). The results indicated that the losses averaged 21% and the gains 75%. They concluded that the short- and long-term performance of the issues calculated were superior to those of the market. They proceeded to investigate the possibility of predicting long-term performance from the short-term results, and considered only new issues which outperformed the market during a predetermined short-term period in their study. They found that: 84% of the issues had price increases during the 11 month period; 72% of the sample outperformed the OTC average; and 80% of the sample outperformed the DJIA. Ibbotson (1975:235) investigated the price performance of IPO's in America, taking into account "risk adjusted returns". The issues chosen had to have a performance history of five years in order to qualify for the research. One issue per month for the period of the study was selected as Ibbotson (1975) claimed that this method eliminated observational dependence. According to Ibbotson (1975), the results obtained from this study conformed to the efficient market hypothesis (EMH). The method involved the calculation of the systematic risk, and it was shown that the systematic risk of the new issue was higher than the systematic risk calculated for the market, but this risk dropped as the issue became seasoned.

Bhana (1989) studied the South African IPO market during 1985-1987, and it was noted that there was an increase in the number of listings during this period. During the period under investigation the prime overdraft rate had reached 25%, which meant that companies could raise equity in the market at a cheaper rate than through the banks. The returns calculated, using the listing/offer price and the respective IPO anniversary share price for the one month and one year holding periods, were positive and statistically significant. Bhana (1989) attributed the excess returns to underpricing and it was observed that the excess returns had a decreasing trend over the life of the share. He also found that the performance of shares that opened with a premium of above 100% on the offer price did not produce returns different from other new issues during

the one year evaluation period. Bhana (1989) concluded that the initial price behaviour was not a sign of long-term performance of the asset.

Bhana (1989) also investigated the share price performance in the secondary market. When comparing the share price performance in this secondary market to the primary market, he found that the IPO's were not a source of superior performance as the returns were negative. He identified the slowing down of the market momentum and the subsequent market crash in October 1987 as reasons for the negative returns.

Lawson and Ward (1998) investigated the risk adjusted IPO performance of issues in South Africa from 1986 to 1995. The one year post-listing performance of the issue was calculated using data from the secondary market, and the methodology employed required the calculation of the systematic risk of the issue, beta (β). In order to fulfil this requirement the IPO share price returns had to be regressed against the JSE Securities Exchange All Share Index (ALSI). Lawson and Ward (1998) found that investors who bought shares in the primary market and held them for a period of one year post-listing, experienced on average significant combined returns. They also revealed that investors who purchased shares in the secondary market did not experience major excess returns. The possible relationship between IPO's with high initial premia, low initial premia and their subsequent aftermarket performance was investigated, and the results showed that IPO's with high initial premia outperformed issues with low initial premia.

Shaw (1970) investigated the IPO performance in Canada during three periods: 1926-1928; 1956-1963 which was defined as long-term; and the third, 1968-1969, which was defined as short-term, and determined the IPO performance using a performance relative. Shaw (1970) observed that when using this measure there was an expectation that the performance of new issues would be higher than 1, since 51% of newly listed issues did not pay dividends in the first four years post-listing and only paid 1% in the fifth year. It was concluded that unseasoned stock offerings did not match the performance of the Toronto Stock Exchange Industrial Index during the five year period from the time of offering.

McConnell and Sanger (1987) investigated 319 over-the-counter (OTC) stocks that listed on the New York Stock Exchange during 1966-1977. It was found that these stocks experienced positive abnormal returns prior to listing and negative abnormal returns after listing. McConnell and Sanger (1987) attributed the positive returns to the prestige that a company gains when listing on a stock exchange. Several possible reasons for the negative post-listing performance were investigated but none were accepted as possible explanations for the performance.

McDonald and Fisher (1968) investigated the aftermarket price behaviour of new stock offerings over a one year period in which the market was classified as being bearish. They could not reject the hypothesis that issues with high initial premium had returns equal to that of the sample for the rest of the year. The period under investigation was broken down further into five time intervals as set out below.

- Offering to first week post offering-During this period the mean excess return was 28.5%.
- End of first week to one year post offering-The mean return for this period was computed to be -18.1%. This was the return that investors received if they purchased the issue in the secondary market.
- Offering to one month post offering-This period yielded a mean excess return of 34.5%.
- End of first month to one year post offering-The mean excess return calculated during this period was calculated to be -19.8%.
- Offering to one year post offering-Mean excess returns obtained during this interval was -3.2%.

McDonald and Fisher (1968) went on to write that the returns which had been calculated for IPO's for the first week anniversary period had no predictive value in the selection of stock for subsequent performance. McDonald and Fisher (1968) indicated that this was in line with the efficient market hypothesis.

Wolfgang, Kammermann and Walchli (2005) investigated the long-run performance of Swiss IPO's in the secondary market. Two calculation methods, namely BHARS and

CARS, were used, as well as two different sets of reference portfolios. Underperformance was observed, regardless of the reference portfolio used, but the degree of underperformance was reduced when the Vontobel small companies' index was used as the reference portfolio compared to the Swiss performance index.

Long-run performance of IPO's in the UK was researched by Levis (1993). His work showed that there was significant underperformance of IPO's even after 36 months following the first day of trading. Levis (1993) used four different reference portfolios: the FTA Index, the Financial Times Actuaries All Share Index, The Extended Hoare Govett Small Companies (HGSC) Index and the All Share Equally Weighted Index (ASEW). Levis (1993) calculated the aftermarket performance of the reference portfolio from the listing date to either the delisting date or the end of the sampling period. This was followed by calculating the BHARs of the issues from the first day of trading till the earlier of the delisting date or the three year sampling period. A wealth relative (WR) was also calculated and used as a measurement of IPO performance. All four reference portfolios showed a reduction in IPO performance during the different periods under investigation.

Alvarez and Gonzalez (2005) investigated Spanish IPO performance using different benchmarks and controlled for size and book-to-market ratios. The long-run abnormal returns were calculated as the return on a BHAR investment in the IPO firm less the BHAR investment in the appropriate benchmark. They documented that Spanish IPO's did not exhibit any underperformance in the first year of issue, however, a negative trend was identified when the period of study was extended to three and five years. This phenomenon was verified by a second method which involved the calculation of a wealth relative ratio which was defined as the ratio of the mean return of the issue and the mean return of the appropriate reference portfolio.

Aggarwal, Leal and Hernandez (1993) examined the short- and long-run performance of IPO's using a sample of companies from the Brazilian, Chilean and Mexican markets. Their procedure was similar to that of Brav and Gompers (December 1997), Levis (1993) and Alvarez and Gonzalez (2005). Aggarwal et al., (1993) reported that for Brazilian issues, the mean excess return for an investor who bought at the offer price and kept the issue for a year, was 39% and was -25.6% for the three year holding period. In the

secondary market however these shares exhibited negative mean returns for two and three year holding periods.

The Chilean results indicated that the mean market excess returns were negative in year one and were positive in years two and three. This was true provided that the investor bought the issue at the offer price. The mean excess market returns of IPO's in the secondary market were positive in year one and were negative in years two and three. The mean excess market returns for IPO's in Mexico for a one year holding period were negative in both the primary and secondary markets.

The literature reviewed has demonstrated that long-term underperformance has not been limited to a particular stock exchange, and it also revealed that initial day performance is not a signal for long-term performance.

2.4 Reputation of Underwriters and their role in pricing IPO's

Carter and Manaster (1990) stated that the reason for firms going public was to raise capital and they have indicated that there was a tendency for IPO's to be underpriced. They reported the attempts to explain underpricing, and some of the models investigated during their literature review suggested that the underwriter was very important. They explained that, the higher the amount of capital associated with informed investors, "the greater was the equilibrium underpricing" (Carter & Manaster, 1990: 1046). Carter and Manaster (1990) have explained that investors concentrate their efforts in gathering information for risky issues since the cost of gathering information is very expensive.

The phenomenon of underpricing has a negative impact on all issuing firms. Low risk firms are able to reduce the level of underpricing by revealing their low risk nature to the market. This is accomplished by selecting esteemed underwriters to take them public. By taking low risk firms public underwriters have preserved their reputation for successful listings. This trend presents itself as a signal to the market which indicates the low risk nature of these firms.

Carter and Manaster (1990) confirmed that the reputation of the underwriter was related to the returns of the IPO and found that the long-run returns for IPO's brought to the market by prominent underwriters were less negative compared to their counterparts.

Michaely and Shaw (1994) investigated the relationship between the prestige of the investment banks on the level of underpricing and the company performance. They built on the model by Rock (1986), in which the "IPO market was divided into two types of investors: the informed and uninformed investors" (Michaely & Shaw, 1994: 291). The informed investors were those investors who had knowledge on the future cash flows of the company, while uninformed investors lacked this knowledge. This information asymmetry produces a problem in that the uninformed investors end up with less successful IPO's and, to keep them interested in the IPO market, an additional incentive is required which comes in the form of underpricing.

Michaely and Shaw (1994) affirmed that companies should use investment banks which were reputable when going public, as the IPO was less underpriced and the company performance over a two year period post-listing was better compared to their counterparts. This finding was consistent with those made by Carter and Manaster (1990). Michaely and Shaw (1994) also discovered that firms that underpriced less had higher earnings and paid higher dividends.

2.5 IPO's and their operating performance

Bharat and Kini (1994) investigated the operating performance of IPO's, measured before and after issuing. They found that IPO firms showed a decline in operating performance post-IPO listing. The performance measures used by Bharat and Kini (1994:1699) were "operating return on assets and operating cash deflated by assets".

Bharat and Kini (1994) also established that companies in which the entrepreneurs kept a high percentage of ownership maintained a high level of performance compared to firms in which the entrepreneurs maintained a lower percentage of ownership.

Three explanations were given for the decline in profit and these are presented below.

- “Increased agency costs” (Bharat and Kini, 1994:1700) – According to the agency hypothesis, there is conflict between the managers of the company and its shareholders. The shareholders would like to see the money obtained from the listing being used in projects and using the money in non-value adding projects is a sure way to diminish profit.
- Managers manipulate the financial statements; thus enhancing company performance prior to the listing.
- Entrepreneurs timed the IPO offering to coincide with periods of good company performance, knowing that the company performance could not be sustained on a long term basis.

2.6 Conclusion of Literature Review

IPO's generally yielded superior first day performance, due to the effects of underpricing and reasons for this underpricing have been examined. Investing in the IPO at the offer price has been more beneficial to the investor when shares purchased in the same IPO in the secondary market are compared with the initial offer price. One reason provided for this phenomenon was that market factors dictated the price of these shares following the issue-the efficient market hypothesis takes over.

The question that needed to be answered was whether this history of IPO performance manifests itself in the current market context; this is the reason for investigating South African IPO performance from 1998 to 2007. In order to determine whether the value of the premium offered by IPO's in the primary market indicates the aftermarket performance of the IPO's, the following hypothesis had to be answered.

2.6.1 Hypothesis 1

Investors that invested in IPO's during the 1998-2007 periods did not receive any premium in the IPO's at the close of trade on the first day of offering.

The null hypothesis: There is no premium offered by IPO's on the first day of the offering, $H_0 \mu_0 = 0$.

The alternate hypothesis: There is a premium offered by the IPO's on the first day of offering, $H_A \mu_0 \neq 0$.

Where

μ_0 is defined as the average aftermarket return of IPO's at the close of trade day on the first day on which the IPO was issued.

2.6.2 Hypothesis 2

The second sub-problem was to determine whether there was any correlation between the value of the premium and the **first year aftermarket performance** of the IPO.

The null hypothesis was H_0 There is no correlation between the value of the premium and the **first year aftermarket performance** of the IPO.

The alternate hypothesis H_A There is a correlation between the value of the premium and the **first year aftermarket performance** of the IPO.

Chapter Two has presented the various studies that have been compiled on IPO performance by researchers throughout the world and concludes by proposing two hypotheses which have to be investigated.

Chapter Three will now describe the research methodology used to answer the hypotheses in section 2.6.

3 RESEARCH METHODOLOGY

The research methodology used in the study is based on the event study methodology which is described by Bowman (1983), Fama, Fischer, Jensen and Roll (1969), Wells (2004), Roell (1996), McWilliams and Siegel (1997) and also McWilliams and McWilliams (2000).

Bowman (1963) describes event study methodology as a technique in which the share price behaviour is analysed at the time of the event or announcement and defines an event as any announcement from within the firm or external to the firm.

McWilliams and Siegel (1997) described event study as an instrument which could be used to determine the impact of an announcement on the companies share price. The method determines whether an uncharacteristic stock price irregularity can be linked to an unexpected event and, once this has been confirmed the implication of the event can be inferred. McWilliams and Siegel (1997:626) indicated that they preferred the use of share prices instead of “accounting-based measures of profit” in event studies, since these prices are supposed to reflect the true value of the firm.

The initial premia for the current study have been calculated and the value of this premia have been correlated to the abnormal performance index calculated using event study methodology in order to find any relation between the value of the premia and the one year post-listing performance. The event in this study is defined as the listing of the IPO and the share price reaction to this event has been modelled.

The remainder of the methodology section first looks at the application of event study methodology to this research. Section 3.1 identifies the population and the sample used in the study. Section 3.1.2 describes how the sample was selected and lists the criteria used in the selection process. Section 3.2 describes the data analysis and outlines the steps involved in calculating the abnormal performance index and the initial premium. Section 3.3 concludes the research methodology section by dealing with the issues of validity and reliability.

3.1 Population and sample

3.1.1 Population

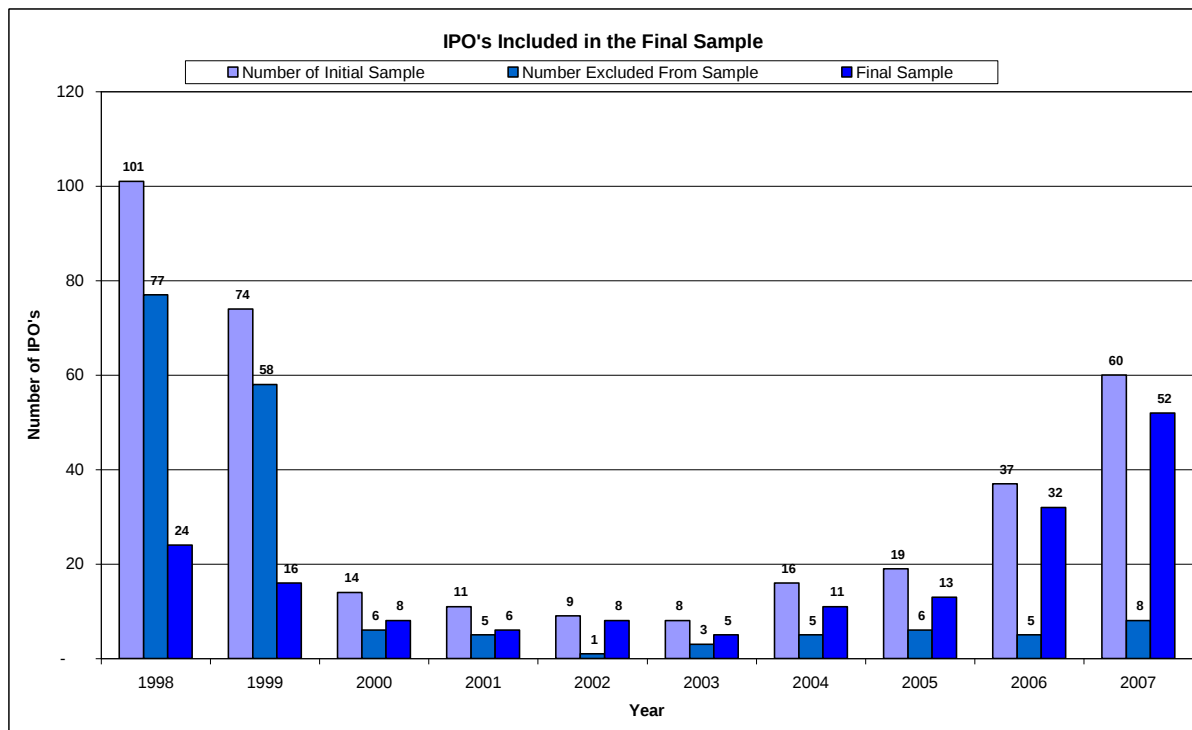
The research population is all the IPO's that are listed on the JSE Securities Exchange.

3.1.2 Sample

IPO initial returns have been researched in South Africa from 1972 to 1998. The sample for this research has been taken as all the IPO's listed during the 1998-2007 period. The reason for this is to continue the research that has been done in this field of study.

Figure 1 below shows: the number of IPO's that has been listed on the JSE Securities Exchange; the number of IPO's that have been excluded from the sample; and the resulting number of IPO's that have participated in the research.

Figure 1: Number of IPO's Included in the Final Sample



For an observation to be included in the sample data, it has to meet the requirements outlined below.

- Only South African IPO's have been considered in the research.
- IPO's have to have a minimum amount of information for the statistical analysis to be carried out on them. The information that is required is the listing date, the listing price, the closing price of the IPO on the first day of listing and the one year share price performance.
- Confounding events have been described by McWilliams and Siegel (1997) as being events other than the event being investigated which may have an impact on the share price. "Confounding events can include the declaration of dividends, announcement of an impending merger, signing of a major government contract and a change in a key executive" (McWilliams & Siegel, 1997: 634). All confounding events have been excluded from the study as they can impact the share price reaction.
- Companies use various methods in order to be listed on a particular stock exchange. Some of these include: an *initial public offering*; a *preferential offer*; a *private placing*; an *introduction*; or alternative listing strategies which include *backdoor listings*; where the company is listed on the stock market by making use of an already listed company by either one of two methods: a *reverse takeover* or a *cash shell*. In order for a company to be eligible to participate for this research, it has to list via the Initial Public Offering route.

In order to calculate the abnormal performance index and the initial returns for the individual IPO's the following data is required:

- the listing date for the IPO;
- the listing price of the IPO;
- any IPO name and code change as the new code has been used in obtaining the one year share price performance;

- the 1 year share price performance which has been used in modelling the abnormal performance index (API);
- the IPO's which have delisted and their delisting dates which have been used to verify whether they met the one year anniversary period required for them to qualify to participate in the research;
- the closing prices for the All-Share index (ALSI market index, J203), which have been used to calculate the market return, R_m ; and
- the closing prices for the South African long bond rate (R157), which have been used to the measure for the risk free rate, R_f .

The data required for the research has been obtained from the JSE Securities Exchange database; the Standard Bank website and The South African Reserve Bank database. The JSE Securities Exchange and the Standard Bank website have been used to gather the share price history of the IPO's. The reason for using both these sources is to verify the correctness of the data gathered. The data from the South African Reserve Bank is used to gather the South African Long Bond rate which has been used to model the Abnormal Performance Index.

3.2 Data analysis

This research methodology followed the event study methodology outlined by Bowman (1983), Fama, Fischer, Jensen and Roll (1969), Dyckman, Philbrick and Stephan (1984). McWilliams and Siegel (1997) noted that the use of event study methodology was on the increase and they had concerns around issues of whether the methodology was being implemented correctly and whether the results were analysed correctly. McWilliams and Siegel (1997) reviewed the assumptions upon which this method was based with the intention of informing the user about potential violations and the subsequent consequences of these violations. The assumptions used which formed the basis of the methodology are set out below.

- Assumption 1: The “markets are efficient” (McWilliams & Siegel, 1997:630). The JSE Securities Exchange was classified by Bhana (1989), Thompson and Ward (1995) and Firer, Ward and Teeuwisse (1987) as being a semi-strong efficient market. In a semi-strong market all information pertaining to the company upon its release is reflected in the share price of the company. The use of event study methodology was allowed once the JSE Securities Exchange was classified as being semi-strong.
- Assumption 2: The event was unanticipated and was announced publicly. This would mean that the share price reaction was determined using the information from the announcement which was available to the public. The listing of the IPO was announced publicly and was regarded as an unanticipated event, which complied with assumption 2.
- Assumption 3: “There are no confounding events” during the event window (McWilliams and Siegel, 1997:634). In order to comply with this requirement, the effect of the event being investigated had to be isolated from the effects of all of the other events that could impact on the share price. In order to comply with this assumption, IPO’s in which the event coincided with the confounding event were excluded from the sample.

McWilliams and Siegel (1997) recommended a sequence of steps when using event studies and only those steps that were applicable to this study were used. The steps used for this research has been outlined below.

1. Define the event under investigation that provides new information to the market (McWilliams & Siegel, 199:652).

The event under consideration was the listing of a company. The period of investigation was taken from 1998 to 2007. The reason for choosing this period was to continue the research on IPO performance in South Africa which have been compiled by Barlow and Sparks (1986), Bradfield and Hampton (1988), Lawson and Ward (1996), Bhana (1989) and M’kombe (1998).

2. Discuss the theory which justifies the expected reaction of the market to the IPO listing (McWilliams & Siegel, 199:652).

The theory and the expected market reactions have been discussed in the literature review.

3. Identify the sample that will be considered for the investigation together with the event dates (McWilliams & Siegel, 199:652).

Section 3.1 discusses the population and the subsequent sample that was considered for the research.

4. Choose an appropriate event window period (McWilliams & Siegel, 199:652).

The length of the window period under investigation was chosen as the one year anniversary date from the event (IPO listing). The reason for this was to correlate the one year post-listing performance to the value of the premium offered upon listing.

5. Control for confounding events (McWilliams & Siegel, 199:652).

Section 3.1.2 describes how this study controlled for confounding events.

Once the above steps were met, the calculation procedure followed the sequence prescribed by Lawson and Ward (1998) as described below.

1. Modelling of the share price reaction to the listing (Lawson & Ward, 1998: 29).

The first step was to use the Capital Asset Pricing Model (CAPM) to determine the value of the share in the aftermarket. This model uses the risk-free rate R_{ft} , the market return R_{mt} and the risk related to the investment, β_{it} as calculated in equation 1 below. The method used to determine β_{it} , was done as per Lawson and Ward (1998). According to Lawson and Ward (1998), beta estimates vary over time and the degree of variability is the greatest in the first year of listing. The

beta value was estimated by regressing the first 52 weeks of daily share performance against the JSE Securities Exchange ALSI index. Treatment of outlier beta values was done according to the process outlined by Lawson and Ward (1998). Outlier β values were defined as those greater than 2.0 and less than 0 and those IPO's which exhibited this behaviour had their β 's adjusted to values of 2 and 0 respectively.

$$R_{it} = R_{ft} + (R_{mt} - R_{ft}) \times \beta_{it} \quad \textbf{(Equation 1)}$$

Where:

R_{it} is defined as the return on investment i, which is time period specific;

R_{ft} is defined as the risk-free rate of return, which is time period specific;

R_{mt} is defined as the market return, which is time period specific; and

β_{it} is defined as the coefficient of systematic risk of the investment i, under consideration.

2. Calculating the Excess Return from the listing.

Two models were used in determining the excess returns: the mean-adjusted excess returns and risk-adjusted excess returns. The mean and risk adjusted excess returns were both calculated using equation 2 below. Risk adjusted market returns used the β estimates that were calculated using equation 1. Mean-adjusted after market returns were calculated by assigning beta values equal to one to the newly listed shares. This method of assigning beta values equal to 1, as explained by Lawson and Ward (1998), assigns an average risk to the IPO's and calculates their average return in the market.

$$E_{it} = R_{it} - \{R_{ft} + (R_{mt} - R_{ft}) \times \beta_{it}\} \quad \textbf{(Equation 2)}$$

Where:

R_{it} is defined as the return on investment i, which is time period specific;

R_{ft} is defined as the risk-free rate of return, which is time period specific;

R_{mt} is defined as the market return, which is time period specific;

β_{it} is defined as the coefficient of systematic risk of the investment i , under consideration; and

E_{it} is defined as the excess return on share i at time t .

3. Organise and Group the Excess returns for analysis (Lawson & Ward, 1998: 29).

Lawson and Ward (1996) explained that the use of the different methods to organise and group the excess returns depended on the situation, and they explained that using the API method best modelled the share price performance of new issues listed on the stock market. The reason given for this by Lawson and Ward (1998) was that this method was less skewed by trading costs than the cumulative average residual (CARS) method. The Abnormal Performance Index is defined as an estimate of the simple average return, and is calculated by purchasing equal amounts of shares in each security at the time of the listing and holding these shares until they are sold at the end of the predetermined time period. The API was calculated according to equation 3 below.

$$API_t = \frac{1}{N} \times \sum_{i=1}^N \prod_{j=1}^T (1 + E_{it}) - 1 \quad \textbf{(Equation 3)}$$

Where:

E_{it} is defined as the excess return on share i at time t ;

T is the number of time periods being aggregated; and

N is the number of firms in the portfolio.

In order to compute the necessary statistics, the initial premium, the aftermarket return and the combined returns had to be calculated. The paragraphs below indicate the method used to determine these variables.

Initial Premium

The initial premium was calculated using equation 4. The systematic risk could only be calculated from the time that the offer was listed on the stock exchange. The systematic risk was not used in the calculation of the initial premium, and Lawson and Ward (1998) explained that the reason for this was that the “average systematic risk adjustments for a period of one day are negligibly small when compared to average expected initial returns, initial returns are not usually adjusted for systematic risk” (Lawson & Ward, 1998:32). Lawson and Ward (1998) also indicated that there has been no method developed to calculate the risk of listing, and that it was incorrect to assign a value of zero to the listing event, therefore, the initial returns was not adjusted for event listing risk.

$$IP = \left(\frac{CP_{FD} - LP}{LP} \right) \times 100 \quad \textbf{(Equation 4)}$$

Where:

IP is the initial premium of the IPO;

CP_{FD} is the first day closing price in cents; and

LP is the listing price in cents.

Aftermarket Performance

Equation 5 below was used to determine the aftermarket performance of the issue and was defined as the percentage change between the closing price of the issue at the end of the period investigated, and the closing price of the issue on the first day of trading.

$$AP = \left(\frac{CP_X - CP_{FD}}{CP_{FD}} \right) \times 100 \quad \textbf{(Equation 5)}$$

Where:

AP is the aftermarket performance of the issue;

CP_{FD} is the first day closing price in cents; and

CP_x is the closing price of the IPO at the specified time period x.

Combined Returns

Equation 6 was used to calculate the combined excess returns. Lawson and Ward (1998) defined combined returns as the combination of initial and aftermarket returns.

$$CR = \left(\frac{CP_x - LP}{LP} \right) \times 100 \quad \textbf{(Equation 6)}$$

Where:

LP is the listing price in cents;

CP_x is the closing price of the IPO at the specified time period x; and

CR is the combined return percentage of the new issue.

3.3 Validity and reliability

This report was compiled to be accurate and meaningful to the investing community at large and in achieving this goal the issue of validity had to be addressed. Leedy & Ormrod (2001:103) explained that validity refers to “accuracy, meaningfulness and credibility” which had to be addressed.

3.3.1 External validity

External validity as explained by Leedy and Ormrod (2001) is the extent to which conclusions from the research can be “generalised to other contexts” (Leedy & Ormrod, 2001:105). They described the use of a representative sample as one of the ways in which to increase the external validity, and this technique was used for this study.

3.3.2 *Internal validity*

Internal validity is the degree to which a researcher can draw “accurate conclusions” from the research (Leedy & Ormrod, 2001:103). The reason for using the event study methodology was that it has been used previously to determine IPO performance in South Africa. The risks associated with this methodology have been investigated and have been eliminated to allow for the use of event study methodology.

3.3.3 *Reliability*

Leedy and Ormrod (2001) explain that the term reliability refers to the consistency of the results of the study. In essence the validity and reliability of the data in the study determines the validity and reliability of the research. In order to address this aspect, the data used in this research was gathered from the JSE Securities Exchange database, the Standard Bank database and the South African Reserve Bank. These sources are secondary sources of information, and the databases were considered to be reputable, thus the information was regarded as valid and reliable.

The primary information required for the research, namely the IPO listing date and listing price and any IPO name change and code change, was obtained from the JSE Securities Exchange. The IPO share price history was gathered from the Standard Bank database and this data was verified using the JSE Securities Exchange database. All discrepancies between the two sources were investigated, and all errors were rectified.

4 PRESENTATION OF RESULTS

4.1 Introduction

This chapter contains the results using the methodology described in Chapter 3. The results of the first day premium will be reported first and these are followed by the results of the correlation between the value of the premium and the first year aftermarket performance.

4.1.1 Hypothesis 1: Premium offered by listed companies at the close of trade on the first day of issuance.

The null hypothesis states that there is no premium offered by IPO's on the first day of the offering.

The alternate hypothesis states that there is a premium offered by the IPO's on the first day of offering.

The sample of 177 new listings was tested for mean initial returns at the close of trading on the first day of listing. The sample consisted of all IPO's which were listed on the JSE Securities Exchange from 1998 to 2007.

Table 2 below contains a summary of the results for hypothesis 1, while Appendix A contains the comprehensive descriptive and t test statistics. For the sample under consideration, the mean initial return was calculated to be **29.39%**, with a standard deviation of 75.13%. The standard deviation is a measure of the volatility of the initial returns. The initial returns at the close of trading on the first day of listing failed the normality test as they were generally positively skewed.

The mean initial return at the close of trading on the first day of listing, at a 5% significance level, was significantly different from zero. Thus, the null hypothesis was rejected and the alternate hypothesis was accepted.

Table 2: t-test results for mean initial return equal to zero

SAMPLE SIZE	177
MEAN	28.39%
STANDARD DEVIATION	75.13%
STANDARD ERROR	5.65%
ALTERNATIVE HYPOTHESIS	INITIAL_PREMIA<>0
T-VALUE	5.0271
PROBABILITY LEVEL	0.000001
DECISION LEVEL (5%)	REJECT H₀
POWER (ALPHA =.0.5)	0.998815

4.1.2 Hypothesis 2: Correlation between the value of the premium and the first year aftermarket performance.

The null hypothesis states that there is no correlation between the value of the premium and the first year aftermarket performance of the IPO.

The alternate hypothesis states that there is a correlation between the value of the premium and the first year aftermarket performance of the IPO.

The correlation coefficient was analysed using a sample comprising 123 IPO's. The reduction in the sample was due to the fact that the IPO's that were listed in 2007 had to be removed because there was insufficient data to calculate their one year post-listing performance.

Appendix B contains the full analysis for the test results. Table 3 shows the summarised correlation results for the value of the premium offered by IPO's considered in the study and the one year aftermarket performance, the significance levels for the correlations and the size of the sample.

The value of the premium and the one year aftermarket performance of the IPO's in the sample are negatively correlated to each other at -10.51%. The negative correlation for the one year aftermarket performance, and the value of the premium offered by an IPO indicate that, as the value of the premium increases, so the one year aftermarket performance decrease and vice versa. This result disagrees with the results of Lawson and Ward (1998) who found a positive correlation between the aftermarket excess returns and the initial premium.

The null hypothesis was rejected, and the alternate hypothesis was accepted at a 24.74% significance level.

Table 3: Correlation Matrix of one year aftermarket returns and initial returns

	INITIAL_PREMIA_EXCL_2007	API_1-YEAR
INITIAL_PREMIA_EXCL_2007	1	-0.105077
SIGNIFICANCE LEVELS	0	0.247409
SAMPLE SIZE	123	123
API_1_YEAR	-0.105077	1
SIGNIFICANCE LEVELS	0.247409	1
SAMPLE SIZE	123	123

4.2 Conclusion

The research results therefore confirm what was stated in the literature: that IPO's generally provide a premium on the first day of listing. However, contrary to the study by Lawson and Ward (1998), the results showed a negative correlation between the initial premia and one year aftermarket performance.

5 INTERPRETATION OF RESULTS

5.1 Introduction

This section is broken down into two components. The first reviews how the results obtained by this research compare with both local and international studies, and the second portion deals with an investment strategy for the primary and secondary market with respect to the magnitude of the initial premium, and the correlation between the value of the premium and the one year aftermarket return.

5.2 Comparison of present and previous local and international studies

Table 1 taken from Celis and Maturana (1989) summarises the international short-run performance of IPO's. The table shows that the first day IPO performance was positive for all the studies. Although the study showed a positive initial return for IPO's, the magnitude of the returns varied from +4% to +166%. Celis and Maturana (1989) calculated the Chilean IPO short-run performance to be +4.8%, and they presented some explanations which have been used to explain the short-run performance of IPO's.

The first set of explanations was related to information asymmetry. This set included topics relating to the "winners' curse model" (Celis & Maturana, 1989:9) in which some investors are better informed than others. A model proposed by Carter and Manaster (1990) explained that the level of underpricing is related to the fraction of the issue that is allocated to informed investors and uninformed investors should be compensated for lack of information. A second set of explanations revolved around the fact that investors must be compensated for revealing information during the preselling period. The last set of explanations was related to inefficient market behaviour and regulatory constraints associated with the relevant stock exchanges. In this set of explanations, the authors argue that underpricing is a means of avoiding law suits. Another theory held by Ruud (1993) was that underpricing stems from price stabilisation implemented by underwriters.

Barlow and Sparks (1986) investigated 105 IPO's which listed on the JSE Securities Exchange during 1971 to 1986. They calculated the mean initial return to be 32.1%, with a maximum of 166.7% and a minimum of -21.7%. Bradfield and Hampton (1988) calculated the initial return during hot and cold periods of issuance, where hot and cold periods were defined by the rate at which IPO's were listed on the JSE Securities Exchange. The hot period for the study had an issuing rate of 37% per annum. The average opening premium during the hot period was 48%, but was 25% during the cold period, and the average during both periods was 27%. Bhana (1989) investigated 80 IPO's that listed on the JSE Securities Exchange from 1985 to 1987 and found the average initial premium to be 65%. Lawson and Ward (1998) investigated 308 IPO's from 1986 to 1998 and calculated the mean initial return to be 27.2%.

The results of the present study investigated 177 IPO's which listed on the JSE Securities Exchange from 1998-2007. The mean initial return averaged 28.39%. The minimum premium was -100% and the maximum was 460%. The standard deviation for this study was 75.13%, compared to 44.8% found by Lawson and Ward (199), 27.0% found by Bradfield and Hampton (1988) and 36.6% found by Barlow and Sparks (1986).

The results of this current study are consistent with previous studies in South Africa. The null hypothesis for Hypothesis 1 was rejected and the alternate hypothesis was accepted in view of the fact that the average initial premium was not statistically significant to zero.

The one year aftermarket performance of IPO's on the London Stock Exchange (LSE) was researched by Reilly and Hatfield (1969). They found that the new issues enjoyed an average price change of 44%. Williams (1972) observed that new issues on the LSE from 1966 to 1976 had excess returns in the first year of listing of 6%. McDonald and Fisher (1968) investigated the one year post-performance price behaviour of new issues and calculated the mean excess returns at -3.2%. Alvarez and Gonzalez (2005) calculated Spanish IPO performance and showed that these IPO's did not display any underperformance in the first year of issue. Aggarwal et al., (1993) found that the Brazilian IPO mean excess returns were 39%. Australian IPO's were researched by Dimovski and Brooks (2004) and showed negative median returns in the first year following the issue.

Bradfield and Hampton (1988) calculated that the first year aftermarket excess return of South African IPO's averaged 29%. They showed that there was a significant correlation between the initial premium and the aftermarket returns. Lawson and Ward (1998) observed that IPO's offered significant combined excess returns for one year post-listing and discovered that the aftermarket excess returns were positively correlated to the initial premium during the period 1986-1995.

The results of this study, for hypothesis two, indicated that there was a negative correlation between the one year aftermarket performance and the value of the premium offered by the IPO's being studied. A negative correlation is described as a relationship between two variables in which, as the one variable changes, the second variable changes in the opposite direction to that of the first. The negative correlation for the one year aftermarket performance and the value of the premium offered by an IPO indicates that, as the value of the premium increases, so the one year aftermarket performance decrease and vice versa. Although there is a negative correlation between the two variables, the magnitude of the correlation indicates that it is of little predictive value.

The null hypothesis for hypothesis two was rejected and the alternate hypothesis was accepted.

5.3 Primary and secondary market investment strategies

From the analysis of the mean initial returns it can be seen that investors in the primary market can enjoy superior returns offered by IPO's at the close of trading on the first day of issuance. The potential return which investors on average can achieve was calculated at 28.39%. Investors, however, must be aware that not all IPO's will produce a positive return and careful selection of the stock must be done prior to investing.

All IPO's which were considered during the period 1998 to 2006 showed that a negative correlation existed between the value of the premium and the one year aftermarket return. This indicates that IPO's with negative initial premiums performed better than their positive counterparts. An investment strategy for the secondary market would be to invest in firms which offered negative initial returns since their returns would be superior to those with positive returns.

6 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

A summary of the principal findings will be presented below with suggestions for further research concluding this chapter.

6.2 Summary of the principal findings

This research investigated the initial premium offered by IPO's during 1998-2007, as well as the correlation between the value of the premium and the first year aftermarket performance of the IPO's.

The initial returns for all IPO's during the period 1998-2007 were analysed, and the results indicate that the mean initial return of 28.39% was significantly different from zero. The mean calculated by Lawson and Ward (1998) for IPO's listed during 1986-1995 was 27.2%. Barlow and Sparks (1986) found the mean initial return for IPO's listed on the JSE Securities Exchange between 1972 and 1986 to be 32.1%. Bradfield and Hampton (1998) calculated the mean initial return for IPO's during 1975 to 1986 to be 27.0%. It is evident that the results for this study are consistent with the results obtained by previous researchers who have investigated IPO's in the South African market. The reasons for the initial premium offered by IPO's upon listing have been documented in Chapter 2.

This initial premium is only enjoyed by the primary market and not by the secondary market. The secondary market is at a distinct disadvantage, as this market does not enjoy those benefits of underpricing which are present in the IPO arena. In order for the secondary market to realise similar gains to those of the initial premium, parties would have to invest in these IPO's and keep the shares for a period of time prior to selling. For the secondary market to be sure of the performance of the IPO, the correlation between the value of the premium and the one year aftermarket performance was investigated.

The correlation between the one year aftermarket performance and the value of the premium offered by the IPO was found to be -10.51%. This negative correlation means

that IPO's which had negative initial premiums had one year aftermarket returns which were superior to those of their positive counterparts, and could benefit an investor if they were included in the investor's portfolio.

6.3 Suggestions for further research

Some of the research opportunities that were identified during the course of this report have been set out below.

In this study it was found that the correlation between the value of the premium offered by IPO's and the one year aftermarket performance was negative. This implied that negative initial premium IPO's had better returns than their positive counterparts. The possible reasons for this negative correlation were not investigated in this study, and a future research topic could be to investigate these reasons.

The research period considered for this study coincided with one of the longest bull markets seen on the JSE Securities Exchange, which was a clear limitation upon this research. In order to gain a clearer understanding of IPO initial returns and one year aftermarket performance, this study could be duplicated to cover all IPO's listed on the JSE Securities Exchange since the advent of the South African stock market. The data gathered for that study would include both bull and bear markets, and would give an investor the ability to make informed decisions during both cycles.

This study found that the mean initial performance of IPO's during 1998 to 2007 ranged from -100% and 460%. A future research topic could be to group the IPO's into their relevant sectors and investigate the initial returns offered by IPO's in these various sectors. By categorising the IPO's into their particular sectors investors would then be able to invest their money in the more lucrative sectors thus enhancing their portfolios.

Investors in the primary market have the option of increasing, maintaining or reducing their exposure with regard to the new offer, and this strategy could be dependent on the investor's analysis of these shares. A research topic could be to investigate the minimum holding period that investors would need to invest in the IPO in order to optimise their portfolio.

Another research question could be to investigate whether investors who purchased shares at the close of trading on the first day of the listing had received significant excess returns in the aftermarket. Lawson and Ward (1998) researched the aftermarket performance of shares purchased at the close of trading on the first day of listing. They found that the mean excess returns for the IPO's in their study were equal to zero for the one week, one month and one year anniversary periods. They did, however, find that the mean aftermarket performance for the six month anniversary period was not equal to zero.

Lawson and Ward (1998) also investigated the correlation between the share volumes traded in the aftermarket and the initial premium. They found that shares which yielded high premia had high aftermarket activity and high volatilities. In this study the correlation between the volume of shares at the time of the offer and the initial premium was not investigated. A potential research question could be to investigate the correlation between the volume of the shares at the time of the offer and the initial premium, as well as the correlation between the share volumes traded in the aftermarket and the initial premia. This correlation, as stated by Lawson and Ward (1998), is important for an investor who is seeking a share which will offer high trading volumes.

Lawson and Ward (1998) indicated that the methodology used to determine the one year aftermarket performance did not take into account dividends and trading costs. The same methodology was used in this research which was a clear limitation, and an investigation into a more robust method which takes dividends into account when determining the aftermarket performance could be a potential research question.

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APPENDIX A HYPOTHESIS 1 DESCRIPTIVE STATISTICS

Variable Initial_Premia

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Initial_Premia	177	0.2838881	0.7513094	5.647187E-02	0.1724389	0.3953373

T for Confidence Limits = 1.9735

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality	9.5485	0.000000	Reject normality
Kurtosis Normality	6.9667	0.000000	Reject normality
Omnibus Normality	139.7099	0.000000	Reject normality
Correlation Coefficient			

T-Test For Difference Between Mean and Value Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Initial_Premia<>0	5.0271	0.000001	Reject Ho	0.998815	0.991883
Initial_Premia<0	5.0271	0.999999	Accept Ho	0.000000	0.000000
Initial_Premia>0	5.0271	0.000001	Reject Ho	0.999614	0.996114

Nonparametric Tests Section

Quantile (Sign) Test

Hypothesized Value	Quantile	Number Lower	Number Higher	Prob Lower	Prob Higher	Prob Both
0	0.5	38	121	0.000000	1.000000	0.000000

Wilcoxon Signed-Rank Test for Difference in Medians

W	Mean of W	Std Dev of W	Number of Zeros	Number Sets of Ties	Multiplicity Factor
12279	7791	682.2645	18	18	678

Approximation Without

Alternative Hypothesis	Continuity Correction Prob Z-Value	Decision Level (5%)
Median<>0	6.5781	0.000000 Reject Ho
Median<0	6.5781	1.000000 Accept Ho
Median>0	6.5781	0.000000 Reject Ho

Approximation With

Continuity Correction Prob Z-Value	Decision Level (5%)
6.5774	0.000000 Reject Ho
6.5788	1.000000 Accept Ho
6.5774	0.000000 Reject Ho

PLOTS SECTION

Figure 2: Histogram of the Initial Premia

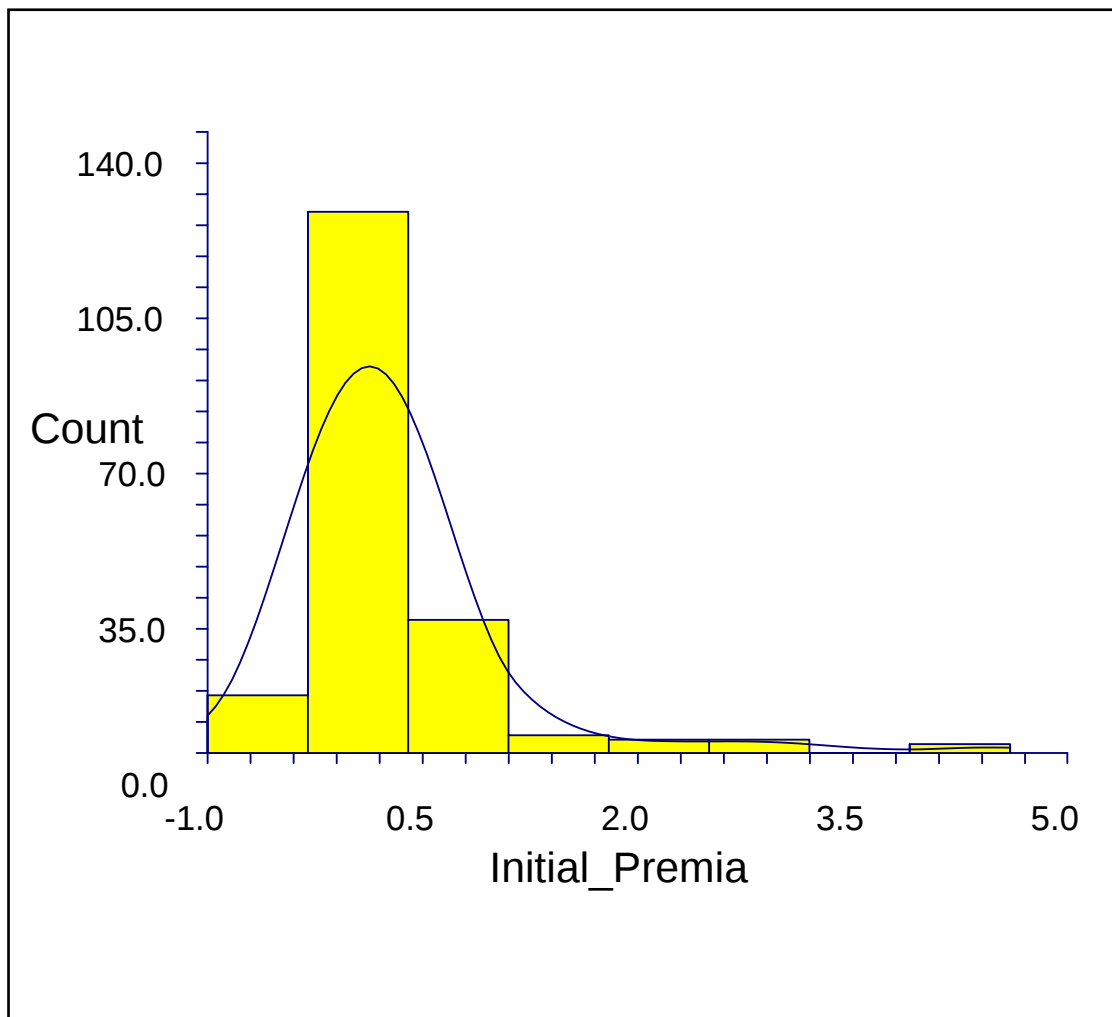


Figure 3: Normal Probability Plot of Initial Premia

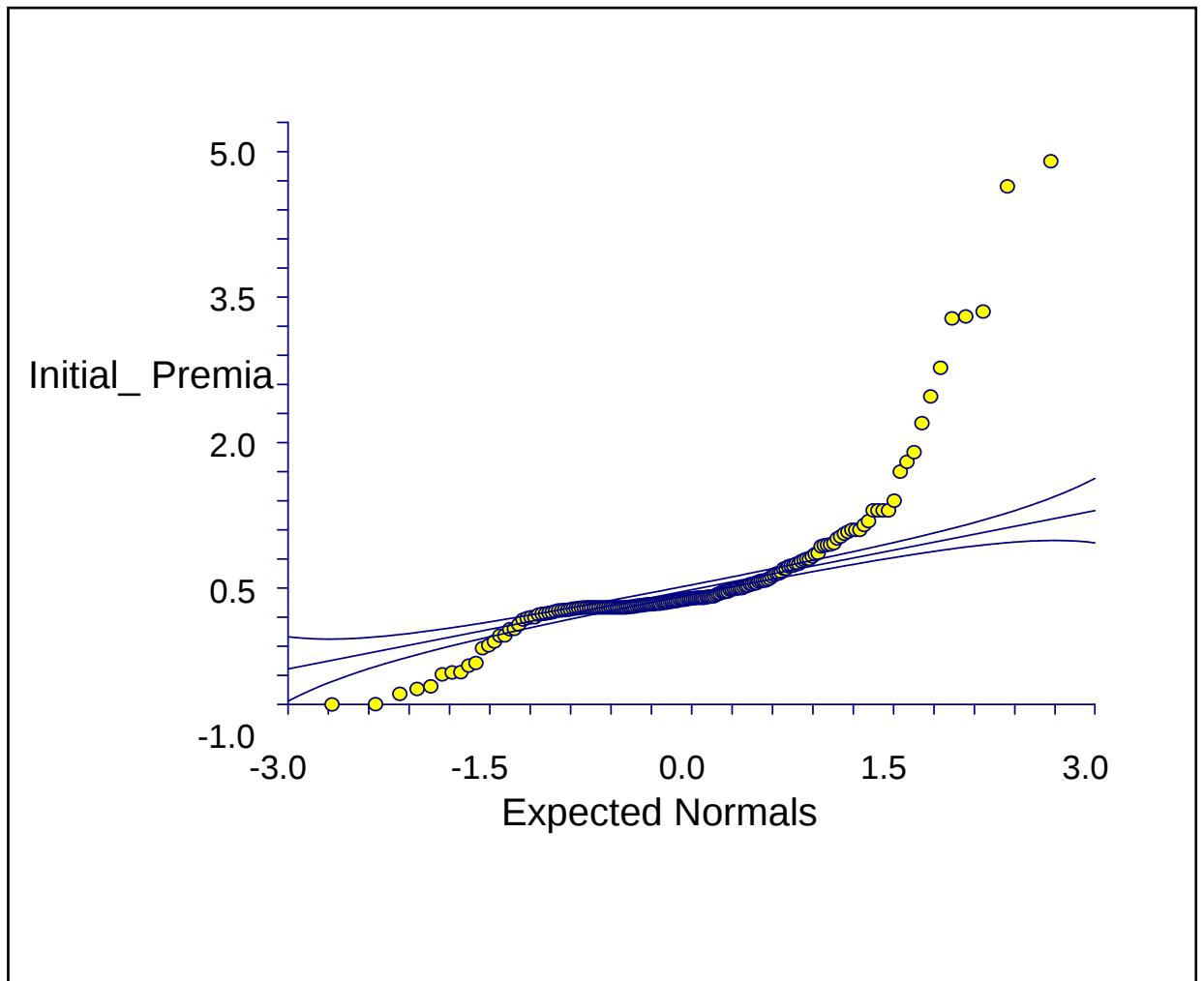
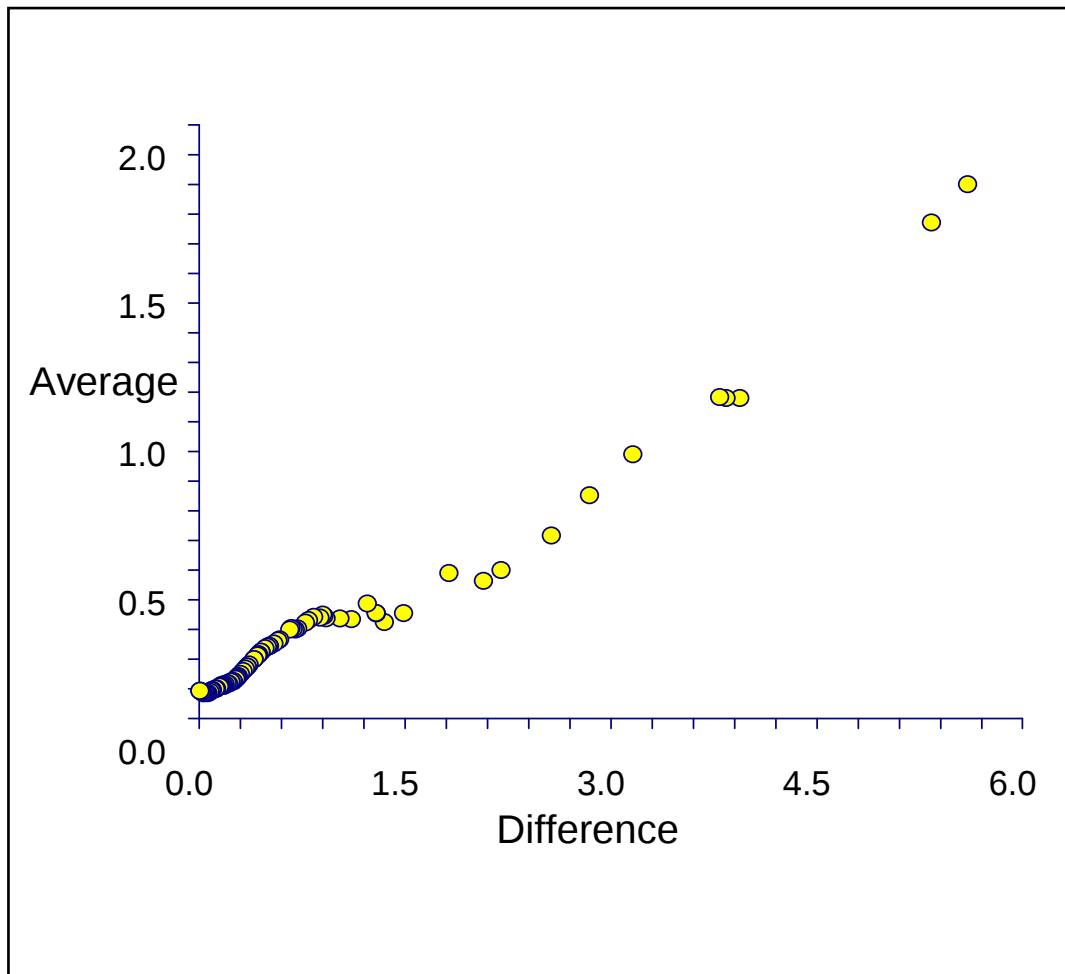


Figure 4: Average- Difference Plot



APPENDIX B HYPOTHESIS 2-CORRELATION RESULTS

Correlation Report

Spearman Correlations Section (Pair-Wise Deletion)

	INITIAL_PREMIA_EX_2007	API_1_YEAR
INITIAL_PREMIA_EX_2007	1.000000 0.000000 123.000000	-0.105077 0.247409 123.000000
API_1_YEAR	-0.105077 0.247409 123.000000	1.000000 0.000000 123.000000

APPENDIX C IPO AND API RESULTS

Company	Abnormal Performance Index	Initial Premia
1Time Holdings Ltd		9.00%
ABC Cash Plus Ltd	-154.60%	55.00%
ABE Construction Chemicals Ltd		0.00%
ACC-ROSS Holdings Limited	-88.04%	10.00%
Acupac Properties Limited	-5.59%	0.00%
Africa Cellular Towers	71.17%	20.00%
Africa Glass Industries Ltd	68.72%	-3.01%
African Brick Centre Ltd		24.00%
African Eagle Resources PLC		19.05%
African Gem Resources Limited	-52.31%	-35.00%
Afrimat Limited	36.45%	64.00%
Afrocentric Investment Corporation Limited	-0.71%	0.00%
Alert Steel Holdings Ltd		35.00%
Alliance Data Corporation Limited	14.11%	30.00%
Alpina Property Holdings Limited	-89.04%	0.00%
Amalgamated Electronics Corporation Limited	-0.72%	28.57%
Ambit Properties Limited	3.53%	-1.00%
Annuity Property Fund Limited	10.73%	0.00%
Anooraq Resources Corporation	245.18%	7.82%
Ansys Ltd.		43.00%
Apexhi A Properties Limited	-26.52%	1.71%
Apexi B Properties Limited	-16.02%	3.35%
Aquarius Platinum Limited	33.92%	-66.67%
ARB Holdings Ltd		10.78%
Astral Foods Limited	15.23%	-22.50%
Austro Group Ltd		76.00%
Aveng Ltd	2.51%	22.15%
B&W Instrument and Elect Ltd		85.00%
Barnard Jacobs Mellet Holdings Ltd	13.26%	66.25%
Beget Holdings Limited	-109.04%	80.00%
Blue Financial Services Limited	194.87%	45.00%
Blue Label Telecoms Ltd		27.41%
Brikor Ltd		65.00%
Brimstone Investment Corp. Ltd	-128.55%	45.00%
BSI (SA) Ltd		-4.00%
Buildworks Group Ltd		50.00%
Business Connexion Group Limited	23.41%	-2.67%
Cadiz Holdings Ltd	-167.69%	247.06%
Cape Empowerment Trust Ltd	-59.58%	35.00%
Capitec Bank Holdings Limited	28.55%	-29.13%
Cedargo Holdings Ltd	-86.81%	9.09%
Celcom Group Limited	-56.04%	10.00%
Central Rand Gold Ltd		19.24%

APPENDIX C CONTINUED

Company	Abnormal Performance Index	Initial Premia
Chemical Specialities Ltd		0.00%
Chrometco Limited	-74.76%	3.20%
CIC Holdings Ltd		1.00%
Comair Ltd	-31.23%	0.00%
Command Holdings Limited	-109.32%	14.00%
Compu Clearing Outsourcing Ltd	-45.72%	110.00%
Coronation Fund Managers Limited	-9.53%	6.69%
Country Bird Holdings Ltd		0.39%
Country Foods Ltd		5.00%
Datacentrin Holdings Ltd	83.93%	-10.00%
Datapro Group Limited	-18.41%	-6.35%
Decillion Ltd	136.42%	-84.00%
Dectronic Ltd	-55.13%	0.00%
Dialogue Group Holdings Limited	39.54%	21.00%
Digicore Holdings Ltd	-39.42%	-5.00%
Discovery Holdings Limited	36.50%	14.49%
Diversified Property Income Fund Limited	17.87%	16.00%
Dynamic Visual Tech Holdings Ltd		4.00%
Ellies Holdings Ltd		-7.50%
Emira Property Fund	5.70%	6.00%
Enterprise Outsourcing Holdings Ltd	-7.90%	460.00%
ERP.COM Holdings Limited	-129.83%	100.00%
Escher Group Limited	-49.78%	7.00%
Escor Limited	356.14%	100.00%
Fairvest Property Holdings	-99.71%	36.36%
Faritec Holdings Ltd	-175.72%	305.00%
Finbond Property Fund		0.00%
First Uranium Corporation		3.17%
Glenrand M.I.B. Ltd	-41.38%	-5.56%
Great Basin Gold Limited	88.31%	0.00%
Hardware Warehouse Ltd		13.00%
Hospitality Property Fund Limited	-15.15%	-89.00%
Huge Group Ltd		24.00%
Hulamin Ltd.		-17.57%
Ideco Group Ltd		0.00%
IFA Hotels and Resorts Limited	-41.31%	11.11%
IFCA Technologies Limited	-71.34%	16.00%
Ifour Properties Limited	3.49%	-10.00%
Iliad Africa Ltd	-62.71%	2.00%

APPENDIX C CONTINUED

Company	Abnormal Performance Index	Initial Premia
Imuniti Holdings Limited	-211.88%	150.00%
Indequity Group Ltd	106.70%	300.00%
Industrial Credit Company Africa Holdings Limited	-49.23%	0.00%
Infrasors Holdings Ltd		-10.91%
Interconnective Solutions Ltd	-159.42%	80.00%
Intertrading Ltd	-109.50%	140.00%
Interwaste Holdings Ltd.		78.00%
Investec PLC	-14.35%	-81.37%
IPSA Group plc	16.52%	4.09%
Iquad Group Ltd		0.00%
John Daniel Holdings Limited	-7.34%	-99.75%
JSE Limited	233.39%	-3.00%
Jubilee Platinum PLC	15.22%	4.86%
Kagisano Group Holdings Ltd		10.00%
Kaydav Group Ltd		20.00%
Kelly Group Ltd		3.78%
Kumba Iron Ore Limited	133.80%	10.94%
Kumba Resources Limited	16.31%	-57.24%
Kwikspace Modular BLD Ltd		9.23%
Lewis Group Limited	43.71%	6.61%
Liberty International PLC	5.83%	-2.44%
Madison Property Fund Managers	74.18%	2.40%
Massmart Holdings Limited	-46.28%	9.60%
Mazor Group Ltd		10.00%
Metmar Limited	231.35%	47.66%
Milkworx Limited	972.74%	100.00%
Money Web Holdings Ltd	-117.55%	73.00%
Mvelaphanda Group Limited	0.79%	-1.23%
Myriad Medical Holdings Limited	-13.07%	11.76%
New Corpcapital Limited	-40.64%	0.00%
Oando plc	-38.94%	5.37%
Oasis Crescent Property Fund	7.56%	3.00%
Old Mutual plc	20.64%	16.44%
O-Line Holdings Ltd		-2.00%
Paracon Holdings Ltd	-87.52%	100.00%
Peregrine Holdings Ltd	87.51%	434.00%
Phumelela Gaming and Leisure Limited	318.88%	16.00%
Placecol Holdings Ltd		-39.00%
Privest Group Ltd	22.46%	298.00%
Protech Khuthele Holdings Ltd		80.00%
PSV Holdings Limited	-7.55%	-60.00%
Quyn Holdings Ltd	-49.51%	33.60%
RACEC GROUP LTD		49.00%
Rare Holdings Ltd		42.50%
Raubex Group Ltd		18.67%
RBA Holdings Ltd		40.00%

APPENDIX C CONTINUED

Company	Abnormal Performance Index	Initial Premia
Redefine Income Fund Limited	-13.75%	5.00%
Remgro Limited	38.49%	-0.25%
Resilient Propert Income Fund Limited	26.31%	2.00%
Rockwell Diamonds Incor		6.02%
Rolfes Technology Holdings		64.50%
SA French Ltd		56.00%
SAB & T Ubuntu Holdings Limited	-26.06%	43.33%
Safic Holdings Limited	71.17%	0.00%
Sanlam Ltd	18.43%	-0.17%
Sanyati Holdings Limited	145.50%	32.00%
Seakay Holdings Ltd		89.00%
Sekunjalo Investments Ltd	-68.69%	4.00%
Siyathenga Property Fund	7.07%	8.00%
Spectrum Shipping Limited	-54.22%	0.00%
Spur Corporation Limited	-28.47%	11.36%
Square One Solutions Group Limited	-23.66%	22.50%
Stefanutti & Bressan Holdings		52.50%
Steinhoff International Holdings Ltd	-39.36%	25.00%
Stella Vista Technologies Ltd	-14.55%	-22.00%
Stratcorp Limited	-74.27%	26.67%
Synergy Holdings Ltd	-230.00%	190.00%
Taste Holdings limited	56.92%	-6.67%
Telimatrix Ltd		2.86%
Telkom SA Limited	154.99%	0.71%
The Appleton Group Ltd	-212.12%	-67.00%
The Spar Group Limited	44.20%	8.11%
Top Fix Holdings Limited	60.85%	63.00%
Tradehold Limited	-69.90%	-12.50%
Truworths International Ltd	-26.75%	10.43%
TWP Holdings Ltd		27.79%
UCS Group Ltd	47.65%	-28.89%
Universal Industrial Corp Ltd		-0.67%
Value Group Ltd	-18.06%	18.18%
Venmil Ltd	-52.70%	27.69%
Verimark Holdings Limited	-2.41%	-42.00%
Vesta Technology Holdings	44.73%	20.00%
Vukile Property Fund Limited	7.85%	0.00%
Vunani Ltd		25.00%
W G Wearne Limited	403.86%	71.00%
Wellco Health Limited	-97.91%	50.00%
Wescoal Holdings Limited	32.66%	10.00%
Wesizwe Platinum Limited	51.55%	217.46%
William Tel Holdings Ltd		0.94%
Workforce Holdings Limited	8.28%	40.00%
Zeder Investments Limited	14.65%	8.18%