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POST-LISTING PRICING PERFORMANCE OF INITIAL PUBLIC OFFERS: INSIGHTS FROM INDIA

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A B S T R A C T

The objective of this study is to investigate short-run performance and whether the IPOs are over-priced or under-priced in various window periods. This study applies one-sample t-tests, capital asset pricing models, and market-adjusted excess return to quantify the short-term pricing performance as well as the risk and return of initial public offerings and market indices. The study investigates the claim that post-listing initial public offerings (IPOs) guarantee short-term gains. The twelve months following the listing, in particular, have seen the biggest gains.

According to reports, investors who buy shares in IPOs get strong returns in this period. The market-adjusted initial returns for the IPOs registered on the National Stock Exchange between January 2019 and December 2020 have been found to be roughly 44%, per this analysis.

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1. INTRODUCTION

A financial system is a set of financial markets, financial institutions, rules, regulations, and processes used to exchange financial products, calculate interest rates, manufacture and distribute financial services all over the world (Srilakshmi, D. and Archana, H. N. 2019). Financial markets are crucial to the growth of the economy in general and the corporate sector in particular. It aids in the distribution of limited financial and economic resources. It reroutes resources from savers to borrowers, directing them to productive sectors. People's savings are propelled by the financial market. As a result, it boosts the country's overall investment activity. The financial market is well-structured and separated into two sections. The first is the primary market, and the second is the secondary market (Mishra, A. K. 2010). The primary market is where new securities are first offered to investors. Investors are just corporations looking to raise funds in order to fund expansion and growth objectives.

A secondary market is a place where all of these instruments, such as stocks, bonds, options, and futures, are traded as a follow-up to the main market (Andriansyah, A. 2017). There are two stock exchanges in India: the Bombay Stock Exchange and the National Stock Exchange. The stock market is treated as a barometer of the economic activity of any country which is affected by investors' reactions.

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In India, IPOs are overseen by the SEBI (Security Exchange Board of India), and the business issuing the IPO must first obtain clearance from SEBI (Ghosh, S. 2005). Under SEBI's supervision, issuers are free to price their offerings as they see fit, as long as they disclose adequate disclosures in the offer documentation. It is generally assumed that market prices do not reflect all relevant information, as inferred from the partial aggregate of financial markets, especially information that is not publicly available.

The IPO market has changed with the adoption of a fixed pricing regime and has progressed further with the implementation of the Book Building procedure (Ritter, J. R. 2003; Sandhu, H. and Guhathakurta, K. 2020). In India, there are two primary avenues for selling public securities. i. Book Building Method. ii. Fixed Price Method (Dhall, H. S. and Singh, S. 2017). For decades, academics, researchers, and practitioners have been interested in the underpricing of IPO in developed and emerging markets. Many scholars have attempted to shed light on the extent of underpricing in various nations and over time periods. The common consensus is that IPOs are underpriced on average, but the extent of underpricing varies (Loughran, T. et al., 1994).

The changes that occur following an IPO affect the firm's performance in the short and long term. The influence of IPOs on stock prices reveals investor sentiments, market trends, and the signaling impact of IPOs (Ghosh, S. 2005; Malhotra, M. and Prem Kumar, N. 2017). The IPO may face underpricing, which means that the price of the newly listed company's share trades in the secondary market for the first time is lower than the price at which the share trades in the primary market. Firms that undertake IPO may also face long-term underperformance, which describes the firm's stock price behavior after the IPO has been issued for more than two years. Several factors may influence stock price behavior over time, and these elements can be investigated to explain stock price changes in the post-IPO period. (Baluja, G. 2017). (a) underpricing or overpricing, (b) information asymmetry (Babu, T. R. C. and Dsouza, A. E. C. 2021), and (c) an agency problem between the investment bank and the issuing corporation are the most common anomalies that an investor detects in an IPO issue. IPO underpricing occurs when the closing price on a listing day is higher than the first offer price, whereas IPO overpricing occurs when the closing price on a listing day is lower than the initial offer price (Lowry, M. et al. 2010; Shah, D. K. and Priyan, P. K. 2021). An IPO may be underpriced on purpose or by accident. An IPO may be intentionally underpriced to entice investors, or it may be accidentally underpriced because the underwriters miscalculated demand. The imbalance in knowledge of information about the company and its potential growth among investors (and other stakeholders) is referred to as information asymmetry (Lowry, M. 2003).

The total money raised through IPOs reached a 6-year high in 2017, making 2017 the golden year for the Indian IPO market (Manu, K. S. and Saini, C. 2020). Over 150 organizations, including small and medium-sized businesses, raised a total of $11.6 billion, the most since 2011. Many IPOs in 2017 provided favorable returns to investors, with a few of them providing huge positive returns on the same day.

On the other side, over half of the companies that conducted initial public offerings in 2017 have outperformed the market since their issuance (Manu, K. S. and Saini, C. 2020). This clearly shows that the risk incurred by investors in the primary market is not reduced when compared to the equities market. As a result, the odds are stacked against investors, and they should proceed with extreme caution when investing in IPOs today.

Investors are faced with several questions because of the significant risk of investing in an IPO, which causes them to be undecided. In light of the foregoing, the goal of this study is to find the answers to the following research questions on the Indian IPO market.

RQ1: How can be IPO's post-listing return performance be evaluated in the context of overpricing and underpricing?
RQ2: Which time windows are considered for investing in IPOs to optimize short-term returns?
RQ3: What evaluation criteria should be used for measuring the risk and return of IPOs and market benchmark index?

The following study objectives are established in light of the aforementioned research questions:

1) To analyze the post-performance of Indian IPOs in the short run either underpriced or overpriced.
2) To analyze the IPO's pricing performance at different time frames.
3) To identify the risk and return performance of IPOs and market benchmark return.

As a result, this research has been carried out. Using the return research technique, examine the first listing day and subsequent day returns over and above the benchmark index for issuing IPOs in the Indian Stock Market. For evaluation of the price performance of IPOs, this study has collected two years IPOs data comparing with market benchmark CNX Nifty from Jan 2019 to Dec 2020. The remaining part of this study is structured as follows: An overview of the literature on the performance of IPOs is included in Section 2. Section 3 presents the study methodology and data set. Section 4 describes the test results comparing IPOs' returns performance at different periods with market index performance. The study's findings and conclusion are presented in Section 5. The study's shortcomings and future directions are discussed in Section 6.

2. LITERATURE REVIEW

The research has examined and classified based on numerous theories and models of pricing as under-pricing and overpricing with impacting IPO factors like age of firms, subscription times, industry-wise, delay of listing, and ownership holding likewise in short as well as long run periods. Therefore, the contribution of this paper to the previous research literature in two folds First, the articles listed below only discuss the pricing performance of initial public offerings over short time periods. Second, long-term time frames were used to examine the pricing performance of the IPO.

2.1 Short-run pricing performance

Mavruk, T. (2008) in a study surveyed the investors' sentiments affected by local bias and risk-adjusted portfolios for their preferable investment alternatives. This study found that local investing does not beat a fully diversified market portfolio. When faced with equal or almost equal profits, investors invariably choose local companies, which might be considered to have a local bias. Evans, T. and Mc Millan, D. (2009) used the daily market indices return data which was collected for the analyses of the degree of risk on portfolio diversification. The degree of risk was compared to an equally weighted portfolio by using the Generalized Auto Regressive Conditional Heteroskedasticity (GARCH) and correlation methodology. This study's realized correlations indicated that stock diversification helped an equally weighted portfolio, and portfolio managers benefited from it. However, policymakers must consider the potential adjustment costs of coordinated actions. Selvamathi, R. and Ananth, A. A. (2019) stated that is a requirement for the IPOs performance to collect many factors which affected short run pricing performance of IPOs and the factors collected in this study as over time lead time, offering size, and IPO Grade, as assessed by buy and hold raw return on listing day and short run time frames, were all elements to consider and recorded the underpricing performance of initial public offerings was studied throughout time.

Furthermore, Srilakshmi, D. and Archana, H. N. (2019) estimated the sector-wise first-day listing and short-term performance of initial public offerings. By using descriptive statistics and market-adjusted excess return, concluded that the IT industry underperformed and the automotive industry outperformed during the study period.

The IPOs performance was not only affected by several variables such as company age, issue size, and ownership holding but also affected by investors' behaviour in their study and concluded that the majority of IPOs were underpriced due to the reactions of investors on hot issue market. It showed that independent variables had no significant impact on the total return and abnormal return of selected Indian IPOs by using correlation, regression, and ANOVA results (Manu, K. S. and Saini, C. 2020).

Babu, T. R. C. and Dsouza, A. E. C. (2021) investigated the short-term performance of initial public offerings determining the anomalous return of IPOs and the impact of oversubscription, profit after tax, promoter holdings, issue price, and market returns on IPO performance. Using a market-adjusted short-run performance model, a wealth relative model, a t-test, and regression analysis, it was discovered that IPOs outperform the market on the first trading day, that oversubscription has an impact on IPO performance, and that other factors such as issue price, profit after tax, market returns, and promoter holdings have no impact on IPO returns.

The investor's contour fear of loss when investing in IPOs during the COVID-19 period was highlighted in this study. The link between pandemic fear and IPO performance in the short run. And, motivated by the nearly 9.30 per cent higher IPO initial returns in 2020 than in the previous 40 years, they discovered the impact of pandemic-related fear on initial IPO returns. This fear behaviour of investors leads to cause losses while investing in IPOs. Given the outperformance of the initial return, it was also examined whether initial returns were responsive to fear of the epidemic. Using the fear index, researchers discovered that the initial return has been adversely related to pandemic fear (Mazumder, S. and Saha, P. 2021).

Sikdar, A. (2021) study evaluated how Covid 19 affected share prices on the Indian stock market. It noticed that for the majority of the sectors, the average daily share prices, average daily return, average daily number of transactions, and volatility were noticeably different between the pre-and post-Covid periods. However, comparing the two study periods did not see any appreciable differences in the delivery percentage of traded shares of these industries.

2.2 Long-run pricing performance

The return on asset and equity to asset ratio was used to calculate business profitability in this study (Peristiani, S. and Hong, G. 2004). Over the 1980-2000 decade, there was a slow but significant decrease in pre-IPO financial performance, as well as an increase in the failure rate of enterprises after they went public.

Ghosh, S. (2005) used BSE-listed company IPOs from 1993 to 2001 and analyze a variety of characteristics including issue size, industry affiliation, and the age of the IPO firm, all of which had an impact on the underpricing of IPOs in emerging economies. In this study, it was discovered that uncertainty played a significant impact on the performance of initial public offerings in the Indian market and that IPOs with big

issue sizes generated worse returns than enterprises with modest issue sizes. Additionally, during strong boom periods compared to slump periods, IPOs were less underpriced. Throughout the entire study period, the industry distribution of IPOs had no discernible effect on the underpricing of IPOs. Furthermore, The BSE listed IPOs were collected only to calculate overseas market performance in long run. And author recorded 99.20 per cent of data was underpriced, Indian IPOs outperformed and were influenced by the firm's age, listing delay, and IPO subscription times (Sehgal, S. and Singh, B. 2008).

Ritter, J. R. (1991); Mazouz, K. et. al. (2010) developed the systematic liquidity risk new evaluation pricing mechanism on the London Stock Exchange. Price effect and market illiquidity ratio were crucial considerations in this study for the evaluation of systemic liquidity risk. Additionally, recorded that the systemic risk of market liquidity has an impact on forecasted excess stock returns.

The stock market momentum is always influenced by various factors in the long run: issue size, company size, time lag, and firm age. Malhotra, M. and Premkumar, N. (2017) recorded underperformance of IPOs and issues like firm age, time lag, and company size had no bearing on the long-term performance of IPOs as evaluated by the buy-and-hold abnormal rate of return.

The market abnormal excess returns (MAER) criteria were used for the calculations of 117 IPOs either positively performed or negatively (Samanta, K. P. et. al. 2017). This study found that, regardless of the sectors in which IPOs were published, there was a positive correlation between listing day price and subscription times. has stated that long-term returns to investors from IPOs are negative. Investors in secondary sector IPOs suffered more losses as a result of MAER performances than investors in tertiary sector IPOs.

Satta, G. et. al. (2017) focused mainly on the seaport industry to analyze the long period time performance. Buy and Hold Average Return (BHAR), Cumulative Average Returns (CAR), and ordinary least square regression methods were used to analyze the results. The use of BHAR and CARs in this investigation resulted in poor long-term aftermarket performance. The ability of ports and terminal operating firms to obtain further financial resources from the equity market in the future is influenced by the performance of initial public offerings.

The cumulative average abnormal return (CAAR) was used to assess the long-term performance of IPOs in this study for two pricing anomalies. Book-built IPOs were underpriced by a smaller margin than fixed-price IPOs, according to the findings (Hawaldar, T. I. et. al. 2018). Furthermore, although book-built IPOs have negative cumulative average abnormal returns (CAARs) for up to five years and beyond, negative CAARs associated with fixed-price IPOs turn positive after one and a half years and remain positive thereafter. Ahmed, F. (2021) evaluated the financial and operational performance of 70 IPO companies from 2011 to 2015 for the long-run period. According to this study, post-IPO performance was much lower than pre-IPO performance, as evaluated by return on asset. However, sales growth was favourable for the first three years following the IPO. However, the ownership structure performed poorly, and the firm's age and size had a beneficial impact on the change in return on assets.

Matharu, J. S. (2021) the author looked at long-term returns from the first listing day return of initial public offerings and the impact of variables on IPO underpricing in India. Market return algorithms were used to analyze the data, and it was determined that underpricing was highly high during the study period. The investors were aware of the possibility of receiving an initial return, so they purchased shares and sold them on the first day. This could have resulted in more shares being issued on the first day, resulting in lesser returns.

2.3 Short-run and long-run IPO pricing performance

For practically analyzing the short as well as the long-run performance of the Indian first-day IPO market the author collected 10 years of secondary data and it was stated that the market was underpriced in 2003, which rose with time and peaked during the hot issue market of 2007. In 2008, it was reduced. The fixed pricing and book-building method was utilized in this study (Mishra, A. K. 2010).

Reddy, K. S. (2015) made an effort on the IPO's after-market underpricing performance with special insights of Indian firms in three groups of house-full collections, short-run and long-run periods discussed. This study mainly established the relationship between IPOs' aftermarket performance with economic growth and the Indian financial system. It analyzed that the post-listing IPOs earned positive returns in the short run but plunged negatively in the long run. This study highlighted that the IPOs earned the highest return in the first week of the listing day.

In summary, to the best of my knowledge, most of the studies found underpriced in the short-run and counterplay in long periods. Some of the literature showed high returns on the first listing day and plunged in the long run. Subsequently, the returns declined with the period changes due to the investors' investing holding strategies. Investors try to buy and sell their shares in a hurry and not hold due to fear of loss. This study has revealed the risk and returns performance of IPOs with a market return to examine the short-run performance in the Indian context, none of them has

been conducted about the period considered in this study, namely, Jan 2019 to Dec 2020.

This study focuses on examining the post-listing performance of IPOs in the short term while taking into account the pertinent empirical work on IPOs both internationally and in the context of India.

The Hypotheses are as follows:

H01: There is no significant difference found in IPOs' performance in the short run (fairly priced).

H02: There is no significant difference between stock returns performance and market returns performance on the 1st listing day, 1st week, 1st month, 3rd month, 6th month and 12th month after listing day.

The purpose of this research is to look at the performance of initial public offerings in India before and after the pandemic, as well as the effect of the market index on IPO performance.

3. BODY OF THE PAPER

All initial public offerings (IPOs) that were made between January 2019 and December 2020 were taken into consideration. The book-building strategy was taken into consideration by 27 IPOs with NSE listings. The dataset contains share prices for each script that were taken from the NSE (https://www1.nseindia.com/products/content/equities/ipos/historical_ipo.htm) as well as the Indian CMIE-Prowess and Capitaline databases (https://prowessiq.cmie.com/). The CNX Nifty index data (https://www1.nseindia.com/live_market/dynaContent/live_watch/live_index_watch.htm) for the daily market was also gathered using the money control website (http://www.moneycontrol.com/ipo/ipoissues/ipoissues.php?s=LI&pn=2). Table 1 shows the data description used for the IPO issues during the study period of Jan 2019 to Dec 2019.

Table 1. Details of IPO Issues during the Study Period of Jan 2019 to Dec 2020

	Total No. of IPOs Released	Withdrawn issues	Unlisted Issues	Eligible IPOs for this study
2019	16	2	1	13
2020	18	1	3	14
Total	34	3	4	27

Source: NSE website and author's bifurcation

A total of 34 IPOs were launched during this time using the book-building method. It reveals, in particular, that one issue was withdrawn, two were cancelled, and four were unlisted; as a result, the final sample for this study consisted of 27 IPOs. Later, post-listing IPO price information for various time windows was also gathered.

3.1 Data analytical tools

During the study period, the performance of post-listing IPOs is measured on the first listing day, the first week after the listing day, one month after the listing day, three months after the listing day, six months after the listing day, and twelve-month after the listing day. The post-performance of selected Indian IPOs is examined using different risk and return models, MAER, Capital Asset Pricing Models and a one-sample t-test. The IPO return has been calculated using a Microsoft Excel spreadsheet in this study.

The following measures are used to analyze the data in the study.

- Raw return on Nth day= (Nth day's closing price – Issue price)/ Issue Price *100
- For a market benchmark, the CNX Nifty index is employed.

$$R_m = \left(\frac{m_1 - m_0}{m_0}\right) * 100$$

where Rm is the market return, m1 is the closing benchmark value on the Nth day; and m0 is the closing benchmark value on the IPO issue closing day.

MAER method

By comparing the IPO return to the market benchmark return, the market-adjusted excess return is computed (Shobha, R. and Annapoorna, M. S. 2022).

$$MAER_{it} = \left(\frac{Pt_1 - P_0}{P_0} - \frac{Mt_1 - M_0}{M_0}\right) * 100$$

$$MAER_{it} = R_{it} - R_{mt}$$

Sharpe's measure

Sharpe's measure of the IPO return obtained more than the risk-free rate and the overall risk measured by the standard deviation, was used to measure the IPO return earned more than the risk-free rate (Bakar, A. N. and Rosbi, S. 2019).

$$S_i = \frac{R_i - R_f}{\sigma_i}$$

where S_i is the sharpe measure, R_i is the return series' average return, R_f is the risk-free rate of return and $\boldsymbol{\sigma}_i$ is the standard deviation.

Treynor's measure

Treynor's measure is used to assess the risk level of the IPOs by using the beta where β is the beta of the IPO returns and T_i is treynor's measure.

$$T_i = \frac{R_i - R_f}{\beta}$$

Jensen's alpha measure

Jensen measure, which refers to the excess IPO return over predicted returns. The alpha is utilised to calculate the extra return after modifying the IPO's risk level (Michael C. Jensen 1968; Rahman, A. B. M. M. et. al. 2012).

$$\alpha_j = R_i - (R_f + \beta * (R_m - R_f))$$

One-sample t-test

In this study, the one-sample t-test is conducted using the Microsoft Excel tool. With the number of instances in the sample and the sample's standard deviation taken into account, this test compares the sample mean to the population mean.

$$t = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}$$

Where $\bar{x}$ is the observed sample mean, μ_0 is the expected mean of the population, s is the standard deviation of the sample and n is the number of observations in the sample.

4. RESULTS AND DISCUSSIONS

It is important to note that a public offering is a route for funding; in other words, it supports the initialization of start-ups and new enterprises as well as the diversification of businesses. According to several previous studies, IPOs produce better profits in the short term but tend to lose value over time (Reddy, K. S. 2015; Bessler and Thies, 2007).

In this analysis, the focus is on the performance of IPOs at different time frames till 12 months after their released in the market and descriptive statistics are evaluated. The comparison of mean, median, standard deviation, maximum, minimum values etc. shows the result of IPOs during the study period. This study tries to figure out the short-run performance of IPOs at different time periods with respect to the CNX Nifty Market index and analyze whether the given stocks are underpriced or overpriced.

4.1 Inferences of IPOs return and index return at different time periods

In Table 2, IPOs return is calculated at different time frames till 12 months after the listed day. The initial return of an IPO is not the actual way of evaluating the price performance of IPOs because it does not consider the market conditions at the time. For this, index return and market-adjusted excess return (Ljungqvist, A. P. 1997) calculations are done in below Tables 2 and 3. Table 2 contains the mean values which are growing and indicates that IPO returns are increasing from 1st LD to 12-month LD. The initial public offerings performed well and are underpriced (Andrew, J. et. al. 1987). The mean valuation of 27 initial public offerings throughout the study period on the first day of trading is around 31.20, with a standard deviation of 41.23, and both are up 110.40 and 182.50 in 12 months from the first day of trading. It's also worth noting that during the course of the study, the Index mean values have moved synchronously from -0.02 on the first day of listing to 19.95 per cent 12 months later, implying that the index has a minor impact on IPO performance.

Table 2. Descriptive statistics of mean IPOs return and mean index return CNX Nifty at different time frames

Listing Day Returns (LD)	Mean Return	Median	Standard Deviation	Minimum	Maximum	Kurtosis	Skewness
1st LD Return (%)	31.20	18.59	41.23	-14.04	125	0.21	1.13
1st LD Index Return (%)	-0.02	0.07	0.92	-2.5	1.24	0.82	-0.97
1st Week LD Return (%)	32.18	19.82	48.57	-22.86	163.83	2.58	1.70
1st Week LD Index Return (%)	-0.13	-0.21	4.32	-17.26	7.03	9.35	-2.04
1st Month LD Return (%)	27.83	16.54	40.38	-29.52	141.33	1.69	1.40
1st Month LD Index Return (%)	2.63	2.24	5.12	-9.08	12.38	-0.06	-0.06
3rd Month LD Return (%)	40.22	38.68	53.27	-42.33	205.64	2.36	1.12
3rd Month LD Index Return (%)	6.97	7.33	13.03	-26.61	25.53	0.53	-0.64
6th Month LD Return (%)	60.63	35.53	88.74	-38.85	342.87	2.96	1.67
6th Month LD Index Return (%)	9.46	11.85	16.01	-21.56	30.98	-1.06	-0.33
12th Month LD Return (%)	110.40	67.53	182.50	-36.54	797.53	9.42	2.90
12th Month LD Index Return (%)	19.95	13.25	31.32	-25.49	62.12	-1.56	-0.09

Source: Author's calculations

The minimal return on IPO is -14.04 per cent on the first day of trading, and the minimum return 12 months later is -36.54 per cent. And the index returns -2.5 on the first day of listing and -25.49 per cent on the 12th day of listing.

However, the largest return earned by 27 IPOs on their first day of trading has around 125 per cent, with significant increases in all time periods and underpriced by 797.53% after 12 months from listing day. The IPO Happiest Mind Technologies has overperformed in this period from listing day (123.46%) to 12 months after listing day (797.53%).

As per Table 2 the IPO Route Mobile outperformed with a maximum return of 162.76 percent in the first week following LD, IPO Burger King India outperformed with a maximum return of 141.33 percent in the first month following LD, and IPO Route Mobile once more outperformed with a return of 205.64 percent in 3 months following LD and a return of 342.87 percent in 6 months following LD. On the other hand, this study indicates a first-day return of 31.20 percent although a few earlier studies in India reported a first-day return of 77.94% (Krishnamurti, C. and Kumar, P. 2002). Furthermore, it is also observed that over the period of time IPOs return data, there exists positive skewness at all time frames which signifies that data are skewed right and the right tail of the distribution is longer than the left tail. On the other hand, only on the first LD, the value of kurtosis is below 3 which signifies that distribution on the first day is platykurtic and after 12 months on listing day the distribution is leptokurtic due to the value being around 9.42 percent. The value of kurtosis over the period is fluctuating. Overall, this table shows that the IPOs are found underpriced and investors are getting good returns.

4.2 Results of market-adjusted excess return and capital asset pricing models at different time windows

The market-adjusted excess return is shows in table 3 which steadily grows from listing day to 12-month listing day, and positive returns have been discovered at all time frames during the study period, as shown in this model performance table (Chhabra, S. et. al. 2017). A positive market-adjusted excess return indicates that the IPO outperformed the benchmark (CNX Nifty). This is a risk-free investment in which investors profited from their investment.

Table 3. Market-adjusted excess return and capital asset pricing risk and return models performance at different time windows

Models	1st LD Return (%)	1st Week LD Return (%)	1st Month LD Return (%)	3rd Month LD Return (%)	6th Month LD Return (%)	12th Month LD Return (%)	Average
Market Adjusted Excess Return (MAER)	31.22	32.32	25.20	33.26	51.17	90.45	43.94
Beta	5.26	0.49	2.33	1.57	3.06	2.57	2.55
Sharpe Model	0.73	0.66	0.69	0.76	0.65	0.57	0.68
Treynor Model	5.49	63.20	11.54	23.13	18.23	38.55	26.69
Jensen Alpha Model	39.19	32.24	21.50	29.63	20.91	-14.90	21.43

Source: Author's calculations

This Table 3 also included beta, which indicates how sensitive the stock's return is to overall market risk. The beta for the first day of trading is 5.26 per cent, which suggests that IPOs are 5 times as volatile as the broader market. We can conclude that the higher the beta, the greater the return.

The Sharpe ratio measures the risk-adjusted return on an IPO investment, and a Sharpe value of less than one indicates poor performance. However, the Sharpe value in this study is more than 0.5 across all time frames, indicating that long-term market-beating performance will be obtained. The reward-to-volatility measure was represented by the Treynor model. Treynor Model value is increasing in this table from 5.49 per cent on the first listing day to 38.55 per cent on the 12th listing day, indicating a more acceptable investment as the value rises. A greater Treynor value is preferable to one with a lower value. Jensen's alpha value has 39.19 per cent on the first LD, 32.24 per cent in the first week after listing, 21.50 per cent in the first month after listing, 29.63 per cent in the third month after LD, and 20.91 per cent in the sixth month after LD, indicating that the higher the Jensen alpha value, the greater the capacity to beat the market with stock-picking skills in investors. When it comes to investing in IPOs, investors have greater risk tolerance. Overall, the IPOs performed well for investors during this time period, earning strong returns because of their underpriced performance.

4.3 Interpretation of One sample T-test

Table 4 represents the evaluation of hypothesis testing that has been performed using the IPOs return means data and index return mean data at a significance level of 5%. And it is observed that a one-sample t-test results in a p-value that is less than the table value, rejecting the null hypothesis at a 5% level of significance.

Table 4. Analysis of One-Sample t-test

T-Test: Paired Two Sample for Means		
	IPOs Return Data	***Market Return Data***
Mean	50.32673376	6.476820988
Variance	1007.448965	58.27894434
Observations	6	6
Pearson Correlation	0.964994219	
Hypothesized Mean Difference	0	
df	5	
t Stat	4.392036307	
P(T<=t) one-tail	0.003537189	
t Critical one-tail	2.015048373	
P(T<=t) two-tail	0.007074379	
t Critical two-tail	2.570581836	

* p< 0.05 significant at 5% level

In this study, this analysis concluded that the IPOs are not fairly priced and it is overpriced or underpriced at different time frames. The number of IPOs have found statistically significant at a 95% confidence level as the significance p-value is 0.003 quite low than the 0.05 value. However, results showed the underpriced performance of IPOs in different periods in the short run. While evaluating stock return and market index return, it showed there is a positive relationship between these two except for two-time frames 1st LD and 1st week LD.

5. PRACTICAL IMPLICATIONS

The performance of IPOs and their impact on investor investments are examined in the current study. This analysis demonstrates that initial returns and underpricing are widespread occurrences in India throughout all historical periods. Evidence of underpricing throughout the period ranges from 31.20 on the first listing day to 19.95 on the 12th month after the listed day. The initial returns of initial public offerings (IPOs) rise on listing day and one week later but decline from 32% to 27% one month later. This is possibly because many investors purchased shares in the IPO and sold them off one week after listing day after becoming aware of available inside information. This might have resulted in a higher share supply on the first day, resulting in lower returns, and a subsequent increase in returns throughout the period. The study examined several statistics that could affect the level of IPO risk and return over a range of time frames.

Many investors attempt to enter the market to benefit through initial public offerings (IPOs), however, the results of this study show excellent returns and encourage investors to participate for a little time. However, some investors go above and beyond by making investments in particular IPOs, which in turn creates hype in the market. Numerous studies conducted in India have shown that IPOs are underpriced in the near term (Sahi, W. and Lee, S. L. 2001; Bessler, W. and Thies, S. 2007) and perform poorly over the long term. This analysis uncovers comparable evidence. In a nutshell, it was found that the Indian IPO market has underpriced the post-listing performance of IPOs. This study's findings from the first LD to the 12-month LD have demonstrated it. These findings initially imply that better-performing firms have the opportunity to raise further equity, whereas underperformers do not have a second opportunity to sell equity to the public. This insight into the past is obviously useless for predicting which companies will do better in the future. Investing in IPOs is like investing in equity. It means a high potential to bring big returns in the long run.

6. CONCLUSION

The analysis of IPO market movement is an important concern in making better decisions for primary market investors. The above findings of the study have applicable to investors, issuing companies and stock regulatory bodies. This study analysis is limited by the possibility that other additional factors could account for IPO's initial performance. Separate research on underpricing following the financial crisis may be undertaken, or the time frame may be extended. The majority of studies, including this one, indicate that IPOs are typically underpriced; possible causes include information asymmetry, signaling, and a number of other factors.

However, over the long term, perhaps 3 to 5 years, the prices of the companies that filed for IPOs eventually demonstrated a drop. The long-term returns of the IPOs examined in this article could be further investigated. In the end, this study's findings were based only on the context of Indian initial public offerings, adding some fresh perspectives on investors' contours from global market contexts

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