

Analysing The Long-Term Performance of Initial Public Offering in Indian Stock Market

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Abstract: This paper is an analysis of the long-term performance of 377 Indian IPOs issued between 2005 and 2015. The key objective of the study is to find out whether the performance of IPOs in India is better or worse compared to the market in general with time and what the key factors are that affect the performance of the IPOs in the long term. The results indicate that IPOs perform well in India immediately after listing, but their returns in the long term are worse. An average IPO made excess returns of approximately 22 percent at the time of the listing. Nevertheless, approximately 37 percent of the initial IPOs had negative returns, which implies that not every IPO offers listing returns. In the case of the long-run performance, it was found that IPOs had poor performance as compared to the general market. The 36-month post-listing buy and hold abnormal returns (BHAR) was -57.33, showing that IPOs performed significantly below average. Among 377 IPOs analysed, only 38 companies (approximately 10 percent) managed to perform better than the benchmark index of the market in the three-year term. Several key variables that determine the performance of IPOs in the long run are also given by the study in the context of India. These are the nature of issuer (government ownership or privately owned company), the reputation of the lead manager, amount of shareholding by the promoters, and the size of issue.

Keywords— Initial Public Offering, Cumulative Abnormal Return, Buy-and-hold Abnormal Return, Wealth Relative.

INTRODUCTION

Initial Public Offering (IPO) refers to the process in which a privately owned company sells its shares to the public in the first instance and gets listed in a stock exchange. IPOs are also significant in the capital markets as they enable the firms to use the funds to grow their businesses besides providing investors with a chance to invest in a growing business.

Under-pricing of IPOs usually leads to high returns on the listing day in most markets all over the World. Nevertheless, studies indicate conflicting findings by investigating the performance of IPOs in the long term. According to some studies, IPOs do well in the short run compared to the market, but perform poorly in the long run. Indian capital market has been in a remarkable growth over the past two decades and a lot of companies have raised funds by way of IPOs. The Securities and Exchange Board of India (SEBI) regulatory reforms, including IPO grading and use of anchor investors, have tried to enhance transparency and created efficiency in pricing of the IPO market.

In spite of these reforms, there is always the question by investors whether IPO investments can pay off in the long term. Hence, it becomes significant to investors, companies, and policymakers to study the long-term performance of IPOs in India.

In this study, the researcher will focus on the performance of IPOs after listing within the Indian stock market in the

long-run to find out the major factors that shape the performance of these issues.

REVIEW OF LITERATURE

Past studies on IPO performance have given either positive or negative results in various countries. Most studies in the mature market like the United States, United Kingdom and Australia have established that IPOs do not perform well in the long term in the market.

Ritter (1991) examined IPOs in United States and determined that IPOs yield high initial returns but the performance of IPOs in the long term is poor. On the same note, Lee, Taylor and Walter (1996) also documented underperformance of IPOs in the long term.

However, other research in the developing markets has indicated otherwise. As an illustration, the research in Greece and Malaysia has discovered the sign of long-term excellent performance of IPOs. The differentiation can be as a result of market efficiency, behaviour of investors and regulatory structures.

Past research in India by Madhusoodnan and Thiripalraju (1997) and Kumar (2007) studied the performance of IPO and had mixed findings. According to some studies, IPOs do not perform well after some time.

A number of theories have existed to explain the long term behaviour of IPOs. The divergence of opinion theory indicates that the initial push of the prices is done by

optimistic investors but on more information being released, the price is corrected down. There is the window of opportunity theory where the companies decide to issue IPOs when the market conditions are favourable and this can result in low long run returns.

There are also other factors identified by the previous literature that affect the IPO performance, including the age of the firm in which the issue is issued, the issue size, the promotion in the form of the holder of the promoters, and the reputation of the underwriters.

This research is valuable to the overall research body because it studies the performance of IPOs in India based on a large sample size and further variables like IPO grading, and anchor investors.

The main objectives of this study are:

- To investigate the post-listing performance of the Indian stock market of the Initial Public Offerings (IPOs).
- To examine the correlation between IPO stock returns and the overall market returns based on BSE Sensex as a yardstick.
- To test the abnormal performance of IPO stocks in terms of the abnormal returns that include Abnormal Return (AR), Average Abnormal Return (AAR), Cumulative Abnormal Return (CAR), Cumulative Average Abnormal Return (CAAR), and Buy-and-Hold Abnormal Return (BHAR).
- The reason is to assess whether IPO stock will over or underperform the market during the time of the observation.

RESEARCH METHODOLOGY

The current study utilizes the quantitative research design to examine the performance of the Initial Public Offering (IPOs) in comparison to market movements. The study aims at investigating the whether IPO stocks provide abnormal returns in comparison with the overall market performance. In order to fulfil this goal, statistical methods were utilized which included stock calculation, market estimation, abnormal analysis, cumulative and regression analysis. The research is founded on secondary sources in the form of credible financial databases and stock markets. Data regarding IPO companies comprising of company name, price of issue, listing price, issue dates and listing dates was, gathered through publicly available financial portals and stock exchange records. The historical stock price data of each of the IPO companies were obtained to compute the monthly stock returns beginning with the listing date up to December 2025. The market index data have been obtained by the use of BSE Sensex index that served as the barometer of total market performance. Market returns were calculated by taking monthly closing values of the Sensex index.

The responses were analysed and processed with the help of Python programming language and Microsoft Excel. Sample Selection

The sample will consist of firms that held Initial Public Offerings within the period of choice of the study. Only the companies that had the complete information about issue price, listing price, monthly stock prices, and the market index values were considered in the final sample.

To achieve consistency and reliability in the analysis, companies having missing or incomplete data were not included in the study. The last data set has several IPO companies where monthly observations will be done between the month of listing and December 2025.

Calculation of Stock Returns

Stock returns were calculated using monthly closing prices of IPO stocks. The return for each period was calculated using the following formula:

$$R_{it} = \frac{P_t - P_{t-1}}{P_{t-1}}$$

Where:

R_{it} = Stock return of company i at time t

P_t = Closing price of the stock at time t

P_{t-1} = Closing price of the stock in the previous period

This measure represents the percentage change in stock price from one period to another.

Calculation of Market Returns

Market returns were calculated using the monthly closing values of the BSE Sensex index. The formula used is:

$$R_{mt} = \frac{M_t - M_{t-1}}{M_{t-1}}$$

Where:

R_{mt} = Market return at time t

M_t = Market index value at time t

M_{t-1} = Market index value in the previous period

The Sensex index was used as a benchmark to represent overall market movements.

Abnormal Return (AR)

Abnormal return measures the difference between the actual stock return and the market return for the same period. It represents the excess return earned by a stock relative to the market benchmark.

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

Where:

AR_{it} = Abnormal return of stock i at time t

R_{it} = Stock return

R_{mt} = Market return

Positive abnormal returns indicate that the IPO stock outperformed the market, whereas negative abnormal returns indicate underperformance.

Average Abnormal Return (AAR)

Average Abnormal Return represents the average abnormal return of all IPO firms during a particular time period. It is calculated as:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it}$$

Where:

N = number of IPO firms in the sample
 AR_{it} = abnormal return of firm i at time t
 AAR provides insight into the average market-adjusted performance of IPOs during each period.

Cumulative Abnormal Return (CAR)

Cumulative Abnormal Return measures the total abnormal return of a stock over a specified period by summing abnormal returns across time.

$$CAR_i = \sum_{t=1}^T AR_{it}$$

Where:

T = number of periods

CAR helps in evaluating the long-term performance of individual IPO stocks relative to the market.

Cumulative Average Abnormal Return (CAAR)

Cumulative Average Abnormal Return represents the cumulative sum of average abnormal returns across time. It is calculated as:

$$CAAR_t = \sum_{t=1}^T AAR_t$$

CAAR provides an overall measure of IPO performance across the entire sample over the observation period.

Buy-and-Hold Abnormal Return (BHAR)

Buy-and-Hold Abnormal Return measures the difference between the compounded returns of IPO stocks and the compounded market returns over the same period.

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

This method reflects the return that an investor would earn by buying the IPO stock at listing and holding it for a specified time period compared with investing in the market index.

Data Analysis

The analysis of data is aimed at assessing the performance of IPOs in the long run following the listing. The research quantifies the abnormal returns up to 36 months of IPO listing day.

The findings indicate that there are numerous IPOs that yield returns in the first post-listing period. But with time, the performance of these IPOs falls below the market.

Based on the discussion, the mean first day excess return of IPOs in India is approximately 22 percent which implies that IPOs have good listing returns to investors. Nevertheless, there is a great underperformance in the long-term performance.

Figure 1: Distribution of IPO Listing Gains (%)

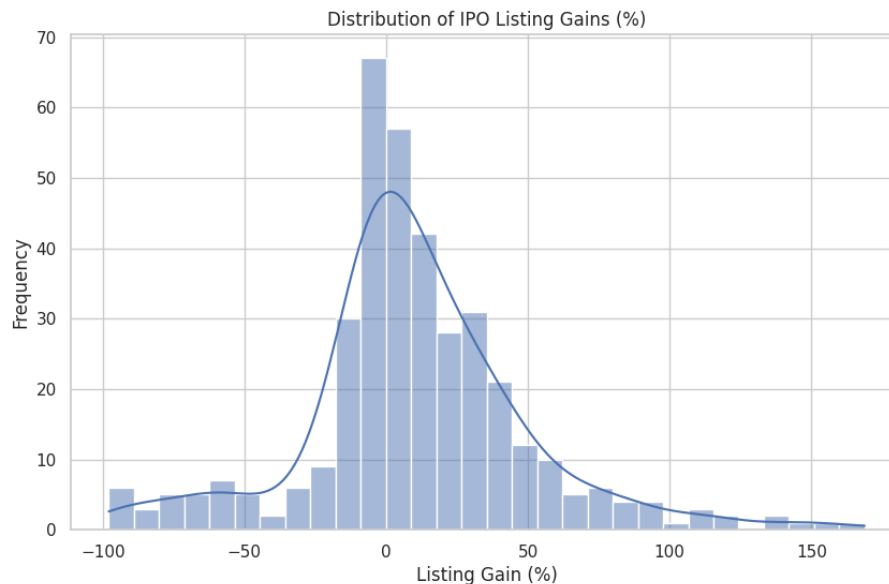


Figure 1 indicates that the histogram of IPO listing gains is at most producing small positive listing gains of 0-20. The skewness of the distribution is a positive one; that is, a small number of IPOs are having exceptionally high gains and there are those with negative returns. This implies that the market has under-pricing of IPO.

The research concludes that the majority of IPOs start to experience negative abnormal returns a few months after the share are listed and this suggests that the excitement in the market slowly dies away.

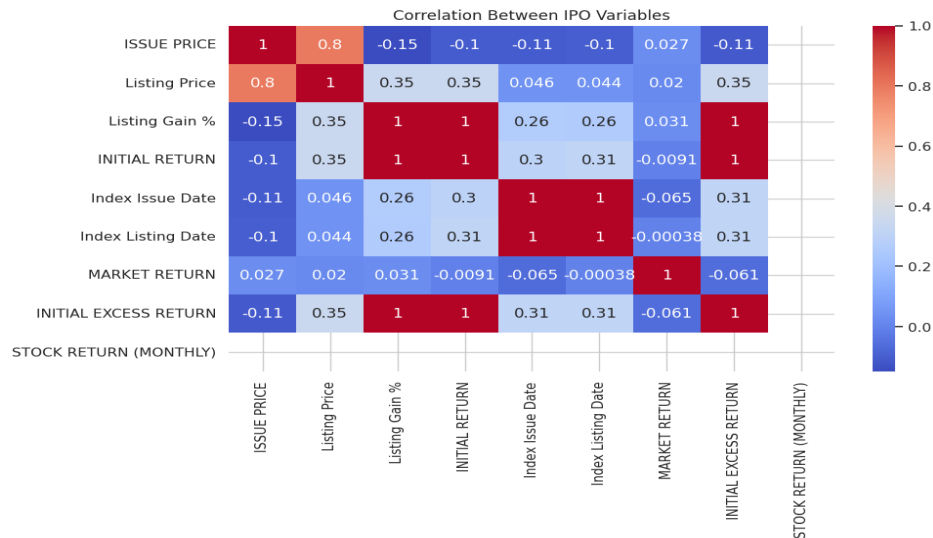


Figure 2: Correlation between IPO Variables

The heatmap (Figure 2) displays the correlation between the variables of IPO. There is a strong positive correlation between issue price and listing price, and IPOs priced high will have a high listing price. Measuring such listing-day performance, the correlation between listing gain, initial return, and initial excess return is high. Market return demonstrates very weak correlation with IPO variables, indicating that the performance of IPOs depends mostly on the general market trends.

Regression Analysis and Hypothesis Testing

Ordinary Least Squares (OLS) regression model was used to investigate the relationship between IPO stock returns and market returns. The regression model approximates the sensitivity of IPO stock returns to market movements as well as determine whether the market returns have a significant impact on IPO performance.

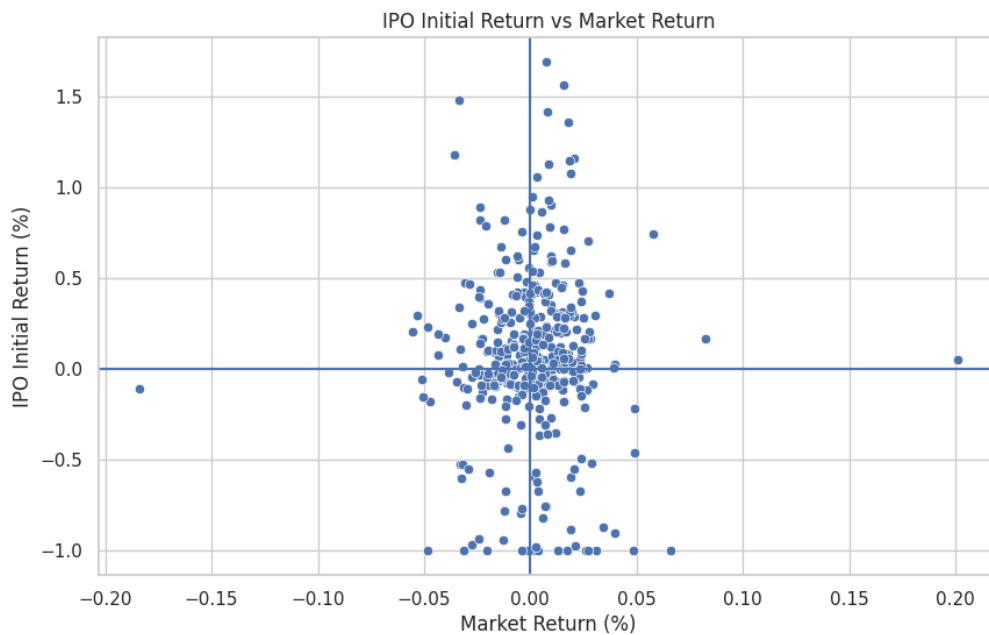


Figure 3: Relationship between IPO Initial Return and Market Return

Figure 3 indicates that the interrelationship between the IPO initial returns and market returns is weak with respect to the scatter plot. The values are well dispersed without a definite pattern, which shows that market conditions do not have a significant effect on the results of IPO listing.

The regression model used in this study is expressed as:

$$R_{it} = \alpha + \beta R_{mt} + \epsilon$$

Where:

- R_{it} represents the stock return of IPO i at time t .
- R_{mt} represents the market return measured by the BSE Sensex index.

- α represents the intercept, indicating abnormal performance when market return is zero.
- β represents the sensitivity of stock returns to market returns.
- ε is the error term.

The regression was performed using monthly IPO stock returns and corresponding market returns from the listing month until December 2025.

Hypothesis Formulation

To test whether market returns significantly affect IPO stock returns, the following hypotheses were formulated:

Null Hypothesis (H_0):

Market return does not have a significant impact on IPO stock returns.

$$H_0: \beta = 0$$

Alternative Hypothesis (H_1):

Market return has a significant impact on IPO stock returns.

$$H_1: \beta \neq 0$$

Regression Output

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OLS Regression Results						
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Dep. Variable:	Stock_Return	R-squared:	0.130			
Model:	OLS	Adj. R-squared:	0.130			
Method:	Least Squares	F-statistic:	2277.			
Date:	Thu, 12 Mar 2026	Prob (F-statistic):	0.00			
Time:	14:02:48	Log-Likelihood:	10943.			
No. Observations:	15198	AIC:	-2.188e+04			
Df Residuals:	15196	BIC:	-2.187e+04			
Df Model:	1					
Covariance Type:	nonrobust					
=====						
	coef	std err	t	P> t	[0.025	0.975]

const	0.0004	0.001	0.456	0.648	-0.001	0.002
Market_Return	1.1117	0.023	47.719	0.000	1.066	1.157
=====						
Omnibus:	3222.009	Durbin-Watson:	1.978			
Prob(Omnibus):	0.000	Jarque-Bera (JB):	14885.219			
Skew:	0.962	Prob(JB):	0.00			
Kurtosis:	7.450	Cond. No.	24.4			
=====						

Regression Results

Variable	Coefficient	Std. Error	t-value	p-value
Constant	0.000449	0.000985	0.456	0.648
Market Return	1.111739	0.023298	47.719	0.000

Table 1: Regression Result

Model statistics:

Statistic	Value
R-squared	0.130
Adjusted R-squared	0.130
F-statistic	2277.108
Prob(F-statistic)	0.000
Observations	15198

Table 2: Statistics Result

Interpretation of Regression Results

The coefficient of market return is approximated to 1.1117 and hence a strong positive correlation exists between the market returns and IPO stock returns. This implies that there is an upward movement of 1.11 units in IPO stocks returns with every one unit rising in the market returns.

The t-value 47.719 and the p-value 0.000 show that the coefficient of market returns is statistically significant at 1% level of significance. So, the null hypothesis is disapproved and proves the existence of a significant impact of market returns on IPO stock returns.

The intercept coefficient of the regression is 0.000449, or the abnormal return at zero on the market return. Nevertheless, the p-value of 0.648 shows that the intercept is not statistically significant. This is an indication that non-market driven abnormal returns are statistically insignificant.

The value of R-squared is 0.130 which shows that market returns can explain about 13% of fluctuations in IPO stock returns. This is also typical of financial return model in which the explanatory power is relatively modest, although in the financial return model there are several external variables, which affect the prices of stock.

The fact that the F-statistical value of 2277.108 with a probability value of 0.000 is significant proves that the regression model in totality is significant.

DISCUSSION

The outcome of the regression analysis shows that market movements are significant determinants of IPO stock returns. The positive and statistically significant market return coefficient indicates that the IPO stocks would be likely to move based on the market general trends.

These results confirm the idea that systematic market risk is a significant factor to explain IPO performance. IPO stock returns are also likely to give higher returns when there is a positive market performance.

Nevertheless, the R-squared is found to be relatively low, which implies that there might be other firm-specific and market-based variables that can also affect the IPO performance. IPO returns may be further attributed to variables in the size of the company, price of the issue, the sentiments of the investors and the nature of the industry.

On the whole, the findings suggest that although the market return is a significant factor in explaining the stock returns of IPO, there might be other explanatory variables that can enhance the predictive ability of the model.

CONCLUSION

This paper has discussed the performance of initial public offering (IPOs) as a stock return in comparison with the market returns through the use of BSE Sensex as a reference. To analyze the relationship between the performance of IPOs and market movements, the analysis included the calculation of stock returns, market returns, abnormal returns and the regression analysis.

The regression analysis findings show that the influence of market returns on the IPO stock returns are statistically significant. The market return coefficient was realized to be positive and significantly significant, thereby indicating that IPO stocks have the tendency to follow the overall market. It means that the systematic market factors have a significant role in the performance of IPO stocks after listing.

The results of testing the hypothesis also validate that

market return plays a significant role in IPO stock returns because the p-value of the coefficient on market returns do not exceed the standard level of significance of 0.05. Thus, the null hypothesis concerning market return as a factor that does not affect IPO stock returns is rejected.

Nevertheless, the value of R-squared is quite low, which shows that the market returns only partially explain the variation in IPO stock returns. This indicates that, there are other number of firm-specific and market-related factors that also influence the IPO performance. Altogether, the results emphasize the importance of the market conditions as the determinants of IPO returns but other factors should be evaluated when the performance of IPOs is explored.

Future Scope of the Study

As much as this research offers valuable information regarding the relationship between IPO stock returns and market returns, there are still a number of research opportunities.

The future research could also include more explanatory variables that could include the issue size, the age of the company, the type of industry, the rate of subscription, and the financial performance variables to understand the determinants of IPO performance better. The inclusion of these variables can enhance the explanatory power of the regression model and give more insights about IPO behaviour.

Additional studies can also be undertaken to lengthen the time horizon of analysis to look at the long-term IPO performance over a period of three five years of the listing period. This would assist in determining IPO stocks performance either out of the market or under the market in the long-term.

The other potential extension is to compare the performance of IPOs in various stock exchanges or emerging markets to determine the effect of institutional and regulatory environment on the performance of IPO.

More complex econometric methods like panel data

regression or event study method could be used to get stronger results and the dynamic nature of IPO performance over the time.

In general, it is possible to consider that the widening of the variables, time frame and types of analysis will give a more detailed picture of how IPO markets behave and allow investors to make better investment choices.

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