INITIAL PERFORMANCE OF IPOs IN INDIA: EVIDENCE FROM 2010-2014

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ABSTRACT

In this paper, we studied listing day performance pertaining to 113 IPOs in India during January, 2010 to December, 2014, listed in National Stock Exchange(NSE) India. We found that there is, on the average, significantly positive return on the listing day. The Market Adjusted Abnormal Returns (MAAR) of all sample Initial Public Offers (IPO) companies were 7.19%. It is observed that IPOs are initially underpriced. We have applied t-test to verify the returns and mean initial return of 7.19% and proved that average returns are significantly lower and also compare to historical returns of IPO. Regression model has been used to analyse the relationship between degree of underpricing with independent variables such as issue price, issue size, issue oversubscription and market index return. The result of regression analysis shows that there was no significant relationship between the degree of underpricing and explanatory variables except oversubscription of issue. The study suggests that investors can make their investment in new issues as IPOs are underpriced in initial days.

Key Words: *Market Adjusted Abnormal Returns (MAAR), Initial Public Offers (IPO), Issue Price, Issue Size, Issue Oversubscription, Underpricing*

1. Introduction

Initial Public Offerings (IPOs)rank top among the largest sources of capital for the firms in India to launch their business ventures or for business expansion. They encourage the investors to avail the lucrative investment opportunities in the country and motivate them to mobilize funds from low growth opportunities to high growth opportunities. Broadly speaking literature regarding IPOs study reveal that 1) IPOs are listed with significant premium to issue price and due to this investors are able to earn significant return on the listing day. 2) The overpricing or in other words, underperformance of IPOs persists for a long period. The underpricing of the IPOs is supported by large number of researches which tries to justify large first day return as a compensation for bearing risk. Underpricing is the pricing of the IPO at less than the fair value of the issue. The degree of underpricing differs from country to country and issue to issue in the same country. The underpricing of the IPO is a loss of capital to the issuing company but gain for the investors as it yields them positive abnormal initial return. All the relevant literatures conclude that average IPOs are undervalued at the offer

price as the first day market price is the indication of intrinsic value or fair value of the stock. Empirical evidences all over the world indicate that on an aggregate basis IPOs generate positive abnormal listing day return (i.e. underpriced) followed by negative abnormal return for a reasonably long period say one year to three years (Purnanandan K. Amiyatosh; Bhaskaran Swaminathan, 2004).

2. Literature Review

One of the models of underpricing is based on the winner's curse hypothesis. Rock (1986) distinguishes between informed and uninformed investors. If the issues are underpriced, the IPOs will be oversubscribed by informed investors as limited number of shares would be available to uninformed investors. If the issues are overpriced, the IPOs will be sold exclusively to uninformed investors who will earn negative initial returns. Thus, uninformed investors will be winning the entire issue but at an unfavourable price, creating a situation termed as the winner's curse. In order to keep uninformed investors in the IPO market, securities are offered at a discount from their expected listing price. According to the winner's curse theory, the IPO underpricing will decrease if the information asymmetry gap between informed and uninformed investors is reduced. Baron and Holmstrom(1980) noted that it is observed that investment bankers exploit their superior information regarding market conditions to underprice new issues, thereby allowing companies to spend less effort on marketing the issue and gain the goodwill of potential clients.

In one of the study carried by Saurabh Ghosh in 2004 to identify the factors explaining underpricing of Initial Public Offerings of 1842 companies of Bombay Stock Exchange for a period 1993- 2001 inferred that uncertainty plays a role for vicious underpricing in the Indian primary market but IPOs with large issue size and with seasonal offerings had less underpricing. The underpricing for IPOs of financial institutions is associated to proxies for asymmetric information. This view is supported by various studies such as signaling (Allen & Faulhaber, 1989), asymmetric information (Ibbotson, 1975), offer size (Megginson & Weiss, 1991), age of the firm (Muscarella&Vetsuypens, 1989), market capitalization, (McDonald & Fisher, 1972, Baker &Wurgler, 2007), pricing mechanism (Bansal&Khanna, 2012).

Bansal &Khanna(2012) analysed thatthere is significant difference between the magnitudes of level of underpricing of IPOs that priced through the book build with those priced through the fixed price option and IPOs price through book build are more underpriced than fix price option IPOs.

Most of the IPO valuation studies focus on the listing day return. Many empirical evidences (Omran, 2005; Reber and Fong, 2006;Khurshed, Pande and Singh, 2008)suggest that IPOs are underpriced on the listing day. Datar and Mao (2006) have suggested that the issuercompany knowingly underprice the IPOs to encourage a wider subscription. According to the behavioural argument it is observed thatover-enthusiastic investors bid the price of IPOs beyond its true fundamental value on the listing day.Shah (1995) analysed aremarkable 105.6% excess return over the issue offer price in one of the study of 2056 IPOs over the time period of 1991 to 1995. In one more study Madhusoodanan and Thiripalraju (1997) studied IPOs offered on BSE exchange a period 1992- 1995and inferred that underpricing in India was higher than theinternational IPO experiences in the short run and they yield higher returns in long term also compared to thenegative returns recorded from the other country markets. Kakati (1999)studied the performance of IPOs thatcame in the market during January 1993 to March 1996 and concluded that the short run underpricing is of 36.6% and in the long-run overpricing is40.8%.It is analysed that IPOs of January, 2001 to August, 2011, most of the stocks have generated listing profits whereas in long term most of the companies have underperformed compared to market returns. Bagga, Khurana & Singh(2012) advised three strategies for investors

when investing in an IPO - a) Sell all the allotment on listing day itself, b) Partial profit booking on listing and rest holding for long term and c) holding for a period of more than 5 years. As perJotwani and Singh (2011) subscription rate of the IPO plays major role only in short run. Investors may try to analyse the demand-supply situation of the IPO before investing, which has little significance in the long run. They also mentioned the objective of the IPO showed its significance only in the long run, i.e., five years after the IPO.

3. Research Design

Problem Statement: There is ambiguity regarding the effects of different determinants like issue size, issue price, over subscription and market index return on IPOs' listing day performance.

Objectives:

- To measure the IPOs' listing day performance.
- To calculate how much percentage market adjusted abnormal return is realized on very first day of trading
- To identify the factors affecting IPOs' listing day performance.
- To analyze the impact of various factors; issue price, issue size, over subscription and market index return on Underpricing of IPOs.

4. Research Methodology:

i) Time duration of Study:

To analyse the performance of the IPOs on the listing day, the required data has been collected from the period January 2010 to December 2014 of the companies which came up with the Initial public offers (IPO).

ii) Data Collection:

NSE official website is used to collect list of IPOs for analysis from the period of January, 2010 to December, 2014. Respective company prospectus is used to get details regarding the issue price, issue dates, issue size and oversubscription.

iii) Sample Selection:

The sample used in this study consists of all Indian firms which went public on National Stock Exchange (NSE) from January 2010 to December 2014. Data is taken of 113 companies for the analysis.

Table 1 Number of IPO listed on NSE (2010-2014)

Year	Number of IPOs listed in NSE
2010	63
2011	30
2012	12
2013	3
2014	5
Total	**113**

(Source: www.nseindia.com)

iv) Sources of data:
This study was totally based on secondary data. The information related to the analysis of market return (Mi), listing day return (Ri) and market adjusted abnormal return (MAAR)was taken from the NSE website and related websites. Other relevant information was obtained from books, journals and magazines.

v) Hypotheses

1. The market adjusted abnormal returns are zero
2. There is significant difference between several independent variables with the level of underpricing.

vi) Data Analysis Method:
Measure of IPOs Performance:
Consistent with the standard methodology, return of particular day is calculated as the percentage change from the issue price to the closing price on that day in the secondary market.
(1) Ri = (Pi-P0)/P0
Where, Ri = return of i security on listing day, Pi = Closing Price of i security on listing day, P0 = offer price of i security.

Secondly, to calculate index return on listing day,
(2) Mi = (Ii- I0)/I0
Where, Mi = market return on listing day, Ii = closing index at listing day, I0 = closing index at offer day.

To compute the degree of underpricing of the Indian IPOs, market abnormal adjusted initial returns for all IPOs have been calculated. Market-adjusted abnormal return (MAAR) for the listing day is calculated as the difference of initial return calculated for the i^{th} security on day one to the benchmark index return on that day hence S & P CNX Nifty closing value has been used to calculate the market index return. The MAAR for the i^{th}IPO stock on listing day is calculated by using;
(3) MAAR = {100* [(1+Ri)/ (1+Mi)-1]}

On the basis of research problem, research objectives and empirical evidence about IPO underpricing, hypothesis have been formulated to check and test the validity and robustness of our results. For the study on listing day there are several short run variables which impact underpricing of the script viz. Issue price, Issue size, Oversubscriptionof issue and Market Index return.
Explanation of Independent variables:
Issue Price: Issue price is the final offer price offered by the company determined after book building process or fixed price process to the public for subscription of the Initial Public Offer (IPO).
Issue Size: Issue size is the total amount that the issuing company want to raise from Initial Public Offer (IPO). The total issue size is the total number of shares offered multiplied by the final offer price of the IPO decided by the merchant bank.
Oversubscription of IPO: Oversubscription is the number of times the IPO has been subscribed by the various investor categories during the issue offer period.
Market Index Return (Mi): Index return is the absolute change in S & P CNX nifty on the listing day of the IPO and last day of the Issue offer.

Multiple regression analysis has been applied to examine the factors that may explain theunderpricing performance of Indian IPOs on listing day. This technique helps in identifying the extent and direction of relationship between the dependent variable and several independent variables. The R square and the adjusted R square generated by it indicates the proportion of variation in the dependent variable explained by the independent variables. On the basis of existing literature, the following OLS regression model hasbeen developed to find the determinants of performance of IPOson listing day in India:
$$\mathbf{Y1i = \alpha + \beta1X1 + \beta2X2 + \beta3X3i + \ldots\ldots\ldots + \varepsilon i}$$
$$\mathbf{Log\ Ri = \alpha + \beta1\ log\ IP + \beta2\ log\ IS + \beta3\ log\ OS + \beta4\ log\ Mi + \varepsilon i}$$
Log Ri = Underpricing of i^{th} security
β1 log IP= Issue Price of the firm
β2 log IS= Issue Size of the firm

β3 log OS= Oversubscription of IPO
β4 Mi= Market Index Return (S & P CNX Nifty),
εi= Constant.

5. Underpricing of IPOs: Data Analysis and interpretation

Table 2: Sample selection

Criteria	Number of IPOs
Total number of IPOs offered	137
(-) companies not listed on exchange and FPO	24
= Companies listed on NSE	113
(-) Outliers removed from data*	16
= Final sample data taken from companies	97

(Source: www.nseindia.com and SPSS 19.0 Version output)

Outliers removed from data*- number of companies removed from the sample taken as to obtain normality of data for OLS Regression model

Table 3: Descriptive statistics of Issue price, Issue size, Issue oversubscription and Market return of IPOs Listed in NSE during year 2010 to 2014

Year	Variables	N	Actual N	Minimum	Maximum	Mean	Standard Deviation
2010	Issue price	63	57	11.00	1310.00	202.51	223.59
	Issue size			28.76	2486.35	395.64	505.46
	Oversubscription			.96	93.60	15.21	19.41
	Market Return (Mi)			-.09	.08	.0038	.03
2011	Issue price	30	21	6.00	256.00	99.71	67.78
	Issue size			23.25	1245.00	237.64	329.05
	Oversubscription			1.11	35.21	5.04	8.55
	Market Return (Mi)			-.07	.09	.0000	.056
2012	Issue price	12	11	50.00	1032.00	297.73	314.74
	Issue size			19.00	4155.80	612.20	1198.91
	Oversubscription			.00	40.98	6.41	11.65
	Market Return (Mi)			-.04	.08	.0096	.033
2013	Issue price	3	3	172.00	530.00	304.00	196.64
	Issue size			94.42	950.11	438.31	451.88
	Oversubscription			1.20	11.63	4.83	5.90

	Market Return (Mi)			-.029	-.002	-.02	.015
2014	Issue price	5	5	47	645	228.60	237.60
	Issue size			120.00	351.86	240.19	105.33
	Oversubscription			7.39	59.97	34.60	26.20
	Market Return (Mi)			-.037	.019	-.01	.022

(Source: SPSS 19.0 Version output)

Table-3 shows the descriptive statistics of issue price, issue size, issue oversubscription of IPO companies and market index return (Mi) listed during 2010 to 2014. In 2010 data was taken of 63 companies but only 57 companies' data is taken for analysis. The difference between the lowest price 11 and highest price 1310 is huge and average issue price was 202.5. Average issue size was 395.65 crores with minimum issue size 28.76 crores. The average oversubscription was 15.2 times with maximum 93.6 times. The average market return S & P CNX nifty from issue close day to listing day was 0.38% with highest return of 8%.

In 2011 final data was taken of 21 companies. While the average issue price was 99.71, the minimum issue price was 6 and highest price 256. The average issue size was 237.64 with maximum issue size 1245 crores. The oversubscription was on average 5 times, with minimum 1 time only. The average market return S & P CNX nifty for the period was 0 %.

In 2012, 11 companies' data was taken for analysis. In this year also minimum and maximum range is high and average issue price was 297.73. Average issue size was 612.2 crores with minimum issue size of 19 crores. Average oversubscription was 6.4 times with minimum 0 time for one of the IPO.The average market return for that period was around 1 % only.

2013 was slack period for the IPOs and only three IPOs got listed on NSE and minimum issue price was 172 and maximum was 530. Average issue size was 438.31 crores and average subscription was 4.8 times with maximum subscription of 11.6 times of Just dial company IPO. The average market return S & P CNX NIFTY from issue close day to listing day was negative 1.9 %.

In year 2014 total 5 companies' IPO got listed on NSE and maximum issue price was of Monte Carlo company issue. The average issue size was 240 crores for the year and average oversubscription was 34.9 times with maximum 60 times of Sharda Cropchem and 59 times of Snowman Logistic IPO. Average market return for the period was negative 1%.

Table:4 Average returns of IPO companies during 2010 to 2014.

S. no.	Year	Avg. Initial Raw Return
1	2010	8.30%
2	2011	2.90%
3	2012	3.95%
4	2013	2.14%
5	2014	26.11%

(Source: SPSS 19.0 Version output)

In table-4 shows average year wise first day return of the all companies listed in NSEfrom

2010 to 2014. The return is of only listing day return for the listed IPOs taken from NSE.

Table 5: Market Adjusted Abnormal Return (MAAR) for period 2010 to 2014

Year	Number of firms	Minimum	Maximum	Mean	Std. Deviation
2010	57	-38.32	73.31	8.036	24.468
2011	21	-49.17	54.12	2.739	33.031
2012	11	-13.50	27.90	3.129	13.940
2013	3	-3.156	18.866	4.248	12.660
2014	5	-8.698	64.429	27.016	30.966

(Source: SPSS 19.0 Version output)

The table-5 shows the market adjusted abnormal returns during the period of 2010-2014. The initial day returns of the IPO of all the companies were adjusted with the NSE (S & P CNX 500) Market index returns. From year January, 2010 to December, 2014, total 113 companies have come up with IPO and out of 97 companies' IPO are taken for the study with required data. The average market adjusted returns of all the IPO companies issued during the given period of time were 8.03 %, 2.74%, 3.13%, 4.25% and 27.02% respectively from year 2010 to 2014. In year 2010 highest returnfrom57 IPOs was 73 % to the investors and standard deviation of that year was 24.4 %. This denotes that initial day abnormal returns were moderately deviated. In year 2011 the highest return from IPO was 54 % with standard deviation of 33 % but due to negative returns from many of IPOs the average returns were very low at 2. 74% as above mentioned. As year 2012, 2013 and 2014 had faced sluggish period for IPOs processes resulted in less number of IPOs in market. In 2014 out of 5 IPOs, Snowman Logistic and Sharda Corpchem had given more than 50% initial abnormal returns over market returns.

Table 6: Overall Market Adjusted Initial returns and t-test of all sample IPOs during the period

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
MAARO	97	7.19384	25.835281	2.623175

One-Sample Test						
	Test Value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
MAARO	2.742	96	.007	7.193843	1.98688	12.40080

(Source: SPSS 19.0 Version output)

To test the hypothesis, the market adjusted abnormal returns are equal to zero we have applied t-test and from the above table-6 it is also clearly found that adjusted abnormal return for the period 2010-2014 was 7.19%with t value of 2.742.From that the hypothesis, "Market adjusted abnormal return are equal to zero", is rejected. So from that it is understood that market adjusted abnormal return is different from zero.

Table 7 Regression Result of all sample IPOs during the period 2010-2014.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
	(Constant)	.042	.152		.274	.784
	Issueprice	.012	.028	.041	.425	.672
	Issuesize	-.034	.021	-.150	-1.587	.116
	Oversubscription	.091	.018	.468	4.922	.000
	Market Index	.333	.618	.050	.539	.591

(Source: SPSS 19.0 Version output)

To test the second hypothesis of there is significant difference between several independent variables with the level of underpricing; the multiple regression analysis has been used. The above table-7 shows the regression results of the IPO during the period 2010-2014. From the analysis it can inferred that independent variable issue price did not have any linear relationship with the level of underpricing of an issue. The beta value of issue price was 0.041, with t value of 0.425; indicate that there was no linear relationship between issue price and degree of underpricing. So it can be concluded that null hypothesis is accepted and there is no significant association between issue price and underpricing of IPO. The second independent variable issue size was having negative beta value -0.150 with t-value -1.59. So it can be inferred that there was no linear correlation between issue size and underpricing of IPO and null hypothesis cannot be rejected for it. The significance value of the independent variable Oversubscription was < 0.05 and coefficient was 0.468 with t- value 4.922 so null hypothesis is rejected and it can be concluded that there is significant relationship between Oversubscription of the issue and underpricing of an IPO. Higher the oversubscription of an issue means higher the demand for the issue result in higher initial day return of an IPO. Market index return (S&P CNX Nifty) had co-efficient 0.05 and t- value was 0.539 reveals that there is no relationship between Market Index return and underpricing of an IPO and null hypothesis is accepted.

6. Findings

- Overall primary issue market has faced downward sloping growth in terms of number of IPO due to global economic crisis.
- The total number of public issues over 2010-2014 time period were 113. The total value of IPOs was 63633 crores.
- The average year wise first day return of the all companies listed in NSE from

2010 to 2014 were 8.3 %, 2.9 %, 3.95 %, 2.14 % and 26.11 % respectively. Year 2014 has given exceptionally high returns in some of the IPOs whereas the average return from the all IPOs from 2010 to 2014 has given average 7 % return.

- Regression results reveals that independent variables like Issue price, Issue size and Market Index have no significant relation with initial day returns of IPO and independent variable Issue Oversubscription has linear relationship with underpricing.

7. Conclusion And Suggestions

The research tried to find out the initial day returns and the factors affecting the degree of underpricing. The data for the research has been taken of total 97 IPOs listed on NSE between the periods 2010-2014. The average market adjusted abnormal return for above mention IPOs was 7.19% and t-test revealed that the market adjusted abnormal return of sample IPOs was not significantly equal to zero. The regression analysis depict that there was no significant relationship between factors viz. Issue price, Issue size and Market returns with issue underpricing whereas the underpricing has linear relationship with the Issue oversubscription. It indicates that the Indian IPOs are underpricing and the explanatory variable like Issue oversubscription has impact on it. So investors should invest in IPOs for short term returns. As the variables Issue price, Issue size and Market returns are not showing linear relation with initial day return the investors are advised not to rate or assess IPOs based on these variables but the factor Oversubscription should be taken into consideration for the investment decision.

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