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Research Paper

IPO Underpricing and Short Run Performance: An Empirical Analysis of its Impact to the number of IPO listings on the Zimbabwe Stock Exchange (ZSE)

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ABSTRACT:- *The number of initial public offerings (IPOs) on the ZSE in the late 90s and early 2000s increased significantly. However, since the end of June 2003 only four companies were listed on the ZSE through IPOs. The research examined whether few companies are being listed on the ZSE through IPOs because the companies that listed before were underpriced and performed poorly in the short run. It also determined the sources and causes of IPO underpricing on the ZSE. A sample of nineteen IPOs held on the ZSE during the period January 1993 to June 2003 was used. It was established that IPOs on the ZSE were underpriced with average raw and market adjusted initial returns of 45.4% and 38.4% respectively and in the short run had positive returns. However, IPO underpricing and short run performance had no effect to the decrease in the number of IPOs on the ZSE. The pricing of IPOs using a fixed offer price, demand multiple (subscription rates), IPO media coverage, lack of rating agencies, retained equity percentage by promoters, size of companies listing, market conditions and lack of alternative investment opportunities with real returns were determined as the sources and causes of IPO underpricing.*

Keywords:- *initial public offering (IPO), underpricing, short run performance*

I. INTRODUCTION

A firm invests in new equipment and plant to generate additional revenue and income - the basis of its growth. The firm can finance the purchase of new equipment and plant from its operations by re-investing the earnings back into the firm and forgoing paying cash dividends to shareholders. However, earnings might not be sufficient to finance all the profitable opportunities of a firm. The firm will either have to forgo profitable investment opportunities or raise additional capital.

The new capital can be raised either by borrowing or selling additional equity in the firm or both (Frank J. Fabozzi and Pamela P. Peterson, 2003). A decision has to be made regarding the capital structure before deciding how to raise additional capital. If a firm decides to finance its operations with debt, the lenders expect the interest and principal fixed to be paid as agreed. Failure to honor the debt obligations result financial distress to the firms decisions not in the best interests of its shareholders. However, with equity financing there is no obligation to pay interest and principal, although the firm may choose to distribute funds to shareholders in the form of cash dividends; there is no legal requirement to do so.

Due to the legal obligation the firms face if they fail to pay the interest and principal when it is due for payment, majority of firms globally prefer to finance their operations through equity financing. The same scenario being faced by international firms also obtains in Zimbabwe with several local firms preferring to finance their operations through equity financing. The majority of firms globally raise their additional capital through private placements to selected small groups of private investors willing to acquire a significant stake in a firm. However, as the firms grow and prosper they need to raise additional equity capital by going public through selling their equity to a large number of diversified investors.

The firms in Zimbabwe also go through the same procedure of raising capital through private placements and later on by going public. This process of going public and raising capital is referred to as Initial Public Offering (IPO), when a security is sold to the public for the first time with the expectation that a liquid

market will develop in which the founders and other shareholders can convert some of their wealth into cash at a future date (Ivo Welch and Jay Ritter, 2000). The number of companies listed on the ZSE increased by 70% from forty-seven to eighty during the period January 1996 to June 2003. There were 19 companies that were listed through initial public offerings on the ZSE during this period.

Statement of problem

The number of companies that listed on the ZSE in the late 90s and early 2000s increased significantly. However, since the end of June 2003 when Fidelity Life Assurance Limited was listed on the ZSE through an initial public offering, only four companies were listed on the ZSE through an IPO to date (31 December 2014). Are few companies now being listed on the ZSE through initial public offerings because the companies that were listed before were underpriced and had poor short run performance?

From the issuer's perspective poor short run performance is having continuous positive gains of the trading price from offer price or an increase in cumulative underpricing in the short run.

Objectives of the Study

The primary objective of the study is to investigate whether IPOs on the ZSE are underpriced and establish their short run performance and, determine whether the decrease in IPOs on ZSE is due to underpricing and poor short run performance. The other objectives of the study are:-

1. To establish whether there is a relationship between the underpricing levels and initial public offerings demand multiple (subscription rates).
2. To assess the level of percentage of equity retained by pre-IPO shareholders after the IPO and establish whether it has any relationship with the IPO underpricing levels.
3. To determine the causes and sources for underpricing of IPOs on the ZSE.

Hypotheses

1. IPO's on the ZSE are underpriced and under perform in the short run from the issuer's perspective and, this has resulted a decrease in the number of IPOs.
2. There is a negative relationship between company size and IPO underpricing.
3. There is a positive relationship between demand multiple (subscription rates) and level of IPO underpricing.
4. There is a negative relationship between IPO gross proceeds and the level of IPO underpricing.
5. There is a negative relationship between the number of uses of proceeds and the IPO underpricing.
6. There is a positive relationship between percentages of equity retained by promoters (pre-IPO shareholders) post listing and level of underpricing.
7. There is a positive relationship between the time from offer opening to listing and the underpricing level.
8. There is a negative relationship between the degree of underpricing and the age of company.

II. REVIEW OF EMPIRICAL LITERATURE

The results of several studies carried out on IPOs in various markets have concluded that underpricing of IPOs is a common phenomenon in every stock market. Jing Chi and Caroll Podgett (2002) define IPO underpricing as a large positive gain of a new issue immediately after floatation, while Andreas Oehler et al (2004) said it is a huge and systematic increase from the offer price of an initial public offering in the primary market to its first-day (closing) price in the secondary market. Ralph Bachman (2004) explains it as positive excess returns in the short run (first day of trading) to the subscribers of shares at IPO. Michael B. Heeley et al (2007) stated that underpricing occurs when the initial price of an IPO is lower than the closing price at the first day of trading, meaning that the value the firm sells shares to investment community is lower than their actual market value.

2.1 Empirical literature - IPOs under pricing

The first empirical evidence on IPO underpricing dates back to a study by the U.S Securities and Exchange Commission in 1963, (Ralph Bachman, 2004). Tim Loughran and Jay Ritter (2004) confirmed the existence of IPO underpricing over the period 1980 to 2003 using a sample of 6,391 firms by reporting average initial returns of 18.7%. The study of Re-Jin Guo et al (2004) for 2,696 IPOs on the New York Stock Exchange over the period 1980 to 1995 reported positive average raw and market adjusted initial returns of 10.8% and 10.76% respectively. While Christopher B. Barry (1993) from a sample of 229 American IPOs over the period December 1988 to December 1990 found positive average initial returns of 6.78%. Timothy Pollock and Violina P. Randova (2003) confirmed the existence of IPO underpricing in the US by reporting average initial raw returns of 11.68% from a sample of 225 firms listed in 1992. The research of Aggarwal and Pot Conroy

(2000) also concluded that US IPOs are underpriced using a sample of 188 IPOs from the NASDAQ Stock Exchange during the period May to October 1997, average underpricing of 19.47% was reported.

The study of Dimitrios Gounopoulous (2003) for the Greek IPOs using a sample of 225 IPOs listed on the Athens Stock Exchange (ASE) over the period 1990 to 2001 concluded that there was underpricing. The results show average raw and market adjusted initial returns of 63.92% and 62.52% respectively. The study of Maher Kooli et al (2001) of the stock market performance of the Canadian initial public offerings over the period 1991 to 1998 concluded that there was underpricing with average raw and market adjusted initial returns of 20.57% and 22.57% respectively. Andreas Oehler et al (2004) focusing on the German IPOs that went public on the Frankfurt Stock Exchange over the period 1997 to 2001, using a sample of 410 firms reports average first day returns of 44.47%.Thus confirming the existence of IPO underpricing in Germany.

The study of Arif Khurshed (2003) for 228 IPOs floated on the Main Market of London Stock Exchange from January 1991 through to June 1995, concluded that whether it was a domestic or multinational firm underpricing prevailed. For the overall sample of domestic firms, the underpricing was 8.29% and for multinational firms the underpricing was 11.3%. Winston Sahi and Stephen Lee (2001) concluded that the first day trading return performance of UK Property Trading Companies over the period 1986 to 1995 displayed underpricing. From a sample of 40 UK Property Company IPOs, positive average raw and market adjusted initial returns of 7.79% and 8.33% were reported respectively. Roberto Arosio et al (2000) verified the existence of IPO underpricing on the Milan Stock Exchange, Italy over the period 1985 to 2000 for 164 IPOs and computed the amount of money "left on the table" by issuers, when they sold underpriced shares and found that more wealth was lost. The average raw and market adjusted initial returns of 23.94% and 21.02% were observed respectively.

Michael Aitken et al (2003) in the investigation of Australian IPOs during the period 1986 – 1999 from a sample of 30 firms concluded that underpricing existed in Australia by reporting average raw and market adjusted initial returns of 66.64% and 65.11% respectively. The examination of the initial performance of Malaysian IPOs by Suan Chin Ong (2001) for 207 firms on the Kuala Lumpur Stock Exchange over the period 1995 – 2000, the results showed a high level of underpricing with average initial returns of 116.81% over the period. Using a sample of all new issues listed on both the Main Board and the Second Board of Kuala Lumpur Stock Exchange from January 1991 to December 1995, Othman Yong et al (2000) documented average initial returns of 81.6%.

Chaipon Vithessanti (2007) examined the initial public offerings of Thailand between 2001 and 2005 and concluded that IPOs were underpriced with average raw and market adjusted initial returns of 13.88% and 13.72% respectively. Ajay Shah (1995) reports that the Indian IPO market was characterised by pervasive underpricing and on average, the prices on first day of trading were 105.6% above the offer prices based on the 2,056 firms listed from 1 January 1991 to April 1995. Alok Pandel et al (2007) concluded that there was IPO underpricing in India from their study of 55 firms that were listed on the National Stock Exchange of India over the period 26th March 2004 to 31 October 2006. The degree of underpricing for the sample varied from 33.04% to 82.5% with a mean of 22.62%. Ibolya Schindele et al (2002) in the study of initial public offerings in Hungary during the period 1990-98 concluded that underpricing existed and averaged 22% over the period.

Jing Chi et al (2002) states that Chinese IPOs have higher initial returns (level of underpricing) in the examination of Chinese IPOs over the period 1 January 1996 to 31 December 2000, using a sample of 668 new issues, average market adjusted initial returns of 129.16% were observed. George Lihui Tian (2003) also concurs with Jing Chi et al (2002) and reports that there is severe underpricing of IPOs in China with the first day average returns of 1,124 new issues from 1991 to 2000 being 267%.

Coming to Africa, C' Mkombe and M Ward (2000) in the study of 690 companies listed on the Johannesburg Stock Exchange between 1980 and 1998 observed average initial raw returns of 26.8%. R. Lawson and M. Ward (2002) also concluded that the phenomenon of underpricing IPOs existed on the JSE by finding average raw initial returns of 27.2% from a sample of 535 firms during the period 1975 to 1995. From a sample of 141 firms Kasim L. Alli et al (2004) agrees with C' Mkombe and M Ward (2000) and R. Lawson and M. Ward (2002) that underpricing is a common phenomenon on the JSE by reporting average market adjusted initial returns of 7.35%. However, Kasim L. Alli et al (2004) points out that the level of underpricing on the JSE has gone down significantly in the post apartheid era.

Reena Aggarwal (1993) examined IPOs based on 62 Brazilian offerings in 1980 - 1990, 36 Chilean IPOs in 1982 – 1990 and 44 Mexican IPOs in 1987 – 1990 and obtained average initial returns of 78.5%, 16.7% and 2.8% respectively and concluded that IPOs were underpriced. Dick Brounen and Piet Eichholtz (2000) concluded that there was underpricing for the initial public offerings of property companies in Britain, France and Sweden during the period 1984 to 1999 on average by 2.55% above the benchmark on their first day of trading.

Caroline Fahlin (2000) states that the initial public offerings for both Berlin, 1889 - 1892 and New York, 1989 - 1990 were underpriced by having average initial returns of 31.11% and 66.64% respectively even when the IPOs for the two countries were held in different centuries. Jay R. Ritter (1998) mentions that the best

known pattern associated with the process of going public is the frequency of large initial returns accruing to investors in the IPOs of common stock. He further explains that the new issue underpricing phenomenon exists almost in every nation with stock market, although the level of underpricing varies from country to country. Table 1, shows a summary of the equally-weighted average initial returns on IPOs of thirty three countries around the world. China has the highest average initial return of 388% followed by Malaysia with an average initial return of 80.3%. France has the smallest average initial return of 4.2%.

Qi Huang et al (1998) share the same opinion with Jay R. Ritter (1998) that underpricing exists in every nation with a stock market and varies considerably across geographic regions. Their investigation of 298 companies that were privatised through initial public offerings from 39 countries across the world reported average initial returns of 25.7%. The level of development of countries was cited as the main cause for the differences in levels underpricing and concluded that underpricing levels for developing countries are higher as compared to those of developed countries. Dick Brounen and Piet Eichholtz (2000) explained that initial returns vary strongly across different countries and cited the maturity and structure of the markets as the cause for the differences in level of underpricing.

Table 1 IPO under pricing across the world

Country	Sample Size	Time Period	Average Initial Returns
Australia	266	1976-89	11.9%
Austria	67	1964-96	6.5%
Belgium	28	1984-90	10.1%
Brazil	62	1979-90	78.5%
Canada	258	1971-92	5.4%
Chile	19	1982-90	16.3%
China	226	1990-96	388.0%
Denmark	32	1989-97	7.7%
Finland	85	1984-92	9.6%
France	187	1983-92	4.2%
Germany	170	1978-92	10.9%
Greece	79	1987-91	48.5%
Hong Kong	334	1980-96	15.9%
India	98	1992-93	35.3%
Israel	28	1993-94	4.5%
Italy	75	1985-91	27.1%
Japan	975	1970-96	24.0%
Korea	347	1980-90	78.1%
Malaysia	132	1980-91	80.3%
Mexico	37	1987-90	33.0%
Netherlands	72	1982-91	7.2%
New Zealand	149	1979-91	28.6%
Norway	68	1984-96	12.5%
Portugal	62	1986-87	54.4%
Singapore	128	1973-92	31.4%
Spain	71	1985-90	35.0%
Sweden	251	1980-94	34.1%
Switzerland	42	1983-89	35.8%
Taiwan	168	1971-90	45.0%
Thailand	32	1988-89	58.1%
Turkey	138	1990-95	13.6%
United Kingdom	2133	1959-90	12.0%
United States	13308	1960-96	15.8%

Source: Jay Ritter (1998)

2.2 Empirical literature - IPO short run performance

The research of Jing Chi et al (2002) for the Chinese stock market verified the existence of underpricing in the short run with the average initial abnormal returns from the 1st day trading to the 5th, 10th and 20th trading days slightly decreasing from 129.16% to 126.93%, 126.93% and 124.95% respectively and decreasing wealth relatives of 2.82%, 2.26%, 2.25% and 2.22%.

Roberto Arosio et al (2000) investigated the performance of Italian IPOs in the first weeks of trading. The first day underpricing and the cumulated underpricing for 1st week, 2nd week, 3rd week, 4th week and 5th week were 23.94%, 22.89%, 22.91%, 22.64%, 22.46% and 22.34% respectively. There were no significant difference from the first day underpricing and the cumulated underpricing in weeks, but the median value decreased from the second week going forward. However, Roberto Arosio et al (2000) also points out that the short run performance of IPOs depends on the period of listing whether it's a "cold" or "hot". The companies which list in the cold period initially exhibit negative returns which change into positive return over weeks whilst those that list in hot period exhibit huge positive returns which after couple of weeks turn into negative returns.

Alok Pandel et al (2007) in the study of IPOs listed on the National Stock Exchange of India concluded that if any investor had invested in all the IPOs from their sample and waited for a month would have earned on average returns of 1.06% which was below the market return of 2.19%. The undepricing of IPOs in India disappeared a few weeks after listing.

Back to Southern Africa, Kasim L. Alli et al (2004) examined the initial and cumulative short term returns over the first twenty days of trading for 141 IPOs on the Johannesburg Stock Exchange for the period 1995 – 2001. During the period under consideration the average cumulative short term returns increased for twelve days while for the other eight days they decreased marginally. The significant underpricing happened on the first day of trading.

The results of R Lawson and M Ward (2002) regarding the short run performance of initial public offerings show that investors who subscribe to IPO receive significant returns for almost a year after listing. The average excess returns from the offer price of 27.2%, 29.32%, 41.48% , 43.48%, 43.7% and 38.36% for the first day, end of week, month end, half year end and year end were reported respectively. Christopher B Barry (2004) concluded that the significant returns of IPOs are gained on the opening trade and thereafter the continued price movement was marginal.

2.3 Theoretical Concepts Explaining IPO Underpricing

2.3.1 Principal – Agent and Costly Monitoring Theory

Investment banks when pricing an IPO attempt to reach an offering price that is low enough to stimulate interest in the stock, but high enough to raise an adequate amount of capital for the company and in the process underprice an IPO. Jay R. Ritter (1998) explains that investment bankers may underprice public offerings to enable themselves to spend less time marketing the offer during the road shows to the potential clients. Ajah Shah (1995) explains that the interaction between the investment banker and the company going public is typically a one-shot interaction, but the investment banker is in a repeated game with many of his large clients, especially the large institutional investors. In this situation, the investment banker has an incentive to underprice thereby favoring his established clients. While the underpricing will hurt the interests of the issuing company, this may not affect the profit maximization of the investment banker directly. Roberto Arioso et al (2000) also noted that marketing expenses have a decreasing marginal return and it is less costly to convince investors to subscribe for underpriced IPOs. Frank K. Reilly (1985) explains that the role of an investment banker or underwriter in an initial public offering is to give advice to the issuer about the general characteristics of the issue, its pricing and the timing of the offering. Robert C. Radcliffe (1990) points out that the costs of issuing new securities to the public include a price concession which is an inducement offered to the first buyer. The underwriters offer the price concessions because they do not wish to be exposed to the risks of carrying the shares in their inventory. Dimitrios Gounopoulous (2003) also explains that underwriters propose an offer price below intrinsic value when there is a high volatility market in order to protect the issue from failure.

2.3.2 Underwriter Reputation

Maher Kooli et al (2001) concluded that the prestige of an underwriter affects the level of IPO underpricing. The more the underwriter's prestige, the less risky are the IPOs underwritten and the lower the required initial return. Prestigious underwriters avoid smaller firms because they are concerned about their reputation being affected if they begin to participate in the underwriting of smaller firms. Smaller firms are underwritten by less prestigious underwriters and huge initial returns are made.

However, Suan Ching Ong (2001) have a different opinion and concluded that the reputation of an underwriter does not affect the level of IPO underpricing. Nuray Guner et al (2000) also agrees with Ching Ong et al (2000) and suggests that the initial returns of an IPO is dependent on the market type whether it's an emerging or developed market and in their research of emerging markets it was concluded that the underwriters reputation does not affect the initial day returns. George Lihui Tian (2003) is of different opinion and cites the underwriter' costs for an IPO as the determinant of underpricing not the underwriter's reputation. With a high payment of underwriting fees, issuers may persuade the underwriters to refrain from intentionally underpricing IPO shares.

Tom Berglund (1994) explains that the task of the underwriter is to determine the per share offer price at which the issue will be offered to the public. The offer price per share should be equal to the unbiased estimate value per share that will be equivalent to the price on the first day of trading. Rational underwriters usually choose an offer price which is below the unbiased estimate value per share. The reputation of an underwriter is affected whether the IPO is underpriced or overpriced. When the IPO is underpriced the reward to the underwriter will be small and its reputation will suffer among potential entrants if they think the underwriter is selling the shares to the public to cheaply. When the IPO is overpriced the underwriter loss reputation because firms do not want to engage an underwriter in an IPO just to experience failure. Tom Berglund (1994) reports that an underwriter should price an IPO at the unbiased estimate value per share that will be equivalent to its price on the first day of trading, in order not to loss reputation.

2.3.3 Market Climate: Hot and Cold Issues

Jay R. Ritter (1998) explains that cycles exist in both the volume and the average initial returns of IPOs. During "hot issue" markets periods when stocks are selling at a premium to book value and there are high stock market returns. The volumes and average initial returns of IPOs show a strong tendency to be high following the periods of "hot issue" markets. Dimitrios Gounopoulous (2003) agrees that the market condition, cold periods or hot periods significantly affect the underpricing level of the IPOs. Higher initial returns are evident in hot periods whilst lower initial returns are common in cold periods. The study of Suan Chin Ong (2001) of Malaysian IPOs verified that higher initial returns are evident of hot periods whilst lower initial returns were expected in cold periods. In Robert Arosio et al (2000) the first day returns computed for 164 IPOs listed on the Milan Stock Exchange, Italy between January 1985 and 2000 verified that underpricing is particularly high during "hot issues" and decreases during "cold issues". The underpricing is significantly related to the period of issue. R Lawson et al (2002) confirmed the existence of hot and cold periods on the JSE. In the twenty year period studied average initial returns for the hot and cold cycles were 34% and 12% respectively. Qi Huang et al (1998) confirmed that issuers or underwriters successfully time their offerings when market is optimistic (during hot issue periods) about IPOs, in general when the demand for IPOs is high, in order to achieve a smooth distribution of shares and raise a large amount of capital. Maher Kooli et al (2001) pointed out that during hot periods investors will be overly optimistic about a firm's prospects, causing the first trading day price to be greater than in normal market conditions. Jean Fernand Nguema et al (2006) in the research about IPO underpricing across the world verified that market timing by equity issuers determines the level of underpricing. Firms usually go public during hot issue markets when there are better market conditions and investors' sentiment.

2.3.4 Signalling Theory

The theory applies to issuers who intend to sell shares through an initial public offering and subsequent (seasoned) public offerings. Due to the existence of good and bad firms investors value a signal that an IPO is from a good firm. A good firm can afford to signal by underpricing its IPO and can credibly signal their type. When the good firms make future issues to the public it will be very easy to raise the required capital as a result of the "good taste" that was left in the investors from the previous public issue (Qi Huang et al, 1998). Jay Ritter (1998) and Ajay Shah (1995) shares a similar opinion and explains that, underpriced new issues "leave a good taste" with investors, allowing the firms and insiders to sell future offerings at a higher price than otherwise would be the case. Alexander Lyjungqvist (2006) explains that low quality firms will not signal themselves to investors by underpricing because it will be detected by investors that they are low quality firms before returning to the market on a later date to recoup "the money left on the table".

Some firms will optimally use underpricing to augment the information that is conveyed by the firm's investment decision to outsiders. This enables the firm to signal profitability of its investment to outsiders, thereby maximises the original shareholders' personal wealth (Ralph Bachmann, 2004).

2.3.5 Investor Sentiment Theory

Jay Ritter (1998) reports that the IPO market may be subject to "bandwagon effects", which is a situation when potential investors considers the actions of other investors about a new issue not the information they have at hand. When a potential investor realises that the other investors are not buying, he or she will decide not buy also even if there is favourable information about the IPO. To prevent this from happening an issuers underprice IPOs to persuade a few potential investors whom other investors look up to and induce a bandwagon in which all subsequent investors want to buy irrespective of the information they have at hand. Alexander Lyjungqvist (2006) explains that information cascades give market power to early investors who can demand more underpricing in return for committing to the IPO and thus starting a cascade, later investors will condition their bids on the decision of earlier investors, rationally disregarding their own information. Jing Chi et al (2002) also agree that there are bandwagon effects in the Chinese IPO markets. Chinese people are very

group oriented and when they find others interested in a certain initial stock issue they also decide to buy even when there is no favourable information about the issue.

2.3.6 Rock's Model "The Winner's Curse"

Suan Ching Ong (2001) explains Rock's model that IPO underpricing is necessary to compensate uninformed investors for the risk of dealing with informed investors. Informed investors will only attempt to buy underpriced shares whilst the uninformed investors cannot distinguish between issues, and they will be allocated a small fraction of the most desirable issues, while they will obtain full allotment of the least attractive ones. Shares must be offered at a discount price to compensate the uninformed investors at least at the risk free rate. Jing Chi et al (2002) asserts to Rock's model and reports that the Chinese government underprice IPOs to make uninformed and inexperienced investors stay in the stock markets. Ajay Shah (1995) cites George Akerlof's model of the used car market in which the seller of the car knows the true worth, but the buyer will not know the blemishes and it is not optimal for the buyer to research each potential used car thoroughly. Thus at equilibrium, the presence of bad used cars implies that good used cars have to be underpriced. In the case of the IPO market, at equilibrium, good firms will have to underprice themselves to compensate the investors for the risk taken in investing in relatively unknown firm.

2.3.7 Demand Multiple

Dimitrious Gounopoulos (2003) in his study of the initial performance of initial public offerings on the Athens Stock Exchange during the period January 1990 to December 2001 concluded there is a positive relationship between the degree of underpricing and demand multiple (subscription rates). Initial public offerings which are heavily oversubscribed subsequently have high initial returns. Suan Chin Ong (2001), George Lihui Tain (2003) and Othman Yong et al (2000) verified the existence of positive relationship between the demand multiple and the level of underpricing. The positive correlation coefficient indicates that the higher the over-subscription rate, the higher is the initial return.

2.3.8 Legal Liability

Jay Ritter (1998) also cited lawsuit avoidance as the other reason for underpricing of IPOs. The Securities Act of 1933 (US) makes all participants in the offer who sign the prospectus liable for any material omissions, one way of reducing the frequency and severity of future lawsuits is to underprice. Securities class action suits are filed whenever a firm's stock price declines enough following an IPO to make it worthwhile for attorneys to pursue a case. Section 11 of the 1933 Securities Act allows any person who bought a registered security, either during distribution or in the open market to bring a suit if any part of the registration statement contained an untrue statement of a material fact or omitted a material fact necessary to make the statements misleading. The firm will be liable for loss in market value from the time of the alleged misstatements or omissions to the time of discovery (see Larry L. DuCharme et al 2000). Tom Berglund (1994) also points out that the institutional settings of an IPO affects it's pricing, in a country where there is a considerable probability that an underwriter will face a lawsuit if the IPO fails then underwriter will underprice the IPO to avoid lawsuits.

Alexander Lyjungqvist (2006) argue that intentional underpricing may act as insurance against securities litigation. The probability of litigation increases, the more an issue is overpriced, and the more likely is a lawsuit in the future. Underpricing reduces not only the probability of lawsuit, but the probability of adverse ruling conditional on lawsuit being filed and the amount of damages awarded in the event of an adverse ruling since the damages will be limited to the offer price.

However, Philip D. Drake and Michael R. Vetsuypens (1993) concluded that litigation is driven by large aftermarket price declines long after the IPO, not by whether the IPO was initially overpriced. The plaintiffs entitled to damages include investors who bought stock in the aftermarket for up to 14.7 months, on average, after the IPO. Therefore underpricing the IPO at the offer date is irrelevant to these aftermarket investors' incentive to sue and has little effect on the issuer's potential damage payments.

2.3.9 Privatisation

The study of Iboyla Schindele et al (2002) for Hungary initial public offerings of which 29 of the issues were privatisations whilst the other 24 were private issues. It was concluded that privatisation IPOs were underpriced to a significantly greater extent than private sales. Privatisation IPOs were underpriced by 31% on average while for private issues the average discount was 10.7%. Joao Duque et al (2000) concluded that the average initial returns of state owned IPOs are bigger than the average initial returns of private IPOs. The study of privatisations in China by Jing Chi et al (2002) suggests that the success for privatisation of IPOs affects the credibility of both the company and government. The government could not afford any possible failure of an IPO and has to make the supply much less than the demand, even at the cost of underpricing. George Lihui Tian (2003) in his study of the Chinese IPO market has a different opinion and points out that there was no

significant difference in the pricing of state owned enterprises and private owned enterprises. The government had the same motivation to pursue with the offering proceeds and the state owned enterprises are priced the same with private owned enterprises.

However, the study of Qi Huang et al (1998) of initial public offerings by privatised firms of eight countries namely United Kingdom, France, Singapore, Germany, Italy, Canada, Australia, and Malaysia show mixed results. United Kingdom, France and Singapore the mean initial returns for privatisation IPOs were greater than conventional IPOs (by private owners). However, for the other five countries namely, Germany, Italy, Canada, Australia and Malaysia the results are the opposite with greater mean initial returns for the conventional IPOs compared with privatisation IPOs. Roberto Arosio et al (2000) examined Italian IPOs over the period 1985 – 1999 and, concluded that underpricing of privatisation IPOs on average were lower than the conventional IPOs.

2.3.10 Size

The research of Maher Kooli et al (2001) found that a relationship existed between the degree of underpricing and the size of a firm. The results suggested that IPOs for small firms are more underpriced than those of large firms. George Lihui Tian (2003) explains that large firms are better known to the public with a longer corporate history and this reduces their underpricing while small sized firms are not known by the public. Dimitrious Gounopoulos (2003) also reports that a negative relationship exists between the firm size and undepricing. Suan Chin Ong (2001) agrees that firm size affects the level of underpricing but not at a very significant level. Andreas Oehler et al (2004) established that new stock market segment for young and fast growing companies are highly underpriced.

2.3.11 Uses of Gross Proceeds

According Suan Chin Ong (2001) and Dimitrious Gounopoulos (2003) the revealing of more uses of the gross proceeds in the prospectus, the lower will be the level of underpricing of an IPO.

2.3.12 Gross Proceeds Amount

The studies of Suan Chin Ong (2001) and Dimitrious Gounopoulos (2003) cited the existence of a negative relationship between total gross proceeds and underpricing level. Smaller offerings are more risky and the higher the degree of uncertainty for a high initial premium. However, the findings by Roberto Arosio et al (2000) shows that there is an insignificant correlation between offering size and level of underpricing.

Ajay Shah (1995) is of different opinion because in his research about Indian IPO Market between January 1991 and April 1995 both small and big issue offerings were affected by underpricing. When the offering size is very small, the underpricing is very high and as the size of offering starts to increase the underpricing decreases. However as the offering size continue to increase the underpricing level also starts to increase.

2.3.13 Degree of debt financing

Dick Brounen and Piet Eichholtz (2000) cited the degree of debt financing of a company as a determinant of underpricing of an initial public offering. "Firms with growth potential rely less on debt financing. The low reliance on debt financing is caused by their high risk profiles, which makes the debt market less accessible. When these companies with potential for growth go to the stock market during an IPO, the public will consider them more risky and will demand a higher risk premium in the form of more underpricing. IPOs with lowest debt ratios are associated with highest initial returns." However, Iboyla Schindele et al (2002) reports that there was a positive relationship between underpricing and debt levels for firms that issued shares through an IPO in Hungary over the period 1990-1998. High level of debt prevents refinancing projects and therefore implies a negative signal on the firm's future prospects. Indebted IPO firms should therefore use underpricing as a counter signal to convince investors to the shares.

2.3.14 Time Lag and value of money

According to Suan Chin Ong et al (2001) and Dimitrious Gounopoulos (2003) the time between the offering date (IPO announcement day or date of the prospectus) and the first day of market trading, affects the underpricing level. They found the existence of a positive relationship between the time lag and the underpricing. The longer the time it takes to list the higher the level of underpricing of an IPO. Ajah Shah (1995) also cites time lag as the reason of IPO underpricing and explains that the longer the time from the offering date to the listing date the higher the underpricing because the issuing firm earns interest on the application money, and to the extent that investors lose liquidity on their application money. At equilibrium the markets would compensate investors for this by paying a liquidity premium, which would show up in the form of underpricing.

2.3.15 Lack of alternative investment opportunities

Jing Chi et al (2002) cited lack of attractive investment opportunities as the reason for the high demand of IPOs which leads to underpricing. It was explained that in China stocks, bank deposits and treasury bonds are the only investment instruments available to investors. The Chinese government reduced the interest rates several times during period considered, which increased the demand of IPOs since investors saw no point in investing their funds in the banks.

2.3.16 Age

Dimitrious Gounopoulos (2003) and Suan Chin Ong (2001) cited the operating history of firms prior to going public as a factor that affects the level of underpricing of initial public offerings. Companies, which are older and have longer operating history, have more information available to the public and the lower their initial returns, whilst young firms with a short operating history few information available to the public, experience higeher initial returns.

2.3.17 Retained Ownership and Control

Sanjai Bhagat et al (2004) suggest that high retention levels by pre-IPO shareholders may lead to underpricing of IPOs. The high retention levels imply fewer shares will be available for trading and consequently they become a scarce commodity and prices of the shares increase significantly on the first day trading. The higher the equity ownership retained by pre-IPO shareholders sends a credible signal of their confidence about the company's prospects to potential investors and leads to higher returns on the first day of trading. Roberto Arosio et al (2000) also share the same notion and concluded that a significant positive correlation existed between underpricing with percentage of equity retained by the controlling shareholders after the IPO. Jing Chi et al (2002) explained that in the case of privatised IPOs the more shares the government gives up, the better the corporate governance the investors will expect on the listed companies and the higher the initial returns. However, Dimitrious Gounopoulos (2003) and Suan Chin Ong (2001) conclude that there is a negative relationship between ownership retention rates with the underpricing level. Roberto Arosio et al (2000) also conclude that the percentage of equity retained by the founding shareholders has no effect on level of IPO underpricing.

2.3.18 Lack of IPO rating Agencies

Alok Pandel et al (2007) reports that Securities Exchange Board of India (SEBI) made it mandatory for any company intending to be listed through an initial public offering to be graded by any credit rating agency registered under SEBI prior to making a public offer. The grading of IPOs was made mandatory by SEBI from the 1st May 2007 and there are four credit rating agencies registered under SEBI being Credit Analysis & Research Ltd (CARE), ICRA Limited, CRISIL and FITCH Ratings.

The IPO grading process considers the prospects of the industry in which the company operates the competitive strengths of the company that would allow it to address the risks inherent in the business and capitalise on the opportunities available, as well as the company's financial position. The rating of IPOs does not take into account the offer price but it serves as a signal to the investors about the credibility of firm and has an impact to the degree of underpricing since it is done by an independent entity.

III. METHODOLOGY

3.1 Research Design

The research is a case study of the IPOs that occurred on the ZSE during the period January 1996 to June 2003. The case study design was preferred because it enabled the researcher to investigate the chronological chain of events from the announcement of the initial public offerings to the eventual listing of the companies that listed over the period under consideration.

3.2 Target Population

The target population consisted of companies that were listed on the ZSE through initial public offerings. Financial advisors, underwriters (investment banks), stockbroking firms and transfer secretaries were consulted since they form a team that advises issuers when listing through IPOs. The ZSE was also targeted since it is authority responsible for listing companies, whose listing requirements should be met before any company can list.

3.3 Sample and Sampling Procedure

The researchers considered the companies that were listed on the ZSE through an IPO during the period January 1993 to June 2003. The non-probability sampling technique was used for this research. This technique was used because the researchers could not consider all the companies that were listed on the ZSE through IPOs because some of the companies trading on the ZSE were listed as far back as the 1940s and

information regarding their listing was not available. During the period under consideration there were other companies which were listed on the ZSE not through IPOs. However, the research only focused on companies that were listed through initial public offerings. There were thirty nine companies that were listed on the ZSE and only nineteen were listed through initial public offerings during the period January 1993 to June 2003. The other twenty companies were listed through acquisitions, de-mergers and introductions (Imara Edwards Securities, 2006).

3.4 Type of Data

Secondary data

The data on initial public offerings being the offer prices, first day trading and short run prices and other offering characteristics were in the form of secondary data and were obtained from prospectuses of the respective companies, publications by stock-broking firms and the ZSE. The historical prices for the IPOs and Industrial Index (used as the market index) were obtained from Kingdom Stockbrokers database.

The researchers also used the Annual Reports of the companies that listed during the period under consideration, Zimbabwe Stock Exchange Listing Requirements and Zimbabwe Stock Exchange Act. The Consumer Price Index data was obtained from the Central Statistics Office publications. The researchers also obtained data on the subject of initial public offerings from the internet, journals, textbooks and publications by renowned authors. The secondary data sources assisted the researcher mainly to form the introductory and literature review sections of the study.

Primary Data

The researcher did not rely only on secondary data only to establish the underpricing and short run performance of IPOs in Zimbabwe. Primary data was also collected from various practitioners in the stock market of Zimbabwe. The researcher used questionnaires and personal interviews to gather the data. Judgemental sampling was used to choose the respondents to the questionnaires and interviews

3.5 Presentation of Findings and Data Analysis

The researchers used tables and scatter diagrams where appropriate to present the research findings. The other findings were presented in the form of explanations in reference to the reviewed related literature. The research findings were analysed using the statistical function of the Microsoft Excel package. Descriptive statistics such as the mean, standard deviation, median and frequency distributions were calculated to summarise the sample distribution. The researcher analysed the findings by relating them to related literature reviewed in most of the underpricing aspects.

3.6 Research Model

The initial return (underpricing) of each initial public offering was calculated using the methodology used by Suan Ching Ong (2001), Ibolya Schindele and Enrico C. Perotti (2002), Dimitrios Gounopoulos (2003) and Jing Chi and Carol Padgett (2000). The methodology is described below.

The raw initial return of stock 'i' is calculated using Equation 1.

Equation 1: $R_{it} = (P_{it}/P_{i0}) - 1$

Where

P_{it} is the price of stock 'i' at the 't' trading day,

P_{i0} is the offer price and R_{it} is the raw initial return of the stock 'i' on the 't' day.

More precisely, raw return can be:

i. Initial raw return, which refers to the percentage change in price from the offer price to the closing price on the first day of trading.
ii. Short run raw return or cumulative underpricing, which refers to the percentage change in price from the offer price to the closing price on the 30th day of trading.

Thus, the sample mean daily return for day't' is given by Equation 2.

Equation 2: Mean Raw Return = $\sum_{t=1}^{N} R_{it} / N$

The raw initial return calculated with the above equation, would apply more to perfect market conditions where there is no opportunity cost, for the funds invested in the initial public offer between the first day the offer opens and the first day of trading of the shares on the stock exchange or where the subscription rate of shares is equal to 1 (that is when demand is equal to supply so that rationing of shares does not take place) and when no other transaction costs exist.

The market adjusted initial return of stock 'i' is calculated using equation 3.

Equation 3: $MAIR_{it} = R_{it} - ((P_{mt}/P_{mt}) - 1)$

Where

P_{mt} is the market index (ZSE Industrial Index) value at the close of the't' trading day

P_{m0} is the market index (ZSE Industrial Index) value on the offer day of stock 'i'

$MAIR_{it}$ is the market adjusted initial return of stock 'i' at the't' defined as the raw initial return less the equivalent change in the ZSE Industrial Index.

More precisely, market adjusted return:

i. Market adjusted initial return, refers to the percentage change in price from the offer price to the closing price on the first day of trading less the equivalent change in the ZSE Industrial Index.
ii. Short run market adjusted initial return, which refers to the percentage change in price from the offer price to the closing price on the 30th day of trading less the equivalent change in the ZSE Industrial Index.

Thus, the sample mean daily return for day't' is given by Equation 4.

Equation 4: Mean Market Adjusted Initial Return = $\sum_{t=1}^{N} MAIR_{it} / N$

The $MAIR_{it}$ method assumes that the systematic risk of IPOs is the same as that of the market index, the market beta of the stock 'i' is 1(See Othman Yong et al (2000) and Jing Chi et al (2002)).

The wealth relative was calculated to measure the performance for a group of IPOs vis-à-vis the market, determined using Equation 5 previously used by Wolfgang Aussenegg (1999) and JoÃo Duque and Miguel Almeida (2000) .

Equation 5 : $WR_{l,} = [1+ (1/N) \sum_{t=1}^{N} R_{it}] / [1+ (1/N) \sum_{m=1}^{N} R_{mt}]$

Where WR_l is the wealth relative for the first trading day and N is the total number of IPOs in the sample. A wealth relative above one implies that the IPO outperformed the market in the period. A wealth relative below one indicates underperformance.

Correlation coefficients were also computed to ascertain the relationship between the market adjusted initial returns and subscription rates, and percentage of equity retained by the original shareholders after the IPO. The correlation coefficient was given by equation 6.

Equation 6: $R = \frac{\sum (X - \overline{X})(Y - \overline{Y})}{\sqrt{\sum (X - \overline{X})^{\wedge}_2 (Y - \overline{Y})^{\wedge}_2}}$

To determine the sources and causes of IPO underpricing on the ZSE the researcher tested the relationship between the market adjusted initial return for each IPO used as the dependent variable and the explanatory variables. This was done using regression model Equation 7.

Equation 7:

$$MAIR = \alpha + \beta_1 SIZE_i + \beta_2 DM_i + \beta_3 MC_i + \beta_4 LGP_i + \beta_5 UGP_i + \beta_6 RO_i + \beta_7 TLAG_i + \beta_8 AGE_i$$

The regression model used thirteen IPOs from the sample and excluded six IPOs without demand (subscription rates) data. MAIR is the Market Adjusted Initial Return of an IPO, Size natural logarithm of net asset value, DM demand multiple or subscription rate of the IPO, MC market condition measured by the standard deviation of the industrial index three months before listing of the firm, LGP logarithm of the gross proceeds for the IPO, UGP is Ln(1+ use) number of uses of the proceeds, RO is the proportion or percentage retained ownership by pre-IPO shareholders, TLAG is the time lag between the opening of the offer and listing date and AGE is Ln(1+AGE) the natural logarithm of one plus the age of company in years on the listing date.

Table 2 Summary of the expected results from the regressions tests

Explanatory variable	**Expected Sign**
Size	Negative
Demand Multiple/ Subsription rate (DM)	Positive
Market Condition (MC)	Negative
Gross Proceeds (LGP)	Negative
Use of Gross Proceeds (UGP)	Negative
Retained Ownership by Pre-IPO shareholers (RO)	Positive
Time from offering to listing (TLAG)	Positive
Age of the company (AGE)	Negative

IV. RESULTS

4.1 Degree of Raw and Market Adjusted Initial Return (Underpricing)

The table 3 shows the level of underpricing for the nineteen initial public offerings using raw and market adjusted initial returns.

Table 3
Summary of IPO Underpricing

	Company	Date of Listing	Raw Initial Return	Market Adjusted Initial Return
1	DCZ	05-Aug-96	-20.0%	-20.4%
2	Seedco	15-Jul-96	10.7%	11.9%
3	CFI	17-Mar-97	43.3%	39.2%
4	Randalls	07-Apr-97	11.5%	14.4%
5	NMBZ	17-Apr-97	41.6%	37.0%
6	Dairibord	09-Jul-97	54.2%	49.9%
7	Cottco	01-Dec-97	0.0%	10.6%
8	CBZ	29-Jun-98	43.8%	82.7%
9	Econet	17-Sep-98	10.0%	19.2%
10	Medtech	24-Aug-98	16.7%	30.4%
11	RTG	01-Nov-99	0.0%	3.5%
12	Zimre	22-Nov-99	6.7%	-72.4%
13	Century	19-Mar-01	45.5%	27.0%
14	Zimnat	24-May-01	50.0%	26.0%
15	FBC	11-Jun-01	45.5%	37.2%
16	Trust	11-Jul-01	473.3%	447.9%
17	O.K	17-Oct-01	10.0%	5.8%
18	Nicoz	28-Oct-02	17.9%	8.8%
19	Fidelity Life	30-Jun-03	2.8%	-29.3%
			Descriptive Statistics	
		Mean	45.4%	38.4%
		Median	16.7%	19.2%
		Standard Deviation	106%	104%
		Kurtosis	17.2	15.0
		Skewness	4.1	3.6
		Minimum	-20.0%	-72.4%
		Maximum	473.3%	447.9%
		Wealth Relative	**1.36**	

The nineteen initial public offerings under consideration had average raw and market adjusted initial returns of 45.4% and 38.4% respectively confirming the underpricing of IPOs on the ZSE. The wealth relative measure for the first day of trading for the initial public offerings was 1.36 implying that the IPOs outperformed the market in the period, strengthening the fact of their underpricing. The standard deviations of the raw and market adjusted initial returns are 106% and 104%. However, when the market adjusted initial returns are taken into account three companies from the sample were overpriced being DCZ , Fidelity Life and Zimre with market adjusted initial returns of -20.4%, -29.3% and -72.4% respectively. The findings are consistent with empirical evidence on the related literature review section by Qi Huang et al (1998) and Jay R. Ritter (1998) which states that underpricing of initial public offerings is a common phenomenon across the world.

4.2 Short Run Performance

The table 4 shows the cumulative underpricing for the initial public offerings on 30th day after listing using raw and market adjusted returns for the companies.

Table 4 Summary of Cumulative Underpricing

	Company	Date	Short Run Return	
		Short run	Raw	Mkt Adjusted
1	DCZ	4-Sep-96	-20.0%	-34.0%
2	Seedco	14-Aug-96	3.6%	2.3%
3	CFI	16-Apr-97	30.0%	24.3%
4	Randalls	7-May-97	0.0%	-1.5%
5	NMBZ	19-May-97	41.6%	42.4%
6	Dairibord	8-Aug-97	52.5%	37.5%
7	Cottco	31-Dec-97	-4.5%	22.1%
8	CBZ	29-Jul-98	50.0%	90.9%
9	Econet	19-Oct-98	0.0%	9.3%
10	Medtech	23-Sep-98	-26.7%	-6.7%
11	RTG	1-Dec-99	-6.7%	-16.6%
12	Zimre	22-Dec-99	5.3%	-82.2%
13	Century	19-Apr-01	40.9%	15.8%
14	Zimnat	25-Jun-01	13.6%	-0.6%
15	FBC	11-Jul-01	263.6%	234.4%
16	Trust	10-Aug-01	273.3%	231.7%
17	O.K	16-Nov-01	10.0%	-1.2%
18	Nicoz	27-Nov-02	-17.9%	-9.2%
19	Fidelity Life	30-Jul-03	282.8%	130.9%
	Descriptive Statistics			
	Mean		52.2%	36.3%
	Median		10.0%	9.3%
	Standard Deviation		101.1%	82.3%
	Kurtosis		1.90	2.06
	Skewness		1.82	1.52
	Minimum		-26.7%	-82.2%
	Maximum		282.8%	234.4%
	Wealth Relative on 30th day		**1.31**	

The nineteen initial public offerings under consideration had an average cumulative underpricing of 52.2% being an increase 6.2% from the first day average raw initial returns whilst the average market adjusted returns decreased to 36.3% from 38.4% recorded for the first day of trading. The wealth relative for the sample on the 30th day also decreased to 1.31 from 1.36 recorded for the first day of trading. These findings show that in the short run initial public offerings were underpriced. However, significant returns were gained on the first day of trade being consistent with the observations of Christopher B Barry (2004) and Kasim L. Alli et al (2004).

4.3 Money left on the table (Wealth lost by issuers)

Table 5 shows the wealth lost by issuers on the first of trading for the nineteen companies as a result of underpricing. The table also shows the inflation adjusted values for the money left as at 30 June 2003 for comparison purposes considering the hyperinflationary environment that was prevailing in Zimbabwe at that time.

Table 5 Summary of Money Left of the table (Wealth lost by issuers)

	Company	Money left on the table	
		Historical	Inflation adjusted
1	DCZ	(14,565,600)	(915,417,762)
2	Seedco	5,100,000	320,524,426
3	CFI	33,475,000	1,770,161,696
4	Randalls	7,500,000	396,600,828
5	NMBZ	138,619,751	7,330,227,750
6	Dairibord	109,399,284	5,785,046,192
7	Cottco	-	-
8	CBZ	224,000,000	11,845,144,734
9	Econet	29,000,000	1,158,949,556
10	Medtech	16,666,667	666,062,956
11	RTG	-	-
12	Zimre	20,661,667	453,226,339
13	Century	136,363,637	1,600,500,547
14	Zimnat	155,000,000	1,671,660,544
15	FBC	250,000,000	2,491,931,932
16	Trust	1,696,900,000	16,190,998,687
17	O.K	27,606,000	196,192,372
18	Nicoz	133,928,572	389,772,901
19	Fidelity Life	55,891,518	55,891,518
	Sum	**3,025,546,494**	**51,407,475,216**

From the nineteen initial public offerings held only three companies did not leave money on the table. Trust had the largest amount of wealth loss of $16.19 billon followed by CBZ that had $11.84 billion. Fidelity had the lowest amount loss of $55.8 million.

4.4 Net Effect of Underpricing to the Wealth of Pre-IPO Shareholders

Table 6 below shows the net effect of amount left on the table to the wealth or the new value of the retained equity by the pre-IPO shareholders or promoters of the company.

Table 5 Summary of Net Effect of Underpricing to the Wealth of Promoters

	Company	Wealth lost by Issuers	Wealth gained by promoters on first trading day	Net effect to the promoters' wealth
1	DCZ	(14,565,600)	(33,986,400)	(19,420,800)
2	Seedco	5,100,000	9,900,000	4,800,000
3	CFI	33,475,000	90,506,481	57,031,481
4	Randalls	7,500,000	23,750,000	16,250,000
5	NMBZ	138,619,751	156,315,890	17,696,138
6	Dairibord	109,399,284	72,932,856	(36,466,428)
7	Cottco	-	-	-
8	CBZ	224,000,000	56,000,000	(168,000,000)
9	Econet	29,000,000	43,500,000	14,500,000
10	Medtech	16,666,667	18,055,555	1,388,889
11	RTG	-	-	-
12	Zimre	20,661,667	21,505,000	843,333
13	Century	136,363,637	429,155,893	292,792,256
14	Zimnat	155,000,000	549,545,455	394,545,455
15	FBC	250,000,000	429,238,864	179,238,864
16	Trust	1,696,900,000	26,584,766,667	24,887,866,667
17	O.K	27,606,000	317,469,000	289,863,000
18	Nicoz	133,928,572	238,095,238	104,166,667
19	Fidelity Life	55,891,518	60,549,144	4,657,626
	Mean	**159,239,289**	**1,529,857,876**	**1,370,618,587**

Table 5 shows that except for Dairibord, Cottco, CBZ and RTG the underpricing of the initial public offerings had a net positive gain to the value of retained equity by promoters after subtracting the amount of money left on the table. DCZ was overpriced; therefore the effect of underpricing is not issue of consideration for it. Therefore the underpricing of initial public offerings has no effect to the issuers or promoters of IPOs but what matters most is the net gain to their wealth. From the sample of initial public offerings considered the net effect was positive for fourteen companies which was a 74% success rate for the IPOs, from the perspective of the promoters or pre-IPO shareholders.

4.5 Sources and Causes of IPO underpricing

Regression Results

Table 7 Results of multivariate regression analysis

Explanatory Variables	Coefficient	t-statistic	Prob	Expected Sign
Size	-0.165	-0.74	0.748	-
Demand Multiple (DM)	0.27	4.91	0.00	+
Market Condition (MC)	-3.4	-0.08	0.528	-
Gross Proceeds (LGP)	1.02	0.98	0.191	-
Use of Gross Proceeds (UGP)	0.41	0.43	0.345	-
Retained Ownership (RO)	1.44	0.66	0.272	+
Time offer to listing (TLAG)	-0.004	-0.01	0.531	+
Age of the company (AGE)	0.067	0.02	0.412	-
Intercept	-8.47	-0.88	0.78	
Coefficient of determination	0.937			
F Value	7.43			
Probability of F Value	0.04			

Table 7 above shows the estimates for the explanatory variables considered to be affecting IPO underpricing on the ZSE. The results show a coefficient of determination of 0.937 and F Value of 7.43 significant at 5% level. The regression results indicate that Size, Demand multiple, Market condition, Gross Proceeds, Use of Proceeds, Retained Ownership, Time Lag and Age variables had coefficients of -0.165, 0.27, -3.4, 1.02, 0.41, 1.4, -0.004 and 0.067 respecitively. The negative sign for the coefficient of size is consistent with the findings by Maher Kooli et al (2001) and Suan Chin Ong et al (2001). This confirms the existence of negative relationship between the firm size and underpricing level. Demand multiple or subscription rate has a positive relationship with IPO underpricing on the ZSE. This agrees with the conclusions of Dimitrious Gounopoulos (2003), Suan Chin Ong (2001), George Lihui Tain (2003) and Othman Yong et al (2000). It is the strong explanatory variable of IPO underpricing on the ZSE. Market condition and Retained ownership have the expected signs of negative and positive respectively with IPO underpricing. Therefore the market condition has a negative relationship with underpricing whilst retained ownership has a positive relationship. This is consistent with the findings of Sanjai Bhagat et al (2004) and Roberto Arosio et al(2000). The signs of gross proceeds, use of gross proceeds, time lag and age are not the same with the expected signs. The relationship that was found between these explanatory variables is different from the results that were expected.

Privatisation and Underpricing

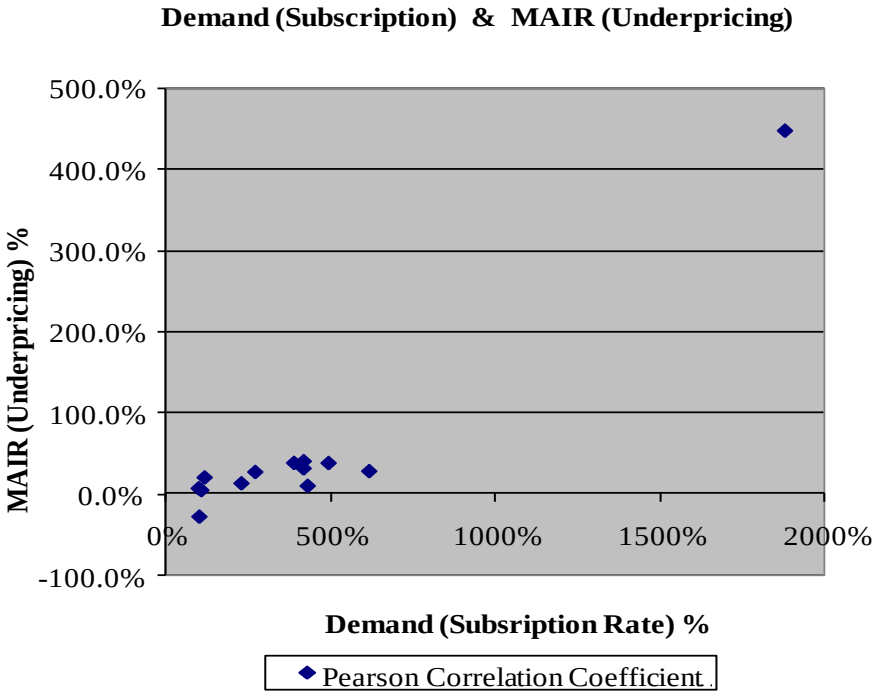
From the nineteen companies under consideration that were listed through initial public offerings, five of the companies were privatisations by the government. These were Dairibord, Cottco, RTG, CBZ and ZIMRE and, had raw initial returns of 54%, 0%, 0%, 44% and 7% respectively. Their market adjusted initial returns were Dairibord (49.9%), Cottco (10.6%), RTG (3.5%), CBZ (82.7%) and Zimre (72.4%). The mean raw and market adjusted initial returns for the privatisations are 21% and 15% respectively as compared to 54% and 47% for the conventional IPOs (by private owners). Therefore the conventional IPOs on the ZSE have high levels of underpricing as compared to the privatisations by the government. This is not consistent with the findings of Iboyla Schindele et al (2002), Joao Duque et al (2000) and Ji Chi et al (2002) who concluded that privatisation IPOs by government were underpriced to a significantly greater extent than private sales.

Lack of Rating Agencies

There are no local rating agencies in Zimbabwe who can grade initial public offerings and the ZSE has not made it mandatory for initial public offerings to be rated like what happens in India. The financial institutions in the Zimbabwe are rated by international credit rating agencies and this could also be done to local

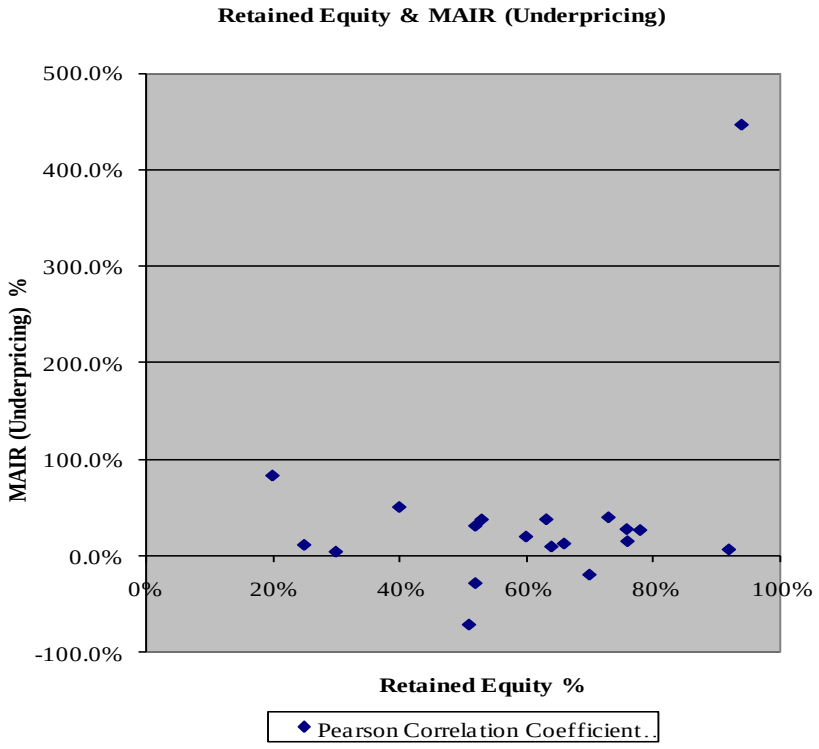
firms intending to be listed if the ZSE makes IPO grading mandatory. Therefore initial public offerings on the ZSE are being underpriced because they are not graded.

Figure 1 Underpricing and Subscription rates Scatter Diagram



As shown in figure 1 above and the calculated Pearson correlation coefficient of 0.96, shows a strong positive relationship between the Market adjusted initial return (MAIR) or underpricing and demand multiple (subscription rate). When an IPO is oversubscribed, there are high chances of it experiencing underpricing on its first day of trading.

Figure 2 Underpricing and Retained Ownership Scatter Diagram



As presented in the scatter diagram above and the calculated Pearson correlation coefficient 0.33 there is a positive relationship between IPO underpricing and percentage of ownership retained by pre-IPO shareholders (promoters). However, the relationship is not very strong.

4.6 Survey Results

IPO Underpricing and Short run performance

90% of respondents who answered the questionnaire invested in initial public offerings whilst the balance of 10% did not invest. All the respondents advocated for positive initial returns (underpricing) on the first day of trading for the initial public offerings. The majority (90%) of the respondents believed that the underpricing and poor short run performance of recent IPOs had no bearing to the decrease in the number of the companies being listed on the ZSE through initial public offerings.

IPO Timing

In terms of IPO timing 50% of the respondents were of the opinion that the stock market conditions had a bearing on the timing, whilst the other 50% were not sure whether the market conditions had any effect on the timing. 80% of the respondents felt that the industry conditions for a firm had a bearing on the timing of its initial public offering, 10% of the respondents were not sure of its effect whilst the other 10% said that industry conditions had no effect to the timing of an IPO. The first day initial returns (underpricing levels) of recent IPOs and listing of good firms had no bearing to IPO timing according to 80% of the respondents. However, the other 20% of the respondents believed that these two factors were important to IPO timing. 60% of the respondents agreed that the need for capital to grow the business had a huge impact on the timing of an initial public offering.

Explanatory variables (causes and sources) of underpricing

Fixed Offer price, IPO media coverage and lack of alternative investment opportunities were cited as the major causes and sources of IPO underpricing on the ZSE by 70% of the respondents. The respondents pointed out that once an offer price had been published in the prospectus it could not be changed even if the issuer realises later that the issue had been underpriced when there is an overwhelming demand for the shares. During the offer period which is usually about three weeks, the fixed offer price loses value due to the hyperinflationary environment in Zimbabwe. At the time when the offer is about to close everyone would be willing to subscribe for the shares on offer and this would lead to oversubscription of IPO and, consequently underpricing on the first day of trading.

The lack of alternative investment opportunities with real returns above inflation was also mentioned as the other major contributor to IPO underpricing. It was pointed out that the money market had been offering sub-inflationary returns to investors and not all investors could afford to invest in the lucrative property market. Therefore anyone who had excess funds to invest would opt for the stock market and this was inclusive of initial public offerings.

The respondents also cited the publicity of initial public offerings through road shows and media coverage as another factor that contributed to underpricing. The more an IPO was mentioned through the radio, television, road shows and newspapers this increased demand of its shares by certain individuals who have no idea about its financial performance.

The need to create a wide base of investors, reduction of IPO marketing costs, compensation of investors for investing in the IPO and creation of personal wealth by pre-IPO shareholders (promoters) were considered as the other causes of IPO underpricing by 50% of the respondents.

The need to avoid future litigation from investors by issuers was cited not as a reason for underpricing an IPO by all the respondents. 70% of the respondents said that underwriters did not intentionally underprice initial public offerings in return for future favours from institutional investors. The other 30% of the respondents were not sure whether the underwriters intentionally underprice initial public offerings or not.

Signals and their effects to IPO underpricing

80% of the respondents felt that the use of the big accounting firms as the auditors for a firm when embarking on an IPO did not affect its level of underpricing on the first day of trading, whilst the other 20% of the respondents were not sure whether auditors had an impact on underpricing. The use of a top investment bank as an IPO underwriter was cited as good signal that results in a decrease in the level of underpricing by 50% respondents whilst 50% of the other respondents considered it not as signal that affects IPO underpricing.

V. CONCLUSION

The research established that there was IPO underpricing on the ZSE and in the short run the IPOs have positive returns. It was also revealed that IPO underpricing and poor short run performance had no effect to the decrease in the number of companies being listed on the ZSE through IPOs. The reasons cited for decrease in IPOs was the absence of listing boards on the ZSE with less stringent listing requirements and, the instability in the political and economic environment in the country.

The research established the causes and sources of IPO underpricing on the ZSE were use of fixed offer price, demand multiple, retained equity by pre-IPO shareholders, media coverage, market conditions, lack of alternative investment opportunities with real returns and failure by the ZSE to make it mandatory that companies have to be graded by rating agencies prior to making a public offer.

The ZSE should have more boards to list companies. The listing requirements of the new boards should be less stringent as compared to the main board to enable new ventures without a profit history and small to medium enterprises to meet the listing requirements so that they can be listed on the exchange thereby increasing the number of IPOs.

The government should have policies that enable local companies, multinational companies, foreign investors and other stakeholders to have confidence in the political and economic environment of the country and property ownership rights should be restored.

The study revealed that the decrease in the number IPOs is not due to underpricing and poor short run performance. Another issue related to the research for further study is the price discovery process of IPOs on the first day of trading and the roles played by the underwriters and sponsoring brokers in the market.

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