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# An in-depth analysis of Trend, Pattern and

## **Progress of IPOs: an Evidence from India**

1. Name of the author : SHARANAPPA KILARAHATTI M.Com.

Designation : Research Scholar, Department of Commerce VSKU Ballari, Karnataka, India

Name of the author : CMA. Dr. Jeelan Basha. V M. Com., M. Phil., Ph.D., ACMA. Designation: Professor & Dean, Official Address : CMA Dr. Jeelan Basha. V, Professor& Dean, Department of Commerce VSKU Ballari, Karnataka, India



2.

#### Abstract

In recent years, there has been a tremendous increase in the number of Indian firms which went public. These firms aim to obtain funds for various purposes. One of the major sources of raising required funds for these firms is by opting for an Initial Public Offers (IPOs). Thus, investors need to take utmost caution while investing in IPOs today. Underpricing of initial public offerings (IPOs) is an important factor for investors to predict the profit from investment activities. The IPOs underpricing phenomenon has existed for a long time in stock markets around the world, although its magnitude varies from country to country.

Objective of the study is to analyze the trend and progress of equity IPO issues during the study period and to provide results, discussion and conclusion. The current study is completely based on secondary data. The needed data has been collected from official websites of NSE, BSE, SEBI and CSE. It covers 137 equity IPO issues. The sample period for the study is 6 years covering from 27, Jan. 2016 to 30, Jul. 2021. The data collected for the study is graphically presented, adequately tabulated, suitably analyzed and

meaningfully interpreted. Exclusive class interval is followed for classification of all IPO issues. Descriptive and inferential statistics are used.

There is stability in the total number of year-wise IPO issues and underpriced issues as their co-efficient of variation is less than one. With the decrease in the number of majority parameters IPO issues, there is decrease in number of their underpriced issues and decrease in the varying percentage of their respective underpriced issues during the study period. Not less than 50% of respective sector-wise IPO issues are underpriced except aviation sector. More than 60% of the IPO issues are underpriced from all regions except eastern region. Companies under study with respective parameters of annual average market adjusted excess returns (AAMAER) are positive except offer size less than ₹500, aviation sector, eastern region, 25-50 years experience of existence and offer price more than ₹1500 during the study period.

Key words: IPOs, Underpricing, AAMAE returns, Exclusive class interval and BRLM.

## An in-depth analysis of Trend, Pattern and Progress of IPOs: an Evidence from India

#### Introduction

An IPO is the first issuance of shares of companies that were not previously listed on a stock exchange. In this way, shares are offered to the widest market investors i.e. interested investors who put their money in share purchase, which enables companies to raise necessary capital for their own development. The willingness of a company to raise necessary capital from public to a large extent depends on the conditions, nature and efficiency of a financial system. Companies looking for finance generally go for IPOs that can help them to grow and expand their business. IPOs are mostly offered by medium size and new firms. Companies opting for this route are called public offering. After the public issue process, the securities are listed and traded in the secondary market. Many of the investors who apply for Initial Public Offerings (IPOs) in India sell the shares on the first day of listing itself to make high initial returns, commonly known as underpricing. It is assumed that positive performance in IPOs markets could be achieved by the economies that have more favorable trends of macroeconomic variables, efficient legislation which is consistently applied, and a high degree of corporate education.

In the legal sense, the process of initial public offering of shares (IPOs) represents the process of creating joint stock companies, while this procedure substantively leads to raising investment capital for company funding. The creation of a joint stock company is not an end in itself; it is rather a number of advantages that stock companies bring along, starting from an unlimited lifetime, the possibility of an easy transfer of ownership by selling shares, as well as limited obligations and responsibilities.

In recent years, there has been a tremendous increase in the number of Indian firms which went public. These firms aim to obtain funds for various purposes such as expansion, diversification, financing their working capital needs, purchasing an asset, debt reconstruction, etc. Initial Public Offers (IPOs) is one of the major sources of raising required funds for entities.

The golden year for the Indian IPOs market is the year 2017 as the total capital mobilized through IPOs hit a 6-year high and nearly 50 per cent of the companies issued IPOs outperformed the market since their issuance in 2017. In comparison with equity market, the risk faced by the investors in the primary market at any extent. Thus, they need to take utmost caution while investing in IPOs today.

Underpricing of initial public offerings (IPOs) is an important factor for investors to predict the profit from investment activities. The IPOs underpricing phenomenon has existed for a long time in stock markets around the world, although its magnitude varies from country to country.

#### Literature of Review:

Saravana Krishnan V and Nandhini M (2021), focused on to examine the dependency of listing gains on FII inflows over total shares offered and FII inflows over total subscription. The regression model concludes that listing gains impact positively on FII inflows over total shares offered by the company but not on the total subscription. The study found that listing gains has a significant relationship with FII inflows over total shares offered.

Sheela Sundarasen et.al (2021), have aimed to investigate the relationship between the interacted signaling variables and IPOs' first day returns in the OECD nations. This study uses signaling theory as the underpinning theory. The empirical outcomes indicate that, in general, the interacted reputable underwriters and auditors have a positive impact on IPOs first-day return.

Neetu Goya and Dr. Vikas Deep (2021) concluded in their study that Initial Public Offerings (IPOs) are unique economic and governance events as privately held firms issue common stock or shares to the public for the first time.

**S. Burcu Avcia (2021)**, showed significantly negative relationship between long-run abnormal price performance and operating performance when asset efficiency or return on equity is used as a measure of operating performance. The higher the issuing company's asset efficiency or equity efficiency is more likely to have a severe abnormal price underperformance in their post-IPO years. It also concluded that large IPOs have higher returns in the long-term. Moreover, IPOs made in hot issue periods will underperform more. This finding is in line with "windows of opportunity theory" of long-run returns of IPOs.

**Jasbir Singh Matharu (2021),** showed that the market adjusted initial returns for the IPOs, during their study period have been found to be around 28%. This is a very high initial return and indicates that India IPOs were underpriced. The study finds that it is affected by issue proceeds, delay in listing, issue price, and promoter groups. The issue proceeds have negative relationship with underpricing and the rest are positively related to underpricing.

Tharitsaya Kongkaew, Supa Tongkong and Sungworn Ngudgratoke (2021), focused on to investigate moderating effects of the founders' role on the impact of internationalization on IPOs performance of newly listed companies. It revealed that internationalization demonstrated no statistically significant effect on IPOs

underpricing. A non founder CEO had a moderating effect on the influence of internationalization than a founder CEO on IPOs underpricing. Specifically, internationalization had a negative effect on IPOs underpricing once an international firm had a non-founder CEO.

**T. Ramesh Chandra Babu and Aaron Ethan Charles Dsouza** (2021), concluded that an initial public offering is a great opportunity for investors to earn good profits in the short run. The abnormal returns are also the highest on the listing day after which the gradually decrease.

Md. Sajib Hossain and Dr. Muhammad Saifuddin Khan (2021), investigated the change in the operating performance of firms as they go from private to public ownership. The study documented that there is a significant decline in post-IPOs operating performances as measured by ROA, asset turnover, and OCFTA, and the decline continues for the next two to three years with the highest deterioration of operating performance being observed in the immediate next year of IPO. It concluded that the IPOs event negatively affects all measures of operating performance.

Iftikhar Ahmad, Izlin Ismail and Shahrin Saaid Shaharuddin (2021), observed that ex-ante higher share premium, higher percentage listed capital, and longer firm age at the listing date significantly increase the survival (reduce hazard) of IPOs listed on Main Market and Second Board. Conversely, the bigger firm size and more risk factors significantly reduce the survival (increase hazard) of the listed IPOs mentioned above. However, share premium is the only variable that has a negative and significant correlation with IPOs survival in ACE Market.

Nizar Dwaikat, Abdelbaset Queiri and Ihab Sameer Qubbaj (2021), focused on determinants that affect dividends initiation by initial public offering firms in Malaysia and revealed that the presence of institutional investors in the ownership structure make it more likely for IPOs firms to initiate dividends. The presence of a family ownership structure in IPOs companies as the controlling shareholder makes these companies less probable to initiate dividends. Managerial ownership was found to have no effect on the decision of initiating dividends by IPOs firms.

**Razan Bahauddin H et.al (2021),** observed that Public companies achieved higher profitability ratios between ROA and ROS compared to private firms. It also showed the public companies demonstrated better financial performance compared to the private company, despite the economic recession.

Ms. Drashti Kaushal Shah and Dr. P. K. Priyan (2021), documented that grouped affiliation is not influencing the initial return (IR) and initial excess return (IER) and also concluded that group affiliation reduces the volatility (risk) of IPOs.

Amithy Kumare and Ashween Anand (2020), showed that on an average, SME IPOs provided positive returns of 8.66% on the listing day. Age, subscription, issue price, listing delay, market sentiment, and financial and construction sector dummies had significant impact on listing day price performance of SME IPOs. SME issues with the higher issue size have higher listing day returns compared to SME issue with lower issue size. It was also concluded that the high reputation underwriters underpriced more.

**Prof. Ashok Bantwa and Dr. Kaushl Bhatt (2020),** explored empirically the level of underpricing and determinants of underpricing of Initial Public Offerings (IPOs) in Indian capital market. The results showed IPOs underpricing in India is the result of market adjusted return opening (high willingness to pay), level of subscription (high demand of the issue) and turnover rate on listing day (high demand of the issue).

Zachary Alexander Smith, Hakan Kislal and Muhammad Zubair Mumtaz (2020), found that concentration harmed initial public offering (IPO) performance in Japan but had a positive impact in Pakistan and also concentration was negatively related to performance in Japan; however, in Pakistan, founder-level concentration seemed to be aligned with positive performance results while group-level concentration to the negative performance results.

**Ms. Jyothi G H and Ms. Ashwini G K (2020),** found level of subscription, Issue size, and listing day gain factors influence the performance of IPOs of the company. Through these, they concluded that IPOs can be a long term investment tool or a speculative opportunity to earn booming profits.

**Shahedin Alom (2020)**, examined Kyber Network was found to be simpler and efficient for users since it only needs a user to create an account and begin trading with their crypto currencies or crypto tokens . Kyber Network has more prospective profitability with time due to increasing in per crypto price.

Saravana Krishnan V (2020), studied an investor can get better listing gains when the FII inflows over the total subscription are high and there is no impact of FII inflows over the total subscription for the company on the listing gains.

Humera and Ullah Khan (2020), concluded that there is a significant difference in the current ratio before and after listing of IPOs.

Amit Kumar Singh et.al (2020), showed that the IPOs market moved towards a trend where a large amount of capital is raised from a small number of issues which also indicated that an overall increase in the quality of issues, instead of quantity. They also concluded that markets get matured over periods and the system did not shake even in the crisis period and become able to sustain the major downturn.

Sharif Mazumdera and Pritam Sahac (2020), examined the relationship between COVID-19 related fear and short-term IPOs performance. It revealed the performance of IPOs firms is more sensitive to the fear of the pandemic than the performance of similar existing firms.

Nadya Rizki Ariyanto et.al (2020), concluded post-Initial Public Offering in Indonesia's Islamic Capital Market is characterized by herding behavior.

Vabila Ananta Setya, et.al (2020), revealed that underwriter and auditor reputation has a significant negative relationship with the company's underpricing level.

Aprajita Pandey and J. K. Pattanayak (2018), showed that immediate market return affects the current underpricing positively. Similarly, historical values of market volatility have a notable impact on underpricing. It has also been observed that increase in market volatility leads to increase in market risk and at the same time reduces the degree of underpricing. Similarly, GDP has greater explanatory power on

lagged values of underpricing. Firm age is negatively correlated with underpricing, which means higher the firm age, lesser will be the underpricing.

#### **Research Gap:**

In the past decades, the researchers around the globe mainly focused on the limited usage of variables. In our study, ten variables i.e. issue size, issue price, age, sector, face value, location, assets, year, promoters' holdings and BRLM were focused. We couldn't find any such study undertaken in Indian context that showed equities issues majorly from NSE to gauge the underpricing.

#### **Objective of the Study:**

1. To analyze the trend and progress of equity IPO issues during the study period;

#### **Hypotheses Development:**

On the basis of the literature review, the following hypotheses are formulated:

▶ **H1:** There is no significant difference between respective total number of year-wise IPO issues and number of underpriced issues during the study period.

▶ H1: There is no significant difference between respective total number of year-wise IPO issues and average annual market adjusted excess returns (AAMAERs) during the study period.

▶ **H2:** There is no significant difference between respective number of offer size-wise IPO issues and number of underpriced issues during the study period.

H2: There is no significant difference between respective total number of offer size-wise IPO issues and AAMAE returns during the study period.

**H3:** There is no significant difference between respective total number of sector-wise IPO issues and number of underpriced issues during the study period.

**H3:** There is no significant difference between respective total number of sector-wise IPO issues and AAMAE returns during the study period.

➤ H4: There is no significant difference between respective total number of region-wise IPO issues and number of underpriced issues during the study period.

➤ H4: There is no significant difference between respective total number of region-wise IPO issues and AAMAE returns during the study period.

▶ **H5:** There is no significant difference between respective total number of age-wise IPO issues and number of underpriced issues during the study period.

➢ H5: There is no significant difference between respective total number of age-wise IPO issues and AAMAE returns during the study period.

➤ H6: There is no significant difference between respective total number of face value-wise IPO issues and number of underpriced issues during the study period.

➢ H6: There is no significant difference between respective total number of face value-wise IPO issues and AAMAE returns during the study period.

➢ H7: There is no significant difference between respective total number of assets-wise IPO issues and number of underpriced issues during the study period.

➢ H7: There is no significant difference between respective total number of asset-wise IPO issues and AAMAE returns during the study period.

➤ H8: There is no significant difference between respective total number of promoters' holding-wise IPO issues and number of underpriced issues during the study period.

➤ H8: There is no significant difference between respective total number of promoters' holding-wise IPO issues and AAMAE returns during the study period

➤ H9: There is no significant difference between respective total number of book runner-lead manager-wise IPO issues and number of underpriced issues during the study period.

➢ H9: There is no significant difference between respective total number of book runner-lead manager -wise IPO issues and AAMAE returns during the study period.

**H10:** There is no significant difference between respective total number of offer price-wise IPO issues and number of underpriced issues during the study period.

> **H10:** There is no significant difference between respective total number of offer price-wise IPO issues and AAMAE returns during the study period.

#### Data and Research Methodology:

(1) Sources of Data: The current study is completely based on secondary data. The needed data has been collected from official websites of National Stock Exchange (NSE) (<u>www.nseindia.com</u>), Securities Exchange Board of India (SEBI) (<u>www.sebi.gov.in</u>) and Chittorghar Stock Exchange (CSE) (<u>www.chittorghar.com</u>).

(2) Sample: It comprises of 137 equity IPOs offered through NSE.

(3) Sample Period: The sample period for the study is 6 years covering from 27, Jan. 2016 to 30, Jul. 2021. The data collected for the study is graphically presented, adequately tabulated, suitably analyzed and meaningfully interpreted. Exclusive class interval is followed for classification of all IPO issues. Descriptive statistics and inferential statistics are used.

#### **Descriptive Variables under study:**

(i) Underpricing: measured as the percentage change from the offer price to the closing price of the first trading day.

(ii) Initial Returns (IR): The IPOs closing price on the listing day is taken for the study; because it is determined by the demand and supply forces in the market. It represents the price at which investors have the last chance to sell their allotted shares in the secondary market on the listing day. Thus, it is more logical and apt price.

Raw Return = <u>First trading/listing day closing price – offer price  $x_{100}$ </u>

Offer Price

(iii) Market Adjusted Excess Returns (MAER): Used as another measure to gauge underpricing.

**MAER** =  $(\underline{P_1}-\underline{P_0}) - (\underline{M_1}-\underline{M_0}) * 100$  $\underline{P_0}$   $\underline{M_0}$ 

Where

P1 = Closing price on the first day of trading/listing

P0 = offer price

M1 = market index on the first day of trading/listing

M0 = market index on the offer date

#### **Annualizing factor:**

Since for different companies, the time taken to list IPOs share varies, annualized return has been taken into consideration in order to normalize it. Annualized return has been calculated by multiplying raw return and MAE returns with annualizing factor. Annualizing factor has been computed as under:

Annualizing factor = 365 daysAfter market trading lead time

(iv) Offer Size: Offer size of the firm refers to the gross proceeds of the issue. It is measured by the product of the issue price and number of shares offered through the IPO. It is anticipated that the higher the issue size, the more the under price of IPOs and vice-versa.

(v) Sector: Sectors in this study is classified into 14 categories based on National Industrial Classification (NIC-2008). The sectors of emerging economy will under price more to attract the investors.

(vi) Location: Location of companies issued IPOsfor the study is classified based on registration place of corporate office namely East India, West India, North India and South India.

(vii) Age: Age of a company is measured for the duration from the year of incorporation of the company to the year of the IPO launched. This variable has been rounded off to whole number that is in fraction of year. It is anticipated that the higher the age of the company, the more the experienced and the more the under price of IPOs and vice-versa.

(viii) Face Value: This is price as listed in its books and share certificates of the company as coupon price. It is an important parameter for calculating various key aspects like the market value of shares, premium, return and interest payments, concerning shares and bonds.

(ix) Total Assets: Amount of total assets of immediate preceding year to the year of IPO issues of the company as per balance sheet. There is anticipation that the larger the amount of total assets, the more the under price of IPOs and vice-versa.

(x) **Promoters' Holding:** It is measured as the percentage of the total equity shares held and owned by the promoters in the total IPOs offer size. It is also considered post-IPO promoters' holding as a proxy for liquidity of the issue in the secondary market. Thus, they anticipated that IPO firms with high promoters' holding (low liquidity) will under price more in order to attract the investors and vice versa.

(xi) Offer Price/ issue price: It is the price at which shares are issued to the public (bidders). There is an anticipation that the bigger the amount of offer price, the more the under price of IPOs and vice-versa.

(xii) Book Runner Lead Managers (BRLMs): Brand/popularity of Book Runner Lead Manager (BRLM) is an important variable in determining the under price issue. There is general presumption that the more the popularity of BRLM, the more the under price and vice-versa.

#### Analysis and Results:

			Closing Price-Of	fer Price	365* <u>MAER</u>	
			Offer Pric	e	Listing Lead Time	
S. No	Years	NO OF IPO			Average Annual MAER	
		Issues	<b>Under Priced</b>	<b>Over Priced</b>	(Market Adjusted Excess	
					Returns (%))	
1	2016	26(18.97%)	17(65.38%) (18.28%)	9	202.804730	
2	2017	33(24.08%)	23(69.69%) (24.73%)	10	388.521696	
3	2018	23(16.78%)	11( <mark>47.82%)</mark> (11.83%)	12	166.764635	
4	2019	13(9.48%)	9(6 <mark>9.23%) (9.68%</mark> )	4	930.409598	
5	2020	15(10.94%)	12(80%) (12.90%)	3	2545.792996	
6	2021	27(19.70%)	21(77.78%) (22.58%)	6	1079.862995	
Total		137(100%)	93(67.88%)	44(32.12%)	1	
P-value	e		0.2211	-	0.0403	
Averag	ge 👘	22.83333	15.50000	7.33333	885.69277	
S.D	8	7.60044	5.71839	3.55903	897.33018	
Min	1	13	9	3	166.76464	
Max	6	33	23	12	2545.79300	
Skewn	ess	-0.18897	0.29360	0.02958	1.56517	
Kurtos	is	-1.17346	-2.04107	-1.83573	2.54095	
C V		0.33287	0.36893	0.48532	1.01314	
S/K		0.16103	-0.14384	-0.01611	0.61598	
CV*S/I	K	0.05360	-0.05307	-0.00782	0.62407	
CAGR		-0.00627	-0.03461	0.06991	-0.24325	

#### Table No: 1 Descriptive Statistics of Year-wise IPO Issues during 2016-2021

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of year-wise IPO issues.

\* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during the study period.



Nearly 50%-80% of respective year-wise IPO issues are underpriced during the study period. Nearly 2/3 of the IPO issues are underpriced during the study period. Average annual market adjusted excess returns (AAMAERs) is in the wide range of 166% - 2545% during the study period. There is stability in the number of year-wise IPO issues, underpriced issues and overpriced issues as their co-efficient of variation is less than one. As skewness is negative, it is left skewed and longer or fatter tail on the left side of the distribution, where in median is greater than mean. As the skewness lies between -0.5 and 0.5, the data are fairly symmetrical. If the kurtosis is the less than zero, the distribution is light tail and is called platykurtic distribution.

As P-value of 't' statistic is evident that the null hypothesis is accepted and hence, there is no significance difference between the number of year-wise IPO issues and its underpriced issues. There is evident of rejecting null hypothesis between the number of year-wise IPO issues and its AAMAE returns and hence, there is significance difference.

			<u>Closing Price-C</u> Offer Pr	<u>)ffer Price</u> rice	365* <u>MAER</u> Listing Lead Time
S. No	(Millions)	No of IPO Issues	Under Priced	Over Priced	Average Annual MAER (Market Adjusted Excess Returns (%))
1	Less than 500	48(35.04%)	36(75%) (39.13)	12	-39408029.23076
2	500-1000	40(29.19%)	25(62.5%) (27.17)	15	1896.30782
3	1000-1250	14(10.21%)	8(57.14%) (8.69)	6	295.97004
4	More than 1250	35(25.54%)	23(65.71%) (25)	12	562.32321
Total		137(100%)	92 (67.15%)	45 (32.84%)	

 Table No: 2 Offer Size-wise IPO Issues during 2016-2021

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of offer size-wise IPO issues. \* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during the study period.



50%-75% of the respective offer size-wise number of IPO issues are underpriced. Majority of the IPOs are issued from the companies having offer size less than ₹500mn. It is followed by companies having offer size ₹500mn-1000mn, more than ₹1250mn and ₹1000mn-1250mn respectively. Number of offer size-wise IPO issues, number of underpriced issues and percentage of underpriced issues decrease with the increase in offer-size up to ₹1250 Cr and thereafter, they increase with the increase in the offer size. AAMAE returns of the companies belonging to offer size more than ₹500mn have positive returns ranging from 295% to 1896%.

Significance difference between number of offer size-wise IPO issues and their underpriced issues have become evident from P-value of 't' statistic but not between number of offer size-wise IPO issues and AAMAE returns at 95% level of confidence.

#### Table No: 3 Sector-wise IPO Issues during 2016-2021

			Closing Price-Off	er Price	365* <u>MAER</u>
			Offer Price	e	Average Annual
S. No	Sectors	No of IPO		Over	MAED (Morkot
20110		Issues	<b>Under Priced</b>	Over	MAEK (Market
				Priced	Adjusted Excess
					Returns (%))
1	Financial Services	31(22.62%)	18(58.06%) (19.35%)	13	425.0710234
2	Chemical	13(9.49%)	12(92.30%) (12.90%)	1	1709.081543
3	FMCG	10(7.29%)	9(90%) (9.68%)	1	1650.635221
4	Service	14(10.21%)	12(85.71%) (12.90%)	2	879.1161173
5	Pharmaceutical	13(9.48%)	9(69.23%) (9.68%)	4	362.4963455
6	Infrastructure	15(1 <mark>0.94%</mark> )	8(53.33%) (8.60%)	7	740.0360861
7	Manufacturing	18(1 <mark>3.14%)</mark>	10(55.55%) (10.75%)	8	761.4076759
8	Logistic	2(1 <mark>.46%)</mark>	2(100%) (2.15%)	0	61.16410138
9	Metal & Mining	3(2 <mark>.19%)</mark>	3(1 <mark>00%) (</mark> 3.23%)	0	695.669136
10	Aviation	1(0 <mark>.73%)</mark>	0(0%) (0%)	1	-303.685964
11	Railway	1(0 <mark>.73%)</mark>	1(100%) (1.08 <mark>%)</mark>	0	<mark>42</mark> 28.940714
12	Miscellaneous	16(11.68%)	9(56.25%) (9.68%)	7	410.8239779
Total	Q.	137(100%)	93 (67.88%)	44 (32.12%)	
P-value			0.2298		0.0100

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of sector-wise IPO issues. \* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during the study period.



Not less than 50% of the respective sector-wise IPO issues are underpriced except aviation sector. About 20% of total number of IPO issues is belonged to financial services sector followed by more or less 10% each from manufacturing, miscellaneous, chemical sector, service sector, FMCG, pharmaceutical, infrastructure respectively. Rest of the sectors is negligible. IPO issues from negligible sectors are cent percent underpriced.

AAMAE returns of IPO issues, ranges from 4228.94% of railway sector to 61.16% of logistic sector during the study period, is positive except aviation.

Since P-value of 't' statistic is more than 5% at 95% confidence level, null hypothesis is accepted between the number of sector-wise IPO issues and their underpriced issues and hence, they are the same. However, there is significant difference between number of sector-wise IPO issues and their AAMAE returns and hence, there is difference.

		No of IPO	Closing Price-Of Offer Price	<u>fer Price</u> æ	365* <u>MAER</u> Listing Lead Time	
SI. No	Region	Issues	Under Priced	Over Priced	Average Annual MAER (Market Adjusted Excess Returns (%))	
1	Eastern	10(7.29%)	<b>3(30%)</b> (3.23%)	7	-95.91208548	
2	Western	61(44.52%)	4 <mark>6(75.40%) (49.46%)</mark>	15	859.2110433	
3	Northern	37(27%)	26(70.27%) (27.95%)	11	886.8923918	
4	Southern	29(21.17%)	18(62.06%) (19.35%)	11	676.6969972	
Total		137(100%)	93 (67.88%)	44 ( <mark>32.12%</mark> )	//2	
P-value			0.4573	- /	0.0554	

Table No: 4 Region-wise IPO Issues during 2016-2021

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of region-wise IPO issues.
\* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during



Region-wise IPO issues in total number of IPO issues are in the wide range of 7.3% - 45%. 75% of the IPO issues from western region are underpriced followed by 70% from northern, 62% from southern and 30% from eastern region respectively. AAMAE returns of all region-wise IPO issues except eastern region, have positive returns ranging between 676.69% and 859.211%.

The P-values of 't' statistic between number of region-wise IPO issues and their underpriced issues and number of region-wise IPO issues and their AAMAE returns are 0.4573 and 0.055 registering acceptance of null hypothesis and insignificant at 5% level of significance respectively.

			Closing Price-Off Offer Price	365* <u>MAER</u> Listing Lead Time	
SI. No	Age	No of IPO Issues	Under Priced	Over Priced	Average Annual MAER (Market Adjusted Excess Returns (%))
1	Less than 25	88(64. <mark>23%)</mark>	62(70 <mark>.45%) (</mark> 66.6 <mark>7%)</mark>	26	2368.82728
2	25-50	42(30. <mark>65%)</mark>	27(64.28%) (29.03%)	15	-0.20664
3	50-75	4(2.9 <mark>2%)</mark>	2(50%) (2.15%)	2	953.17048
4	More than 75	3(2.19%)	2(66.67%) (2.15 <mark>%)</mark>	1	898.40166
Total	Fotal 137		93 (67.88%)	44 (32.12%)	
<b>P-value</b>			0.6704	/	0.0823

#### Table No: 5 Age-wise IPO Issues during 2016-2021

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of age-wise IPO issues.

\* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during the study period.



Not less than 50% of IPO issues are underpriced in all the ages of the companies during study period. More than half of the total number of age-wise IPO issues are from the companies having less than 25 years of experience followed by 30% of 25-50 years of experience companies. Rest of them are marginal. As the age of companies increases, number of IPO issues, number of underpriced issues and percentage of underpriced issues with variation decreases during the study period. Companies under study having different ages of existence have positive AAMAE returns with maximum 2368.827% and minimum 898.401% except 25-50 years of companies. Companies having less than 25 years of existence have outstanding returns of 2368.82%.

There is insignificance between number of age-wise IPO issues and their underpriced issues and number of age-wise IPO issues and AAMAE returns since their alternative hypotheses are rejected.

			Closing Price-Of	<u>fer Price</u>	365* <u>MAER</u>	
			Offer Prie	ce	Listing Lead Time	
S No	Face Value	e Issues			Average Annual MAER	
	Tuce value		Under Priced	Over Priced	(Market Adjusted Excess	
			$\gamma$		Returns (%))	
1	1	9(6.56%)	6(66.67%) (6.45%)	3	742.8674863	
2	2	10(7.29%)	9(90%) (9.68%)	1	1094.873208	
3	4	2(1.46%)	2(100%) (2.15%)	0	1301.364588	
4	5	13(9.49%)	8(61.54%) (8.60%)	5	1358.449708	
5	10	103(75.18%)	68(66.01%) (73.12%)	35	620.8618311	
Total		137(100%)	93 (67.88%)	44 (32.12%)		
P-value		$\sim$	0.7081		0.0002	

#### Table No: 6 Face Value-wise IPO Issues during 2016-2021

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of face value-wise IPO issues. \* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during the study period.



More than 60% of respective face value-wise IPO issues are underpriced. Lion's share of IPO issues are from the companies having face value at  $\overline{10/2}$ . Rest of the face values is insignificance. Companies having face value at  $\overline{10/2}$  have cent percent underpriced followed by 90% at  $\overline{10/2}$ , 66.67% at  $\overline{10/2}$ , 66.01% at  $\overline{10/2}$ . Rest of the face values except at  $\overline{10/2}$ , 66.01% at  $\overline{10/2}$ . The second seco

Null hypothesis of insignificant difference between number of face value-wise IPO issues and their underpriced issues is accepted as its P-value is more than 5% significance level. There is significance between number of face value-wise IPO issues and their AAMAE returns.

			<u>Closing Price-Off</u> Offer Pric	365* <u>MAER</u> Listing Lead Time	
SI. No	Total Assets (Crores)	No of IPO Issues	Under Priced	Over Priced	Average Annual MAER (Market Adjusted Excess Returns (%))
1	Less than 10,000	59(43.06%)	45(76.27%) (48.39%)	14	989.8952939
2	10,000-50,000	45(32.84%)	28(62.00%) (30.11%)	17	487.3881533
3	50,000-1,00,000	16(11.68%)	10(62.00%) (10.75%)	6	454.6729326
4	More than 1,00,000	17(12.41%)	10(58.82%) (10.75%)	7	878.3197947
Total		137(100%)	93 (67.88%)	44 (32.12%)	

Table No: 7 Total Assets-wise IPO Issues during 2016-2021

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of total assets-wise IPO issues. \* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during the study period.



There is decrease in the respective number of total assets-wise IPO issues, number and percentage of underpriced issues, with the increase in the respective amount of total assets. As the increase in the worth of total assets, there is decrease in AAMAE returns up to ₹.100000; thereafter there is increase.

Alternative hypothesis of number of total assets-wise IPO issues and their underpriced issues are rejected as against number of total assets-wise IPO issues and their AAMAE returns.

T	able	e N	No:	8]	Promoters'	Holding-wise	Issues o	f IPO	during	2016-	2021
						0					

S. No	Promoters' Holding (%)	No of IPO Issues	<u>Closing Price-Of</u> Offer Price Under Priced	f <u>er Price</u> ce Over Priced	365* <u>MAER</u> Listing Lead Time Average Annual MAER (Market Adjusted Excess Returns (%))
1	Less than 25	7(5.10%)	6(85.71%) (6.45%)	1	1562.674162
2	25-50	30(21.89%)	21(70%) (23.07%)	9	770.9130956
3	50-75	41(29.92%)	28(68.29%) (30.76%)	13	792.5432222
4	More than 75	59(43.06%)	36(61.01%) (39.56%)	23	1344.721912
Total		137(100%)	91 (66.42%)	46 (33.58%)	
<b>P-value</b>			0.3966	-	0.0016

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of promoters' holding-wise IPO issues.

\* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during the study period.



With the increase in respective promoter's shareholding, there is increase in the total number of IPO issues and underpriced issues and decrease in percentage of underpriced issues, and vice versa. All types of promoters holding have positive AAMAE returns with minimum of 770.91% and maximum of 1562.67%. 't' statistic p-value 0.3966 is evident that there is no significant difference between number of promoters' holding-wise IPO issues and their underpriced issues as contrary to the number of promoters' holding-wise IPO issues and AAMAE returns. Hence, there is no significant different.

 Table No: 9 Offer Price-wise IPO Issues during 2016-2021

			Closing Price-Of	fer Price	365* <u>MAER</u>
	Offer Prices (₹)		Offer Prie	ce	Listing Lead Time
S. No		No of IPO			Average Annual MAER
		Issues	Under Priced	Over Priced	Market Adjusted
			Onder Triced	OverTriceu	(Mai Ket Aujusteu
					Excess Returns (%))
1	Less than 500	83(60.58%)	58(69.88%) (63.04%)	25	963.9714276
2	500-1000	41(29.92%)	25(60.97%) (27.17%)	16	298.8452801
3	1000-1500	9(6.56%)	7(77.78%) (7.61%)	2	1455.32792
4	More than 1500	4(2.91%)	2(50%) (2.17%)	2	-1086.061116
Total		137(100%)	92 (67.15%)	45 (32.85%)	
P-value			0.6300	-	0.5234

\* Figures in first parenthesis are the percentage of underpriced issues in respective total number of offer price-wise IPO issues.

\* Figures in second parenthesis are the percentage of respective underpriced issues in total number of underpriced issues during the study period.



The more the offer price of IPO issues, the lesser the number of offer price-wise IPO issues and the number of underpriced issues and the lesser the variation in the percentage of underpriced issues varying from 50%-77%. AAMAE return is positive up to offer price of Rs 1500/- ranging from 298.84% to 1455.32%. P-values are insignificant between number of offer price-wise IPO issues and underpriced issues and number of offer price-wise IPO issues and AAMAE returns as null hypotheses are accepted.

#### Table No: 10 Book Runner Lead Manager-wise Issues of IPO during

#### 2016-2021

S. No	No of IPO Issues	Book Runner Lead Manager
1	01 to 10	35
2	10 to 20	5
3	20 to 30	2
4	above 30	6



More than thirty number of IPO issues each are issued from six Book Runner Lead Managers (BRLMs). Only two BRLM have issued IPO issues ranging 20-30. Each Five BRLM issue IPOs ranging 10-20. IPOs less than 10 each are issued from Thirty five BRLM.

 Table No: 11 Ranks of Book Runner Lead Managers Based on Number of IPO Issues,

 Percentage of Underpriced Issues and Average Annual MAE returns of IPO Issues

Book Runner Lead Manager	Rank S Base d on no of Issue S	Ranks Based on Percen tage of underp riced	Ranks Based on average annual MAER	Grand Rank	Book Runner Lead Manager	Ranks Based on no of Issues	Ranks Based on Percenta ge of underpri ced	Ranks Based on average annual MAER	Total Ranks
CLSA India Private Limited	15	1	2	1	Karvy Investor Services Limited	16	1	22	39
BofA Securities India Limited	16	1	1	1	IDBI Capital Markets & Securities Limited	9	13	20	42
Equirus Capital Private Limited	12	5	3	2	Credit Suisse Securities (India) Private Limited	11	3	29	43
Centrum Capital Limited	15	1	4	2	Axis Capital Limited	2	12	31	45
Motilal Oswal Investment Advisors Limited	10	2	9	3	IDFC Securities Limited	13	7	26	46
Pantomath	15	1	5	3	SBI Capital	2	17	28	47

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Capital Advisors Private Limited					Markets Limited				
Haitong Securities India Private Limited	14	1	7	22	KFin Technologies Private Limited	16	1	33	50
Intensive Fiscal Services Private Limited	15	1	6	22	Link Intime India Private Limited	16	1	34	51
JM Financial Limited	3	4	17	24	Elara Capital (India) Private Limited	15	1	38	54
J.P. Morgan India Private Limited	13	1	10	24	Citigroup Global Markets India Private Limited	9	16	30	55
INDusInd Bank Limited	16	1	8	25	INGA Capital Private Limited	16	1	39	56
BNP Paribas	13	1	13	27	YES Securities (India) Limited	6	15	36	57
Nomura Financial Advisory and Securities Private Limited	9	6	13	28	Srei Capital Markets Limited	16	1	40	57
SMC Capital Limited	16	1	11	28	Goldman Sachs (India) Securities Private Limited	14	10	35	59
Ambit Capital Private Limited	12	5	12	29	Jefferies India Private Limited	14	10	37	61
ICICI Securities Limited	1	14	15	30	DSP Merrill Lynch Limited	12	19	32	63
IIFL Securities Limited	2	12	16	30	HDFC Securities Limited	13	7	44	64
Spark Capital Advisors (India) Private Limited	16	1	14	31	Morgan Stanley India Company Private Limited	14	10	46	70
Edelweiss Financial	5	9	18	32	HSBC Securities	12	19	42	73

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Services Limited					and Capital Markets (India) Private Limited				
HDFC Bank Limited	7	11	14	32	BOB Capital Markets Limited	13	18	43	74
JM Financial Institutional Securities Limited	8	3	21	32	UBS Securities India Private Limited	15	18	41	74
PNB Investment Services Limited	16	1	19	36	Aryaman Financial Services Limited	16	20	45	81
Kotak Mahindra Capital Company Limited	4	8	27	39	IndusInd Bank Limited	15	20	48	83
DAM Capital Advisors Limited	14	10	15	39	Deutsche Equities India Private Limited	16	20	47	83



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#### Conclusion

Nearly 2/3 of the IPO issues are underpriced and its average annual market adjusted excess returns (AAMAER) is in the range of 166%-2545% during the study period. There is stability in the total number of year-wise IPO issues, underpriced issues and overpriced issues as their co-efficient of variation is less than one.

With the decrease in the respective number of offer size-wise IPO issues up to ₹1250 Cr, age-wise IPO issues, total assets-wise IPO issues, and offer price-wise IPO issues, there is decrease in number of underpriced issues and decrease in the varying percentage of their underpriced issues. With the increase in the respective number of promoters' holding-wise IPO issues and number of underpriced issues, there is decrease in the percentage of underpriced issues during the study period. With increase in the face value, there is variation in the number of IPO issues, number of underpriced issues and percentage of underpriced issues.

Not less than 50% of the respective sector-wise IPO issues are underpriced except aviation sector. 75% of the IPO issues from western region are underpriced followed by 70% from northern, 62% from southern and 30% from eastern region respectively. More than thirty number of IPO issues each are issued from six Book Runner Lead Managers (BRLMs). Only two BRLM have issued IPOs ranging 20-30. Six Each BRLM issue IPOs ranging from 10 to 20. IPOs less than 10 each are issued from Thirty four BRLM.

Companies under study with respective parameters of annual average market adjusted excess returns (AAMAER) are positive except offer size less than ₹500, aviation sector, eastern region, 25-50 years experience of existence and offer price more than ₹1500 during the study period.

Null hypotheses are accepted among the number of year-wise, sector-wise, region-wise, age-wise, face value-wise, total assets-wise, promoters holding-wise, and offer price-wise except offer size-wise IPO issues with their respective underpriced issues, since their p values of 't' statistic of two independent variables is more than 5%, at 95% level significance. Hence, there is no significant difference.

P value of 't' statistic of year-wise, sector-wise, face value-wise, total assets-wise, promoters holding-wise IPO issues with their respective AAMAER are rejected as against acceptance of null hypotheses of offer size-wise, region-wise, age-wise and offer price-wise IPO issues with their respective AAMAER. Thus, there is significant difference in the former cases as contrary to later cases.

#### Limitation of the study and scope for Further Research

The study is limited to firm specific variables and the equity IPOs of Indian companies.

Moreover, there are limits on number of variables, stock exchanges (BSE & MSEI) and time horizon of investment used. There is a need to account for other significant variables like macro-economic, the auditor's, and underwriter's prestige. Further studies can extend period and study of SME IPOs and a need to examine the changing determinants of post-IPO pricing over a period longer than 12 months. Therefore, future research can also conduct a comparative study on a global level.

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