An Investigation into IPO Anomaly in the Indian Capital Market

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Abstract

This article provides a look at the "Under Pricing" IPO phenomenon that happened in the Indian capital market between April 2016 and March 2024. To identify the components that contribute to under-pricing, stepwise regression was used. In terms of adjusted R^2, the results produced in this investigation are rather ahead of the prior empirical findings. Author discovered that issues price, market rate of return, degree of oversubscription, and post-issue promoter holding account for 52.2% of under-pricing, among other important aspects. It is possible that the changes in the institutional and regulatory framework of the Indian Capital Market are to blame for the change in the level and causes of under-pricing. Policymakers, market intermediaries, and individual investors may all benefit greatly from this paper's conclusions.

Introduction

Some of the most common ways for businesses to get more equity funding is to sell shares to regular people. New issue offers, sometimes known as an initial public offering (IPO), occur when a company sells shares to the public for the first time. Companies may decide to sell more shares in a seasoned equity offering (SEO) after the fresh issuance in order to increase their equity capital.

For their first round of funding, the majority of new and small businesses in India use private placements to attract a select group of investors. At some time, a successful business may decide to sell shares to the public via fresh issue offers in order to raise more equity capital. The firm's market worth and the common stock's marketability are both established via the issuance of publicly traded equity.

In the 1990s, India's market for new problems began to grow again. There was a meteoric rise in the number of IPOs that year, and the total amount of money raised was over four times more than in the preceding three decades put together. After the year 2000, the tendency kept rising, and gross revenues kept going up. The under-pricing phenomena is becoming increasingly noticeable in the new issues market, which is expanding. Year after year, the average proportion of new problems returned on the first day was consistently in the double digits. Therefore, scholars have persisted in trying to explain the undervaluation of emerging concerns since Ibbotson (1975).

The so-called "Under-pricing anomaly" is a main stylized feature of emerging concerns, according to various research. When we talk about new issues seeing a huge spike in their offer prices and market prices in the days after their first listing, we're talking about under-pricing. Initial return, defined as the ratio of the difference between the offer price (P_0) and the listing day closing price (P_1) divided by the offer price (P_0), is a useful metric for gauging the extent to which prices are under- or overpriced. When P_1 is more than P_0 but less than P_0, under-pricing (overpricing) happens. After adjusting for changes in market returns R_m, the change in the ratio of P_1 and P_0 is referred to as market adjusted return. The original return is the change in this ratio. This research will add to what is already known about how beneficial prospectus information is for under-pricing new offerings. The study approach argues later on that the elements causing under-pricing are determinants. Under-priced new issues may be influenced by prospectus material; hence, this research may add to our understanding of that effect.

Review of Literature

In this part, author has tried to compile a literature review of research that has examined the ongoing problem of under-pricing and whether or not the theoretical considerations put forward in the literature on new difficulties hold water. Many nations, including India, have undertaken empirical research to investigate under-pricing. The phrase "listing day performance" or "short run performance" is synonymous with the word "under-pricing" in the literature of new issues.

In 1986, Rock created one of the most well-known methods to examine under-pricing. Under-pricing of fresh issues is, in his opinion, due to knowledge asymmetry. Based on the data they possess, he divides investors into two groups. An informed investor (II) is one who has sufficient knowledge about emerging concerns; an uninformed investor (UI) lacks this knowledge. Due to this imbalance in knowledge, II only competes with UI on "good" topics. As a result, the likelihood of UI towards "bad" problem allocation grows. So, there will be an oversupply of "bad" problems and an over

demand of "good" ones. Thanks to the better data, IIs will be able to book favourable issues early. Consequently, issuers purposefully under-price fresh issues in order to induce UIs. Although this doesn't go far enough to explain under-pricing, Rock's (1986) research has been a game-changer in illuminating hitherto unexplored topics in this area. Hedau, A. (2018). Beatty and Ritter dug more into Rock's model (1986). They looked at the ex-ante uncertainty that investors in new issuers encounter. A measure of ex-ante uncertainty was the number of uses for the revenues, which is equal to the inverse of the gross proceeds. Many issues, they said, omit specifics on how they intend to utilize the revenues in order to conceal proprietary information from rivals in the market. The researchers discovered a significant correlation between the degree of under-pricing and ex-ante uncertainty variables. Numerous academics built on the work of Beatty and Ritter (1986) to shed light on previously unexplained problems with pricing.

Peavy III (1990) analyzed 41 initial public offerings (IPOs) of closed-end funds that took place during 1986 and 1987. There was no indication of statistically significant favorable first returns in his results. There was an overpricing of fresh fund shares instead. Despite the new funds' modest initial price reductions, which were enough to counteract early overpricing, they had substantial negative returns in the aftermarket. Hedau, A. (2018).

Frederikslust, Geest (2001) analyzed the performance of first returns for new offerings in the UAE from 1985 to 1998 on the Amsterdam stock market. The study included 38 new issues funded by private equity (PEB) and 68 new issues that were not backed by PEB. On day one, the average initial return for the whole 55-item sample was around 16%. Both the adjusted and uncorrected anomalous returns that he computed were almost identical in their initial results.

Hao (2007) Hedau, A. (2020) discovered variables that relate to the impact of laddering on the price of initial public offerings (IPOs). In laddering, the allocating underwriter sets a requirement in order to acquire shares at the offer price by requiring the ladderer to purchase more issuer shares in the aftermarket. He demonstrated that, compared to the effects of non-laddering pricing and aftermarket momentum, the impact of laddering on the market price of new issues is larger; that, while increasing laddering does not always result in an increase in the percentage of under-priced items; that laddering has a negative correlation between short-term and long-term returns and contributes to underperformance over time; also, that, on account of benefit sharing, both the degree of laddering and the rate under estimating are amplified.

Dimovski and Brooks (2008) Hedau, A. (2024) identified a substantial downward trend in under-pricing after reviewing the prospectuses of 114 fresh offerings of Australian gold mining companies from 1994 to 2004. How (2000) looked at 100 new issues in Australian gold mining from 1979 to 1990 and found an average under-pricing of 11.3 percent. In contrast, he discovered an average under-pricing of 19.51%. Both the legal and institutional environments changed between the two time periods, which is thought to explain the discrepancy in under-pricing Hedau, A. (2016)

Zouari, Boudriga and Taktak (2009) studied initial public offerings (IPOs) in Tunisia, a market with "noise" traders, sparse trading, low information efficiency, and substantial information asymmetry. Using data from 34 new Tunisian offerings between 1992 and 2008, they calculated an average market adjusted initial return of around 16.0% for the first trading day.

Jones and Swaleheen (2010) used a two-stage least-squares regression analysis to look at the period between 1980 and 2003 and see how underwriter reputation correlated with the early returns of new issues (IPOs). Findings indicate that, when reputation is considered an exogenous variable, underwriter reputation has a statistically significant negative relationship with early gets back from 1980 to 1991 and a genuinely critical positive relationship with introductory gets back from 1992 to 2003. If we take the underwriter's reputation as an endogenous business attribute, we find a positive connection between guarantor notoriety and starting gets back from 1980–2003 and 1992–2003, but no correlation from 1980–1991.

Empirical Evidences from India

Shah (1995) conducted research on 2056 new issues that were released in India between 1991 and 1995. Constant under-pricing permeated India's new issues market, he discovered. The statistics revealed a weekly under-pricing of 3.8% and an average under-pricing of 105.6%. Research by Narasimhan and Ramana (1995) looked at the post-CCI (Control of Capital Issues Act 1947, which was abolished in 1992) system's pricing position for new issues. Finding the short-term returns of new issues was the main focus of the research, which aimed to determine whether the stock price was reflecting its intrinsic value. Depending on whether it was April–May 1994 or November 1993–January 1994, the sample was either bearish or bullish for the purposes of the research. There was no correlation between price and changes in the

market index, according to their analysis. Plus, they elaborated by saying that premium issues were significantly less expensive than par issues.

Nandha and Sawyer (2002) looked at 381 fresh offerings from 1994–1995 and discovered a link between early returns and promoter holding after the issue. In contrast to Su's (2004) empirical research on the Chinese capital market, their results were contradictory.

Madhusoodanan and Thiripalraju (2004) discovered that between 1992 and 1995, new issues were listed on BSE and priced utilizing the 1922 formula. They found that, in the near term, under-pricing in India was more prevalent than in other nations. No merchant banker was shown to be capable of higher share pricing, they said.

Ghosh (2005) examined in the context of Indian pricing for 1842 new issues that were released between 1991 and 2001. Under-pricing is a negative function of issue size, according to the study's underlying assumption. Uncertainty, the length of time between the offer closing and listing days, and size were shown to be significant predictors of under-pricing, although age and industry categorization were not. Concerning the current status of the market, the survey also found... There is less under-pricing of concerns when the market is heated. In addition, his research found that companies with successful initial public offerings (IPOs) and higher price points often went on to offer fresh IPOs, or follow-on public offers (FPOs), to capitalize on the market's favorable sentiment.

Shelly and Singh (2008) researched 1963 fixed-price fresh offerings listed on the Bombay Stock Exchange from July 1992 to August 2006. It was determined that, on average, under-pricing was about 70% throughout the time period under consideration. Also, the size of the issue had a negative correlation with cost, but subscription to the issue had a positive correlation. In contrast to other markets, they said that a disproportionately high number of uneducated individuals were buying into India's new issues market Hedau, A. (2020). Hedau, A., & Joshi, V. K. (2015).

Pande and Vaidyanathan (2009) investigated the causes of the undervaluation of 55 new concerns that were raised between 2004 and 2006. Under-pricing and the independent variable of listing delay were positively correlated, leading to an average initial return of around 22.62%.

Shelly (2010) underpriced by 73.59% of the 62 businesses listed on the Bombay Stock Exchange in a research that looked at 1967 issues from July 1992 to March 2005. According to the research, oversubscription is a positive and major factor that determines under-pricing in Indian daily newspapers. In their study of 129 new issues from 2002 to 2006, Sahoo and Rajib (2010) looked at their listing the day-to-day and long-term results. They recorded that the fresh issues were priced below the offer price by as much as $46.55.

Mishra A (2012) between April 1997 and March 2008, 235 newly identified concerns were studied. With an initial return of 14.45%, empirical data indicated that 60% of new issues were priced too high. He recorded that beginning in 2003, the Indian market was under-priced; in 2007, it was expensive; and beginning in 2008, it dropped. In addition, he adds to the existing body of knowledge by investigating the connection that exists between the degree of under-pricing and kind of pricing mechanism (fixed pricing vs. book building).

Sample Construction

This research looks at 427 initial public offerings (IPOs) of newly formed equity companies that were listed on the National Stock Exchange (NSE) or Bombay Stock Exchange (BSE) during April 2016 to March 2024. To analyze the new concerns' underpriced aspects, however, the sample size was decreased to 144 (68.12%) because of causes such as non-accessibility of information, missing data about a variable, and exceptions.

The research included the following filters:

   (a) You can find the company on the NSE/BSE.

   (b) The asset being distributed is a portion of equity.

   (c) This is the first time the firm has gone public. No FPOs will be considered for inclusion in this research.

   (d) Prior to its listing date, the company possesses financial records going back at least three years.

   (e) Information on the lead managers, listing delay, oversubscription, industry, listing date, issue size, date of incorporation, and offer price is accessible.

Time Period of the Study

Based on the list of new issues posted on the National Stock Exchange's website, this research examines the price and the handling of brand-new problems in India from 2016 to 2024.

Sources of Data

The data used in this research came from other sources. Author retrieved the list of new problems from the NSE website during the research period. P/E ratio, assets, debt, profits, net worth, cash flow, dividend rate, and sales are some of the fundamental pieces of information gleaned from the prospectus that can be found on the SEBI website. Using data from the capitaline database, the details about different sectors, including the size, offer price, providing a list of the date, industry, lead manager, and oversubscription of initial public offerings (IPOs). Meanwhile, the closing values of the NIFTY index from the NSE. By using Nifty as a proxy for the market, we can compare the returns of initial public offerings (IPOs) to those of the market as a whole. There are four possible Nifty values per day: opening, high, low, and closing. The market-adjusted return is computed in the research using the closing values on various days. The closest date (within a week) has been taken into account when data on the precise date is not available. Information on the listing date, opening price, and closing price of issues, as well as their opening and closing dates, is sourced from reputable sources, as cited in the bibliography.

Regression Model Specification

This research used multiple regression, an extension of linear regression with two predictor variables, since there were more than two factors to be considered. In this context, "UP" refers to the initial return on the stock's listing day, which is the dependent variable under price. To break down performance variance into its component parts, Ordinary Least Squares (OLS) multiple regression models are used. Through the use of this method, the strength and direction of the link between the dependent and independent variables may be shown. The following under-pricing model is developed with the help of several research that were cited in the literature review. Hedau, A., & Mishra, S. (2023).

$$UP_{xyi} = \beta_0 + \beta_1 Age\ of\ the\ Firm_i + \beta_2 Leverage_i + \beta_3 L\_Issue\ Price_i + \beta_4 Market\ Return_i + \beta_5 Over\ Subscription_i + \beta_6 Post\ Issue\ Promoter\ Holding_i + \beta_7 Return\ on\ Opening_i + \beta_8 Rate\ of\ Dividend_i + Resi$$

Variable Definition,

UP = Underpricing (the dependent variable)

By dividing the difference between the listing day closing price (P_1) and the issue price (P_0) by the issue price (P_0), it is determined in accordance with the standard technique. It may be stated mathematically as

$$UP = ((P1 - P0)/P0)*100 \qquad Eq.\ 1$$

In a perfectly genuine market, as shown by Equation (1), there would be no lag time between the stock's offer and trade. Returns should be modified to account for changes in market circumstances throughout this time if the first criteria is not met. There is a long lag period in India between when a stock is offered and when it is listed. According to Singh and Mittal (2003), a significant shift in the market might take place during this time, and the premium or discount calculated using equation (1) could not be due to initial mispricing but rather to this shift. So, to account for market return, we subtract the market rate of return from the original or raw return projected by equation (1), which is based on the price determined by equation (1).

Explanatory variables

1) **Issue Price –** the value that the issuing firm offers to investors for their shares. The offering price of shares is fixed by the issuing business under the fix price system. On the other hand, when it comes to book building, the issuing business sets a price range and investors may bid on the shares at any price they find comfortable. The issuing business uses the bids received after the issue closes to determine the final issue price.

2) **Market return –** Many Indians look to the NIFTY index as a gauge of the health of the country's economy and a barometer of the market. As a surrogate for market return, author included market-related factors into the regression model by tracking the NIFTY index's performance. Gupta et al. also stressed the significance of market return for pricing-related explanations and predictions (1998). The analysis took into account the average monthly return of the NIFTY for the three months leading up to the month when subscriptions were accessible to the public.

3) **Return on Opening** - Listing prices for new issues can factor toward under-pricing. The under-pricing is proportional to the listed price and vice versa. By raising the under-pricing, which is characterized as the hole between the posting cost and the end cost on the posting day, some issues in India throughout the study period generated considerable returns on listing. One important component of under-pricing that Kumar (2007)

identifies is return on opening. Return on opening was utilized as a substitute for financial backers' eagerness to pay in this research. Investors, similar to the book-building pricing method, have the opportunity to set the issue's price within a price range where the difference between the cap and floor price does not exceed 20%. An increase in the return on opening suggests that financial backers are prepared to follow through on a superior over the deal cost.

4) **Over subscription** – Initial work on the relevance of oversubscription for under-pricing of fresh issues was done by Rock (1986). Oversubscription, he said, happens when ignorant investors put huge orders. When Koh and Walter (1989) applied Rock's (1986) model to the Singaporean market, they discovered a positive and statistically significant relationship between the amount of oversubscription and the first return on listing day. The changed and crude gets back with their oversubscription proportion were positively and strongly correlated, according to Sidik et al. (2000). The Indian market is anticipated to be similar to Rock's (1986) model. The following table displays the expected outcomes of this investigation, which are comparable to those of Shelly and Singh B (2008).

5) **Post issue promoters shareholding** – Existing shareholders, sometimes known as promoters or major shareholders, have their ownership stakes diluted when fresh issues are offered. According to Leland and Pyle (1977), a high retention ratio indicates that the issuer is eager to participate in the company's operations and gives a positive indication of the future cash flows generated by the issuer. The worth of the issuing company is thereby increased by a larger ratio. It is believed by Allen and Faulhaber (1989) that high-value firms hold onto more in order to make follow-on offers down the road. Data on post-issuance promoter ownership is sourced from the issuing company's prospectus in this research.

6) **Age of the Firm** –The relationship between under-pricing and the age of the business is inverse, according to Ritter (1991). Under-pricing is positively associated with company age, according to Suchard and Singh (2007). This research agrees with Ghosh (2005) in its underlying assumption that established businesses have more reliable track records than startups, which gives investors greater faith in their ability to turn a profit and lowers their risk exposure.

7) **Leverage** - According to theories of capital structure, a high level of leverage before an initial public offering (IPO) suggests that the company is struggling financially, has a high agency cost, and does not have sufficient internal finance or profit. Accordingly, the research presupposes that, at IPO, the heavily leveraged firm's value is low. The meaning of this variable is the proportion of an organization's complete obligation to its all-out resources. (Typically three years prior to an initial public offering]. High pre-IPO leverage increases risk and diminishes business value according to capital structure theory, which also signals high monetary pain costs, office costs, and decreased productivity.

8) **Rate of Dividend** - Dividends are a way for shareholders to obtain liquidity before the initial public offering (IPO) (Martin J and Zeckhauser R 2009). That way, they won't send the wrong message by selling shares during the IPO. In addition, management are taking measures to control their cash reserves in the run-up to the IPO. They cut down on cash holdings because they are afraid the market would undervalue the marginal dollar of surplus funds in the initial public offering. Managers are worried about the firm's pre-IPO signal, according to Brau and Fawcett (2006).

Results and Discussion of the Empirical Findings

The empirical data pertaining to under-pricing in the new concerns are presented and discussed in this portion of the paper. The dependent variable's change was used to regress the same eight variables. Under-pricing was present in the study sample, which indicates a mean value of 24.21% and is considerably unique in relation to zero at the 95% degrees of importance.

This means that investors get an average return of 24.21% when they purchase new issues at offer cost and sell them at shutting costs on the posting day in the main market. Nearly all of the novel problems included in the study's sample are offered at too low of prices. The sample size is 144, and out of that, 50 overpriced; 10 are priced correctly; and 80 are under-priced. The highest and lowest prices recorded were 240.96% in 2007 by Everonn System India Limited and 0.07% in 2021. A number of important distinctions between this research and others on Indian IPOs have been identified. To begin, out of all the IPOs filed between 1991 and 1995, the average under-pricing was 22.62% according to Alok

Pande and R. Vaidyanathan (2009), which is much lower than the 105.6% indicated by Shah (1995). The change in legislation that permitted allocations to knowledgeable institutional investors is a contributing factor to the decrease in under-pricing.

Fama and French (1995) state that the proportion of book worth to showcase esteem uncovers the peril of the offers. They proceed to say that organizations with high book-to-advertise proportions (BV/Po) are more likely to be in a constant state of crisis. On the other side, consistently profitable businesses tend to have low book to market ratios. The new issues initial investors can anticipate a high degree of under-pricing to compensate for the added risk, since "more risk is associated with higher BV/Po ratio" according to this information. However, lower BV/Po ratios indicate that new issues are less risky, which means that under-pricing is likely to be lower for them. In order to investigate that correlation, the study population is split into two groups according to the median BV/Po value of 0.45: those with a low ratio and those with a high ratio. A t-test comparing the means of two groups, one based on a low book value to offer price ratio and the other on a high ratio, was conducted and the results are shown in the table above. The results of Levene's test for balance of changes are uncertain (p=.21), subsequently author acknowledge the invalid speculation that the fluctuations are about equivalent and there are no tremendous contrasts. There was no measurably huge contrast between the two gatherings' averages, as the two-tailed p-value is.075 (>.05). That is to say, according to the examined data, a low ratio of book value to offer price indicates under-pricing, whereas a high proportion of book worth to offer cost indicates undervaluation. There is a lack of data in the Indian setting throughout the research period to support the results of Fama and French (1995).

Eight different factors were included as explanatory variables in all three experiments. Oversubscription, market pace of return, and log of issue cost were determined to be important in both the first and second trials. Nevertheless, a third experiment was run using the same explanatory variable in an effort to enhance the model by eliminating three outliers. Author discovered significance for four factors, or half of the variables we input. A large portion of the variance in the value of under-pricing may be explained by oversubscription, market return, log of issue cost, and post issue advertisers share, according to the stepwise regression technique. (R^2 Adjusted =.522). Two of the four variables have positive constant coefficients, and two of them are statistically critical at the 1% and 5% levels, separately. In addition to the prior empirical evidences, the findings demonstrated that under-pricing persisted. The following is an analysis of those key factors.

Over subscription

According to what was said previously, Rock's (1986) approach should also work for the Indian market. Oversubscription and under-pricing are both shown statistically in the study data in the table above. As the number of subscribers to the issue grows, the under-pricing becomes more apparent. The empirical data by Shelly and Singh B ((2008), β.216, p = 0.000)), Chowdhry B and Sherman A (1996), Sehgal S and Sinha B K (2013), Jain N and Padmavathi (2012), and others supports the highest β value of.985 (p = 0.000) for this variable according to the regression findings. According to Anna P. I. Vong (2006), around 55% of the variability in initial return may be explained by simply regressing it against the subscription rate.

Market Return

Results for the market return (β =0.765, p = 0.000) support the conclusions of Chaturvedi A, Pandey A and Ghosh S K (2006) and Dimovski W and Brooks R (2006), lending credence to Rock's (1985) winner's curse concept. The amount of under-pricing is really determined by the level of oversubscription of fresh issues. However, what factors lead to new problems being oversubscribed? Some elements serve as powerful "signals" and hold the key to the solution. Oversubscription occurs when there is a "rush" for a certain new issue because of the strong signals. As indicated before, this oversubscription causes fresh issues to be priced lower.

Post Issue Promoters Share Holding

This study confirmed the findings of Sahoo and Rajib (2010) that the post-issue promoters' shareholding is a strong determinant of pricing (β = -.121, p =.033). According to SEBI guidelines, the issuing company's promoters are required to hold 20% of the post-issue equity, with a 3-year lock-in period. This limitation has an immediate effect on the marketability of the shares that are available for trade; as the promoter holding grows, the marketability of the shares decreases. Hence, there is less oversubscription since financial backers applying to new issues during the exploration

time frame are reluctant to buy into such issues. But previous research by Chaturvedi, Pandey, and Ghosh (2006) and Sehgal, Sinha, and Khosh (2013) in the Indian market showed this variable to be minor, therefore our results contradict theirs.

Issue Price

The results of this research show that there is a negative correlation (β = -7.48, p =.026) between the issue price and under-pricing. This study's results are consistent with those of Madan, A. A. (2003), Nafid, S. (2014, = -1.3, p =.0461), Chalk, Peavy, and Dimovski, W., and Brooks, R. among others. As the issue price rises, the under-pricing falls, as shown by negative coefficients. Based on the data, it seems that the companies that went public during the study period are financially stable and safe investments. The fact that issuers of new shares intended to issue fewer shares while maintaining a higher offer price is supported by the observed negative coefficients, which occur over the examined period. The problems will be improved in two ways by this. It will first cut down on money that isn't needed. Second, each shareholder will incur lower post-issue service costs for statutory compliance..

Conclusion

The purpose of this research was to examine the undervaluing of new issues that appeared on the Indian capital market between 2016 and 2024. To identify the components that contribute to under-pricing, stepwise regression was used. In terms of adjusted R^2, the results produced in this investigation are rather ahead of the prior empirical findings. With an adjusted R^2 of 52.5, the variables that were determined to be significant in the regression model may account for 52.5% of the variance in under-pricing, according to this research. Previous research by Rohit Bansal and Anshu Khanna (2012), Alok Pande and R Vaidyanathan (2007), Sehgal, Shikha and Singh, Balwinder (2008), and Nashirah Binti Abu Bakar Kiyotaka Uzaki (2007) all found lower predictive power of the regression model than this study. It is possible that the changes in the institutional and regulatory framework of the Indian Capital Market are to blame for the change in the level and causes of under-pricing. Policymakers, market intermediaries, and individual investors may all benefit greatly from this paper's conclusions.

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