

Initial Performance of Indian IPOs before the Financial Crisis

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Abstract

Investors who purchase shares in the Initial Public Offerings (IPO) are reported to get high initial returns. This shows that the issuer may have priced the shares much lower than their true worth. According to this study, the market adjusted initial returns for the IPOs, from January 1999 to August 2008, listed on Bombay Stock Exchange, have been found to be around 28%. This is a very high initial return and indicates that India IPOs were underpriced. The study looks at the various determinants of underpricing in India, and finds that it is affected by issue proceeds, delay in listing, issue price, and promoter groups.

Keywords

Initial public offerings, initial returns, underpricing, India, capital markets, primary markets

Introduction

Many of the investors who apply for Initial Public Offerings (IPOs) in India sell the shares on the first day itself to make high initial returns, commonly known as underpricing. Underpricing has been a common phenomenon for a long time across various countries (Loughran et al., 1994). Investors make high initial returns because the issuer may have priced the shares much lower than their true worth. This concept is commonly described as “leaving money on the table”.

It is pertinent here to mention how Indian markets have evolved over time. In 1992, Securities and Exchange Board of India (SEBI) was given the responsibility of regulating primary markets after abolishing the Controller of Capital Issues. The primary role of SEBI is to protect the interest of the investors. Book building method of IPOs was introduced in India in 1999 for better price discovery; screen-based trading system was introduced in 1994 followed by dematerialization of shares in 1996. With all these changes and others that followed, Indian markets have become much more transparent and efficient.

Global Financial Crisis (GFC) was a severe financial crisis that started in the USA due to lending to sub-prime borrowers and affected many countries. It came to the fore when Lehman Brothers filed for

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bankruptcy in September 2008. It had repercussions on primary and secondary markets as well. This study uses data up to August 2008 to understand how underpricing changed a decade before the crisis and what were its various determinants.

Review of Literature

Studies have been conducted worldwide on underpricing. Ibbotson (1975) found initial returns to the tune of 11.4% on IPOs in the USA from January 1960 through December 1969. Ibbotson and Jaffe (1975) found the underpricing to be around 16.8% in the first month after listing. Ritter (1984) reported an underpricing of 48% in the presumably good time for IPOs in the USA between 1980 and 1981. In Canada a study by Jog and Riding (1987) from 1971 to 1983 found IPOs to be underpriced, which ranged between 9 and 11.5%, and a study by Kooli and Suret (2004) found that Canadian IPOs are underpriced and the type of issue determined the quantum of underpricing. Ljungqvist (1997) studied underpricing of IPOs in Germany with a sample of 189 firms from 1970 to 1993 and found the average underpricing return of 10.57%. Dawson (1987) found IPO underpricing in the stock markets of Hong Kong, Singapore, and Malaysia to be 13.8%, 39.4%, and 166.6%, respectively. Perera and Kulendran (2016) found that IPOs were underpriced in Australia. Unlu et al. (2006) studied the changing nature of IPO underpricing in the UK using a sample of 513 IPOs from 1993 to 2001. They found that the underpricing varies from 2% to 65%. Loughran et al. (1994) looked at underpricing in 25 countries on the basis of literature available and suggested most of the IPOs are issued when markets have gone up. Banerjee et al. (2011) used data from 36 countries during the period 2000 to 2006, and found that the average underpricing ranged from 4.33% in Norway to 57.1% in China.

Various authors have studied underpricing of IPOs in India. Madhusoodanan and Thiripalraju (1997) reported high underpricing as compared to other countries. Nandha and Sawyer (2002) studied 381 issues and found the underpricing to be 101% and earnings per share projections to be one of the most important determinants of underpricing. Krishnamurti and Kumar (2002) studied 386 firms and reported average underpricing of around 78%. They found that more underpricing is observed for risky and smaller firms. Ghosh (2005) found underpricing to be 96% on an average based on 1,842 IPOs in between 1993 and 2001. He reported that larger issues had lesser initial returns and also for companies that went for subsequent offers. Chaturvedi et al. (2006) studied 50 IPOs and suggested that extent of over subscription of an IPO determined the underpricing. The oversubscription was due to market returns, nature of the industry, and track record of promoters. Gopaldaswamy et al. (2008) found that initial returns were not significantly influenced by the route used for IPO whether it was fixed price offer or book building route. Garg et al. (2008) reported that initial day returns were not significantly different in hot and cold IPO phases. Deb (2009) reported initial day returns of around 33% but these returns were reversed very quickly. Pande and Vaidyanathan (2009) found that oversubscription and delay in listing positively impacted first day returns. Sahoo and Rajib (2010) had reported underpricing of 47%. Mishra (2012) reported an average positive initial day returns of 14%. Hawaldar et al. (2018) studied 464 IPOs and found that issues using book building method were less underpriced than the issues using fixed price method.

Various theories have been conceptualized to find out the reason for underpricing. Rock (1986) found that the investors could be segregated into an informed set and an uninformed set. His opinion was that underpricing had to be done to attract uninformed investors. Boulton et al. (2011) studied IPOs from 37 countries and found that IPOs were underpriced less in countries where the companies had higher quality

earnings information. Loughran and Ritter (2004) tried to find out the reasons for change in underpricing from the 1980s to 2003. Purnanandam and Swaminathan (2004) showed that overvalued IPOs provided high first-day returns. Baron (1982) postulated that the investment banker was better informed than the issuer regarding the market conditions and pricing of the issue and thus the banker was rewarded for this information. Allen and Faulhaber (1989) explained that underpricing could be an indication of good quality because the low value companies may not be able to price the issues lower and thus the high value companies underprice to signal their high value. Carter and Manaster (1990) found that underpricing is linked to underwriter's reputation.

Very few studies have been done on the impact of global financial crisis on IPO underpricing. Leow (2018) found the initial returns of IPO in Malaysia to be higher before the GFC, which dropped very low during the crisis and rose slightly post GFC. Li et al. (2018) investigated 1069 IPOs in China and found that underpricing was lesser for smaller firms after the global financial crisis. Fauzi et al. (2012) studied IPOs in New Zealand and found that they outperformed in the short run during the financial crisis.

After going through the literature, it was found that various studies have been done in the Indian context but none of them have been done with a reference to a time period used in this study, i.e., from the time book building in 1999 to the beginning of the global financial crisis. This study has attempted to find out the initial performance of initial public offerings in India before the financial crisis.

Methodology and Data

The initial returns are calculated by taking the difference between the issue price and the closing price of first day of listing. The data for IPOs has been taken from the Center for Monitoring Indian Economy's Prowess database for the period January 1999 to August 2008. The study starts in 1999 as it was the year when book building was introduced by Securities and Exchange Board of India (SEBI) and marks a change in the way issues were priced. Earlier the pricing was based on fixed Price, i.e. one single price was given by the issuer, but book building allowed pricing flexibility and discretion in allocation (Mishra 2010). The study stops at August 2008 to understand the extent of underpricing before the Great Financial Crisis (GFC). Lehman Brothers, an investment bank in the USA, filed for bankruptcy on 15 September 2008 and this is believed to be the date when the GFC came to the fore. The study is done on 379 companies listed on the Bombay Stock Exchange (BSE), India's oldest stock exchange.

Initial returns or underpricing for the stock is defined as

$$\text{Initial Stock Returns}_t = LN\left(\frac{P_t}{P_{t-1}}\right)$$

where P_t is closing price of the first day of listing or listing price

P_{t-1} is the offer price in the IPO

This gives us the raw underpricing but the convention in most of the studies is to use Market Adjusted Initial Returns (MAIR). MAIR is calculated as

MAIR = Initial Stock Returns_t – Market returns_t

Market Returns_t is defined as

$$\text{Market Returns}_t = LN\left(\frac{M_t}{M_{t-1}}\right)$$

where,

M_t is level of BSE Sensex on the day of listing

M_{t-1} is level of BSE Sensex on the offer day.

Determinants of Initial Returns

There are various factors that have been used in various studies mentioned in the literature review. This study uses certain variables that may affect market adjusted initial returns. We use age of the firm as measured in years from the time of incorporation to the public issue. The younger the firm, higher may be the underpricing because there is a lot of uncertainty regarding the operations of younger firms. Issue proceeds in millions of rupees is the second variable identified. Well known firms generally have large offerings, so firms with smaller offerings may have to underprice more. It is seen that higher prices in the IPOs are associated with firms which are well known, so there might be an inverse relation between offer price and underpricing. Delay in listing is another variable used in the study which is measured by the number of days that elapse between the offer date and the listing date. Delay in listing is said to cause higher underpricing due to an increase in information asymmetry over time. It is also posited in many studies that different industries may affect the initial returns; thus two dummy variables are created for industry type, one for non-finance companies and the other for banking companies. The reference variable is non-banking finance companies. Similarly a dummy variable is created for the promoter group, i.e., central government commercial enterprises with private enterprises coded as reference variable. The presence of central government commercial firms is shown with value equal to 1 and 0 otherwise.

The market adjusted initial returns (MAIR) from the IPO are regressed on the age of the firm, the issue size, delay in listing, issue price, market returns, and two dummy variable: industry type and promoter group. The regression model used is as follows:

$$\text{InUnderpricing} = \beta_0 + \beta_1 \ln(\text{Age of firm}) + \beta_2 \ln(\text{Issue Proceeds}) + \beta_3 \ln(\text{Delay in listing}) + \beta_4 (\text{Issue price}) + \beta_5 (\text{Industry Type}) + \beta_6 (\text{Promoter Group}) + \varepsilon_i \quad (1)$$

where, \ln is the natural logarithm, β_0 is the intercept, β_1 to β_6 are the coefficients of various independent variables and ε_i is the error term of the regression equation.

Results and Analysis

The total number of IPOs studied is 379 with issued capital worth ₹843,516 million between January 1999 and August 2008. The average amount raised per issue was ₹2,226 million. In 2007, the number of IPOs are the highest and in 2003, the lowest. The average returns on the first day of listing for the 379 IPOs from January 1999 to August 2008 has been found to be 28%. This shows that underpricing is very high in India. The date for underpricing is segregated year wise on the basis of year of issue in Table 1 along with the capital raised.

As per Table 1, the underpricing is maximum in the year 1999 but has dropped in the following year even though the number of IPOs has gone up more than 100%. Year 2001 to 2003 saw only few issues coming to the market with underpricing dropping very low in the year 2002. The number of IPOs has been increasing thereafter up to the year 2007. The underpricing has declined from the first half of the

Table 1. Capital Raised through IPOs and Underpricing

Year	Capital raised (Indian rupees, millions)	Number of IPOs	Average Underpricing
1999	14,614.50	23	142%
2000	28,256.10	56	14%
2001	2,983.60	9	21%
2002	19,497.70	6	8%
2003	3,811.10	5	34%
2004	67,068.20	21	37%
2005	77,587.10	54	36%
2006	163,254.30	73	22%
2007	313,430.00	99	20%
2008	153,013.00	33	3%
Total	843,515.60	379	

Source: CMIE Prowess and author's calculations.

decade studied to the second half from around 45% to around 23%. The correlation between the extent of underpricing and the number of IPOs, is found to be negative 0.17. This indicates a mild negative correlation between the data.

Table 2 shows the details of the descriptive statistics for the variables. The mean market adjusted returns is around 28% with a standard deviation of 51.9%. The average age of the firms is around 15 years and the average number of days to list is around 43 days. The median number of days to list is around 28, which shows that there are some extreme values for this data. There are 16 issues which have listing delay of more than 100 days, 126 issues which have a listing delay between 30 and 100 days.

The market adjusted initial returns from the IPO are regressed on the age of the firm, the issue proceeds, delay in listing, the issue price, market returns, and two dummy variable namely, industry type and promoter group. The regression statistics, the coefficients of the independent variables and the p values are reported in the Tables 3a, 3b and 3c.

In Tables 3a and 3b, the regression statistics show an R square of 0.19 and an adjusted R square of 0.17, which is low but the equation shows an F statistic of 12.12 that is significant at 95% confidence level. This shows that at least one of the independent variables have a beta not equal to zero.

We look at the independent variables, as reported in Table 3c, one by one. Age of the firm is the difference between the listing date and the date of incorporation. More information is available for the older firms and thus they may have lesser underpricing. We find that the coefficient for the age of the

Table 2. Descriptive Statistics for the Variables

	Market adjusted Initial Returns	Age of firm (years)	Issue Amount (Rupees Million)	Delay in listing (days)	Issue Price (Rupees)	Market Return
<i>Mean</i>	27.9%	15	2,225.64	43	151.35	0.6%
<i>Standard Error</i>	2.7%	1	409.62	3	8.97	0.5%
<i>Median</i>	17.3%	11	607.40	28	90.00	3.1%
<i>Standard Deviation</i>	51.9%	16	7,974.43	52	174.69	9.5%
<i>Range</i>	427.9%	137	98,032.50	351	1,090.00	68.5%
<i>Minimum</i>	-77.2%	1	7.50	9	10.00	-31.3%
<i>Maximum</i>	350.7%	137	98,040.00	360	1,100.00	37.2%

Source: Author's calculations.

Table 3a. Regression Statistics

Regression Statistics	
Multiple R	0.4315
R Square	0.1862
Adjusted R Square	0.1708
Standard Error	0.4726
Observations	379

Source: Author's Calculations.

Table 3b. Analysis of Variance

ANOVA			
	Degrees of freedom	F	Significance F
Regression	7	12.12	0.0000
Residual	371		
Total	378		

Source: Author's Calculations.

Table 3c. Coefficients of Independent Variables and their Statistical Significance

	Coefficients	Standard Error	t Stat	P-value
Intercept	-0.2712	0.3138	-0.8644	0.3879
LN Age of firm	-0.0400	0.0302	-1.3254	0.1859
LN Issue Proceeds (Rupees million)	-0.0736	0.0255	-2.8890	0.0041*
LN Delay in listing	0.2657	0.0538	4.9403	0.0000*
Issue Price	0.0004	0.0002	1.9775	0.0487*
Industry type Non finance companies	0.1290	0.0930	1.3876	0.1661
Industry type Banking Companies	0.0358	0.1648	0.2173	0.8281
Promoter group	0.2979	0.1608	1.8527	0.0647*

Source: Author calculations.

firm has a negative relation with underpricing, though it is not statistically significant. Sahoo and Rajib (2011) had also reported that underpricing is affected by age of the firm.

The IPOs with larger proceeds have more coverage by analysts and may be under more scrutiny and thus they may be less underpriced. According to the data collected, the amount of proceeds from the issue has a negative relation with underpricing. This relation has a *p* value lower than 0.05, i.e., the relation is statistically significant. This confirms that firms with lower issue proceeds have higher underpricing. Kumar (2007) also reported that initial returns were lower for larger issues.

Delay in listing is the difference between the issue opening date and the date of listing. If there are more delays in listing, there would be higher underpricing. Delay in listing is one variable, which has a positive relationship with underpricing and is statistically significant at 95% confidence interval as well. This signifies that underpricing is higher in cases where the stocks get listed late on the stock exchange. Ghosh (2005) and Pande and Vaidyanathan (2009) reported similar results.

Issue price is the offer price announced by the issuer in case of fixed price method or the price chosen by investors under the book building method. If the issue price is low, investors may get higher initial returns. The data taken for this study shows a mild positive relationship between issue price and underpricing which is statistically significant. This is in contradiction to the posited relationship and the issue is further explored and reported in Table 4.

Table 4 breaks up the underpricing into decile on the basis of issue price. The first decile where the issue price (up to ₹10) showed underpricing of 70%. The underpricing subsequently reduced as the issue price increases. This is in line with earlier studies such as done by Majumdar (2003). Even though we see an aberration in the range ₹60 to ₹90 and then between ₹168/- and ₹240/-, we may conclude that issue price probably has some impact upon underpricing.

Industry is classified into three categories, namely, non-finance company, banking company, and non-banking finance company. Two dummy variables have been created, one for non-finance companies and the other for banking companies, with non-banking finance companies as the reference variable. The industry type dummy variables on non-finance companies and banking companies are reported to be positive, i.e., the non-finance companies and banking companies have a higher underpricing than non-banking finance companies. But looking at *p* values, we see that the results are not significant. In an effort to probe further as to which particular industry affected underpricing, the industries which had less than five companies have been clubbed together.

Table 5 shows the market adjusted initial returns (MAIR) on the basis of various industries. The lowest initial returns are seen in Automobile Ancillaries industry (-4.2%) and the highest in Cloth industry (60.7 percent). The mean MAIR in the overall sample set was around 28%. The industries which had underpricing more than the mean belong to Business Services and Consultancy, Computer Software/ITES, Media, Wholesale trading and Retail trading. Allen and Faulhaber (1989) have mentioned in their study that underpricing is industry specific.

Another dummy variable was created for the promoter group. The presence of central government commercial firms is shown with value equal to 1 and 0 otherwise. The coefficient is positive (and statistically significant at 5% level) indicating that central government commercial firms are contributing more to underpricing than private enterprises. One has to note here that out of the total 379 firms only 12 belonged to the central government commercial firm's category. A similar result was reported by Dewenter and Malatesta (1997) that government owned enterprises have more initial returns than private sector enterprises.

Table 4. Issue Price and Underpricing

Range of Price (in Rupees)	Decile	Underpricing
Up to 10	1	70%
11 to 24	2	40%
25 to 40	3	26%
40 to 60	4	17%
60 to 90	5	29%
91 to 125	6	11%
125 to 167	7	18%
168 to 240	8	26%
240 to 390	9	18%
400 to 1100	10	23%

Source: Author's calculations.

Table 5. Industry-wise Underpricing

Industry	Underpricing
Banking services	17.6%
Business services & consultancy	59.4%
Castings & forgings	19.6%
Cloth	60.7%
Computer Software/ITES	57.6%
Diversified	9.1%
Drugs & pharmaceuticals	19.0%
Construction	18.8%
Media	32.2%
Automobile ancillaries	-4.2%
Electronics	21.6%
Ferrous metal products	6.9%
No-banking financial services	13.5%
Plastic goods	19.7%
Production, distribution & exhibition of films	19.2%
Readymade garments	15.2%
Retail trading	25.9%
Telecommunication services	13.7%
Wholesale trading	29.2%
Others	21.8%

Source: Author's calculations.

Conclusion

Underpricing is a common phenomenon in stock markets across the world. In India, various studies have indicated underpricing to be high and fluctuating over different periods studied. This study shows that the initial returns or underpricing in India a decade before the global financial crisis has been high at around 28% but we see the underpricing dropping in the second half of the decade studied from 47% to 21%. This is probably because many investors became aware of the initial returns available and bought shares in the IPO and sold it off on the first day. This may have led to more supply of shares on the first day leading to lower returns. The study looks at various factors which may determine the level of underpricing before the financial crisis, namely age of the firm, the issue size, delay in listing, issue price, and two dummy variable: industry type and promoter group. The variables, age of the firm, industry type for non-finance companies and for banking companies are not statistically significant. The variables which are statistically significant include issue proceeds, delay in listing, issue price, and a dummy variable, i.e., promoter group (commercial government enterprises). The issue proceeds are having a negative relationship with underpricing and the rest are positively related to underpricing.

This study has a limitation that there could be many more factors that could explain initial returns of IPOs. Further, the time period may be extended or a separate study on underpricing after the financial crisis may be taken up. Most of the studies including this one suggests that IPOs are underpriced on an average and the reasons could range from information asymmetry to signaling and various others. But eventually in the long run, maybe 3 years to 5 years, the prices of companies that went for IPOs showed a decline. One could probe further the long term returns of the IPOs studied in this work.

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