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Short-term Price Performance of Initial Public Offerings (IPOs) in the Indian Capital Market: An Empirical Evidence

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Abstract

The first-ever attempt of an enterprise to procure funds by issuing shares through the stock exchange is known as an Initial Public Offering (IPO). It is well documented in the finance literature that the underpricing of IPO (positive difference between the listing day closing market price and the issue price of the stock under IPO) is a very common short-term phenomenon of IPOs for almost all the stock markets around the globe. An attempt has been made in the present study to analyse the short-term price performance of IPOs in the context of the Indian capital market using a sample of 62 IPOs issued during the period from January 2012 to December 2016 and listed in the National Stock Exchange (NSE). The Absolute (Raw) Returns and Market Adjusted Abnormal Returns for different holding periods have been analysed to evaluate the short-term price performance of the IPOs. The findings of the study demonstrate that the average absolute (raw) return of the IPOs on the day of the listing is 7.94 per cent(ranging between -38.42% and 52.94% across IPOs) with a standard deviation of more than 18.01% implying that underpricing of IPOs is also a phenomenon for India but investment in IPOs is a risky proposition in India for wide fluctuations in the listing day gain. There is no significant variation in the price performance of the IPOs considering the Market-adjusted Average Abnormal Return (MAAR) which is 8.05 per cent with a similar range of returns. The study also shows that the underpricing phenomenon persists till the end of the six months from the listing day.

Keywords: *IPO performance, IPO underpricing, IPO overpricing, Fair value of IPO, Listing gains, Absolute return, Market adjusted return*

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Introduction:

The first-ever attempt of an enterprise to procure funds by issuing shares through the stock exchange is known as an Initial Public Offering (IPO). Generally, almost unknown business enterprises find the IPO a proper way to collect required funds through the capital market. Once the shares started trading publicly through the stock exchanges it becomes very easier to raise a higher amount of capital subsequently through the seasonal offerings. Going public helps the company to raise equity capital to fuel its growth opportunities (Saunders, A. 1990). But the issue of IPO brings a sea change in the management of the company, it dilutes the ownership concentration and thereby the possibility of losing overwhelming control over the management of the company becomes high.

The IPO issuing company hires an investment banker to manage all the prerequisites of going for public issues. Underwriters and the investment banker then assess diligently the nature of the management, prospects and expected returns of the company compared with the parameters of the peer companies to finalize the offer price of the issue. So the evaluation of the company based on its present overall business and the prospective business plays a very crucial role in pricing the IPOs. Ideally, the price of the IPO should reflect the intrinsic value of the share. But practically there remains an inequality between the valuation and prospective investors' perception of the IPO issuing company.

It is well documented in the finance literature that the underpricing of IPO (positive difference between the listing day closing price and the issue price of the stock under IPO) is a very common short-term phenomenon of IPOs prevalent worldwide. Generally, capital market investors are circumspect in parting their assets for an almost unknown or new company. So it is expected to have a higher return which is commensurate with the nature of the risk involved in investing in an IPO. The existence of high listing day returns known as underpricing is an established phenomenon especially, in respect of the capital market in advanced economies. This is known as underpricing in the IPO-related literature. Underpricing is the difference between the issue price and the listing day closing price while the latter is more than the former or conversely known as overpricing. Therefore the listing day return is a function of the offer price of the IPO.

The IPO issuing company hires an investment banker to manage all the prerequisites of going for public issues. Underwriters and the investment banker then assess diligently the nature of the management, prospects and expected returns of the company compared with the parameters of the peer companies to finalize the offer price of the issue. So the evaluation of the company based on its present overall business and the prospective business plays a very crucial role in pricing the IPOs. Ideally, the price of the IPO should reflect the intrinsic value of the share. But practically there remains an inequality between the valuation and prospective investors' perception of the IPO issuing company.

Following the opening up of the Indian economy in 1991, some important reforms were undertaken by the SEBI (Securities and Exchange Board of India) in respect of the IPO especially, on the basic legal policy framework, adoption of digital technology and overall restructuring which facilitate boosting of the Indian IPO market as well as made Indian capital market more transparent. This paves the way for attracting foreign direct investment through FII (Foreign Institutional Investors) in the Indian capital market.

It is often apprehended that the offer price of the IPO is fixed at a price lower than the intrinsic value of the shares of the company deliberately to woo prospective investors, thereby IPOs get fully subscribed or oversubscribed. Otherwise, undervaluation may be due to a pessimistic assessment of the basics of the IPO issuing company. In this context returns of the IPO play a very important role to understand the nature of the performance of IPO in the Indian capital market. IPO is one of the most popular ways of raising capital in India. It is often seen that the IPO that performs well on a listing day fails to continue to perform well in the long run. The puzzle of underpricing and overpricing of IPO is still to be resolved convincingly. The discussion regarding this anomaly is being undertaken by the financial academic fraternity throughout the world taking into consideration many explanatory theories. In this context, we endeavour to understand the performance of the Indian IPOs in a short-term scenario. The study can help us to understand the underlying relationship between firm-specific and IPO-specific characteristics which may have a bearing on the short-term price performance of IPO.

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Literature review:

The majority of studies on IPO valuation especially, on advanced economies focussed on listing day returns. Those empirical studies put forward shreds of evidence that IPOs are underpriced on listing day (McDonald and Fisher, 1972; Kim et al, 1995; Madhusoodan and Thiripalraju, 1997; Omran, 2005; Reber and Fong, 2006 and others). The underpricing of IPOs is a short-run phenomenon, the phenomenon which was initially documented by Stoll & Curley (1970), Logue (1973) and Ibbotson (1975). Normally investors earn a positive abnormal return from an IPO, though, for a short stint, this phenomenon is known as Initial Underpricing which yields an initial higher return. Initial return is defined as the difference between the IPO’s offer price and the closing market price on the listing day i.e.the first day of trading in the secondary market(Ibbotson, Sindelar& Ritter 1988, Ritter 1998)**.** Ibbotson (1975)reported the existence of underpricing of IPOs in the U.S. market to the extent of 11.4% while comparing the issue price with the price following one month of trading in the secondary market. Ritter (1984), Rock (1986), Beatty & Ritter (1986), Ritter (1987)and others in their studies confirm the existence of initial underpricing especially, in the developed markets. The US IPO market has been studied extensively by researchers in comparison to other markets of the world. The initial-day return as depicted by Loughran &Schultz (2006) **w**as 18.1 per cent and Ritter & Welch (2002)showed it as 18.8 per cent. Ritter (1987) considered a sample of 664 firm commitments and 364 best-effort offers which showed the existence of short-run underpricing and found the initial-day returns of 11.4 per cent and 47.8 per cent for these two sub-groups of data.

Karmakar (2002)found an abnormally high initial return of 289 per cent of Indian IPOs in comparison to their counterparts in the developed economy. Ansari (2006), Sahoo &Rajib (2009) and Singh & Mittal (2003)reported underpricing of 40.9 per cent during 2005, 46.63 per cent during 2001-2005 and 83.22 per cent between 1992 and 1996 respectively. It has been observed by Ghosh (2005) that the underpricing of IPOs in the Indian stock market is comparatively lower than that of its counterparts in the international arena. Pandey & Kumar (2001)examined cross-sectional data of 1243 IPOs during 1993-1995 on the Indian market and they found the initial return on IPOs was as high as 68 per cent. They also concluded that the smaller-sized issue tends to have higher initial returns as compared to the larger issue.Pande&Vaidyanathan (2009)found an improvement in valuation by way of a decrease in the level of underpricing of IPOs over time while studying 55 NSE-listed IPOs during the period 2004-2006**.** They also concluded if the offer price is fixed at a price which is on the higher side of the price band, then it signals a good quality IPO to the prospective investors and leads to a higher level of underpricing. This view is consistent with the study of Benveniste&Spindt (1989). Chhabra(2011)investigated NSE listed 251 IPOs from 1994 to 2006 and found that average raw underpricing of 40.08 per cent and it became 39.36 per cent when adjusted for market return (NIFTY). Kumar (2013)considered 2934 IPOs listed in India during 1992-2011 and documented that the average raw initial underpricing of 60.21 per cent.Krishnamurti& Kumar (2002)argued that the extent of underpricing is more for new firms and issues managed by reputed merchant bankers. They investigated data of 386 IPOs issued during 1992-1994 to analyze market performance and concluded that small-sized issues with or without high risk tend to be underpriced more. The findings are commensurate with the findings of Beatty and Ritter (1986), who have argued that the IPOs are not underpriced too much by reputed underwriters to maintain their professional reputation, but the existence of underpricing is not ignored. Ramesh and Dhume (2015) took out a sample of 150 IPOs in India for their study. They argued that the IPOs are overpriced as depicted in both the short run and the long run period. Kumar (2015) studied the post-issue performance of IPOs, especially the pricing performance. They studied both the short and the long-run performance of 211 Indian IPOs over the period 2007-2012. They observed that retail investors mainly subscribe to the IPOs to reap a handsome return on a listing day that deteriorates the performance during the long-term period. The author further observed the initial subscribers to IPO at issue price earned positive market-adjusted returns but those who invested on the listing day earned a negative return for 12 months from the listing day. Kumar (2009) studied the book-building mechanism in IPO pricing where an IPO is priced more efficiently. The study showed that the book-built IPOs were underpriced because of the positive listing day returns and also documented that the IPOs outperformed the market till the 24th month from the listing date but subsequently, they provided negative returns. Book-built IPOs were generally gained on a listing day return as concluded by Anjana and Kunde (2009)while studying 110 IPOs issued between January 2006 and April 2007. They found that nearly 94.5 per cent of those IPOs were underpriced. An average return of approximately 33 per cent was recorded on a listing day. Sehgal and Singh (2008) embarked on a study on the determinants of underpricing and the long-run performance of the Indian IPOs. They researched 438 IPOs listed on the Bombay

Stock Exchange between June 1992 and March 2001 and found that 99.2 per cent of IPOs were underpriced surpassing the international findings by a big margin. The researchers found that underpricing is a function of the age of the firm, listing delay and the rate of subscription. Shelly and Singh (2008)studied the Indian market by examining the 1963 IPO listed with BSE during the period 1992-2006 to test the impact of the signalling variables and concluded that the age of the firm, lead manager reputation and certification to the issue has a significant impact on oversubscription. They further argued that the size of the issue and industry have no conspicuous effect on the oversubscription in the Indian Market.

The summary of the extant empirical evidence of the most common existence of underpricing is prevalent for IPOs in the Indian stock market. The prevalence of short-term positive returns on IPO in India is in tune with the international scenario. However, the literature depicted divergently the periodicity of short-term positive returns and also expressed different views on the relationship between independent variables and the dependent variables while digging deep to understand the underlying reasons for short-term underpricing.

Objectives and Hypotheses of the Study

Against the backdrop of analysing the short-term price performance of the IPOs, the objectives of the study have been framed as under:

(i) To evaluate the magnitude of the IPOs’ listing day performance.

(ii) To analyse post-listing IPOs’ performance up to a trading period of six months.

Based on the above-mentioned objectives, the following two null hypotheses on the price performance of IPOs in the short-run period have been formulated for the study:

(i) The IPOs are fairly priced.

(ii) The average abnormal returns during the post-listing short-term period are zero.

Data source and sample selection

Sample data are collected from NSE official website, Accord data package, SEBI official website, https:// www. Equitymaster.com etc. Our sample data is a collection of all the book-built IPOs issued between January 2012 and December 2016 and listed on the National Stock Exchange (NSE). We have taken those IPOs in our sample for which all the required relevant data are available. Applying thesecriteria we have got a sample of 62 IPOs issued during the period of study as shown in Table-1.

Table-1

Sample Database

Issue Year	Launching of Book-built IPOs	Not Listed or Traded	Sample IPO
2012	12	2	10
2013	6	4	2
2014	8	3	5
2015	21	1	20
2016	29	4	25
	76	**14**	**62**

Research methodology:

In conformity with the standard methodology applied in the extant literature in this field of finance, the methodology adopted for our study of the price performance of IPOs for the short-term period begins with the listing day returns followed by post-listing days returns up to the sixth trading month from the date of listing. Absolute Return or Raw Return (RR) and benchmark-adjusted Abnormal Return, commonly known as Market-adjusted Abnormal Return (MAR) have been used to evaluate short-term including listing day price performance of IPOs. For this study, we have collected daily trading data of all the 62 sample IPOs and corresponding Nifty 50 index values for calculation of market benchmark returns from the NSE official website. We have taken into consideration the returns for IPOs' short-term price performance analysis at different time intervals.

For the analysis, we have resorted to natural logarithmic returns as it gives us a continuous compounding rate of return that changes the initial stock price to the price in a subsequent period. Additionally, logarithmic returns can be added across time and can easily be converted into a simple return using the exponential function. It is also easier to use addition instead of multiplication from a practical point of view.

Methods adopted for evaluating Initial Return (Listing Day Return) or Underpricing

Firstly we have computed Absolute or Raw Return (RR) for the listing day and secondly, we have calculated Market-adjusted Abnormal Return (AR) for the same period.

The RR_i is the listing day natural log difference between the listing day closing price and the offer price of an IPO where the subscript i is the specific IPO.

Market-adjusted Abnormal Return (MAR) has been calculated by differentiating between RR and the corresponding Market Index Return (MR). The MR is the natural log difference between the closing market index on the listing day of an IPO and the closing market index on the offer closing date of that IPO. So, $MAR_i = RR_i - MR$.

Methods adopted for evaluating the short-term post-listing performance of IPO

We have used the same methodology which has been used to analyze listing day performance with the only difference being that the return does not include listing day return.

Statistical tools used to analyze the short-term performance of the IPO

We have used descriptive statistics to visualize the different characteristics of the sample at different periods. We have considered a week of trading consisting of 5 days, a month consisting of 20 days, a quarter of a year i.e. 60 days for 3 months and half a year or 6 months consisting of 120 days of trading. For short-term analysis, the periods we have considered are listing day, a week, a month, a quarter of a year and a half year after the date of listing. We have used SPSS and Microsoft Excel to measure the IPO returns and market-adjusted abnormal returns with their Mean, Median, Maximum, Minimum and Standard Deviation and make inferences we have employed a t-test.

Empirical findings

I. Listing day price performance of sample IPOs

Table:2. Listing Day Returns of sample IPOs

Statistic	Raw Return	Market-adjusted Abnormal Return
Sample Size	62	62
Mean	0.079492	0.080453
Median	0.061983	0.04652
Maximum	0.529376	0.510552
Minimum	-0.384193	-0.401254
Underpriced IPO	0.629	0.6129
S.D.	0.180132	0.175567
Variance	0.032448	0.030824
t-Statistic	3.474782*	3.608228*
p-value	0.000	0.000

*Significant at a 1 per cent level
Source: Author's calculation

The results presented in Table-2 show various descriptive statistics for the listing day return. It is observed that the average listing day raw return (RR) is 7.95 per cent ranging from -38.42 per cent to 52.94 per cent with a standard deviation of 18.01 per cent. Of the total IPOs almost 63 per cent of sample IPOs earn positive returns implying that investment IPOs is a profitable proposition for the investors. The values of standard deviation (18.1 per cent), median raw return (almost 6.2 per cent) and mean raw return (7.95 per cent) demonstrate a variation in the positive raw returns of the IPOs due to the presence of a few well-performing IPOs in the sample. While analyzing the listing day performance based on the market-adjusted average abnormal return (MAAR), it is observed that the mean MAAR has become 8.05 per cent ranging from -0.40 per cent to 51.05 per cent with a standard deviation of 17.56 per cent where almost 61 per cent of the sample IPOs earn positive returns. The variability of the MAAR has shown a slight improvement over the variability of the raw return. It can be concluded that though the overall MAAR has gone up and also the number of IPOs with a positive return has gone down by 2 per cent, a few IPOs have earned comparatively higher listing day MAAR. On listing day IPOs outperform the market but not by a significant margin.

Both the values of RR and MAAR are statistically significant at a 1 per cent level and hence the null hypothesis is rejected and we can conclude that IPOs are underpriced which is in line with the findings of the study made by previous researchers.

Analysis of Post-listing Short-term price performance (Including Listing Day Return)

The post-listing average short-term returns earned on IPOs at the end of a specific period include the listing day returns which means the returns are calculated on the issue price. The investors here hold the stocks from the allotment date till a specified period. Here RR means raw return, MR is the market return and MAAR is the market-adjusted abnormal return.

Table-3 shows the average returns earned on IPOs at the end of the first week of trading since listing. At the end of the week, the average raw and abnormal return is almost 10 per cent with a standard deviation of 21 per cent. The results suggest that the price movement of IPOs

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Table:3. Returns at the closing day of one week from listing day

Returns	Mean	Median	SD	Variance	Underpriced	T-Statistic	p-Value
RR	0.0953	0.0768	0.2138	0.0457	0.5806	3.5104*	0.000
MR	-0.0025	-0.0007	0.0175	0.0003			
MAAR	0.0979	0.0637	0.2119	0.0449	0.6129	3.6368*	0.000

*Significant at a 1 per cent level
Source: Author's calculation

at this point is either not affected or affected negligibly by the market movements because the average raw return and market-adjusted abnormal return are almost the same. The difference between the mean and the median values shows the fact that the average returns are affected by a few well-performed IPOs. The raw return shows that 58.06 per cent of sample IPOs are underpriced whereas 61.29 per cent IPOs are underpriced when market-adjusted average abnormal return is considered. Thus it can be concluded that the IPO underpricing anomaly continues to persist till the end of the first week of trading. The p-value also suggests that the results as shown in the table are statistically significant at a 1 per cent level and the null hypothesis of a fairly priced IPO is rejected implying yielding a significant average abnormal return during the post-listing one-week period.

Table:4. Returns at the closing day of one month post listing day

Returns	Mean	Median	SD	Variance	Underpriced	T-Statistic	p-Value
RR	0.0959	0.1032	0.2187	0.0478	0.5806	3.4535*	0.000
MR	-0.0051	-0.0062	0.0378	0.0014			
MAAR	0.1010	0.1153	0.2136	0.0456	0.6774	3.7246*	0.000

*Significant at a 1 per cent level
Source: Author's calculation

Table-4depicts that after one month the average raw return and market-adjusted abnormal return continued at 10 per cent with a standard deviation of 2 per cent. The result suggests that the performance of the IPO at the end of one month outperforms the market. 67.74 per cent of IPOs are still underpriced while considering MAAR. The average returns are statistically significant at a 1 per cent level and the alternative hypothesis is accepted. So the average IPO is still underpriced at the end of one month of trading since listing.

Table:5. Returns at the closing day of three months post listing day

Returns	Mean	Median	SD	Variance	Underpriced	T-Statistic	p-Value
RR	0.1299	0.147	0.3298	0.1087	0.6129	3.1000**	0.003
MR	0.0086	0.0074	0.0577	0.0033			
MAAR	0.1213	0.1393	0.3145	0.0989	0.6129	3.0365**	0.004

**Significant at a 5 per cent level
Source: Author's calculation

The performance of IPO at the end of three months as per Table-5 shows a gradual improvement so far as the average returns on IPOs are concerned. The average raw return has become almost 13 per cent while MAAR has reduced slightly to 12.11 per cent due to positive market sentiment. The median returns on average increased by almost 2 per cent highlighting the fact that returns are somehow affected by the presence of some better-performing IPO stocks. The t-statistic and the p-value indicate that the underpricing of IPO still exists by rejecting the null hypothesis at a 5 per cent level.

Table:6. Returns at the closing day of six months post listing day

Returns	Mean	Median	SD	Variance	Underpriced	T-Statistic	p-Value
RR	0.2131	0.2187	0.4029	0.1624	0.6290	4.1647*	0.000
MR	0.0281	0.0276	0.0859	0.0074			
MAAR	0.1850	0.1959	0.3925	0.1541	0.6613	3.7119*	0.000

*Significant at a 1 per cent level
Source: Author's calculation

Table-6 shows that the raw return and the MAAR are still growing from 13 per cent at the end of three months' trading to 21.31 per cent and 18.5 per cent with a standard deviation of 40.29 per cent and 39.25 per cent respectively. The median returns show a negligible difference from the mean returns, which suggests that most of the returns hover around the mean return. Moreover, RR shows a positive return for 62.9 per cent IPOs and MAAR generates positive returns for 66.13 per cent of IPOs.So it can be argued that even after six months post-listing the underpricing persists in the Indian market.

Conclusion:

The empirical findings on the short-term price performance of sixty-two book-built IPOs issued between January 2012 and December 2016 and listed on the NSE confirm the existence of the IPO underpricing phenomenon in the Indian IPO market where the difference of closing price of the listing day and the six month's end price from the issue price ranges between 7.94 per cent to 21.31 per cent in case of raw return and 8.05 per cent to 18.5 per cent for MAAR. The average return gets better for holding the IPO from the issue date to the end of six months of listing. But the existence of underpricing of the Indian IPO on the listing day as demonstrated by our study is consistent with the findings of the extant literature for a short period viz. listing day to the end of six months [Shah (1995), Sehgal and Singh (2008), and others]. Finally, we have found that underpricing of IPO prevails till the end of six months from the day of listing of IPOs which is consistent with the findings of most of the existing studies but contradicting a few studies [Deb and Misra (2009) and others].

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