

Short and Long-run Performance of Bookbuilt IPOs in India

S S S Kumar

Abstract

One of the important reforms Indian markets witnessed in the recent past is the introduction of issuing shares through the book building process which aims at efficient price discovery. The paper attempts to see how the IPOs issued through book building process fare both in short-run as well as in long run. Results indicate that the IPOs are under-priced as is evidenced by the positive listing day returns and are out performing the market in the subsequent months almost up to twenty four months. However, after two years of listing they generate negative returns. This finding is consistent with the IPO performance literature from the other countries but is in contrast with the first long run study on IPOs in the long run in India.

JEL Classification: G12, G14, G15

Key Words : IPOs, Book Building, Under-pricing, Fixed Price Regime

Introduction

Indian securities market had witnessed introduction of some important institutional mechanisms in the early part of this millennium in the realms of primary market, secondary market as well. These initiatives were aimed at bringing in the best practices and making the Indian capital market comparable to the global markets. An important reform in the primary market sphere is the introduction of Book Building process of issuing shares. Book Building involves soliciting from the professional

investors how many shares they are willing to buy and at what price. On the basis of the resulting demand curve, the firm and its investment bankers determine the IPO offer price. Book building is an established process of public issue of securities in many markets inter alia Argentina, Brazil, China, Finland, France, Germany, New Zealand, Japan, and the U.S. Book building process helps the issuer not only to determine the demand but also aids the process of 'price discovery' i.e., the price at which shares shall be issued will be determined by the demand and supply forces of the

Dr. S S S Kumar *, Associate Professor, Indian Institute of Management Kozhikode, Kozhikode

market. In this paper we attempt to see short and long run price performance of the book-built IPOs.

This paper is organized as follows: Section 2 traces the different regimes that existed in India for public issue of shares; Section 3 reviews the empirical literature on the performance of IPOs in the short and long run; Section 4 describes the data sources and research methodology; Section 5 presents the results and discussions and in section 6 concludes the findings of the study with directions for further studies.

Issue Pricing Regimes in India : Flotation of new shares in India had so far seen three distinct regimes starting with a thoroughly regulated regime that existed prior to 1992 to the current regime of laissez-faire. In the following paragraphs we briefly explain the salient features of the different regimes.

The CCIs Formula Pricing Regime : The antediluvian Capital Issues (Control) Act, 1947, enforced through the Office of Controller of Capital Issue (CCI) required the companies to obtain approval from CCI for raising capital. During the period prior to 1992 new companies were allowed to issue shares only at par while existing companies with substantial reserves could issue shares at a premium that too to be calculated in accordance with CCI norms. These regulations are aimed at protecting the investors from erring issuers provide no lee way for companies realize their true market price.

The Fixed Price Regime : The CCI guidelines were abolished in May 1992 and Securities & Exchange Board of India (SEBI) was formed under the SEBI Act, 1992. The role of SEBI is something similar to SEC in the U.S. context. Under the new regime eligible companies have the freedom to issue shares at a price determined by themselves in consultation with the lead manger and giving justifications for the proposed premium by disclosing all the relevant information such that the investor can make an informed choice. During the period 1992 to 1999 the regulator played no role in the determination of the price and is solely left to the issuer but the investors have the choice to invest in it or leave it. In case of over subscriptions the allocation will be made on a pro-rata basis. The major disadvantage of this method is the price is determined solely by the issuers and the lead managers well in advance (atleast 2-3 months prior to the offering) and is quite difficult for the lead manager to gauge the market clearing price. To compound the problem, if the issue is under-priced it will lead to oversubscription resulting in huge refunding costs. While in case of over-pricing, the issue may not be fully subscribed leading to devolvement and the lead manager's future business prospects will also be

hampered.

Issuing Shares Through Book Building Mechanism:

The Malegam Committee in 1995 recommended the introduction of book building as a mechanism to gauge the issue price from the market that is determined by demand and supply forces. However, it was in 1998 that SEBI brought forward the guidelines for issuing shares through the book building process. SEBI defines "book building as a process undertaken by which demand for the securities proposed to be issued by a body corporate is elicited and built up and the price for such securities is assessed for the determination of the quantum of securities to be issued by means of a notice, circular, advertisement, document or information memoranda or offer document". Under book building method a company can issue shares to the public in the following ways :

- 100% of the net offer to the public through book building process or
- 75% of the net offer' to the public through book building process and 25% of the net offer to the public at the price determined through book building process.

The process starts off with the issuing company appointing the lead manager for the issue who in turn will enter into an agreement with a set of underwriters called as syndicate members who will elicit bids from prospective investors. The bids from the investors have to be in a price band determined in the following way. The company in consultation with the lead managers specifies a minimum acceptable price known as the floor price. Once the floor price is fixed the upper price of the issue is automatically capped at 120% of the floor price as per regulation. Ofcourse, the floor price could be revised by 20% upwards or downwards but subsequently the ceiling price will also gets revised and the books shall be open for a minimum period of three days consequent to the revision subject to the condition that the total bidding time will not exceed thirteen days. Therefore it appears a little restrictive but book building gives ample opportunities for price discovery. All the institutional investors have to place limit orders while retail investors' can place their bids at the cutoff price to be determined later.

Once the bidding process is complete the lead manager and issuer will determine the cut off price or the market clearing price and shares will be allocated on a uniform price basis to all successful bidders. Allocation to the retail investors is to be made on a proportionate basis while allocation to institutional investors is at the discretion of the lead manager. But in the revised

¹ At present, definition of retail investor is 'the one who applies for shares worth not more than Rs. 1 lakh'

guidelines that came in to force from November 2005 this flexibility is also withdrawn for the lead managers and allotment to them is also to be made on proportionate basis. The first company to issue shares under the book building mechanism was Hughes Software Systems Limited in September 1999. However, even today the fixed price route of issuing shares is still available to the issuers.

Past Studies

Performance of IPOs in the long run and short run is a well researched area in the capital markets literature. Reilly and Hatfield (1969) reported underpricing to the extent of 11% from their study of the IPOs in US during the period 1963-65. Subsequently Ibbotson (1975), Reilly (1977), Aggarwal and Rivoli (1989), Ritter (1991), Loughran and Ritter (1995), Ritter and Welch (2002), Ljungqvist and Wilhelm (2003) all document underpricing in the U.S. market. Jog and Riding (1987) report the same for the Canadian market; Ljungqvist (1997) for the German market; Gong and Sekhar (2001) for the Australian market also report under pricing. Wong and Chiang (1986) for the Singapore market; Chen et al (2004) for the Chinese market and Yong and Isa (2003) provide evidence on underpricing of IPOs in the Asian markets. It is clear that most studies agree that IPOs leave some money on the table where the money left on the table is the difference between the listing day's close price and the offer price multiplied by the number of shares outstanding.

Under-pricing of IPOs is explained by various researchers in different ways and the same may be classified as under:

Information Asymmetry Hypothesis : According to Rock (1986) investment community is characterized with two kinds of investors informed and uninformed investors. When a new issue comes to the market by virtue of their knowledge informed investors keep away from poor quality issues or will be investing only if the after market returns are positive. While uninformed investors subscribe to all issues both good as well as poor quality issues and in all likelihood they will get higher allocation in the later type of issues. This may lead the uninformed investors to keep away from the new issues market. Therefore by underpricing these investors will be lured to participate in the new offerings. Koh and Walter (1989) working on the Singapore market directly tested this hypothesis and their results corroborate this hypothesis.

Signaling hypothesis : Allen and Faulhaber (1989) propose that a good quality issuer by underpricing the IPO will subsequently return to the market with a

seasoned offering and raise money at better terms. Welch (1992) finds evidence that almost a third of the new issuers returned to the market with a seasoned offering.

Other explanations include Tinic (1989) who suggested that underpricing discourages investors to file lawsuits against the issuer and Benveniste and Spindt (1989) propose that investors with more information will be enticed to reveal more information by underpricing the IPOs.

In the Indian context Shah (1995) documents a phenomenal 105.6% excess return over the offer price in a study of 2056 new listings over the period January 1991 to May 1995. However, this study provides evidence on the short run performance only while Madhusoodanan and Thiripalraju (1997) from a study on IPOs offered on BSE during the period 1992 to 1995 shows that underpricing was higher than the international experiences in the short run and in the long run too they yield higher returns compared to the negative returns recorded from the international markets. Krishnamurti and Kumar (2002) working on a sample of IPOs that hit the market between 1992 and 1994 demonstrate that the underpricing is to the extent of 72.34% (market adjusted returns). Kakati (1999) analyzed the performance of a sample of 500 IPOs that came to the market during January 1993 to March 1996 and documents that the short run underpricing is to the tune of 36.6% and in the long-run the overpricing is 40.8%.

From the literature review the following inferences can be made:

- Short-run underpricing of IPOs is an international phenomenon and in the long-run the evidence is mixed.
- Underpricing in the Indian market is quite high compared to the international experiences
- So far all the studies done in India were based on data pertaining to the post CCI regime and prior to the introduction of book building process. The IPOs in that period are priced by the issuers and were offered to the investors on take it or leave it basis, in other words the issue prices were purely determined by the sellers (issuing companies) but not by both buyers and sellers dealing with each other at arms length. Therefore it is possible that the IPO market was characterized by adverse selection and moral hazard problems. From 1999 onwards most of the IPOs were issued through the book building process hence it will be of interest to examine the price performance of bookbuilt IPOs.

Sample and Research Methodology

The sample in this study includes all the new equity issues offered through book building route on the National Stock Exchange (NSE) from 1999 till May 2007. The entire list of public offers made through NSE are available on their web site (www.nseindia.com) however we have excluded all the offer for sale issues, follow on public offers, those the exclusions we were left with a sample of 156 IPOs (see Appendix) for the short run analysis. Over this period these sample companies raised a sum of Rs 56,666.95 Cr. For the listing day and the next day (second day) we collected the opening price and closing price of the IPO from the NSE's web site. Thereafter the monthly adjusted closing prices (adjusted for dividends, stock splits and bonus issues if any) were obtained for the same from Capitaline database.

In this study we examined the price performance of the IPOs both in the short-run as well as in the long-run where short-run means the behaviour of initial returns up on listing. As in other studies on this theme we computed the return realized over the period from the offering of the shares to the first trading day on NSE, called as offer-to-close return. Following Barry and Jennings (1993) we extend the short-run analysis by examining offer-to-open returns which will give a fair idea of how much the IPOs gained or lost up on opening trades and an intra day return on the listing day defined as the open-to-close returns on the listing day. We also analyze the next day (second day) returns in a similar manner with reference to the first day's closing price.

IPO long run performance is gauged by examining the returns beyond the second day of their listing at monthly intervals till May 2007 subject to a maximum of 60 months. Therefore for those listed in January 2000 monthly returns will be observed till December 2004 encompassing 60 monthly returns however for a stock listed in May 2006 we could analyze its performance for a maximum of one year.

We estimate simple returns as well as market adjusted returns to capture the market movements during the period between offer closures to listing. Simple returns are computed as:

$$R_{it} = \left(\frac{P_{it} - O_i}{O_i} \right) \times 100$$

Where P_{it} is the opening/closing price of stock 'i' at time 't' and O_i is the offer price of the i^{th} stock. These returns measure whether an investor gained (or lost) by buying the shares during the IPO at the offer price and selling at

the prevailing price on the opening day. If R_{it} is positive one can infer that the issue is under-priced; if R_{it} is negative it may be inferred that the issue is over-priced and if R_{it} is zero it means the issue is aptly priced. As there is a lag between the offer day and listing day (varying from) the price observed in the market on the listing day may be different from the offer price as a result of the overall market movements, we also computed market adjusted returns of the IPOs for the same period. This adjustment is made first by computing the returns on the market index (Nifty) during the same period :

$$R_{mt} = \left(\frac{I_t - I_o}{I_o} \right) \times 100$$

Where I_t is the Nifty index closing/opening value on day 't' and I_o is the closing level of Nifty on the last day of the IPO offering. If R_{mt} is positive it means the market on the whole has moved up; if it is negative it may be considered that there is a decline in the over all market and if it is equal to zero it may be concluded that market remained unchanged during the interval between IPO offering to its listing.

Now the market returns will be deducted from the IPO's returns and the resultant returns are called as excess returns:

$$ER_{it} = R_{it} - R_{mt}$$

If ER_{it} is positive one can infer that the issue is under-priced after adjusting for the market movements in the intervening period and a negative value for ER_{it} , indicates that the issue is over-priced and it is equal to zero it may be concluded that the issue is fairly priced.

IPO performance in the long run is examined by using two measures buy and hold market adjusted returns (BHAR) and monthly market adjusted returns (MMAR) which are computed as follows :

$$BHAR = \left(\frac{P_{it} - P_{i0}}{P_{i0}} \right) \times 100$$

$$MMAR = \left(\frac{P_{it} - P_{i0}}{P_{i0}} - \left(\frac{I_t - I_o}{I_o} \right) \right) \times 100$$

Where P_{it} is the closing price 't' months of the i^{th} IPO after its listing

P_{i0} is the closing price of the of the i^{th} IPO on its listing day

P_{i0} is the offer price of the i^{th} IPO

I_t is the closing Nifty index value 't' months after IPO's listing

I_0 is the closing index value on the listing day

I_{t-1} is the closing index value on the last day of the IPO's offer

Results and Discussions

Table I presents a snapshot of the IPO activity from the beginning of the millennium.

Table I :IPO Activity in India During 1998-2006
(Rs. crore)

| Year | No. of issues | Amount |
|--------------|---------------|--------------|
| 1998-99 | 18 | 404 |
| 1999-00 | 51 | 2719 |
| 2000-01 | 114 | 2722 |
| 2001-02 | 7 | 1202 |
| 2002-03 | 6 | 1039 |
| 2003-04 | 21 | 3434 |
| 2004-05 | 23 | 13749 |
| 2005-06 | 79 | 10936 |
| Total | 319 | 36205 |

(Source: Handbook of Statistics on the Indian Securities Market 2006, Table 12)

It can be noted there are a total of 319 issues till March 2006 and the number represents IPOs issued following the Book building route as well as Fixed Price Offer

route though a majority of them might had been through the book building method.

IPOs in the short-run : In Table II, we present the results of the price performance of IPOs on the listing day and the second day of listing. It may be noted that on an average IPOs listed with a 26.35% premium over the offer price and the median premium is around 18%. To account for the possibility of outlier effect we considered the average trimmed mean (5% i.e., ignoring 5% of the observations or 8 observations extremely high and low data points) opening returns and the average returns decrease only marginally to 25.93% thereby confirming that underpricing of IPOs is not caused by a few outliers. When the performance is measured with reference to the closing price the average gains increase to 27.26% and the median returns also increase by around 0.4%. We also tested whether the average returns are statistically significant by constructing a cross-sectional 't' statistic and the corresponding 'p' values indicate that the listing day excess returns were statistically significant. From row number 9 we can also note that out of 156 IPOs sampled 134 IPOs listed with a positive return while the rest opened at a discount to the offer price. It may also noted that not all IPOs that opened with gains also closed the day with positive returns in fact some of them closed at a discount to the offer price by the end of the day hence we observe that the number of IPOs that ended the day at a premium are lower than the IPOs that opened at a premium. Then we examined the intra day returns, i.e., if an investor buys the shares at the opening price and sells by the end of the day at the closing price, here we observe that there is a negative returns statistically not distinguishable from zero therefore we may also infer that IPOs listing do not provide economically significant trading opportunities for day traders.

Table II :Average IPO Returns Upon Listing and on the Next Day

| | Listing Day | | | Next Day | | |
|----------------------|-------------|-------------|------------|------------|-------------|------------|
| | Offer-Open | Offer-Close | Open-Close | Offer-Open | Offer-Close | Open-Close |
| Mean | 26.35% | 27.26% | -0.77% | 0.03% | 0.64% | 0.67% |
| 5% Trim mean | 24.52% | 24.27% | -0.98% | 0.27% | 0.68% | 0.49% |
| Median | 18.09% | 18.48% | -0.32% | 0.00% | 0.59% | 0.40% |
| SD | 0.346 | 0.458 | 0.189 | 0.033 | 0.074 | 0.076 |
| T | 9.58 | 7.49 | -0.51 | 0.10 | 1.09 | 1.11 |
| p-value | 0.0000 | 0.0000 | 0.6108 | 0.9186 | 0.2775 | 0.2692 |
| N | 156 | 156 | 156 | 156 | 156 | 156 |
| N>0 | 134 | 107 | 75 | 77 | 83 | 83 |
| Binomial Prob | 0.0000 | 0.0000 | 0.0569 | 0.0630 | 0.0464 | 0.0464 |

We also examined how much of the average initial IPO returns (based on closing prices) are due to the opening returns we ran a regression with opening returns as the deterministic variable as under:

$$Roc = a + R Roo + E$$

Where Roc is the returns based on closing price and Roo is the returns based on opening price of the IPO. The regression output indicates that the intercept term is negative but statistically not different from zero (intercept term is -0.01491 and t-value is -0.5586) while the slope coefficient is 1.088 (t-value is 17.501 and the corresponding p-value is 0.0000) and is statistically not different from 1.00 at ordinary levels of significance. Also the R² of the regression is 81% therefore the regression results indicate that the offer to open returns explains the variation in offer to close returns to an extent of 80% and the unexplained portion is not statistically significant.

The second day's return analysis shows that all the IPO investors gain on the listing day's performance and the returns on second day are not statistically distinguishable from zero in other words if any trader buys the IPOs on the listing day at opening/ closing price, on the listing day with an intention of profiting from liquidating the position on the next day at opening/ closing levels on second day they will not be able to earn any economically significant returns. This is also true for any day trader aiming to profit from the opening and closing prices on the next day.

We performed a cross sectional regression with the initial returns as dependent variable and the following as the independent variables to explain the underpricing:

Size: The natural log of the issue size in rupee terms is included as an independent variable and we premise that larger the issue size less will be underpricing because larger issues will be less risky as they are followed and analyzed by a large set of analysts. Since they are less risky lesser they will be fairly priced.

Before market conditions: In the run up to the opening of the issue if the general market conditions are buoyant the issue may draw more investors and this may lead to a higher demand. Since the number of shares is limited and the demand is not fully met, upon listing there may be lot of buying interest that may lead to the issue listing at a premium to the offer price. We introduce a dummy variable that assumes a value of zero if market has declined in atleast half of the trading days in the month prior to the IPO opening and it will assume a value of 1 if the market has moved up.

Offer price quotient: Higher the listing day gains means more is the demand for the stock. If the demand was

properly gauged in the market before the issue is opened then the offered price will be very close to the upper price limit. Therefore, we introduce the quotient of offered price to upper price limit as another independent variable to explain the underpricing.

The Regression results are presented in Table III below: From the regression results we may observe that only how close the offered price to the upper price limit is found to be significant and the remaining variables are not found to be statistically significant. Ofcourse the R² of the regression is rather low at 0.016852 (Adj. R²) which is not unusual in cross sectional regressions.

Table III :Cross Sectional Regression Results

| | Intercept | Issue size | Offer price Quotient | Before market conditions |
|--------------|-----------|------------|----------------------|--------------------------|
| Coefficients | -0.98 | 0.01 | 0.96 | 0.05 |
| t Stat | -1.34 | 0.45 | 2.29 | 0.60 |
| P-value | 0.1830 | 0.6550 | 0.0232 | 0.5463 |

IPOs in the long-run.'

Results from the long run analysis were presented in Tables IV and V. In Table IV we capture the long run IPO performance using the MMAR metric computed over 3, 6, 9, 12, 24, 36, 48 and 60 months from listing, for comparison sake we have standardized the returns by annualizing them. It may be noted that the IPOs beat the market after two years of listing also but thereafter the IPOs under-perform however we are not categorical about the underperformance in the long-run, particularly about the performance over two years, since our sample size shrinks substantially hence we state that there is prima-facie evidence of underperformance of IPOs after two years of listing. This is a finding consistent with that reported in the western markets literature. The results of buy and hold returns show that this strategy of buying IPOs on the listing day and holding them is not going to generate superior returns. This finding is again consistent with those reported from other countries. For instance Brav, A, et al (2000) report that the after market performance of the IPOs in the U.S. offered during 1975-92 generated an average total return of -44.2% from the listing date to three years. While Ljungqvist (1997) report -12.1% for the IPOs in Germany over a three year period and Cai and Wei (1997) document -27.0% for the Japanese IPOs. Again compared with international evidence the after market performance of the Indian IPOs over a three year period is -14.69% which is not very dissimilar to that reported from other countries.

Table IV : Long Run Performance of the IPOs: Based on Offer Price

| Sample size | Months from listing | Index | | MMAR | | Excess MMAR (annualized) |
|-------------|---------------------|--------------------|-------------------|--------------------|-------------------|--------------------------|
| | | Annualized returns | Trimmed mean (5%) | Annualized returns | Trimmed mean (5%) | |
| 91 | 3 | 25.39% | 5.82% | 159.47% | 26.92% | 134.08% |
| 91 | 6 | 25.20% | 11.89% | 78.47% | 33.59% | 53.27% |
| 91 | 9 | 33.08% | 23.91 % | 66.43% | 46.53% | 33.35% |
| 91 | 12 | 31.17% | 31.17% | 52.35% | 52.35% | 21.18% |
| 38 | 24 | 28.17% | 64.26% | 40.06% | 96.16% | 11.89% |
| 21 | 36 | 23.60% | 88.84% | 19.72% | 71.59% | -3.89% |
| 11 | 48 | 15.85% | 80.14% | 28.28% | 170.76% | 12.42% |
| 10 | 60 | 18.40% | 132.64% | 2.88% | 15.28% | -15.51 % |

Table V : After Market Price Performance of IPOs

| Sample size | Months from listing | Index | | BHAR | | Excess BHAR (annualized) |
|-------------|---------------------|--------------------|-------------------|--------------------|-------------------|--------------------------|
| | | Annualized returns | Trimmed mean (5%) | Annualized returns | Trimmed mean (5%) | |
| 91 | 3 | 25.39% | 5.82% | -3.45% | -0.87% | -28.84% |
| 91 | 6 | 25.20% | 11.89% | 8.26% | 4.05% | -16.94% |
| 91 | 9 | 33.08% | 23.91% | 19.19% | 14.07% | -13.89% |
| 91 | 12 | 31.17% | 31.17% | 17.49% | 17.49% | -13.68% |
| 38 | 24 | 28.17% | 64.26% | 22.97% | 51.22% | -5.20% |
| 21 | 36 | 23.60% | 88.84% | 8.92% | 29.21% | -14.69% |
| 11 | 48 | 15.85% | 80.14% | 26.25% | 154.06% | 10.40% |
| 10 | 60 | 18.40% | 132.64% | 2.54% | 13.36% | -15.86% |

However evidence of IPO performance in the long-run from earlier studies conducted in India is rather mixed. Kakati (1999) reports under-performance in the long run while Madhusoodhanan and Raju (1997) report that Indian IPOs have given higher returns compared to the negative returns reported from other countries. From our analysis it may be observed that IPOs generated positive returns even after two years of listing but subsequently they under-perform. However we again caution that the present study suffers from a small sample limitation particularly in the time frame after twenty four months.

An important finding from this study is the amount of over performance in the short-run and the quantum of underperformance in the long run have come down significantly compared with that reported in earlier mentioned studies. The same is reported in the following Table VI. One can also note that the decrease in

underpricing in the short-run and over performance in the long run has decreased probably due to the introduction of book building process as that is an important change that the public issue process has witnessed from the early nineties to the present study however the same may be confirmed by empirical examination. Our inference is based on the logic that the earlier studies that documented underpricing have examined a sample of IPOs that were issued following the fixed price route while the present study's sample comprises IPOs that were issued only through the book building route hence we attribute the reduction in underpricing to the process of book building. We make this inference at the risk of sounding a little arbitrary but the same may be confirmed or otherwise by an empirical examination by further studies with a sample that pans both the regimes- fixed price regime as well as book building regime.

Table VI : IPO Performance Across Time Periods

| Study | Period | Short run (Listing day returns) | Long run | Sample size |
|--------------------------------|-----------|---------------------------------------|--------------------------|----------------------------------|
| Krishnamurti and Kumar (2002) | 1992-1994 | 72.34% (un-annualized) | Not analysed | 386 |
| Madhusoodhanan and Raju (1997) | 1992-1995 | 294.80 (annualized) | 16.33 (annualized) | 1922 |
| Kakati (1999) | 1993-1996 | 34.9% (un-annualized) | -39.1 (un-annualized) | 500 |
| Present study | 1999-2006 | 26.35% (un-annualized) | -3.89% (annualized) | 156 (short run) 21 (long run) |

However evidence of IPO performance in the long-run from earlier studies conducted in India is rather mixed. Kakati (1999) reports under-performance in the long run while Madhusoodhanan and Raju (1997) report that Indian IPOs have given higher returns compared to the negative returns reported from other countries. From our analysis it may be observed that IPOs generated positive returns even after two years of listing but subsequently they under-perform. However we again caution that the present study suffers from a small sample limitation particularly in the time frame after twenty four months.

An important finding from this study is the amount of over performance in the short-run and the quantum of underperformance in the long run have come down significantly compared with that reported in earlier mentioned studies. The same is reported in the following Table VI. One can also note that the decrease in underpricing in the short-run and over performance in the long run has decreased probably due to the introduction of book building process as that is an important change that the public issue process has witnessed from the early nineties to the present study however the same may be confirmed by empirical examination. Our inference is based on the logic that the earlier studies that documented underpricing have examined a sample of IPOs that were issued following the fixed price route while the present study's sample comprises IPOs that were issued only through the book building route hence we attribute the reduction in underpricing to the process of book building. We make this inference at the risk of sounding a little arbitrary but the same may be confirmed or otherwise by an empirical examination by further studies with a sample that pans both the regimes- fixed price regime as well as book building regime.

Conclusions and Directions for Further Research

This study examines the performance of IPOs issued through the book building process in India over the period 1999-2006. The sample comprises 156 firms that offered their shares through the book building route on the NSE. Upon listing the IPOs on an average offered positive returns (after adjusting for market movements) to investors and a large part of the closing day returns on the listing day were accounted for by the opening returns. In the long run the IPOs offered positive returns up till twenty four months but subsequently they under perform the market. However we cannot be emphatic about our later finding as our sample size comes down substantially because majority of the IPOs in the sample were issued in the last three years hence they do not have a five year track record. The excess buy and hold returns from IPOs are not positive both in the short term as well as in the long run. Further studies can examine the pricing efficiency of bookbuilding process by comparing the excess returns from fixed price offerings during the same period.

References

- Aggrawal, R and P. Rivoli**, (1989), 'Fads, in the Initial Public Offering Market?', *Financial Management* Vol. 19, 45-57
- Allen, F and Faulhaber, G R**, (1989), 'Signaling by Under-pricing in the IPO Market', *Journal of Financial Economics*, Vol. 23, 303-23.
- Barry, C B and Jennings, R H**, (1993), 'The Opening Price Performance of Initial Public Offerings Of Common Stock', *Financial Management*, Vol. 22, 54-63.
- Beatty, R P**, (1989), Auditor Reputation and the Pricing of Initial Public Offerings, *The Accounting Review*, October, 693-709.

- Beatty, R P and Ritter, J R**, (1986), 'Investment Banking, Reputation and the Under-Pricing of Initial Public Offerings', *Journal of Financial Economics*, Vol. 15, 213-32.
- Benveniste, L and P. Spindt**, (1989), 'How Investment Bankers Determine the Offer Price and Allocation of New Issues', *Journal of Financial Economics*, Vol. 24, 343-361
- Block, S and Stanley, M**, (1980), 'The Financial Characteristics and Price Movement Patterns of Companies Approaching the Unseasoned Securities Market in the late 70's', *Financial Management*, Winter, Vol. 306.
- Booth, J R and Chua, L**, (1996), 'Ownership Dispersion, Costly Information, and IPO Underpricing', *Journal of Financial Economics*, Vol.41, 291-310.
- Brav, A, C Geczy and P Gompers**, (2000), 'Is the Abnormal Return Following Equity Issues Anomalous?', *Journal of Financial Economics*, Vol. 56, pp. 209-249
- Cai, J and Wei, K C J**, (1997), 'The Investment and Operating Performance of Japanese Initial Public Offerings', *Pacific-Basin Finance Journal*, Vol. 5, 389-417.
- Krishnamurti Chandrasekhar and Pradeep Kumar**, (2002), 'The Initial Listing Performance of Indian IPOs', *Managerial Finance*; Vol. 28, 39-51
- Chen, Gongmeng; Firth, Michael; Kim, Jeong-Bon**, (2004), 'IPO Underpricing in China's New Stock Markets', *Journal of Multinational Financial Management*, Vol. 14, 283-302
- Chowdhry, B and Sherman, A**, (1996), 'The Winner's Curse and International Methods of Allocating Initial Public Offerings', *Pacific-basin Finance Journal*, Vol. 4, 15-30.
- Gong N and Chander Sekhar**, 2001, 'Underpricing of Privatized IPOs: The Australian Experience', *Australian Journal of Management* Vol. 26, 91-106
- Ibbotson, R G**, (1975), 'Price Performance of Common Stock New Issues', *Journal of Financial Economics*, Vol. 2, 235-72.
- Jog V M and Riding A L**, (1987,) 'Under-pricing in Canadian IPOs', *Financial Analysts Journal*, Vol. 43, 48-55
- Kakati M, (1999), 'Price Performance of Initial Public Offerings', *International Journal of Development Banking*, Vol. 17, 59-75
- Koh, F and T. Walter**, (1989), 'A Direct Test of Rock's Model of the Pricing of Unseasoned Issues', *Journal of Financial Economics*, Vol. 23, 251-72
- Ljungqvist, A**, (1997), 'Pricing Initial Public Offerings: Further Evidence from Germany', *European Economic Review*, Vol. 41, 1309-1320
- Ljungqvist, A and Wilhelm, William J**, (2003), 'IPO Pricing in the Dot-corn Bubble', *Journal of Finance*, Vol. 58, 723-752
- Ljungqvist, A. and W. J. Wilhelm**, (2002), 'IPO Allocations: Discriminatory or Discretionary?', *Journal of Financial Economics* Vol. 65, 167-201.
- Loughran, T, and Ritter, J R**, 'The New Issues Puzzle', *Journal of Finance*, Vol. 50, 23 -51
- Loughran, T, Ritter, J R and Rydqvist, K**, (1994), 'Initial Public Offerings: International Insights', *Pacific-Basin Finance Journal*, Vol. 2, 165-99
- Madhusoonan, T P and Thiripalraju M**, (1997), 'Underpricing in IPOs: The Indian Evidence', *Vikalpa*, Vol.22, 17-30
- Reilly, F K**, (1977), 'New Issues Re-visited', *Financial Management*, Vol. 4, 28-42.
- Reilly, F K and Hatfield, K**, 1969, 'Investor Experience with New Stock Issues', *Financial Analyst Journal*, Vol. 25, 73-80.
- Ritter, J R**, (1991), 'The Long Run Performance of Initial Public Offerings', *Journal Of Finance*, Vol. 46, 3-28
- Ritter, Jay and No Welch**, (2002), 'A Review of IPO Activity, Pricing, and Allocations', *Journal of Finance* Vol. 57,1795-1828.
- Rock, K**, (1986,) 'Why New Issues Are Under-Priced?', *Journal of Financial Economics*, Vol. 15, 1051-69
- Shah, A**, (1995), 'The Indian IPO Market: Empirical Facts', Technical report, Centre For Monitoring Indian Economy, Mumbai
- Tinic, S M**, (1988), 'Anatomy of Initial Public Offerings of Common Stock', *Journal of Finance*, Vol. 43, 789-822.
- Welch, I, (1992), 'Sequential Sales, Learning and Cascades', *Journal of Finance*, Vol. 47, 695-732
- Wong K. A. and H. L. Chiang**, (1986), 'Pricing of New Equity Issues in Singapore', *Asia Pacific Journal of Management*Vol.4, 1-10
- Yong O and Isa A**, (2003), 'Initial Performance of New Issues of Shares in Malaysia' *Applied Economics*, 35, 919-930

Appendix

| | | | |
|----|--|----|---|
| 1 | 3i Infotech Limited | 41 | Ess Dee Aluminium Limited |
| 2 | Abhishek Mills Limited | 42 | Euro Ceramics Limited |
| 3 | Accel Frontline Limited | 43 | Everest Kanto Cylinder Limited |
| 4 | Action Construction Equipment Limited | 44 | Evinix Accessories Limited |
| 5 | Adhunik Metaliks Limited | 45 | FIEM Industries Limited |
| 6 | Advanta India Limited | 46 | Firstsource Solutions Limited |
| 7 | AIA Engineering Limited | 47 | Fortis Healthcare Limited |
| 8 | Akruti Nirman Limited | 48 | Gateway Distriparks Limited |
| 9 | Allcargo Global Logistics Limited | 49 | Gitanjali Gems Limited |
| 10 | Allsec Technologies Limited | 50 | Global Broadcast News Limited |
| 11 | Amar Remedies Limited | 51 | Global Vectra Helicorp Limited |
| 12 | AMD Metplast Limited | 52 | GMR Infrastructure Limited |
| 13 | Atlanta Limited | 53 | Godawari Power and (spat Limited |
| 14 | Aurionpro Solutions Limited | 54 | Gokaldas Exports Limited |
| 15 | Autoline Industries Limited | 55 | Gujarat State Petronet Limited |
| 16 | Balaji Telefilms Limited | 56 | GVK Power & Infrastructure Limited |
| 17 | Bannari Amman Spinning Mills Limited | 57 | Gwalior Chemical Industries Limited |
| 18 | Bartronics India Limited | 58 | Hanung Toys and Textiles Limited |
| 19 | Bhagwati Banquets & Hotels Limited | 59 | HCL Technologies Limited |
| 20 | Bharati Shipyard Limited | 60 | House of Pearl Fashions Limited |
| 21 | Binani Cement Limited | 61 | HOV Services Limited |
| 22 | Biocon Limited | 62 | HT Media Limited |
| 23 | Blue Bird (India) Limited | 63 | ICRA Limited |
| 24 | Bombay Rayon Fashions Limited | 64 | Idea Cellular Limited |
| 25 | Broadcast Initiatives Limited | 65 | I-Flex Solutions Limited |
| 26 | C & C Constructions Limited | 66 | IL&FS Investmart Limited |
| 27 | Cairn India Limited | 67 | India Infoline Limited |
| 28 | Celebrity Fashions Limited | 68 | IndiaBulls Financial Services Limited |
| 29 | Cinemax India Limited | 69 | Indian Bank |
| 30 | Creative Eye Limited | 70 | Indoco Remedies Limited |
| 31 | Datamatics Technologies Limited | 71 | Indraprastha Gas Limited |
| 32 | Deccan Aviation Limited | 72 | Indus Fila Limited |
| 33 | Deccan Chronicle Holdings Limited | 73 | Info Edge (India) Limited |
| 34 | Development Credit Bank Limited | 74 | Infrastructure Development Finance Co. Ltd. |
| 35 | Dishman Pharmaceuticals & Chemicals Ltd. | 75 | INOX Leisure Limited |
| 36 | Divi's Laboratories Limited | 76 | Insecticides (India) Limited |
| 37 | D-Link (India) Limited | 77 | J. K. Cement Limited |
| 38 | Educomp Solutions Limited | 78 | Jagran Prakashan Limited |
| 39 | Emkay Share and Stock Brokers Limited | 79 | Jai Prakash Hydro-Power Limited |
| 40 | Entertainment Network (India) Limited | 80 | Jet Airways (India) Limited |

| | | | |
|-----|---|-----|--|
| 81 | JHS Svendgaard Laboratories Limited | 120 | Raj Television Network Limited |
| 82 | Kernex Microsystems (I) Limited | 121 | Redington (India) Limited |
| 83 | Kewal Kiran Clothing Limited | 122 | Reliance Petroleum Limited |
| 84 | L.T.Overseas Limited | 123 | Repro India Limited |
| 85 | Lanco Infratech Limited | 124 | Royal Orchid Hotels Limited |
| 86 | Lokesh Machines Limited | 125 | Ruchira Papers Limited |
| 87 | Mahindra & Mahindra Financial Services Ltd. | 126 | S.A.L. Steel Limited |
| 88 | Maruti Udyog Limited | 127 | Sadbhav Engineering Limited |
| 89 | MIC Electronics Limited | 128 | Sasken Communication Technologies Ltd. |
| 90 | Mid-Day Multimedia Limited | 129 | Shoppers Stop Limited |
| 91 | MindTree Consulting Limited | 130 | Shree Ashtavinayak Cine Vision Limited |
| 92 | MRO TEK Limited | 131 | Shree Rama Multi Tech Limited |
| 93 | Mudra Lifestyle Limited | 132 | Shree Renuka Sugars Limited |
| 94 | National Thermal Power Corporation Limited | 133 | Shri Ramrupai Balaji Steels Limited |
| 95 | Nectar Lifesciences Limited | 134 | Shringar Cinemas Limited |
| 96 | New Delhi Television Limited | 135 | SMS Pharmaceuticals Limited |
| 97 | Nissan Copper Limited | 136 | Sobha Developers Limited |
| 98 | NITCO Tiles Limited | 137 | Solar Explosives Limited |
| 99 | Nitin Spinners Limited | 138 | SPL Industries Limited |
| 100 | Orbit Corporation Limited | 139 | Sun TV Limited |
| 101 | Oriental Trimex Limited | 140 | Suzlon Energy Limited |
| 102 | Page Industries Limited | 141 | Tanla Solutions Limited |
| 103 | Parsvnath Developers Limited | 142 | Tata Consultancy Services Limited |
| 104 | Patni Computer Systems Limited | 143 | Tata Teleservices (Maharashtra) Limited |
| 105 | Petronet LNG Limited | 144 | Tech Mahindra Limited |
| 106 | Piramyd Retail Limited | 145 | Technocraft Industries (India) Limited |
| 107 | Plethico Pharmaceuticals Limited | 146 | Transwarranty Finance Limited |
| 108 | Pochiraju Industries Limited | 147 | Triveni Engineering & Industries Limited |
| 109 | Power Finance Corporation Limited | 148 | Tulip IT Services Limited |
| 110 | Power Trading Corporation of India Limited | 149 | Unity Infraprojects Limited |
| 111 | Pratibha Industries Limited | 150 | Uttam Sugar Mills Limited |
| 112 | Prime Focus Limited | 151 | UTV Software Communications Limited |
| 113 | Prithvi Information Solutions Limited | 152 | Vardhman Acrylics Limited |
| 114 | British Nandy Communications Limited | 153 | Visa Steel Limited |
| 115 | Provogue (India) Limited | 154 | Voltamp Transformers Limited |
| 116 | Punj Lloyd Limited | 155 | XL Telecom Limited |
| 117 | PVR Limited | 156 | Yes Bank |
| 118 | Pyramid Saimira Theatre Limited | | |
| 119 | R Systems International Limited | | |