

# THE PRICING PERFORMANCE PUZZLE OF INITIAL PUBLIC OFFERINGS (IPOS)

## EVIDENCE FROM INDIAN IPO MARKET

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### Abstract

The introduction of the Book-building process for Initial Public offerings (IPOs) improved IPOs pricing & performances. This paper with a sample of 24 IPOs attempts to study the long run & short run performances. Results indicated 33% of the issues were under-priced. In the short-run, they reported positive average Market Adjusted Abnormal Return (MAAR) of upto 42.85%. In the long run, using buy-and-hold abnormal return (BHARs), these IPOs significantly underperformed the market benchmark up to a period of 1 month from the date of listing and vanish thereafter. The investors who buy at offer get positive returns throughout the period, while the initial day traders are required to wait for more than 1 month to earn a minimal positive return.

### 1.Introduction

Thousands of firms around the world have preferred to go public in the last decade. An initial public offering (IPO) occurs when a security is sold to the general public for the first time. There is considerable international empirical evidence unanimously indicating that IPOs outperform in the short-run, especially on the first day of trading. The phenomenon of IPO underpricing<sup>1</sup> has long existed in the global stock market, although the magnitude of under-pricing varies from country to country. However, several academic researchers found in their studies that IPOs show underperformance in the long-run or have negative abnormal returns over holding periods after the IPO issue date. This implies that most IPO investors earn large positive returns in the early aftermarket period; their returns, however, will be diminished in the long-run. In

contrast, the findings of Jelicet al. (2001), Ahmad-Zalukiet al. (2007) and Chorruck and Worthington (2010) show IPO long-run over performance in developing countries such as Malaysia and Thailand. However, the issue of IPO over- or underperformance in the long run is still controversial. As noted among researchers, the results of long-term performance studies may differ as a result of differences in the methods and approaches used to measure the abnormal return.

The purpose of this study is to extend the existing literature on the aftermarket performance of IPOs by examining the Indian IPOs on the NSE. In particular, the issues of firms that took place between 1999 and 2004 are analysed. This paper focuses on the evaluation of price performance of IPOs up to a period of 10 years including the listing day.

This paper presents fresh evidence on IPO performance, i.e., short-run under pricing and long-run underperformance for 24 Indian IPOs issued during the period 1999-2004. It is reported that on an average the Indian IPOs are underpriced to the tune of 46.55 per cent on the listing day (listing day return vis-à-vis issue price) compared to the market index. Another contribution of this paper is the evaluation of the long-run post-issue price performance of Indian IPOs. The long-run performance of IPOs up to a period of 10 years are measured by using the most promising evaluation techniques, i.e., buy-and-hold abnormal rate of return (BHAR), after being adjusted with market index, CNX-Nifty.

Broadly, this paper is structured as follows: Section 1 consists of the introduction, Section 2 consists of the literature

on short-term & long-term IPO performance. The data samples & methodology are described in Section 3 while Results and statistical analyses are indicated in Section 4. Finally, the conclusions of this study are presented in Section 5.

### Review of Literature

Performance of IPOs in the long run and short run has attracted considerable attention in the literature in recent years. Most of the existing studies from international markets provide evidence indicating initial public offerings (IPOs) being under-priced or showing outperformance in the short-run. The evidences for the same are indicated as below:

Ritter (1991) examines 1,526 IPO stocks in the long run and found that three-year market-adjusted buy-and-hold returns are negative to the extent of -23.4%. Their explanation of this long-run underperformance is that firms go to the public when investors are over-optimistic about the growth of such IPO companies. In the same way, investors are periodically over-optimistic about the earnings potential of young growth companies.

Akhigbe et al. (2006) studied long-term performance of 2,483 IPOs in the US using industrial sector classification. They also reported that the mean one-, two-, and three-year buy-and-hold abnormal returns of the IPO firms were -27.07%, -19.05% and -10.16% respectively and were statistically significant at an 0.01 level.

KULABUTR KOMENKUL\*, JANUSZ BRZESZCZYŃKI AND MOHAMED SHERIF (2013) EXAMINED long-run performance of 227 IPOs in the Thai stock market during the period from 2001 to 2012. They analysed that large IPOs are characterized by a worse long-run performance while the IPOs of smaller companies perform better than those of larger ones.

Goergen et al. (2007) studied 252 IPOs listed on the London Stock Exchange between 1991 and 1995. They also found poor long-run performance of UK IPOs, in particular of the smaller firms while those of the large firms performed better in a cross-sectional study. This finding is consistent with that of Burrows and Jones (2004) that showed the long-run underperformance or negative returns from Alternative Investment Market (AIM) IPOs during the initial two years of seasoning.

Lee et al. (1996) investigated the short- and long-run returns of 266 Australian IPOs during 1976-1989. Their results also showed that the equally-weighted cumulative abnormal return at month 36 was -51.26% and was significant at an 0.01 level. Moreover, they suggested that the performance of Australian IPOs is considerably poorer than that of the US IPOs in Ritter's (1991) study.

Jelic, Saadouni, and Briston (2001) studies the share price performance of Malaysian IPOs listed on the KLSE (Kuala Lumpur Stock Exchange) Main Board during the period 1980 – 1995. They report that the month 36, CAR (Cumulated Abnormal Return) is significantly positive at 24.83 percent; buy-and hold returns (BAHRs) adjusted for the KLSE index are also positive and statistically significant for month 36, at 21.98 percent and is consistent with CAR.

Ahmad-Zalukiet al. (2007) supported Jelic by examining that investors buying IPOs in Malaysia on the first day of trading and holding them for a three-year period can gain significant abnormal returns for equally-weighted event time CARs and BHARs using two market benchmarks.<sup>5</sup> Their study reported positive and statistically significant long-term returns up to 3 years after listing for Malaysian IPOs during the period 1980 to 1995.

Omran (2005) studies 53 Egyptian firms from 1994 to 1998 and shows that these firms yield statistically significant initial excess return. He finds mixed results in the aftermarket of those IPOs.

Sullivan & Unite (1999) show first-day returns earned by investors purchasing the initial public offer of a Philippine company are consistent with what has been documented in other countries. This finding confirms the view that investors in smaller countries with a less developed capital market are subject to greater risks. However, this underpricing of Philippine IPOs is dramatically less severe than underpricing documented for other emerging market countries and less than other Pacific-Rim countries. Possible reasons for these differences include: (1) Stage of market liberalization, (2) Development of the stock market, (3) Stock market regulations, (4) Information disclosure and accuracy, and (5) Specific firm characteristics.

Few studies on IPOs have been done in India as well and some of them are quoted below.

Shah (1995) documents a phenomenal 105.6% excess return over the offer price in a study of 2056 new listings over the period January 1991 to May 1995. However, this study provides evidence on the short run performance only.

Madhusoodan and Thiripalraju (1997) examined the initial and aftermarket returns of 1,922 companies listed on the BSE from 1992 to 1995. The returns given by the Indian IPOs were very high in the short-run compared to the experiences of other countries. In the long-run, the returns were still positive and high, compared to negative returns in most other countries.

Kakati (1999) analysed the performance of a sample of 500 IPOs that came to the market during January 1993 to March

1996 and documents that the short run under-pricing is to the tune of 36.6% and in the long-run the overpricing is 40.8%.

Madan (2003) examined under-pricing and long-run performance of 1,597 Indian IPOs listed during 1989-95 on the BSE. His study also confirms that in the long-run (fiveyears after listing), there was a drastic fall in the IPO returns.

Satya Nandini and Shivraj (2005) examined the initial returns(as on Listing day) of 20 IPOs from different sectors issued during the year 2003-2004 & concluded that the returns of each IPO varied from 25% to 209%, with the average first day returns of 48%.

Singh and Singh (2008) conducted a study based on a sample of 1,963 fixed price IPOs for the period July 1992 to August 2006. The results show that the adjusted initial returns, reputation of lead manager, and age of the company provided a certification to issues leading to over subscription in Indian IPOs.

Pande and Vaidyanathan (2009) studied 55 firms listed on the National Stock Exchange from March 2004 to October 2006 and they demonstrate that the degree of under-pricing in the Indian stock markets has reduced over the years,from 105.6% as reported by Shah (1995) to 22.6%.

Seshadev Sahoo and Prabina Rajib (2010) presented fresh evidence that on an average the Indian IPOs are under-priced to the tune of 46.55 per cent on the listing day (listing day return vis-à-vis issue price) compared to the market index. The long-run performance of IPOs up to a period of 36 months are measured by using the two most promising evaluation techniques, i.e., wealth relative(WR) and buy-and-hold abnormal rate of return (BHAR), both being adjusted with market index, CNX-Nifty. Further, the results evidence that the underperformance is most pronounced during the initial year of trading, i.e., up to 12 months from the listing date followed by over-performance.

S SS Kumar (2010) examined the performance of IPOs issued through the book building process in India over the period 1999-2006 with a sample comprising of 156 firms that offered their shares through the book building route on the NSE. They inferred that upon listing the IPOs on an average offered positive returns (after adjusting for market movements) to investors and a large part of the closing day returns on the listing day were accounted for by the opening returns. In the long run, the IPOs offered positive returns up till twenty four months but subsequently they underperform the market.

From the literature review the following inferences can be made:

- Short-run under-pricing of IPOs is an international phenomenon.
- Under-pricing in the Indian market is quite high compared to the international experiences.
- On the other hand, the results of IPO over- or underperformance in the long-run are mixed.
- From 1999 onwards most of the IPOs were issued through the book building process.
- So far all the study on Long-run IPO performance in India is been limited to 60 months (5 years after listing). Hence, it will be of interest to examine the price performance of all IPOs being issued during the year 1999-2004 till date (10 years after listing).

### Sample and Research Methodology

The sample in this study includes all the new equity issues offered through book building route on the National Stock Exchange (NSE) & Bombay stock exchange (BSE) from 1999 till May 2004. The entire list of public offers made through NSE & BSE are available on their web site ([www.nseindia.com](http://www.nseindia.com)) & ([www.bseindia.com](http://www.bseindia.com)). However, we have excluded all offer for sale issues, follow on public offers. For the listing day and the next day (second day) we collected the opening price and closing price of the IPO from the NSE's web site.

Table 1 presents total IPO activity in the Indian market during the period 1999-2014. The numbers are inclusive of both fixed & book-built IPOs helping us to analyse the IPO trends in India. The data were provided by PRIME Database. It is an agency monitoring and compiling information on all public issues in Indian markets. Table 2 presents the Book-built IPO activity at NSE during September, 1999 to May, 2004, which is the scope of this study.

**Table 1: IPO Activity in India - Ever since the introduction of Book Building**

Year	Number of IPOs
1999-00	56
2000-01	110
2001-02	6
2002-03	6
2003-04	28
2004-05	29
2005-06	102
2006-07	85
2007-08	90
2008-09	21
2009-10	44
2010-11	57
2011-12	36
2012-13	44
2013-14	82
2014-15 (as on 31/05/14)	2
<b>Total</b>	<b>798</b>

**Table 2: Book-built IPO Activity at NSE (September 1999 to May 2004)**

Year	Number of IPOs
1999	3
2000	10
2001	4
2002	5
2003	5
2004 ( Until May 2004)	10
<b>Total</b>	<b>37</b>

A sum total of 37 IPOs are issued during the period 1999-2004. From this sample, we excluded 1 IPO due to missing offer price. To examine the after-market performance (both short-run and long-run), we exclude another 12 IPOs due to non-availability secondary market price data reducing our sample to 24 new issues, which represents 64.86 per cent of the population. Each of the 24 IPOs was tracked for 60 months from the date of listing to evaluate the long-run price performance. Table 3 explains the sample size and its selection methodology.

**Table 3: Description of the Sample of IPOs and the Sampling Criteria**

Total number of Book Built IPOs offered at NSE during the period	37
Exclusion number of IPOs due to missing offer price	1
Remaining	36
Exclusion number of IPOs - Due to incomplete after-market price data. (As a result of merger & other alliances)	12
Remaining total number of IPOs eligible for study	24
Percentage of eligible companies in the sample for study	64.86

The details of the IPOs listed with their date of listing, listing price & issue price are presented in Table 4. As it can be inferred, the number of IPOs during this period peaked in 2000 - dot com boom. The number of book building issues has become a significant part of the IPO market over the years. Over the sample years, though the number of public issues was

relatively less the size of the issues were large. The closing prices were obtained from NSE website to calculate the yearly returns. Of the 37 IPOs analysed in this study, the majority were from the IT sector. Some of the other prominent sectors represented were banking, pharmaceuticals, media and entertainment.

**Table 4: Description of the Sampled Book-Built IPOs**

SI No	Company	Listing Date	Listing Price	Close	Issue Price	Current Price	Close
1	T.V. Today Network Limited	16-01-04	181.35		95	150.1	
2	Indraprastha Gas Limited	26-12-03	119.40		48	322.2	
3	Vardhman Acrylics Limited	30-09-03	11.10		10	18.05	
4	New Delhi Television Limited	19-05-04	99.45		70	85.35	
5	Dishman Pharmaceuticals & Chemicals Limited	22-04-04	541.25		175	88.95	
6	Biocon Limited	07-04-04	484.50		315	437.3	
7	Petronet LNG Limited	26-03-04	14.65		15	155.35	
8	Power Trading Corporation of India Limited	07-04-04	44.80		90	85.7	
9	Divi's Laboratories Limited	12-03-03	176.25		140	1275.2	
10	Creative Eye Limited	20-12-00	64.10		50	4.55	
11	Balaji Telefilms Limited	22-11-00	157.00		130	54.35	
12	Pritish Nandy Communications Limited	11-12-00	165.15		155	14.85	
13	MRO TEK Limited	06-11-00	94.55		95	7.67	
14	Tata Teleservices (Maharashtra) Limited	26-10-00	11.95		12	11.04	
15	Shree Rama Multi Tech Limited	23-03-00	100.00		120	4.95	
16	HCL Technologies Limited	11-01-00	1,575.30		580	1418.55	
17	Bank of Maharashtra	12-04-04	39.35		23	46.95	
18	VIJAYA BANK	10-01-01	9.50		10	50.2	
19	Allahabad Bank	29-11-02	10.15		10	126.5	
20	Andhra Bank	04-04-01	8.90		10	95.25	
21	Indian Overseas Bank	13-12-00	9.90		10	77.3	
22	Punjab National Bank	26-04-02	37.40		31	943.8	
23	Syndicate Bank	27-12-99	33.00		10	141.2	
24	Union Bank of India	24-09-02	16.35		16	206.50	

## Empirical Methodology

In this study, we examined the price performance of the IPOs both in the short-run as well as in the long-run. i.e., performance on the listing day, followed by an estimation of long-term pricing performance over a period of 120 months or 10 years from the date of listing. IPO long run performance is gauged by examining the returns beyond the second day of their listing at half yearly & yearly intervals till May 2014 subject to a maximum of 120 months or 10 years. Therefore, for those listed in May 1999 yearly returns will be observed till May 2014 encompassing higher than 120 months or 10 years returns. However, for a stock listed in May 2004 we could analyze its performance for a maximum of 10 years or 120 months.

Methodology for computation of Short-run price performance of IPOs

To examine the initial returns of the Indian IPOs, we calculate market-adjusted initial returns for all IPOs. Market-adjusted abnormal return (MAAR) for the listing day is calculated as the difference of initial return calculated for (i) the security on day one and (m) the benchmark return on that day which is S & P CNX Nifty of NSE. Miller and Reilly (1987), calculated MAAR using the formula as given in Eq. (1).

The MAAR for the IPO stock (i) on day 1 is calculated by using Eq. (1).

$$MAAR_{i1} = \left[ \frac{(1 + R_{i1})}{(1 + R_{m1})} - 1 \right] \times 100 \dots \dots \dots (1)$$

Where, MAAR<sub>i1</sub> is the market-adjusted abnormal rate of return for the stock i on day 1, R<sub>i1</sub> reflects the percentage change in list price vis-à-vis offer price. R<sub>m1</sub> is calculated as the percentage change in closing market index value on the listing day to market index on the date of closure of issue. The initial day price performance of each IPO has been calculated by using Eq.(1). The above methodology is also in line with Sohail and Nasr (2007). The S & P CNX Nifty (hence after Nifty) closing value has been used to calculate the market index return.

A positive MAAR on the initial day of listing can be interpreted as a better performance for the IPOs compared to the benchmark return (NIFTY) for the same period & provides an evidence for under-pricing of IPOs. From the investors' point of view, such IPOs provide investors with positive initial excess abnormal return, through buying stocks at subscription prices in the primary market and selling them on first trading day in stock market.

Methodology for computation of Long-run price performance of IPOs

Motivated by the existing international practice, we use Buy-and-Hold Abnormal Returns (BHAR) to evaluate long-term performance for a period of 120 months or 10 years from the date of listing. Market-adjusted BHAR are calculated with reference to both issue price and list price. In this method, we assess the change in the wealth of the investors for the sampled IPOs by assuming that the same amount of money is passively invested in the initial day and held for a specified period (excluding initial day) and then compare these with a market benchmark (CNX NIFTY). The market-adjusted BHAR as the excess return for the IPOs over and above the market return is computed as:

$$BHAR_{iT} = \prod_{t=1}^T (1 + R_{it}) - \prod_{t=1}^T (1 + R_{mt})$$

Where, R<sub>it</sub> is the return of the individual IPO stocks i at time t and R<sub>mt</sub> is the market index return for Nifty for the corresponding time t.

The above methodology is also in line with Sohail and Nasr (2007) & Seshadev Sahoo and Prabina Rajib (2010). The Nifty closing value has been used to calculate the market index return.

A positive BHAR for a specific time period can be interpreted as a better performance for the IPOs compared to the benchmark return (NIFTY) for the same period. The advantage of this method is that the terminal values of both of the investment strategies, i.e., investment on a portfolio of IPO and market index, are compared. From the investors' point of view, BHAR indicated whether the benefit (positive initial day return) accrued in terms of investing through IPO subscription is extended to the late buyers or is completely exhausted on the listing date.

The average BHAR for the entire sample is also calculated to find out the overall performance of the portfolio of IPOs for a specific period of time. The mean BHAR is computed as the arithmetic average of abnormal returns on all IPOs in the sample of size N. Mean BHAR is computed by the following formula:

$$\overline{BHAR} = \frac{1}{N} \sum_{i=1}^N BHAR_{iT}$$

Short-run price performance of IPOs on using MAAR

Table 5 details the short-run performance of IPOs using MAAR. It reports the distribution of MAAR from the Issue close day up to the listing day (close price). In other words, it is the excess return over the market benchmark being computed on using Eq. (1). Table 5 also indicates that underpricing (UP) persists in the Indian IPO market during the study period. For 8 IPOs, the list price is below the offer price indicating IPO overprice for these issues.

It is found that the investors outperform (i.e. there is

under-pricing of IPOs in the market), through buying stocks at subscription prices in the primary market and selling them on first trading day in stock market. The results reveal that 33% (8 out of 24 IPOs) provide investors with initial negative return, presenting that these IPOs are overpriced while 67% (16 out of 24 IPOs) provide investors with positive initial excess abnormal return, presenting that these IPOs are under-priced. However, jointly, all 24 IPOs provide investors with positive average Market Adjusted Abnormal Return (MAAR1) up to 42.85% after having adjusted with the benchmark (CNX NIFTY) returns. The higher percentage of undervaluation in comparison with international findings could be interpreted as Indian issuers leaving too much on the table.

**Table 5: Market Adjusted Abnormal Returns(MAAR) Relative to List price & Offer Price**

SI No	Name of the issue	Issue closing date	NIFTY Close	Issue Price	Listing price	NIFTY Listing	MAAR(%)
1	T.V. Today Network Limited	27-12-2003	1874.05	95	181.35	1900.64	88.22
2	Indraprastha Gas Limited	05-12-2003	1645.80	48	119.4	1837.25	122.83
3	Vardhman Acrylics Limited	19-09-2003	1407.05	10	11.1	1417.1	10.21
4	New Delhi Television Limited	28-04-2004	1816.55	70	99.45	1567.85	64.61
5	Dishman Pharmaceuticals & Chemicals Limited	07-04-2004	1848.70	175	541.25	1889.55	202.60
6	Biocon Limited	18-03-2004	1716.65	315	484.5	1848.7	42.82
7	Petronet LNG Limited	08-03-2004	1885.25	15	14.65	1747.5	5.37
8	Power Trading Corporation of India Limited	08-03-2004	1885.25	90	44.8	1848.7	-49.24
9	Divi's Laboratories Limited	21-02-2003	1066.15	140	176.25	1001.7	33.99
10	Creative Eye Limited	19-11-2000	1208.05	50	64.1	1295.25	19.57
11	Balaji Telefilms Limited	12-10-2000	1206.25	130	157	1222.35	19.18
12	Pritish Nandy Communications Limited	11-09-2000	1456.35	155	165.15	1332.15	16.48
13	MRO TEK Limited	09-09-2000	1456.35	95	94.55	1240.25	16.87
14	Tata Teleservices (Maharashtra) Limited	18-07-2000	1463.10	12	11.95	1186.3	22.82
15	Shree Rama Multi Tech Limited	21-01-2000	1620.60	120	100	1553.4	-13.06
16	HCL Technologies Limited	24-11-1999	1394.95	580	1575.3	1572.5	140.94
17	Bank of Maharashtra	04-03-2004	1843.85	23	39.35	1838.2	71.61
18	VIJAYA BANK	04-12-2000	1275.60	10	9.5	1287.3	-5.86
19	Allahabad Bank	31-10-2002	951.4	10	10.15	1050.15	-8.04
20	Andhra Bank	22-02-2001	1355.1	10	8.9	1136.65	6.10
21	Indian Overseas Bank	06-10-2000	1285	10	9.9	1354.3	-6.07
22	Punjab National Bank	26-03-2003	1013.85	31	37.4	1097.4	11.46
23	Syndicate Bank	04-11-1999	1336.80	10	33	1432.1	208.04
24	Union Bank of India	30-08-2002	1010.6	16	16.35	966.2	6.88

**Long-run Price Performance of IPOs on using BHAR**

Table 6 details the long-run performance of IPOs using BHAR. It presents the distribution of BHAR from the listing day up to 120 months or 10 years, with reference to both offer price and list price. Panel 'A' shows market-

adjusted 'BHAR List,' computed from the list price. Panel 'B' reports 'BHAR Offer' being evaluated with reference to offer price.

The empirical results in Panel A of Table 7 shows negative BHARs up to 1 month from the date of listing. For longer periods, e.g., 6 months to 120 months/10 years, positive BHARs are reported. Negative BHARs can be

**Table 6 : Buy and Hold Return(BHAR) Relative to List price & Offer Price**

Time Frame	BHAR_List Price		BHAR_Offer Price	
	Mean	Standard Deviation	Mean	Standard Deviation
Listing Day	NA	NA	0.44	0.69
Listing + 1 month	-1.11	29.02	38.32	68.51
Listing + 6 month	10.11	83.66	43.9	109.55
Listing + 12 month	43.71	168.91	87.72	218.22
Listing + 2 yrs	62.69	224.32	99.67	257.07
Listing + 3 yrs	93.62	291.31	140.06	327.74
Listing + 4 yrs	143.06	420.21	203.94	463.39
Listing + 5 yrs	102.62	344.04	149.8	370.7
Listing + 6 yrs	29.76	351.28	93.52	389.81
Listing + 7 yrs	70.38	515.54	137.33	526.6
Listing + 8 yrs	172.22	723.48	258.23	792.82
Listing + 9 yrs	132.29	707.39	203.48	796.61
Listing + 10 yrs	63.83	614.07	137.57	651.32

Note: Most of the IPOs in our study got listed during the period 2000 and 2004. 4 years from the listing day for these set of IPOs falls in the period 2004 & first half of 2008, and 8 years from the listing day of the same set of IPOs fall in the period of 2008 & 2012 which witnessed financial market boom.

## Conclusion

This study has examined the short and long run share price performance of Indian IPOs during the period 1999 to May 2004. The underpricing is also observed in Indian IPOs, which is widely documented in the literature. Our findings from the sampled 24 IPOs reveal that the 67% of IPOs are under-priced and generates a market adjusted abnormal returns of 42.85% to those investors who would have bought such stocks at subscription prices in the primary market and sold them on first trading day in stock market. This is definitely, the profit opportunity to those investors who borne the risk of price uncertainty in the primary market.

Using buy-and-hold abnormal return (BHARs) as price performance measure, we estimate the long-run performance for the sample IPOs up to a period of 10 years/120 months from the date of listing. We find that the IPOs significantly underperform the market benchmark up to a period of 1 month from the date of listing and vanish thereafter. In fact, we also report that the IPOs are significantly over-performing the CNX NIFTY at 8 years from the initial day. In conclusion, this paper reports the fresh evidence on IPO price performance in long run of up to 10 years or 120 months. In contrary to international evidence where the underperformance continues up to three to five years, our results show underperformance up to 1 month of trading only. Moreover, by using buy-and hold return as an alternative measure for evaluation of IPOs, we find that investors who buy at offer get positive returns throughout the period, while the initial day traders are required to wait for more than 1 month to earn a minimal positive return.

The results obtained from the study provide important information to investors intending to invest in IPOs. We find that IPOs are under-priced on the listing day. Investors investing in IPOs at the offer price and holding these shares over a longer period are better-off compared to investors investing in shares on the listing day. Investors investing at the list price would not get excess returns at least up to one month from the date of listing

## Findings

- We found that on an average 33% of the issues were under-priced.
- In the short-run, the sampled IPOs reported positive average Market Adjusted Abnormal Return (MAAR) of upto 42.85% on the initial day of listing, after having adjusted with the market benchmark (CNX NIFTY) returns.
- Using buy-and-hold abnormal return (BHARs) as price performance measure, we examined that in the long-run, same set of IPOs significantly underperform the market benchmark up to a period of 1 month from the date of listing and vanish thereafter.
- Moreover, we find that investors who buy at offer get positive returns throughout the period, while the initial day traders are required to wait for more than 1 month to earn a minimal positive return.

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