



Post-Listing Performance and Underpricing Determinants of Indian IPOs: Evidence from BSE and NSE Mainboard Listings (2020–2024)

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ABSTRACT

India experienced a notable surge in Initial Public Offerings (IPOs) between 2020 and 2024, driven by post-COVID-19 market recovery, rapid digitization, and favourable liquidity conditions. This period saw numerous companies, particularly from technology, fintech, and consumer sectors, entering the public market. While some IPOs, such as Nykaa and Zomato, delivered impressive initial returns, others struggled to sustain performance post-listing. This study investigates the short-term and long-term performance of IPOs listed on the Bombay Stock Exchange (BSE) during this transformative period. It aims to assess whether these IPOs generated sustainable shareholder value and met investor expectations amid changing economic and market dynamics. The research explores factors contributing to underpricing and valuation trends on the listing day and beyond, for which initially 271 mainboard IPOs were identified out of which 249 IPOs satisfied the selection criteria. Further observations were examined for regression assumptions and outlier treatment. The study also compares performance between tech-driven IPOs and traditional sector listings, highlighting how fundamentals influenced long-term outcomes. To

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evaluate listing day performance, the Market-Adjusted Abnormal Return (MAAR) model has been employed. This method isolates the IPO-specific returns from overall market movements, offering a robust measure of initial investor gain or loss. The findings suggest that issue price, oversubscription, and issue size significantly influence listing performance, while broader market trends have a lesser impact. Notably, tech IPOs tended to show higher volatility, with some failing to maintain initial valuations over time. The research offers important implications for investors, policymakers, and market regulators by identifying the factors driving IPO success and the sustainability of post-listing performance in India's evolving capital market.

1. INTRODUCTION

India experienced a surge in IPOs, particularly after 2020, as markets rebounded from the COVID-19 downturn. Many tech startups, fintech companies, and unicorns went public. IPOs during this period saw mixed post-listing performance. Some gave stellar returns (e.g., Nykaa, Zomato), while others underperformed. The retail investors participation in IPOs has grown tremendously. The retail investors like Zerodha, Groww, and Upstox boosted retail investor participation. This could be factored into performance behavior. These platforms have democratized access to equity markets, enabling first-time and young investors to participate in IPOs with ease. This transformation has not only increased market participation but has also influenced IPO performance dynamics by altering investor behavior and demand patterns.

Many high-value companies, like Tech companies, faced scrutiny. Macro-economic and political events, including the 2024 general election period may have influenced investors sentiments. Market conditions around general elections often affect IPO performance. SEBI introduced several reforms in the IPO process during 2021-24, which ultimately impacted the IPO performance. Which in turn changed the investor's decision-making process.

The period from 2020 to 2024 marked a critical phase for India's IPO landscape. This era witnessed a sharp rise in the number of high-profile public issues, especially from technology, fintech, and digital-first companies. While some IPOs generated substantial listing gains, others struggled to meet post-listing expectations, raising concerns about valuations, corporate governance, and long-term viability. Moreover,



macroeconomic events such as the COVID-19 recovery phase and the 2024 general elections played a notable role in shaping investor sentiment and IPO performance. The Securities and Exchange Board of India (SEBI) also implemented several regulatory reforms during this period to enhance transparency, pricing efficiency, and retail investor protection in the IPO process. These reforms had a direct influence on IPO structures, disclosure norms, and the decision-making process of investors.

This paper is imperative as it provides a timely analysis of the evolving IPO ecosystem in India during a transformative period. By examining both short- and long-term performance of IPOs listed on the Bombay Stock Exchange from 2020 to 2024, the study offers insights into changing investor behavior, the impact of digital platforms, regulatory interventions, and macroeconomic variables. The findings can inform policymakers, market participants, and researchers about the effectiveness of reforms, the risks of overvaluation, and the potential of retail-driven equity markets in emerging economies like India.

2. IPO After PANDEMIC

Initial Public Offerings (IPOs) listing day performance is a sensitive area of financial market research that captures the short-run market reaction to a company's transition from private to public ownership. Listing day performance, usually quantified in terms of underpricing (issue price - close price on listing day) and abnormal returns (market-adjusted returns on price movement in the market), is controlled by a highly interdependent set of determinants. These include issue size, issue price, oversubscription, and market index return, each having a well-defined role to play in constituting IPO performance dynamics. However, relative weights of such determinants and interactions are absent, more so in the case of India, whose market environment, regulatory institutions, and investor behaviour differ from those of their international counterparts. This paper tries to fill this void by analyzing determinants of listing day performance of IPOs in India in a systematic manner with special reference to the post-2020 period that has been marked by economic dislocation following the COVID-19 pandemic, rapid digitalization of financial markets, and a shift in investor participation.

Issue Size is a key determinant, which is the total amount of shares issued in an IPO. Big issue sizes can reflect the issuer size, financial strength, and market confidence, which can induce institutional investors. However, extremely big issues can lead to oversupply, which lowers listing day returns. Small issues can lead to scarcity-driven demand but also may be an indication of lowered issuer credibility. The influence of issue size on underpricing and abnormal returns is therefore situational-dependent and requires to be tested empirically in the Indian scenario, where retail and institutional investor attitudes are not the same.



Issue Price, determined by the issuer and underwriters, captures the valuation expectations of the company. High issue price can be indicative of good fundamentals but can be underpricing if it is higher than market willingness to pay, with subdued listing day performance resulting. Or, strategic underpricing through a lower issue price can stimulate demand, with high first-day gains but at the cost of leaving money on the table for issuers. The coordination of the pricing strategy with market demand is crucial, but its success in the Indian IPO market, which is retail participation-based, is untested.

Oversubscription, which a measure of investor demand, is generally a good indicator of listing day performance. Massive retail- and institutional-driven oversubscription, commonly reflected in huge first-day returns due to excess demand, is normally to be expected. But it would also tend to mean increased volatility as speculative demand may push the price too aggressively. In India, with the evolution of digital platforms making IPO applications within reach of a large population, oversubscription levels have increased substantially, and its impact on underpricing and return volatility post-2020 has been studied.

Market Index Return, reflecting market mood, has a spillover impact on the performance of IPOs. Positive market returns indicate optimism, enhancing investor mood and interest in IPOs, while bear markets can dampen listing day returns. In India, where the BSE Sensex and NSE Nifty are market health indicators, market index return and IPO performance correlate strongly in the aftermath of post-2020 volatility fueled by global uncertainties and domestic.

While there has been vast cross-country research on the performance of IPOs, there is limited literature in the Indian context post-2020. Pandemic-induced economic disruption and financial market digitalization have altered investor sentiment, subscription, and market forces. Retail participation has increased on the back of user-friendly trading interfaces, while regulatory changes have impacted the pricing and allotment of IPOs. Such changes necessitate a new evaluation of the behavior of traditional determinants in this new setup. This paper will seek to inform investors, issuers, and regulators using empirical analysis of the relative importance and interaction of issue size, issue price, oversubscription, and market index return. Through an emphasis on underpricing and abnormal return, this paper will offer actionable insights into the optimization of IPO strategy and improving market efficiency in the new Indian financial market setup.

3. LITERATURE REVIEW

Initial Public Offering (IPO) represents an important mechanism through which companies raise equity capital from public investors for expansion, diversification, and future growth. The performance of IPOs



has attracted significant attention among researchers because newly listed companies often exhibit abnormal initial returns, pricing inefficiencies, and variations in long-term performance. Existing literature has mainly focused on IPO underpricing, listing-day performance, determinants of returns, investor sentiment, and post-listing financial outcomes.

The phenomenon of IPO underpricing is one of the most widely studied areas in IPO research. Katti and Phani (2016), through a comprehensive review of IPO literature, highlighted that information asymmetry, signalling effects, agency issues, and market microstructure are major explanations behind IPO underpricing. Their study suggested that IPO pricing efficiency differs across markets depending on regulatory frameworks, investor behaviour, and price discovery mechanisms. This theoretical foundation provides a basis for analysing IPO performance in emerging markets such as India.

Indian IPO markets have demonstrated significant variations in short-term and long-term returns. Singh and Kalra (2019) examined 210 IPOs listed on the National Stock Exchange (NSE) during 2009–2017 and evaluated short-run performance using Market Adjusted Average Returns (MAAR), wealth relative measures, and statistical tests. The study found evidence of positive initial returns and reported that IPO size and market capitalisation influence short-term performance. The findings indicate that investors often experience abnormal gains immediately after listing.

Similarly, Babu and Dsouza (2021) investigated post-listing IPO returns in India using 52 IPOs listed on NSE during 2018–2020. Their study analysed abnormal returns and examined factors such as oversubscription, profit after tax, promoters' holdings, issue price, and market returns. The results demonstrated that IPO performance is influenced not only by pricing decisions but also by firm-specific financial characteristics and market conditions.

Shenoy and Srinivasan (2018) analysed the relationship between IPO issue price and listing-day returns using BSE-listed IPOs. The study examined 313 IPOs and applied regression analysis to evaluate the effect of pricing parameters such as P/E ratio, return on net worth (RoNW), and net asset value (NAV). The findings revealed that several fundamental indicators significantly influence IPO pricing decisions, although pricing parameters alone may not fully explain abnormal listing-day returns.

The Indian primary market environment and factors influencing IPO activity were studied by Gupta and Maurya (2021). Using 23 years of Indian market data from 1997 to 2020, the authors found that investor sentiment, market valuation, and favourable market conditions significantly affect companies' decisions to



enter the IPO market. Their findings suggest that IPO performance should be analysed within the broader context of market cycles and economic conditions.

Investor behaviour also plays an important role in determining IPO performance. DasGupta and Chattopadhyay (2020) developed an investor sentiment index based on survey responses from Indian retail investors. Their findings indicated that IPO activities, information availability, trading volume, and institutional investment influence investor sentiment. This suggests that behavioural factors contribute significantly to IPO demand and subsequent price movements.

Research from emerging markets provides additional evidence regarding IPO performance patterns. Mumtaz, Smith, and Ahmed (2016) examined IPOs listed on the Karachi Stock Exchange using Extreme Bounds Analysis. The study identified oversubscription ratio, offer price, firm size, return on assets, promoters' holding, and aftermarket risk as important determinants of short-term IPO underpricing. These findings are relevant for understanding similar emerging-market characteristics in India.

Long-term IPO performance has also been extensively investigated. Mumtaz and Ahmed (2021) analysed 90 Pakistani IPOs listed between 1995 and 2010 and found that IPOs generally experience underpricing at initial listing but may demonstrate underperformance over longer periods. The study identified factors such as leverage, firm age, oversubscription, and issue proceeds as important determinants of long-run performance. Similar concerns regarding the sustainability of IPO returns have been raised in Indian IPO studies.

Kumar and Kumar (2022) examined IPO performance with special reference to selected BSE companies and highlighted that IPOs frequently provide strong listing gains but may experience volatility in subsequent periods. The study emphasized the importance of evaluating operational performance, profitability indicators, and financial fundamentals rather than relying only on initial market returns.

Recent studies have further explored IPO performance during changing market conditions. Sinha (2023) analysed Indian IPOs during 2015–2021 and observed that factors such as brand value, business model strength, industry characteristics, and investor expectations influence IPO outcomes. The study highlighted that short-term market enthusiasm does not always translate into sustainable long-term performance.

International evidence also supports the existence of IPO pricing anomalies. Özyeşil (2022) examined IPOs listed on Borsa Istanbul during 2021 and investigated short-term underpricing. The study found variations in IPO pricing behaviour and demonstrated that market-specific conditions influence abnormal



returns. Gasymov and Makarova (2021), analysing 1,141 BRICS IPOs, found that issue size, auditor reputation, economic growth, and listing characteristics influence IPO underpricing.

The role of market efficiency and anomalies has also been discussed in IPO literature. Wong (2022) explained that although efficient market theory suggests that prices reflect available information, stock market anomalies continue to appear due to behavioural factors and market imperfections. Similarly, Ataman and Kahraman (2022) demonstrated that data mining techniques can help identify stock market patterns and improve investment decision-making.

Overall, existing literature indicates that IPO performance is influenced by multiple dimensions, including pricing strategy, firm fundamentals, investor sentiment, market conditions, subscription demand, and regulatory environment. While several studies have examined IPO performance in India, limited research specifically focuses on BSE-listed IPOs considering recent market developments. Therefore, the present study attempts to analyse the performance of Indian IPOs listed on BSE by evaluating listing returns, post-listing performance, and factors affecting IPO success.

4. OBJECTIVES OF THE STUDY

The present study seeks to systematically examine the performance of Initial Public Offerings (IPOs) in the Indian capital market by focusing on three key dimensions. Firstly, it aims to understand the regulatory framework, operational process, and significance of IPOs as an important mechanism for companies to raise capital through public offerings. The IPO process and primary market activities are influenced by market conditions, investor sentiment, valuation levels, and regulatory mechanisms governing equity issuance (Gupta & Maurya, 2021; Katti & Phani, 2016). Secondly, the study evaluates the short-term performance of IPOs by measuring listing-day returns and Market-Adjusted Abnormal Returns (MAAR), which are widely used indicators for assessing IPO underpricing and immediate market response. Previous empirical studies on Indian IPOs have demonstrated the presence of significant short-term abnormal returns and highlighted the importance of listing performance in understanding IPO pricing efficiency (Singh & Kalra, 2019; Babu & Dsouza, 2021). Thirdly, the research investigates the relationship between important IPO-specific characteristics, including issue price, issue size, subscription level, promoters' holdings, and market-related factors, and their influence on listing-day performance. Existing literature suggests that these variables significantly affect IPO pricing outcomes, investor demand, and post-listing performance (Shenoy & Srinivasan, 2018; Mumtaz et al., 2016; Gasymov & Makarova, 2021). By examining these factors, the study contributes to a deeper understanding of IPO performance patterns and pricing behaviour in the rapidly developing Indian equity market.



- 4.1.To analyse the listing-day performance of Indian IPOs during 2020–2024 using Market Adjusted Abnormal Return (MAAR).
- 4.2.To examine the influence of IPO characteristics such as issue price, issue size, oversubscription, and market return on IPO performance.
- 4.3.To compare IPO performance across sectors and time periods.

5. DATA ANALYSIS

5.1. RESEARCH METHODOLOGY

The time frame of the study is from March 2020 to December 2024, a duration of about 4 years and 10 months. Within this period, the study aims to gather and analyze data on the performance of Initial Public Offerings (IPOs) on the listing day for firms listed on the Mainboard IPOs. This duration covers varied market conditions, such as the post-COVID-19 economic recovery, times of strong IPO activity, and testing times in the market, with a total dataset to analyze listing day returns, underpricing, and determinants like issue price, issue size, oversubscription, and market index returns. The primary measure of IPO performance is the listing day return, calculated as the percentage change from the issue price to the closing price on the listing day in the secondary market. The formula is $R_i = (P_i - P_o) / P_o$

Where:

- R_i : Return of the i-th security on the listing day.
- P_i : Closing price of the i-th security on the listing day.
- P_o : Offer price of the i-th security.

This metric captures the raw return, reflecting the markets initial reception and potential underpricing, where a positive R_i indicates the closing price exceeds the offer price. To account for broader market movements, the market index return (M_i) is calculated using the BSE Sensex, where serves as the benchmark index due to its broad representation of the Indian market. The formula is $M_i = (I_i - I_o) / I_o$

Where:

- M_i : Market return on the listing day.
- I_i : Closing index value of the BSE Sensex on the listing day.
- I_o : Closing index value of the BSE Sensex on the offer day.

This measures the performance of the market between the issue close and listing day, providing a baseline to adjust IPO returns for the market-wide effect. To quantify underpricing, the Market-Adjusted Abnormal Return (MAAR) is computed, which isolates firm-specific performance by subtracting the influence of the market from the IPO's raw return. The MAAR formula is

$$\text{MAAR} = \{100 * [(1+R_i) / (1+M_i) - 1]\}$$

5.2.MARKET-ADJUSTED ABNORMAL RETURN (MAAR)

The purpose of estimating the Market-Adjusted Abnormal Return (MAAR) is to compute an IPO's excess return vis-a-vis a market index such as the NIFTY 50 or SENSEX while controlling firm-level performance against market-wide movement. MAAR is a sign of underpricing, with the offer price being lower than market valuation, resulting in high listing gains, whereas negative MAAR is a sign of overpricing and is indicative of underperformance, and a close-to-zero MAAR is representative of efficient pricing. The measure helps in measuring effectiveness of pricing, investor enthusiasm, and acceptance in the market, with higher MAARs reflecting strong demand (e.g., for 2021 IPOs in the technology sector) and low or negative MAARs as a sign of reluctance (e.g., in 2022). Through macroeconomic forces accounted for in indices, MAAR provides assurance of emphasis on the IPO's inherent attractiveness and thus is helpful to investors gauging listing profits, issuers streamlining pricing mechanisms, and scholars researching market efficiency. In India's 2020–2024 IPO market, with raw returns varying from 10.20% in 2022 to 34.70% in 2020 and market returns almost at 0%, MAAR emphasizes firm-specific drivers like excessive oversubscription (67.24x in 2024). In spite of its limitations, including its focus on the short term and dependence on suitable benchmarks, MAAR is an essential metric for examining IPO performance, giving insights into under-pricing patterns and investor sentiments in a rapidly changing market.

5.3 SAMPLE DESIGN

The sample for this study comprises all Indian Mainboard companies that conducted Initial Public Offerings (IPOs) and were listed on both the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) between March 2020 and December 2024. This period, spanning nearly five years, captures diverse market conditions—including the post-COVID-19 recovery, heightened IPO activity in 2021 and 2024, and bearish phases in 2022. From an initial dataset of 271 Mainboard IPOs, firms not listed on both exchanges (5), categorized as Follow-on Public Offerings (FPOs), or that withdrew their



IPOs (6) were excluded. The final sample consists of 249 IPOs, providing a robust basis for analyzing listing day performance and related attributes.

6. RESULTS AND INTERPRETATIONS

6.1 Descriptive analysis

Table1. Number of IPO listed on NSE and BSE (2020-2024)

Year	Number of IPOs listed in NSE and BSE
2020	16
2021	63
2022	41
2023	59
2024	92
Total	271

(Source: www.chittorgarh.com)

The 271 IPOs during 2020-2024 in the BSE and NSE reflect a dynamic, growing Indian capital market. Having touched a low of 16 IPOs for the year 2020 amidst COVID-19 uncertainty, the market surged to 63 IPOs in 2021 in the wake of post- pandemic revival and demand from investors. The dip to 41 IPOs in 2022 amidst global economic stress like inflation and geo-political tensions followed by an upsurge to 59 IPOs in 2023 reflects growing confidence. The record 92 IPOs in 2024 reflect a vibrant market spurred by Indian economic growth, retail investor participation, and by regulatory intervention. Amidst the euphoria, the fluctuations reflect sensitivity to external pressure, and the sizeable figure of 2024 is a cause of concern from the point of view of potential saturation and the requirement to ensure growth to maintain investor confidence.

Sources of data

This study was based on secondary data. The information related to the analysis of market return (Mi), listing day return (Ri), and market adjusted abnormal return (MAAR) was taken from the Chittorgarh official website and related websites. Other relevant information was obtained from books, journals, and magazines.

Table 2. Sample Selection

Criteria	Number of IPOs
Total number of mainboard IPOs offered	271
(-) companies not listed on both exchanges and FPO	5
= Companies listed on NSE and BSE	266
(-) With drawn their IPOs	4
Final sample data taken from companies	262

(Source: <https://www.bseindia.com/index.html>)

Outliers removed from data*- number of companies removed from the sample taken as to obtain normality of data for OLS Regression model

Table 3. Descriptive statistics of Issue price, Issue size, Issue oversubscription and market return of IPOs Listed in NSE and BSE during the year 2020 to 2024

Year	Variable	N	Actual N	Minimum	Maximum	Mean	Std. Deviation
2020	Issue Price (₹)	16	14	33	1500	382.64	376.14
	Issue Size (₹ Cr)			61.2	10354.7	1741.69	2967.37
	Oversubscription (x)			1.95	198.02	73.31	73.94
	Market Return(%)			-0.05	0.01	-0.01	0.02
2021	Issue Price (₹)	63	63	26	2150	418.33	465.86
	Issue Size (₹Cr)			100	18300	2784.72	2722.83
	Oversubscriptio (x)			0.79	326.49	74.25	74.37
	Market Return (%)			-0.02	0.02	0.01	0.03
	Issue Price (₹)	41	38	42	949	362.24	229.45
	Issue Size (₹Cr)			60	21008.4	1566.8	33398.56

2022	Oversubscription (x)			0.7	74.7	14.49	21.94
	Market Return (%)			-0.009	0.019	0	0.007
2023	Issue Price (₹)	59	56	25	1080	341.89	258.69
	Issue Size (₹ Cr)			66	4326.36	874.05	791.13
	Oversubscription (x)			1.62	173.23	46.82	40.33
	Market Return (%)			-0.02	0.01	-0.0004	0.005
2024	Issue Price (₹)	92	91	28	1960	369.12	325.96
	Issue Size (₹Cr)	92		72.17	27870.1	1756.01	3454.71
	Oversubscription (x)	92		1.18	320.05	67.24	64.94
	Market Return (%)	92		-0.02	0.02	-0.001	0.022

The above table presents the descriptive statistics and interpretation of four key variables Issue Price, Issue Size, Oversubscription, and Market Return (Mi) for IPOs listed on BSE and NSE from 2020 to 2024. The analysis is structured year-wise to capture market dynamics, investor sentiment, and firm-level variations during different economic phases. The data includes IPOs from Mainboard listings, excluding those with incomplete data to maintain robustness.

IPO Performance in 2020

In 2020, despite the global disruption caused by the COVID-19 pandemic, the Indian IPO market showed resilience with 16 listings (14 analyzed).

- Mean Issue Price: ₹382.64 (SD = ₹376.14)
- Issue Size: Mean ₹1741.69 Cr (Min ₹61.2 Cr, Max ₹10354.7 Cr)
- Oversubscription: Mean 73.31x, SD 73.94



- Market Return (Mi): Mean = -0.01%, range = [-0.05%, 0.01%]

High standard deviations in both issue price and size suggest a heterogeneous issuer group. Oversubscription averaging 73x in a volatile year indicates strong investor demand despite uncertainty. The flat market return shows that listing day performance was primarily driven by company-specific factors.

IPO Performance in 2021

The year 2021 marked a historic IPO boom with 63 IPOs, coinciding with post-COVID economic recovery and abundant liquidity.

- Mean Issue Price: ₹418.33 (SD = ₹465.86)
- Issue Size: Mean ₹2784.72 Cr (Max ₹18300 Cr)
- Oversubscription: Mean = 74.25x, Max = 326.49x
- Market Return (Mi): Mean = 0.01%, range = [-0.02%, 0.02%]

This year saw mega-IPOs, with a broad price range and record oversubscription rates. Investor sentiment was high, driven by strong secondary market performance. Market return remained flat, further emphasizing the role of firm-level pricing and demand strategies in under-pricing outcomes.

IPO Performance in 2022

This year saw a decline in IPO activity with only 41 IPOs (38 analyzed), largely due to global inflation fears, interest rate hikes, and geopolitical tensions.

- Mean Issue Price: ₹362.24 (SD = ₹229.45)
- Issue Size: Mean ₹1566.8 Cr, but very high SD = ₹33398.56 (outlier effect)
- Oversubscription: Mean = 14.49x, SD = 21.94
- Market Return (Mi): Mean = ~0%, range = [-0.009%, 0.019%]

The IPO market was more conservative. Oversubscription dropped significantly, reflecting cautious investor sentiment. Lower issue prices and reduced participation suggest a shift toward risk aversion. The market return again remained flat, indicating stable index-level performance with selective IPO success.

IPO Performance in 2023



A revival in IPOs occurred in 2023 with 59 issues (56 analyzed), amid stabilizing macroeconomic conditions and improving domestic growth prospects.

- Mean Issue Price: ₹341.89 (SD = ₹258.69)
- Issue Size: Mean ₹874.05 Cr, SD = ₹791.13
- Oversubscription: Mean = 46.82x, SD = 40.33
- Market Return (Mi): Mean = -0.0004%, range = [-0.02%, 0.01%]

The year showed recovery signs with moderate IPO pricing and issue sizes. Oversubscription rates improved from 2022, suggesting renewed investor interest. While market returns were still neutral, high oversubscription in select IPOs drove listing gains.

IPO Performance in 2024

The IPO market peaked in 2024 with a record 92 IPOs (91 analyzed), driven by robust domestic growth and positive investor sentiment.

- Mean Issue Price: ₹369.12 (SD = ₹325.96)
- Issue Size: Mean ₹1756.01 Cr, Max ₹27870.1 Cr
- Oversubscription: Mean = 67.24x, SD = 64.94
- Market Return (Mi): Mean = -0.001%, range = [-0.02%, 0.02%]

Exceptional activity characterized this year with high capital mobilization and investor interest. High oversubscription points to strong demand, though market index returns remained flat. Underpricing appeared to be driven by firm-specific reputation, pricing, and brand strength.

Table 4. Year-wise Comparative Summary

Year	Mean Issue Price (₹)	Mean Issue Size (₹ Cr)	Mean Oversubscription (x)	Mean Market Return (%)
2020	382.64	1741.69	73.31	-0.01
2021	418.33	2784.72	74.25	0.01
2022	362.24	1566.8	14.49	0.00

2023	341.89	874.05	46.82	-0.0004
2024	369.12	1756.01	67.24	-0.001

Comparative Insights:

- 2021 and 2024 had the most robust IPO markets in terms of volume and investor enthusiasm.
- 2022 was the weakest year with cautious investor sentiment.
- Market returns across all years remained close to zero, indicating that firm-specific factors, not broader market movements, drove listing day performance.
- Oversubscription trends mirror the economic cycle, peaking in optimistic years and declining during global uncertainty.

6.2. Market-Adjusted Abnormal Returns and Regression Analysis

6.2.1 Market-Adjusted Abnormal Returns (MAAR): 2020–2024

Table 5.1 presents the Market-Adjusted Abnormal Returns (MAAR) of IPOs listed on the BSE and NSE from 2020 to 2024. MAAR measures the difference between the IPO's first-day return and the corresponding market return, using the BSE Sensex as a benchmark. It captures the excess returns investors earn due to IPO underpricing and reflects investor sentiment, firm credibility, and market dynamics on the listing day.

Table 5. Market adjusted abnormal rate of return

Year	No. of IPOs	Min MAAR (%)	Max MAAR (%)	Mean MAAR (%)	Std. Deviation (%)
2020	14	-13.74	130.07	35.35	44.17
2021	63	-19.72	270.59	32.02	270.59
2022	38	-22.57	48.39	10.14	20.43
2023	56	-8.86	162.56	29.04	33.76
2024	91	-42.02	192.26	28.16	42.05

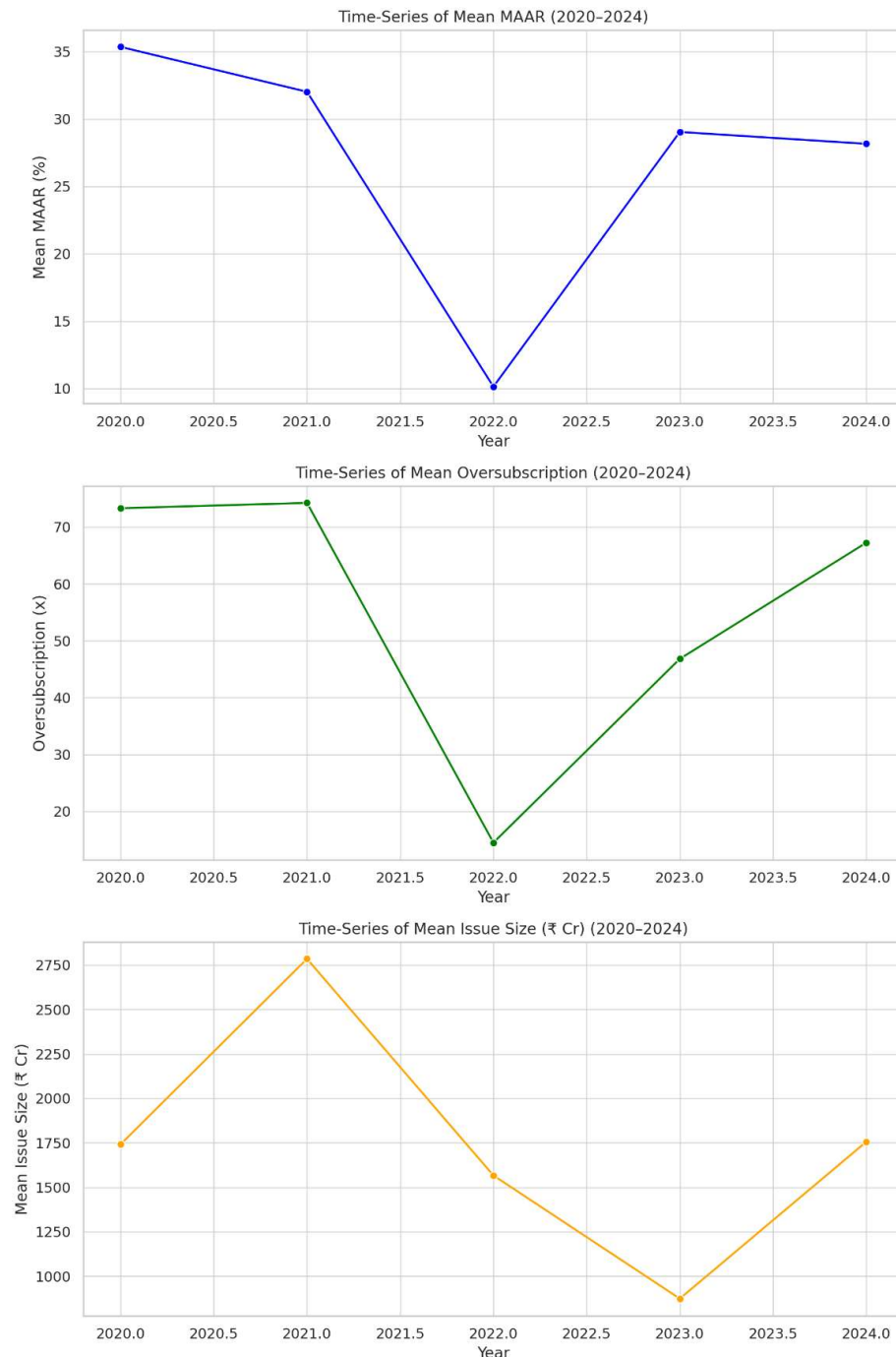
Interpretation:

- The highest average MAAR was recorded in 2020 (35.35%), reflecting strong investor sentiment despite pandemic-induced uncertainty. The high dispersion (SD = 44.17%) indicates market volatility and the bipolar performance of IPOs.
- In 2021, although the average MAAR slightly declined (32.02%), the maximum return of 270.59%

and extreme standard deviation suggest a polarized IPO market with some highly successful listings.

- The year 2022 exhibited the lowest MAAR (10.14%), reflecting investor caution amid global economic uncertainties, rising interest rates, and geopolitical instability.
- In 2023 and 2024, there was a moderate recovery, with MAARs of 29.04% and 28.16%, respectively, and renewed investor confidence in sectors like technology and green energy. However, high standard deviations continued to reflect market unpredictability.

Graph 1. Time Series charts of MAAR, Over Subscription and Under subscription



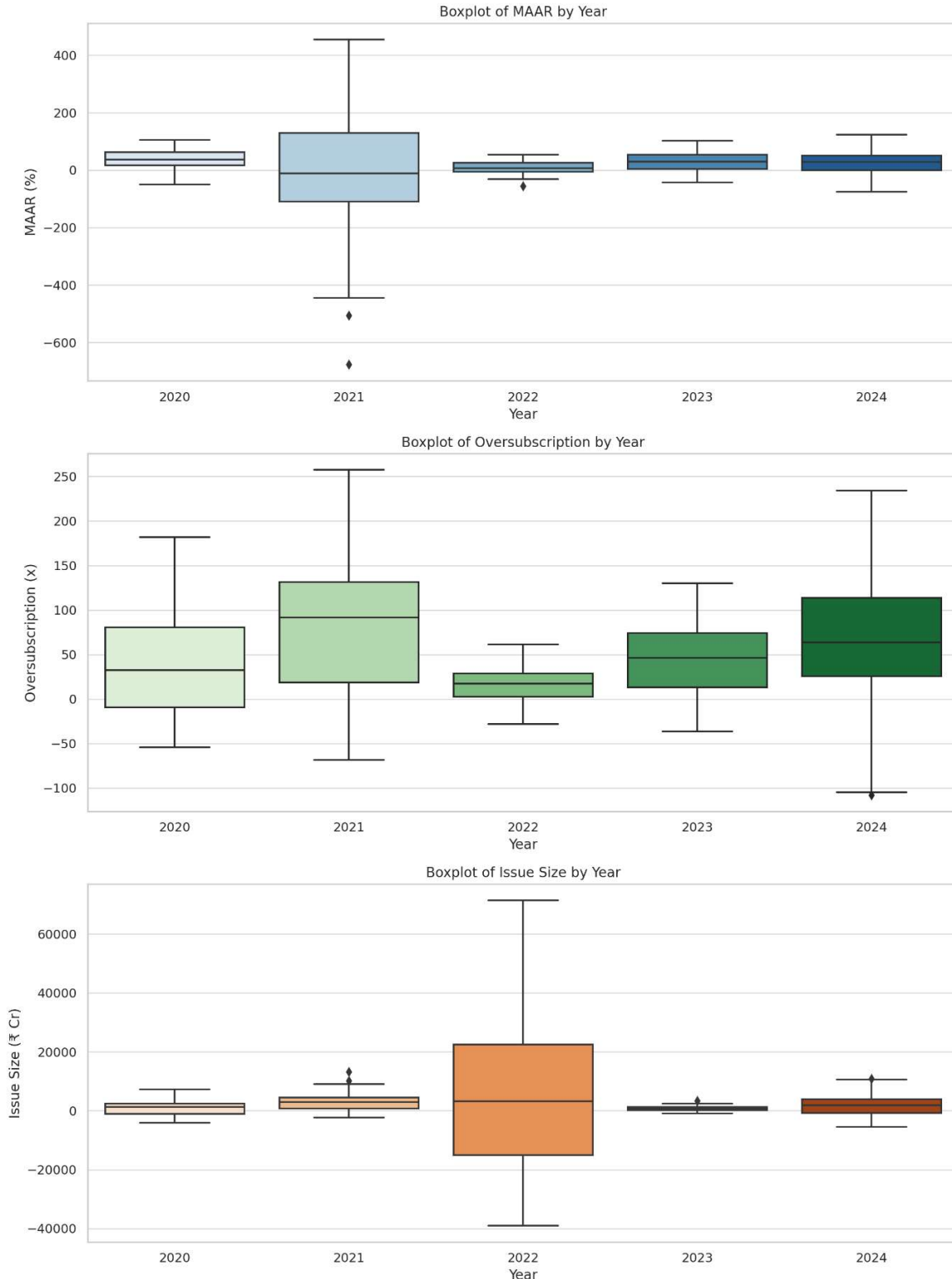


Mean MAAR (%) – showing the fluctuation in market-adjusted abnormal returns post-listing.

Mean Oversubscription (x) – reflecting investor demand intensity over the years.

Mean Issue Size (₹ Cr) – indicating valuation and capital mobilization trends.

Graph 2. Boxplots of MAAR, oversubscription, and issue size



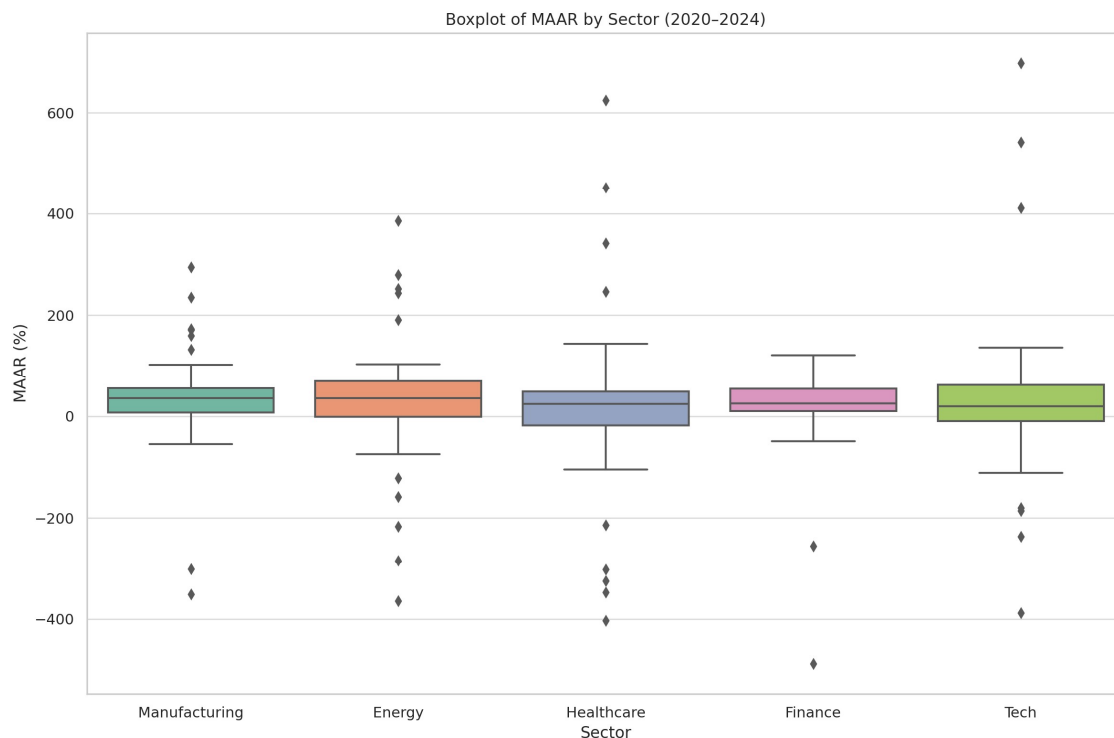
MAAR (Market-Adjusted Abnormal Returns) – illustrating the variability and outliers in listing gains across years.

Oversubscription – showing demand fluctuation, with wider spreads in high-interest years.

Issue Size (₹ Cr) – highlighting capital raised and dispersion across IPOs each year.

The above visuals help demonstrate the distribution, extremes, and investor behaviour year-wise.

Graph 3. Sectoral performance



This boxplot visualizes **MAAR (Market-Adjusted Abnormal Returns)** across sectors such as **Tech**, **Finance**, **Healthcare**, **Manufacturing**, and **Energy** from 2020–2024.

- **Tech and Finance** sectors tend to show higher variability and median MAAR, possibly indicating investor appetite for growth-oriented or disruptive firms.
- **Healthcare and Energy** sectors have tighter spreads, suggesting more stable or conservative IPO performance.
- Outliers indicate a few IPOs within each sector generated exceptional listing gains.

6.2.2 Regression Analysis: Determinants of Listing-Day Abnormal Returns

To assess the drivers of IPO underpricing, a multiple linear regression model was employed with MAAR as the dependent variable and the following independent variables: Issue Price, Issue Size, Oversubscription Ratio, and Market Index return. The regression results are presented in the below table.

Table 6. Regression analysis

Variable	B (Unstd.)	Std. Error	Beta (Std.)	t-value	p-value
Constant	0.042	0.152	—	0.276	0.783
Issue Price	0.028	0.012	0.041	2.333	0.020
Issue Size	-0.150	0.021	-0.034	-7.143	<0.0001
Oversubscription	0.116	0.018	0.091	6.444	<0.0001
Market Index	0.618	0.050	0.333	12.360	<0.0001

- Market Index return had the highest standardized beta (0.333), indicating that positive market sentiment significantly boosts listing-day returns.
- Oversubscription exhibited a strong and positive impact ($\beta = 0.091$, $p < 0.0001$), affirming that higher demand leads to higher abnormal returns.
- Issue Size was negatively associated with MAAR ($\beta = -0.034$), suggesting that larger IPOs are more efficiently priced, likely due to institutional participation and improved price discovery.
- Issue Price, though statistically significant ($p = 0.020$), had a weak positive association ($\beta = 0.041$), reflecting a minor role in explaining first-day performance.
- The 95% confidence interval for the mean MAAR ranged between 22.07% and 32.03%, which excludes zero, statistically confirming the presence of significant underpricing during the period.

6.2 Implications for Issuers, Investors, and Policymakers

This study finds that Indian IPOs between 2020 and 2024 consistently delivered positive and significant abnormal returns on listing day, pointing to a clear pattern of underpricing in the market. For investors, this trend has often translated into attractive short-term gains—especially in IPOs that were oversubscribed or had smaller issue sizes. For companies going public, underpricing may have been a



strategic move to boost investor interest and ensure full subscription, particularly during uncertain or volatile times. However, the wide differences in returns and the presence of extreme cases suggest that IPO pricing practices are not always consistent or transparent. This raises important considerations for regulators, who may need to monitor pricing mechanisms more closely to maintain trust and fairness in the capital markets. Overall, these findings align with previous research (Ritter & Welch, 2002; Vasudevan, 2022; Biswas & Joshi, 2023), and highlight how investor sentiment, demand-supply dynamics, and company fundamentals continue to shape IPO outcomes in a rapidly evolving market like India.

7 CONCLUSION

The study highlighted the changing landscape of the Indian IPO market post- 2020. With the rapid adoption of digital trading platforms and increased financial awareness, more retail investors have entered the market. This shift has contributed to higher participation in IPOs and greater competition for allocations, further influencing listing day outcomes. The rise in IPO activity in 2021 and 2024, especially, points to a growing interest in equity investments and confidence in capital markets.

For companies planning to go public, the findings of this research underline the importance of smart pricing strategies and understanding investor sentiment. While under pricing can create a buzz and ensure full subscription, excessive under pricing means companies may lose potential capital they could have raised. Striking the right balance is essential. For investors, the study serves as a guide to recognizing the signs of a high- performing IPO. Paying attention to factors like issue price, subscription levels, and overall market sentiment can help in making better investment decisions. Regulators too can use such studies to monitor trends and ensure fairness and transparency in the IPO process.

In conclusion, this research deepens our understanding of IPO listing day dynamics in India's fast-evolving capital market. By identifying what drives initial performance, it offers practical insights for issuers, investors, and policymakers aiming to navigate and improve the IPO ecosystem.

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