

# Revisiting Underpricing Of Initial Public Offerings (IPO's) – Evidences From Indian Stock Markets

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*Abstract: Initial Public Offerings (IPOs) is one of the main strategy of going public adopted by firms across the globe, hence marks as an important seminal moment in the life of a concern, Underpricing of initial public offerings (IPOs) is a universally well-documented arena of equity markets. Such an event is evident in context to the pricing of such offerings, which are usually in the form of first hand sale of securities to public. The present study endeavors to access and evaluate the underpricing phenomenon with respect to IPO offerings in the Indian capital markets, using a sample of 290 IPO stocks that floated in the primary market from 2007 to 2017. The findings of the study reveals that the average underpricing marked to 17.9 % and with adjustment to the market indices i.e. both Nifty & Sensex for the same period the returns accounted to 19.1% and 18.4% respectively. In order to seek proper justification, several factors like offer price & date, Size of issue, lead time, and so on are considered. The study based empirical evidences suggest that underpricing remains one of the aspect of great concern to investors furthermore significant level of underpricing phenomenon do exist amongst IPOs pricing in Indian capital markets.*

**Keywords: Pricing, Performance, Underpricing, IPO's, Capital markets.**

## I. INTRODUCTION

Indeed, the Initial Public Offerings (IPOs) and Underpricing of IPOs is a well-documented and studied field of finance. Huge literature exist all across the globe defining and understanding this phenomenon through various markets globally. The phenomenon is quite pertinent in relation to the mystifying manner of pricing aspects of IPOs in the markets. The concept of underpricing is mere contradiction to the efficient markets hypothesis, yet it is significantly existing in the markets worldwide. In relation to the Indian capital market, it have been experiencing remarkable transitions over the last decades, however the changes have become more conspicuous in the last couple of years with the advent of liberalization policies pertaining to industrial policy, licensing policy, interest rates, foreign investments, tax reformation etc. The quality of regulations governing the market is a prerequisite for a healthy capital market. The Indian capital market has been regulated heavily historically, however acted as a major hurdle to the growth of the market, nevertheless

with economic reforms resulting to a fundamental institutional change brought about efficiency in the market through transparency, cost reduction, safety in trading and so on.

The IPO market or Stock Market Launch is a category of public offering in which a privately owned, managed and controlled firm is intentionally converted in a public concern through issue of its common stocks (equity shares) to general public, this mechanism is termed to be as 'going public' or 'floating'. IPOs is one of the largest and most celebrated source of funds with a long and indefinite maturity it is a route through which corporates raise funds to finance project expenses as well as to get global exposure through listing at stock exchanges. IPOs are eye-catching sources of investment for fellow investors in India due to the underling fact of underpricing with respect to pricing of such issues. However not all IPOs have the same behavioral traits, they tend to vary across issuers, sectors, markets, and over different time frames thus it can be said not all IPOs are underpriced, some of them are overpriced too, this pricing phenomenon makes it either an attractive or unattractive for investment moreover it's also not

easy to predict such pricing phenomenon and chose the sweet mangoes (good IPOs) and throw away the spoiled ones (bad IPOs). The study has been thus carried out to determine the extent of underpricing phenomenon amongst Indian IPOs along with estimating the possible signaling factors that one can consider which can help one in choosing good IPOs amongst the rest.

## II. LITERATURE REVIEW

The study by Reilly and Hatfield (1969) reported an 11% underpricing in US IPOs for the period of 1963-65. McDonald and Fisher (1972) investigated the price behaviors of unseasoned equity offerings over to a period of 1969-70 based on a sample of 142 offerings all hypothesis were tested the findings significantly indicates that large returns had been earned by the initial subscribers of the issue and hence proved to be very profitable for a short period. Rock K. (1986) proposed in his paper the ‘Winners Curse Hypothesis’ based on the information that can lead to underpricing. Allen and Faulhaber (1989) in their study have presented an evidence of existence of a hot issue market for IPOs of certain industries which are exclusively underpriced. Ritter (1991) in his study found that the IPOs gave an initial average return of 16.4 percent. Agarwal et al. (1993) analyzed the performance of IPOs in short term The results reveal promising facts with respect to initial one day returns which are found to be 78.5 per cent, 16.3 per cent and 2.8 per cent for Brazilian, Chilean and Mexican IPOs respectively. Several other studies like Keasey and Short (1992), Levis M. (1993), Kunz and Agarwal (1994), Kazantzis and Levis (1994), Lee, Taylor and Walter (1996) depicts the same phenomenon in different markets. Indian studies also have contributed their part of share in the literature with Narasimhan and Ramana (1995) attempted to examine IPOs pricing scenario in Indian context the study was based upon a sample of 103 IPOs belonging to the period of 1993 to 1994. The results revealed that initial returns recorded were relatively higher and hence concluded that Indian IPOs were highly underpriced. Shah (1995) study revealed on an average the prices of stocks at the first day of listing was 105.6 percent over and above the offer price which significantly relate to the extent of underpricing being 3.8 percent per week. Also Pandey and Kumar (2001) analyzed and studied a sample of 1243 IPOs in India and revealed that excess initial returns of approximately 68 percent were booked and moreover they also reported that smaller issues tend to have higher initial returns than large issues. This results were significant with other studies also other studies contributed in predicting the same phenomenon like Krishnamurti and Kumar (2002), Ahmed (2006), Pandey and Vaidyanathan (2007), Mishra (2010), Ramesh and Dhume (2015). The field of study though extensively researched yet pose scope of more research with its growing significance and its relevance in today’s era to the investor community across the globe.

## III. RESEARCH METHODOLOGY

### RESEARCH DESIGN

The present study is in its entirety descriptive in nature and specifically aims at examining the extent of underpricing and the possible factors explaining such a phenomenon.

### DATA SOURCE AND COLLECTION

The current study is completely based on secondary data. The needed data has been collected from the official websites of NSE and BSE stock exchanges. The period of the study is chosen for 10 years from 2001 to 2017. Daily closing prices of stocks and the market index has been collected over the above mentioned period. A sample of 290 IPOs have been chosen for the entire period out of the entire population presented in table 1

Year of Issuance	Number of IPOs	Percentage(%) out of Total
2007	74	25.52
2008	27	9.31
2009	20	6.90
2010	53	18.28
2011	22	7.59
2012	10	3.45
2013	03	1.03
2014	04	1.38
2015	20	6.90
2016	24	8.28
2017	33	11.38
<b>Total</b>	<b>290</b>	<b>100.00</b>

Source: Self Computed based on the sample

Table 1: Sample Characteristics

### ANALYSIS METHODOLOGY

In order to realize the objects of the study several empirical test that are incorporated includes various statistical tools, techniques, and models widely documented and proposed by experts for through analysis of data are as follows,

The listing day returns (R<sub>i</sub>) of IPO is calculated using the following formula:

$$R_i = \frac{P_1 - P_0}{P_0} * 100 \dots\dots\dots (1)$$

Where, R<sub>i</sub> = Listing Day Initial Returns or Raw Returns for the stock

P<sub>1</sub> = Closing price at the day of listing

P<sub>0</sub> = Offer price or Issue price

The Adjusted Excess Returns (MAER) are computed using the following formulae.

$$MAER = \frac{P_1 - P_0}{P_0} - \frac{M_1 - M_0}{M_0} * 100 \dots\dots\dots (2)$$

Where, MAER = Market Adjusted Excess returns

P<sub>1</sub> = Closing price at the day of listing

M<sub>1</sub> = Closing value of market index on first day of trading

P<sub>0</sub> = Offer price or Issue price

M<sub>0</sub> = Closing value of market index on offer closing day.

In India as per SEBI guidelines the firms issuing IPOs are required to be listed over a stock exchange within T+6 working days hence different companies list at different intervals and period of time thus to normalize this variation Annualized returns are estimated which are then multiplied to the Raw returns and the MAER by the following factor.

$$\text{Annualized Factor} = \frac{365}{\text{After Market Trading Lead Time}} \dots (3)$$

The extent of Underpricing with respect to IPOs on the basis of the initial returns are estimated so as to determine the level of underpriced issues. The formulae to estimate the level of underpricing is as follows

$$R_t = \sum_{i=1}^n \frac{R_{it}}{n} \dots \dots \dots (4)$$

Where

$R_t$  = is the average Raw/benchmark adjusted underpricing for the sample of IPOs

$R_{it}$  = is the average Raw/benchmark adjusted underpricing for the stock I and n is the sample size.

**OBJECTIVES OF THE STUDY**

- ✓ To determine the extent of underpricing and or overpricing persisting w.r.t. IPOs
- ✓ To identify and analyze the factors responsible for underpricing of IPOs

Hypothesis to be tested,

$H_1$ : There exist no evidence of underpricing in IPOs on the day of listing.

$H_2$ : There exist no significant difference between the initial returns of IPOs and the market returns.

**IV. DATA ANALYSIS AND INTERPRETATION**

Underpricing is a universal phenomenon in IPOs across the globe, as advocated by many scholars all over the globe through their literature and research work. The current study also throws light over the same phenomenon and test its validity with respect to the Indian capital market issues. It has been found that investors who buy IPOs on the day of its offer tends to gain more returns on the first day trading as compared to those who buy from the markets, hence it can be argued that this stocks are usually priced below the actual intrinsic value, this phenomenon is termed as underpricing, the extent of such pricing phenomenon can be seen in the following table 2

Characteristics	Raw Returns	MAERs		Annualized		
		S&P CNX Nifty	S&P BSE Sensex	Raw Returns	S&P CNX Nifty	S&P BSE Sensex
<b>Sample Size</b>		<b>290</b>				
Mean	17.90*	19.19*	18.42*	280.02*	283.9*	286.60*
5% Trimmed Mean	14.24	14.42	14.60	222.18	226.72	229.53
Maximum	242	243	242	3929	3887	3892
Minimum	(66)	(67)	(67)	(1733)	(1743)	(1744)
Positive Returns (%)	34.80	37.80	36.90	34.80	37.80	36.90
Negative Returns (%)	65.20	62.80	63.10	65.20	62.80	63.10

\*Significantly Different from Zero at 1 Percent Level

Table 2: Underpricing based on initial returns from IPOs

Table 2 shows the existence of underpricing in relation to Indian IPOs Listed over both the stock exchanges, NSE and BSE during the period of 2007 to 2017 with a sample size of 290. One sample t-test has been applied to the data in order to ascertain the presence of underpricing phenomenon it is seen that an average mean value of 17.90% returns are being generated by the entire sample of IPOs, the results also are significant at 1 percent level, the trimmed mean value sum ups to around 14.24. MAERs are respective returns that are earned on an average by IPOs over and above the market proxies, for which 2 broad market proxies are considered relating to both the exchanges i.e. S&P CNX Nifty and S&P BSE Sensex. The results indicate that a mean of 19.19% and 18.42% returns were generated respectively.

The annualized values are significant based on the fact that IPOs have got listed at different time frames as such in order to bring about consistency and reliability the annualized factors for each stock is computed and multiplied to the respective value of returns, thus the annualized values of raw returns accounted to 280.02% and the MAERs were 283.9 and 286.6%. The results also show that 34.80 percent of companies have provided positive returns that signifies an underpricing scenario of IPOs, moreover 65.20 percent of companies of the sample have provided negative returns which indicate an overpricing scenario.

The study has revealed similar footprints as compared to the existing literature however the extent of underpricing over the period has reduced as compared to studies of Shah (1995) and Pandey and Kumar (2001) which stated the level to be 105.6% and 68% respectively.

An attempt has also been made in the study to pin point numerous other factors that can lead to such an occurrence, hence a thorough analysis has been elucidated further in terms of the year of issue, the size of issue, the offer price, the subscription ration and so on.

The year wise analysis of IPOs can be seen in table 3, which indicate the extent on underpricing across IPOs based on their year of issue, IPOs that floated in the year 2007 have provided highest returns of 33%, followed by 2017 with 22% and 2010 and 2016 with 12.5 and 12% respectively, the MAERs of this periods were also significant which indicate that higher underpricing exist with stocks issued in this period of time. However other IPO stocks that were issued in years apart from the above mentioned have shown poor performance and returns too with low proportion.

Particulars	Years										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
n	74	27	20	53	22	10	3	4	20	24	33
Raw Returns %	33.01*	11.93	5.35	12.55*	10.1	5.2	2.3	32.5	11.3*	12.0*	22.0*
MAER-Nifty %	33.23*	16.59	3.4	12.11*	10.5	5.4	3.2	33.2	12.1*	12.2*	21.5*
MAER-Sensex %	33.80*	17.07	3.7	12.00*	10.5	5.4	4.5	33.5	12.5*	12.2*	21.5*

(\*), (\*\*) Significantly different from zero at 1% & 5%, respectively.

Table 3: Yearly analysis of raw returns from IPOs

The lead time is the lag in the time of closing of an issue and the instant of it getting listed over the stock exchanges, thus it is one of the signaling factor that justifies that good

issues get listed quickly rather those which are not so good usually takes long time, however with a recent shift in this trend with SEBI making it acceptable to take a time of 30 days to get listed hence has reduced higher delays. The hypothesis that smaller the listing delay better the performance of the stock, is presented in table 5, which indicate that the highest returns of 25.47% are provided by IPOs with delay of 30 to 60 days, followed by delay of less than 15 days with 15.9% and from 15 days up to 30 days with 13.9%. Moreover any delay in listing above 60 days from the date of closure of the issue are not significant and also the results yet are inconclusive due to the fact of a smaller proportion of IPOs belonging to that category of delay.

Particulars	Delay (days)				
	T ≤ 15	15 < T ≤ 30	30 < T ≤ 60	60 < T ≤ 90	T > 90
n	68	139	76	4	3
Raw Returns %	15.95*	13.90*	25.47*	61.37	-1.49
MAER-Nifty %	16.63*	14.17*	25.24*	61.1	2.84
MAER-Sensex %	16.77*	14.23*	25.87*	60.96	2.68

(\*), (\*\*) Significantly different from zero at 1% & 5%, respectively.

Table 5: Lead time analysis of raw returns from IPOs

The influence of offer price over the IPOs performance has been numerically mirrored in table 6, According to the study of Shelly and Singh (2010), which stated that information that is contained in the prospectus of an issue send necessary signals, which are either intentional or otherwise to the potential investor that can largely influence their decision, hence one of the main signaling factor is offer price, it is an indicator of underpricing and value. In general understanding it is presumed that when the offer prices are very low, it may signal out little demand, or value or both likewise when offer price is very high vice versa may prevail.

The analysis indicate the similar kind of trend where in offer prices below Rs.100 have shown lower performance with less returns and MAERs moreover as the price increases above Rs.100 and up to Rs. 500 the returns tend to increase as well as the MAERs which were 24.7% and 22.6% respectively. However any increase in price above 500 have shown a lower value returns with 7.60%, yet any further increase above Rs. 1000 has provided returns of 24.3%, but due to a less number of IPOs belonging to this category the results cannot be conclusive of an increasing trend. The value of MAERs are highest with offer price above Rs.100 up to Rs. 500, with 24.7% and 22.7% for Nifty respectively and 25.2% and 22.8% for Sensex respectively.

Particulars	Offer price (Rs.)					
	10 < P ≤ 50	50 < P ≤ 100	100 < P ≤ 200	200 < P ≤ 500	500 < P ≤ 1000	P > 1000
n	23	51	82	91	36	7
Raw Returns %	16.2	6.58	24.77*	22.58*	7.60**	24.29**
MAER-Nifty %	15.6	7.58	24.72*	22.69*	7.81*	21.76**
MAER-Sensex %	15.8	7.71	25.21*	22.79*	7.84**	22.31**

(\*), (\*\*) Significantly different from zero at 1% & 5%, respectively.

Table 6: Offer price analysis of raw returns from IPOs

Table 7 correlates evidences of underpricing across different groups of offer sizes, offer size is the sum total of gross proceeds from an IPO. It is presumed that higher chances of speculation exist with respect to IPOs with smaller offer size than larger ones, due to the fact that normally larger offer sizes are associated with well-established and stronger firms hence their prospects are better known to the potential investors as compared to new firms, as such less underpricing is expected from such compared to smaller ones. The results however reveal that highest returns of 23.6% were generated by offer size of greater than 1000 crores, with a higher MAERs of 24% and 24.3%. Followed by offer size above 100 crores and below 500 crores with 21.36% returns and MAERs of 21.06% and 21.25% respectively. Thus there exist an irregular pattern in relation to returns as offer size increases returns also increases and suddenly falls, however increases after size increases, it can be thus inferred that investors are showing more confidence in smaller size issues and extremely higher sizes. It can therefore be said that indeed offer size plays a crucial role deciding the listing performance of IPOs in Indian markets.

Particulars	Offer size				
	S ≤ 50	50 < S ≤ 100	100 < S ≤ 500	500 < S ≤ 1000	S > 1000
n	35	58	115	39	43
Raw Returns %	16.21	15.55*	21.36*	6.47	23.60*
MAER-Nifty %	18.14**	16.35*	21.06*	5.98	24.01*
MAER-Sensex %	17.94**	17.05*	21.25*	5.95	24.27*

(\*), (\*\*), Significantly different from zero at 1% & 5% respectively.

Table 7: Offer Size analysis of raw returns from IPOs

The results are expressed 8 indicate industry wide analysis, out of a total of 23 industries only 10 industries have shown significant returns which were Automobiles 16.29%, Banking & Finance 26.6%, Electronics 34.9%, Forestry & Paper 42.06%, Industrial machinery mining and metals 21.59%, Infrastructure 13.15%, IT 26.22%, Pharmaceuticals 14.4%, Transport & logistics 25.63% , Travel & tourism 14.85% among which the highest returns were earned by forestry & paper industry followed by Electronics and then followed by Banking & Finance industry. Among all the 23 industries the lowest returns were earned by Textiles, Insurance industry, Media, Personal & household durables, Realities and Utilities sectors respectively.

Industry	Sample Size	Particulars		
		Raw Returns	S&P CNX NIFTY	S&P BSE SENSE X
Automobiles & Part	07	16.29**	14.27**	14.22**
Banking & Finance	31	26.66*	27.67*	27.65*
Chemicals	12	22.44	22.56	22.19
Education and Ancillaries	06	54.85	55.25	55.14
Electronic & Electrical Equipment	10	34.89***	34.16**	34.68**
Food & Beverage	07	14.27	13.50	13.50
Forestry & Paper	12	42.06**	39.12**	41.71**
Health Care, Medical	08	6.12	5.47	7.20

Equipment etc.				
Industrial Machinery, Metals & Mining	18	21.59***	21.98**	21.42**
Infrastructure, Construction & Engineering	43	13.15**	13.68*	13.79**
Insurance- Life & Non-life	06	(0.30)	1.07	0.86
IT Consulting, Computer Software	18	26.22*	28.22*	28.57*
Marine Port & Services	05	25.22	26.02	25.91
Media, Broadcasting & Cable TV	17	1.96	0.80	0.86
Personal & Household Goods	27	2.24	2.73	3.16
Pharmaceuticals	08	14.40***	15.52**	16.13**
Realty	09	5.67	4.17	4.36
Retail	04	75.13	72.87	72.79
Telecommunication	06	30.87	32.38	32.13
Textiles	09	(4.03)	0.071	0.085
Transportation - Logistics	07	25.62**	25.42**	25.45**
Travel, Leisure & Accommodations	08	14.85**	15.81**	15.95**
Utilities	12	7.74	7.79	7.97

(\*), (\*\*), (\*\*\*) Significantly different from zero at 1%, 5% & 10% respectively.

Table 8: Industry analysis of raw returns from IPOs

## V. CONCLUSION

Underpricing of IPOs is an evident phenomenon which prevails across all the global financial markets. Our study aimed at determining the extent of underpricing prevalent w.r.t Indian capital markets. It is evident that on an average 17.90% of underpricing is found in Indian IPOs. The results are significant and are consistent with the existing literature outcomes the MAERs are excess returns offered by stocks vis-à-vis the market indices i.e. Sensex and Nifty which accounted for an average 18.42 % and 19.19 % respectively. The results have also shown that IPOs with listing delays up to 90 days are evident of underpricing and, Offer prices above Rs. 100 are significantly underpriced thus investors can buy issues with prices above Rs. 100 as on an average they are underpriced. Also offer size above 50 crore up to 500 crore showed significant underpricing denoting that large issue are more underpriced than small issues. Subscription ratio is one of the important indicator of underpricing, as such the results show that subscription ratio above 1 % up to 100% are underpriced thus investors can make good choices based on the bids of other investors. Industry to which the IPOs belong also determine the level of underpricing, the study revealed that significant returns were provided by Automobiles, Banking & Finance, Electronics, Forestry & Paper, Industrial machinery mining and metals, Infrastructure, IT, Pharmaceuticals, Transport & logistics and Travel & tourism and Retail among which the highest returns were earned by forestry & paper industry followed by Electronics and then followed by Banking & Finance industry. Thus in a nutshell investors can follow certain signaling factors while choosing to invest into IPOs stock and hence can safe play in the market in spite of risk factor. Our study can be reference point for

fellow investors seeking to invest in IPOs in the near future issues in the Indian capital market.

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