Business Analyst, ISSN 0973 - 211X, 41(2), 107-135, ©SRCC

DO SME IPOs BEAT THE MARKET ON LISTING DAY?

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ABSTRACT

This paper aims to examine the listing day returns provided by BSE SME IPOs over and above the market indices namely, S & P CNX Nifty, S & P BSE Sensex and BSE SME IPO Index. Further it identifies the different factors that explain the market-adjusted abnormal returns on listing. The results show that on average SME IPOs not only provide positive returns on the listing day but also outperform the Nifty, Sensex and BSE SME IPO Index. The linear regression analysis provides evidence supporting the information asymmetry, ex-ante uncertainty and signalling hypothesis. Favourable underwriter reputation signals good firm quality creating greater investor interest on listing day and higher abnormal returns. A second possibility could be that under-pricing is done to ensure that the SME issue is a success. This study has practical implications for market regulators to minimise the IPO listing delay in order to make the SME platform more attractive for investors and issuers.

Keywords: Initial Public Offering; Listing Day Abnormal Returns; Small and Medium Enterprises; S&P CNX Nifty; S&P BSE Sensex; BSE SME IPO Index; Underpricing.

INTRODUCTION

Companies go public and list their securities on the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE), which are commonly known as the 'main board'. These exchanges are the primary platforms where IPOs have been taking

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place for years. In spite of well-established exchange platforms, SMEs in India found it difficult to raise public finance through the existing stock exchanges due to several factors such as strict disclosure norms, regulatory and financial requirements. To allow promising enterprises of the future to access equity capital, the BSE and NSE launched their SME boards, namely BSE SME and NSE Emerge respectively in 2012. In contrast to the main board, the eligibility criteria for BSE SME and NSE Emerge platforms are not so stringent. The eligibility criteria of the main board and the SME platforms can be distinguished on the following parameters:

- A Main Board IPO requires a post-issue paid up capital of at least Rs.10 crores whereas for SME IPO, it should not exceed Rs. 25 crores.

- The minimum number of prospective allottees for an IPO stands at 1000. The same for SME IPO is 50 allottees.

- The application size of SME IPO cannot be less than Rs.1,00,000 which is comparatively higher than a regular IPO wherein the applications range from Rs.10,000 to 15,000.

- A mainboard IPO has to report on a quarterly basis whereas the SME IPO has to report every six months i.e. bi-annually.

- It is mandatory for an SME IPO to be 100% underwritten wherein the merchant banker has to compulsorily underwrite 15% on own account. This is not the case with a regular IPO.

In addition to the above differences, the requirement of track record of profitability, corporate governance norms and reporting requirements are comparatively relaxed for an SME, thereby making listing on an SME platform much easier. As SME exchanges are a relatively new platform in India, not much research has been done in this area. The existing literature is mostly descriptive in nature (Tripathi, Pradhan & Pandey, 2017). An important aspect of this platform is that companies can come out with an initial public offering and thereby get listed and traded on the exchange.

There are very few empirical studies on SME IPOs in India (Dhamija & Arora , 2017; Arora & Singh, 2019 and Singh & Anand, 2020). Singh & Anand (2020) analysed the initial raw returns of BSE SME IPOs launched during the period 2012 to 2017. The findings revealed that on an average, SME IPOs provide positive returns of 8.66% on the listing day. The present paper expands Singh & Anand's (2020) study by analysing the listing day returns provided by BSE SME IPOs over and above the market indices namely, S & P CNX Nifty, S & P BSE Sensex and BSE SME IPO Index. It further aims to ascertain the impact of various firm-specific, issue-specific and market-specific variables on the listing day excess returns of IPOs listed on the BSE SME Exchange.

LITERATURE REVIEW

International Evidence of Performance of IPOs

The existence of IPO under-pricing is a well-documented deviation from market efficiency. Loughran, Ritter & Rydqvist (1994) provided international evidence of short-run performance of companies going public in 52 countries. Short-run under-pricing of IPOs is an international phenomenon. There are many theoretical explanations for short-run under-pricing of IPOs. Most of the studies have explained under-pricing to be the outcome of information asymmetry between the informed and the uninformed (Rock, 1986). Under-pricing the new issues becomes necessary to attract the uninformed investors to the new issues market.

A portion of literature attributes under-pricing to signalling by IPO firms. Allen and Faulhaber (1989) stated that good firms with favourable prospects find it optimal to signal their type by under-pricing their initial offering of shares. Grinblatt & Hwang (1989) also developed a similar signalling model that indicated that under-pricing is a signal that the firm is good. This model is in line with Ibbotson (1975) and McGuiness (1992) who stated that under-pricing is done with the intent that underwritings in future from the same issuer could be sold at attractive prices. Bad firms cannot signal as they are aware that they cannot recover the initial loss from under-pricing (Welch, 1989).

Generally, high prestige underwriters prefer to manage good issues. Also, firms with good financial perspectives enable them to hire reputable underwriters. Hence, underwriter reputation can give a signal to the public and therefore, impact the first day returns of the new issue. Vong & Trigueiros (2010) showed evidence of the signalling effect of underwriters' reputation for new offerings in Hong Kong. The higher the reputation of the underwriters, the lower is the under-pricing of the new offerings because the price-setting and information gathering activities are more efficient. On the contrary, a study of the Growth Enterprise Market (GEM) IPOs in Hong Kong revealed that both the underwriters' reputation and signalling role of under-pricing have no impact on first day excess returns (Vong & Zhao, 2008). Carter and Manaster (1990) studied a sample of IPOs of equity during 1979-1983 and concluded that underwriters with high reputation are associated with lower returns IPOs. This is because to maintain their reputation, prestigious underwriters only market low risk offerings. Similar were the findings of Megginson and Weiss (1991) who found significantly lower under-pricing for venture-capital backed IPOs than for non-venture capital backed firms. Titman & Trueman (1986) and Carter, Dark and Singh (1998) also found a negative association between underwriter reputation and short-run excess returns. These findings were reversed in Beatty and Welch (1996) who found for their 1992-1994 sample period that prestigious underwriters under-price more. Similarly, Hoberg (2007) revealed for a sample of U.S IPOs from 1984-2000 that among established underwriters, those that under-price more benefit by experiencing growing market share. Liu and Ritter (2011) also claimed that U.S. IPOs are more under-priced when their underwriters have high quality and more industry expertise. Since literature provides varied evidence on the relationship between lead manager prestige and under-pricing, it becomes important to look into the impact of underwriter reputation on listing day abnormal returns of SME IPOs.

High proportion of post-issue equity holding conveys the promoters and promoter group's confidence in the IPO firm. According to Leland & Pyle (1977), this retention ratio is a credible signal of firm value. Reber & Fong (2006) also explained that high retention ratio conveys a positive signal to investors about the firm value, thus reducing ex-ante uncertainty and the degree of under-pricing. Aggarwal &

Rivoli (1990) presented the fads hypothesis. A fad is a temporary overvaluation caused by investors' over-confidence about the earning potential of IPO firms. Shiller (1990) emphasized another theory for under-pricing of new issues which he called the impresario hypothesis. Underwriters deliberately under-price (i.e. high initial returns) to obtain publicity and goodwill and promote enthusiasm among IPO investors. Another puzzle regarding IPOs is the existence of 'hot issue' markets which are periods with unusually high initial returns and associated with increasing volume of IPOs (Ritter, 1984). Welch (1992) argued that the IPO market is subject to informational "cascades". The first few investors are attracted to the under-priced IPOs, thereby inducing a positive "cascade" effect in which all subsequent investors join creating enormous demand for the issue.

Studies of Indian IPO Market

Sehgal and Singh (2008) showed evidence of high degree of under-pricing (99.2%) by BSE mainline IPOs over the period 1992 to 2001. They further found that age of the firm has a significant negative relation with under-pricing while the number of times the issue is subscribed is positively related to under-pricing. The findings of Sahoo & Rajib (2010) indicated that Indian IPOs are under-priced (measured by market-adjusted initial returns) to the extent of 46.55 per cent. Similarly, Singh & Kumar (2012) reported a significant positive relationship between under-pricing and oversubscription for a sample of 116 companies that came to the market between January 2006 and October 2007. Krishnamurti & Kumar (2002) noted that under-pricing served to compensate investors for bearing additional risk. Jain & Padmavathi (2012) provided evidence supporting the signalling hypothesis in the Indian capital markets. They found that under-pricing increases with high subscription, low pre-IPO leverage and high return on opening that signal high worth of the firm in the market. Kumar (2007) and Ghosh (2005) state that larger offerings are subject to regulatory scrutiny and are inspected thoroughly by many analysts, hence they are less risky and lesser under-priced.

As per SEBI guidelines, in case of an IPO, the promoters' shareholding should not be

less than 20 per cent of the post-issue equity capital. Further, according to Regulation 36 of the SEBI (ICDR) Regulations, 2009 the minimum promoters' contribution shall be locked in for a duration of three years while the promoters' holding over and above the minimum requirement shall be locked in for a duration of one year. Considering these regulations, Jain & Padmavathi (2012) took post-IPO promoters' holding as a proxy for liquidity of the issue in the secondary market. The higher the promoters' holding, the lesser is the liquidity of the stock as promoters' holding is subject to mandatory lock-in period. Thus, they anticipated that IPO firms with high promoters' holding (low liquidity) will under-price more in order to attract investors.

Evidence of performance of Small and Medium Enterprises (SME) IPOs

While several IPO studies have reported significant positive initial returns on the main board, research on the performance of SME IPOs is still rare. Vong & Zhao (2008) examined the price performance of GEM IPOs on the Hong Kong Stock Exchange and reported significant under-pricing on the first trading day. The under-pricing level of 18.32% was comparatively higher than the 15.02% stated by Vong (2006) for the Main Board. Chorruk & Worthington (2013) concluded that the degree of under-pricing of Thai SME IPOs is modest and significantly lower than that of large-firm IPOs listed on the Stock Exchange of Thailand (SET). Anderson, Chi & Wang (2013) discovered that ChiNext IPOs are more significantly under-priced than Main Board IPOs, however the under-pricing is not significantly different from the SME Board IPOs. Burrowes & Jones (2004) studied the raw and market-adjusted initial returns of 125 AIM IPOs that got listed between 1995 and 1997 and showed that the level of under-pricing was not significantly different from that on U.S and London IPO Main Board listings. These results deviate from the expectation of high under-pricing usually linked with small growing companies that are risky in nature.

Very few research studies have been undertaken to examine emerging SME IPO markets like India. Singh and Anand (2020) studied the listing day performance of BSE SME IPOs by examining the initial raw returns. The results showed that SME IPOs are under-priced to the extent of 8.66%. Age, subscription, issue price, listing

delay, market sentiment, and financial & construction sector dummies had a significant impact on initial returns of SME IPOs. Dhamija & Arora (2017) investigated the initial performance of 100 SME IPOs launched by BSE and NSE during the period 23rd February 2012 to 31st March 2015 and found evidence of under-pricing. The average market-adjusted under-pricing was found to be 11 per cent. Promoters' holding, subscription, issue size, underwriter reputation, stock exchange of listing and the type of offer were the key determinants of under-pricing. Arora & Singh (2019) studied a sample of SME IPOs listed on BSE SME and NSE EMERGE and concluded that underwriter prestige has a positive relationship with IPO returns which helps in signalling the quality of issuing firm to investors. Tripathi, Pradhan & Pandey (2017) reinforced the fact that not only mainline IPOs but also SME IPOs are under-priced in India.

HYPOTHESES DEVELOPMENT

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

H_1: There is no significant impact of age of the firm at the time when the issue comes to the market on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_2: There is no significant impact of subscription of the issue on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_3 : There is no significant impact of issue price on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_4: There is no significant impact of issue size on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_5: There is no significant impact of listing delay on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_6: There is no significant impact of post-issue promoters' holding on the Nifty-

adjusted abnormal return of the IPO on the listing day.

H_7: There is no significant impact of lead manager's reputation on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_8 : There is no significant impact of market conditions on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_9: There is no significant impact of market sentiment on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_{10}: There is no significant impact of IPO firms belonging to the manufacturing sector on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_{11}: There is no significant impact of IPO firms belonging to the financial and insurance sector on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_{12}: There is no significant impact of IPO firms belonging to the wholesale and retail trade sector on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_{13}: There is no significant impact of IPO firms belonging to the information, communication and education sector on the Nifty-adjusted abnormal return of the IPO on the listing day.

H_{14}: There is no significant impact of IPO firms belonging to the construction sector on the Nifty-adjusted abnormal return of the IPO on the listing day.

Similarly, 14 hypotheses are constructed for Sensex-adjusted abnormal returns and 14 for BSE SME IPO Index-adjusted abnormal returns on the listing day, resulting in a total of 42 hypotheses formulated for the study.

DATA AND RESEARCH METHODOLOGY

Data

The data for the study has been collected from secondary sources. These sources include the websites of the Bombay Stock Exchange (www.bseindia.com), National Stock Exchange (www.nseindia.com), 'Basis of Allotment' document and the prospectus issued by the firm available on the official website of Securities and Exchange Board of India Ltd. (SEBI) (www.sebi.gov.in).

Sample

The study focuses on IPOs listed on the SME platform of Bombay Stock Exchange (BSE) in India. The sample comprises of 176 BSE SME IPOs launched during the period 23rd February 2012 to 31st March 2017. The initial returns and the market-adjusted returns over and above the market indices namely, S&P CNX Nifty and S&P BSE Sensex are computed for all 176 IPOs as the required data was available for them. However, the market-adjusted returns over and above the S&P BSE SME IPO index could be computed only for 171 IPOs. This is because the base date of the S&P BSE SME IPO index is 16th August, 2012 and hence, the index values were available only after this date. As a result, the first five SME IPOs that came to the market are excluded as their issue closing and listing dates fell before 16th August, 2012 and the market-adjusted returns could not be calculated for them. The final sample size for the regression analysis for Model 1 and 2 is 174 after removing 2 outlier cases (initial sample size was 176) and the final sample size for the regression analysis for Model 3 is 170 after removing 1 outlier case (initial sample size was 171). Table 1 summarizes the sample size for each regression model.

Table 1: Sample Size of Regression Models

Regression Model	Dependent Variable	Sample Size
Model 1	Market-Adjusted Return over and above S&P CNX Nifty index	174
Model 2	Market-Adjusted Return over and above S&P BSE Sensex	174
Model 3	Market-Adjusted Return over and above S&P BSE SME IPO index	170

Sample Period

The sample period under study starts from 23rd February 2012 as the first IPO which got listed on the SME platform of Bombay Stock Exchange (BSE) was issued on this date. The sample period extends over five years from 23rd February 2012 to 31st March 2017.

Description of Variables

Listing Day Abnormal Returns- The market-adjusted model measures the first day returns in excess of the market return. Market-adjusted abnormal returns are taken as the predicted variable in this study. Many prior studies such as Sahoo & Rajib (2010), Anderson, Chi & Wang (2013), Sadaqat, Akhtar & Ali (2011) and Agathee et. al (2012) have used this measure of under-pricing.

The raw initial returns are calculated as follows:

$$Raw\ Return = \frac{First\ day\ closing\ price - Offer\ price}{Offer\ price} \text{ X } 100 \quad (1)$$

The market-adjusted abnormal returns are calculated as follows:

$$MAAR = \left[\frac{1 + Ri}{1 + Rm} - 1\right] \text{ X } 100 \quad (2)$$

Where,

MAAR= Market-adjusted abnormal return

R_i= Raw return on the SME IPO

R_m= Return on the market index

$$R_m = \frac{\textit{Listing Day Index Closing - Issue Close day Index Closing}}{\textit{Issue Close day Index Closing}} \quad (3)$$

For the purpose of this study, three market indices have been used to calculate MAAR namely, S&P CNX Nifty, S&P BSE Sensex and BSE SME IPO Index. This results in three different measures of MAAR, i.e. $MAAR_{Nifty}$, $MAAR_{Sensex}$ and $MAAR_{SME}$. In the regression models used in this study- $MAAR_{Nifty}$, $MAAR_{Sensex}$ and $MAAR_{SME}$ have been individually regressed on the explanatory variables described below:

Age (AGE)- Age of the company at the time when the IPO is launched is taken as a proxy for ex-ante uncertainty as it reflects the operational history of the firm. In this study, age is measured by the difference between the year of IPO launch and the year of incorporation of the firm. This variable has been rounded off to whole number in years. Based on prior literature, it is expected that younger firms, which are supposed to be riskier, under-price their new issues more in order to compensate the investors for undertaking risk.

Subscription (SUB)- It is the ratio of the number of shares applied for to the number of shares offered by the IPO firm. The over-subscription rate of the IPO reflects the magnitude of response of the investors to the new issue. Thus, it is taken as a proxy for investors' demand for the IPO. A high subscription rate indicates high demand for the issue. However, since the investors' demand is not fully met, there might be a lot of buying interest on the listing day leading to surge in closing prices.

Issue Price (INVIP)- It is the price at which an IPO is offered to the public. In this study, inverse of the issue price has been used.

Issue Size (LNSIZE)- It refers to the gross proceeds of the issue (in rupees crores) measured by the product of the issue price and the number of shares offered through

the IPO. In this study, natural logarithm of the issue size has been used. As documented by Ritter (1984) and Ibbotson et al. (1994), larger offers tend to be less under-priced as they are generally offered by more established firms which reduces the perceived risk of the IPO.

Listing Delay (LD)- It is defined as the time lag between the issue closing date and the listing date. The direction of relationship between listing delay and under-pricing is not very clear in the literature. On one hand, it is argued that under-pricing increases as listing delay increases (Mok & Hui, 1998 and Pande & Vaidyanathan, 2007). In contrast to this view, some studies show that listing delay is negatively related to the level of under-pricing (How, 2000 and Sehgal & Singh, 2008). Therefore, it becomes important to test this relationship.

Post Issue Promoters' Holding (PIPH)- It is measured as the percentage of the total equity owned and retained by the promoters and the promoters' group after the issue. This variable plays an important signalling role because high retention ratio implies that promoters are not willing to dilute their stake in the SMEs after they go public.

Lead Manager Reputation (LMREPTOP3)- This study employs Singh & Anand's (2020) ranking of lead managers based on total number of IPOs (whether mainline or SME, BSE-listed or NSE-listed). LMREPTOP3 is taken as a dummy variable that takes the value "1" if the lead manager ranks in the top 3 on the basis of the total number of their managed issues, and "0" otherwise.

Market Condition (MKTCOLD)- This variable has been used as a proxy for the level of IPO activity prevailing at the time of the issue. Following Singh & Anand (2020), the hot and cold months of the IPO market have been identified in the study. Dummy variable "1" is taken as a proxy for IPOs issued during the cold IPO market conditions and "0" is taken for IPOs issued during the hot market condition.

Market Sentiment (SENTPOS)- The market sentiment is said to be positive if Sensex has risen between the IPO closing date and listing date, whereas market sentiment is said

to be negative if Sensex has declined between these two dates. Dummy variable "1" is used for IPOs issued during the positive sentiment phases whereas "0" is used for IPOs issued during the negative sentiment phases. Initial returns are expected to be higher when the market sentiment is positive because the market overvalues the stock on the listing day, thus increasing the gap between the offer price and the listing day close price.

Sectoral Classification Effects (SECMAN, SECFIN, SECTRADE, SECIT, SECCONS)- SME IPOs are issued by firms coming from different sectors. For the purpose of this study, five broad sectors have been identified on the basis of highest concentration of IPOs both in terms of number and amount raised during the sample period. The remaining sectors which individually represent very few SME IPOs are grouped into one broad category named "Others". Thus, with respect to sectoral effects, SME IPO firms are classified into six categories namely, 'manufacturing', 'financial and insurance activities', 'wholesale and retail trade', 'information, communication and education', 'construction and real estate' and 'others' (Singh & Anand, 2020). To capture the sector specific differences in explaining under-pricing, five dummy variables have been used. Dummy variable "1" is used for IPOs that belong to these sectors, else "0". The sector 'others' has been taken as the reference category here.

Multivariate Regression Model

Three regression models are estimated taking $MAAR_{Nifty}$, $MAAR_{Sensex}$ and $MAAR_{SME}$ as the dependent variables respectively. OLS has been employed in the study only after testing the assumptions of OLS regression. Two cases stood out as having large residuals, namely, GCM Securities Ltd. and Max Alert Systems Ltd. So the above two outliers were deleted from the regression models to produce unbiased results. The general form of regression equations for Models 1, 2 and 3 is as follows :

Model 1:

$$MAAR_{Nifty} = \alpha_1 + \beta_1(AGE) + \beta_2(SUB) + \beta_3(INVIP) + \beta_4 ln(SIZE) + \beta_5(LD) + \beta_6(PIPH) + \beta_7(LMREPTOP3) + \beta_8(MKTCOLD) + \beta_9(SENTPOS)$$

$$+\beta_{10}(SECMAN)+\beta_{11}(SECFIN)+\beta_{12}(SECTRADE)+\beta_{13}(SECIT)+\beta_{14}(SECCONS)+\varepsilon_i \quad (4)$$

Model 2:

$$MAAR_{Sensex}=\alpha_2+\beta_{15}(AGE)+\beta_{16}(SUB)+\beta_{17}(INVIP)+\beta_{18}ln(SIZE)+\beta_{19}(LD)+\beta_{20}(PIPH)+\beta_{21}(LMREPTOP3)+\beta_{22}(MKTCOLD)+\beta_{23}(SENTPOS)+\beta_{24}(SECMAN)+\beta_{25}(SECFIN)+\beta_{26}(SECTRADE)+\beta_{27}(SECIT)+\beta_{28}(SECCONS)+\varepsilon_i \quad (5)$$

Model 3:

$$MAAR_{SME}=\alpha_3+\beta_{29}(AGE)+\beta_{30}(SUB)+\beta_{31}(INVIP)+\beta_{32}ln(SIZE)+\beta_{33}(LD)+\beta_{34}(PIPH)+\beta_{35}(LMREPTOP3)+\beta_{36}(MKTCOLD)+\beta_{37}(SENTPOS)+\beta_{38}(SECMAN)+\beta_{39}(SECFIN)+\beta_{40}(SECTRADE)+\beta_{41}(SECIT)+\beta_{42}(SECCONS)+\varepsilon_i \quad (6)$$

EMPIRICAL RESULTS

Listing Day Returns

A descriptive analysis of the sample BSE SME IPOs as shown in Table 2 reveals that the average raw initial return on listing day is 8.66 per cent. The allottees of an SME initial public offering could earn this return in just a time period of 10 to 15 days by selling their holdings on the close of the listing day. Similarly, the average MAARs over and above Nifty and Sensex are almost 8.2 per cent while that over BSE SME IPO index is over 6 per cent (since the SME IPO index performed better as compared to Nifty and Sensex). The positive average listing day returns supports the findings of previous research that IPOs tend to be under-priced. Out of the sample SME issues, 173 initial public offerings (constituting about 98 per cent of the sample) were issued through the fixed price mechanism. The absence of book-building mechanism in price-setting could contribute to such under-pricing. This is because book building is believed to reduce the IPO market information asymmetry to some extent as it is a

more efficient price discovery mechanism that incorporates investor demand into the issue price.

To minimize the impact of extreme observations, 5% trimmed mean has also been calculated for the four measures of listing day returns. As shown in the Table 2, the trimmed mean of initial returns, $MAAR_{Nifty}$, $MAAR_{Sensex}$ and $MAAR_{SME}$ is 5.77 per cent, 5.34 per cent, 5.35 per cent and 3.93 per cent respectively. This indicates that the listing day returns from the top 2.5% extreme cases are very high as compared to the bottom 2.5% cases. This further reinforces the under-pricing phenomenon of IPOs prevailing in the short run.

Figures 1, 2 and 3 show the frequency distributions of $MAAR_{Nifty}$, $MAAR_{Sensex}$ and $MAAR_{SME}$ respectively. It can be observed that on the day of listing, over two-third of the sample SME IPOs outperform the Nifty index. There are only 58 SME IPOs (33 per cent of the sample) that have negative market-adjusted returns on the listing day. The results of $MAAR_{Sensex}$ are almost in line with those obtained for $MAAR_{Nifty}$. It can be observed that on the day of listing, about two-third of the sample SME IPOs outperform Sensex. There are 59 SME IPOs constituting about 33 per cent of the sample that have negative market-adjusted returns on the listing day. The results of $MAAR_{SME}$ show that on the day of listing, about 58 per cent of the sample SME IPOs outperform the BSE SME IPO index. It can be observed that the proportion of outperforming SME issues has gone down when the BSE SME IPO index is taken as the benchmark index. This is because the SME IPO index performed better as compared to Nifty and Sensex. There are 72 SME IPOs constituting about 42 per cent of the sample that have negative market-adjusted returns ($MAAR_{SME}$) on the listing day.

Table 2: Descriptive Statistics of Listing Day Returns

MEASURE OF RETURN	STATISTIC									
	N	Mean Return	5% Trimmed Mean	Median	Std. Deviation	Min.	Max.	Range	Skewness	Kurtosis
IR	176	8.6570	5.7683	3.4359	24.71	-28.00	241.25	269.25	6.051	49.845
$MAAR_{Nifty}$	176	8.1824	5.3401	2.8246	24.91	-26.81	249.92	276.73	6.461	55.859
$MAAR_{Sensex}$	176	8.1946	5.3497	2.7636	24.902	-26.75	249.28	276.03	6.431	55.392
$MAAR_{SME}$	171	6.024	3.9329	2.0424	20.67	-25.19	200.75	225.94	5.456	46.802

Figure 1: Frequency Distribution of $MAAR_{Nifty}$

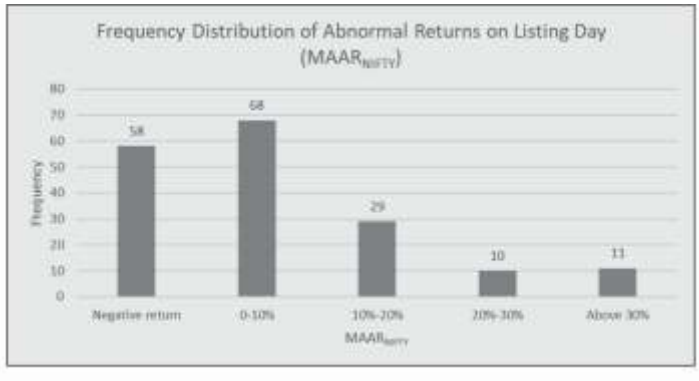


Figure 2: Frequency Distribution of $MAAR_{Sensex}$

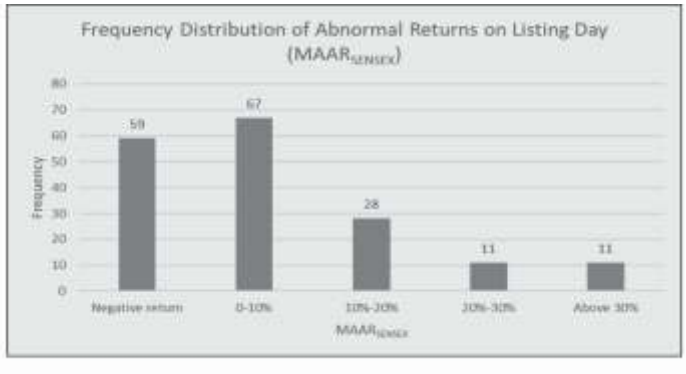
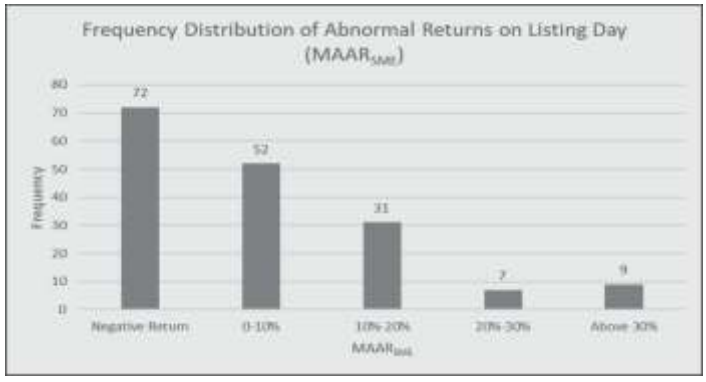


Figure 3: Frequency Distribution of $MAAR_{SME}$



Factors Affecting The Market-Adjusted Abnormal Returns Of BSE SME IPOs On The Listing Day

As shown in Table 3, the F-statistic of all the regression models is significant. Table 4 shows that there is enough evidence to reject the null hypothesis H_1, H_{15} and H_{29}. Thus, there is a significant negative relationship between age of the SME going public and Nifty-adjusted, Sensex-adjusted and SME IPO Index-adjusted abnormal returns. From an investor's point of view, subscribing to an IPO of a relatively young SME is riskier as compared to that of an older firm (which is already in the growth or maturity phase) due to the risk of failure of start-up. So, in order to compensate the investors for undertaking risk, young SMEs under-price their initial public offerings more (as reflected in higher market-adjusted abnormal returns). In contrast, the older SMEs which are well-established have lower ex-ante uncertainty and are less under-priced. Similar findings were also reported by Sehgal and Singh (2008) for mainline Indian IPOs. This finding supports the information asymmetry (Rock, 1986) and ex-ante uncertainty hypothesis. Therefore, higher the risk and uncertainty perceived by investors regarding the SME IPO, higher the under-pricing.

At 5 per cent level of significance, there is enough evidence to reject null hypothesis H_2, H_{16} and H_{30}. Hence, a significant positive relationship exists between subscription and Nifty-adjusted, Sensex-adjusted and SME IPO Index-adjusted

abnormal returns. Thus, we reject null hypothesis H_2, H_{16} and H_{30}. IPOs which attract higher levels of subscription result in higher market-adjusted listing day returns. The evidence suggests that higher levels of subscription reflect higher investor demand as a result of which investors who fail to get allotment in the IPO start purchasing on listing, thereby creating a bubble and resulting in higher listing day abnormal returns. This finding is consistent with the winner's curse hypothesis (Rock, 1986) which shows oversubscription of good issues by all investors. Similar findings were reported by Sehgal & Singh (2008) and Singh & Kumar (2012). Jain & Padmavathi (2012) provided evidence supporting the signalling hypothesis in the Indian capital markets. They found that under-pricing increases with high subscription that signals high value of the firm in the market.

The face value of all the SME IPOs issued during the sample period is ₹10. For majority of the sample IPOs, the issue price is set over and above the face value (i.e. at a premium). However, it was found that SMEs generally do not attach high premiums to their initial public offerings due to risk of failure of issue. At 10 per cent level of significance, we reject the null hypothesis H_3, H_{17} and H_{31}. The significant positive coefficient estimate of INVIP indicates that SME issues with higher offer price have lower Nifty-adjusted, Sensex-adjusted and SME IPO Index-adjusted abnormal returns. Higher priced issues (higher premium issues) generate lower excess returns. Since the high premium IPOs are more fully priced, they reduce the degree of under-pricing and hence the listing day returns for the investors. Higher priced issues leave very little for the investors on the table. They may even bring negative returns (overpriced).

The results of Model 1 as shown in Table 4 indicate that the coefficient estimate of LNSIZE is 2.913 which is positive and significant at 10 per cent level. So, there is enough evidence to reject the null hypothesis H_4. Because issue size is a log-transformed variable, its regression coefficient implies that a 1 per cent increase in issue size of the SME IPO would result in a 0.02913 (2.913/100) percentage point increase in the Nifty-adjusted listing day returns. Similarly, the results of Models 2 and 3 reveal that a 1 per cent increase in issue size of the SME IPO would result in a

0.02984 (2.984/100) and 0.03113 (3.113/100) percentage point increase in the Sensex-adjusted and SME IPO Index-adjusted listing day returns respectively. So, at 10 per cent level of significance, we reject the null hypothesis H_{18} and H_{32}. The results indicate that SME issues with higher issue size have higher market-adjusted listing day returns compared to SME issues with lower issue size. This finding is in contrast to extant literature on mainline IPOs which reports an inverse relation between the two. It, therefore rejects the ex-ante uncertainty hypothesis. IPOs which generate large gross proceeds are considered as big issues. They are generally managed by reputed lead managers and are more thoroughly scrutinized by the market participants. These large-sized issues create greater investor interest and therefore, high investor demand. The evidence suggests that large-sized issues may create positive sentiments towards the IPO and hence, greater demand on the listing day leading to higher abnormal returns. A second possibility is that fads lead to temporary overvaluation due to investors' over-optimism about the earning potential of IPO firms (consistent with Aggarwal & Rivoli, 1990).

As shown in Table 4 , there is enough evidence to reject the null hypotheses H_5, H_{19} and H_{33} at 5 per cent level of significance. Thus, there is a significant positive relationship between listing delay and Nifty-adjusted, Sensex-adjusted and SME IPO Index-adjusted abnormal returns. SME IPOs with longer listing delay tend to be more under-priced (higher listing day excess returns) as compared to IPOs with shorter listing delay. The more the time lag between the issue closing date and listing date, the greater is the speculation about the IPO during this period resulting in greater deviations from the true intrinsic value of the share.

There is not enough evidence to reject the null hypothesis H_6, H_{20} and H_{34} and hence, it can be concluded that there is no significant relationship between post-issue promoters' holding and market-adjusted listing day returns of SME IPOs.

As shown in Table 4, there is enough evidence to conclude that there is a significant relationship between lead manager's reputation and Nifty-adjusted, Sensex-adjusted and SME IPO Index-adjusted abnormal returns. Thus, at 5 per cent level of

significance we reject the null hypothesis H_7, H_{21} and H_{35}. The significant positive coefficient of the dummy variable suggests that the market-adjusted returns of SME IPOs that are managed by the 'Top-3' lead managers (coded as one) is significantly higher relative to those of IPOs managed by the 'Other' lead managers (reference category-coded as zero), holding the other predictor variables constant. This finding supports the signalling hypothesis as the underwriter reputation helps in reducing information asymmetry and signals quality of firms to investors. This could be because IPOs managed by high prestige lead managers are more efficiently priced and thus, generate lower listing day excess returns for the investors. These findings are consistent with Arora & Singh (2019) who documented a positive relationship indicating the increase in investors' demand on the first day of trading due to portrayal of good firm quality to investors.

On the basis of the empirical results shown in Table 4, we do not reject the null hypothesis H_8, H_{22} and H_{36}. Therefore, it can be concluded that the difference in the listing day abnormal returns of IPOs that come during the 'Cold Market' conditions (coded as one) relative to those of IPOs that come in the 'Hot Market' conditions (reference category-coded as zero) is not significant. Therefore, there is not enough evidence to support the presence of "hot issue" market phenomenon in case of SME IPOs.

There is not enough evidence to reject the null hypothesis H_9, H_{23} and H_{37}. Therefore, it can be concluded that there is no significant relationship between market sentiment and Nifty-adjusted, Sensex-adjusted and BSE SME IPO Index-adjusted listing day returns of SME IPOs. In other words, it suggests that the difference in the market-adjusted returns of IPOs that come when the market sentiment is 'positive' (coded as one) relative to those of IPOs that come when the market sentiment is 'negative' (reference category-coded as zero) is not significant.

On the basis of the empirical results shown in Table 4, we do not reject the null hypothesis H_{10}, H_{24} and H_{38}. Therefore, it can be concluded that there is no significant impact of IPO firms belonging to the manufacturing sector on the Nifty-adjusted,

Sensex-adjusted and BSE SME IPO Index-adjusted listing day returns. In other words, it suggests that the difference in the market-adjusted returns of IPOs launched by firms belonging to the manufacturing sector (coded as one) relative to those of IPOs that come from the sector category 'Others' (reference category-coded as zero) is not significant.

At 5 per cent level of significance, there is enough evidence to reject the null hypotheses H_{11} and H_{25}. The significant negative coefficient of the dummy variable suggests that the Nifty-adjusted and Sensex-adjusted abnormal returns of IPOs launched by SMEs belonging to the financial and insurance sector (coded as one) is significantly lower relative to those of IPOs that come from the sector category 'Others' (reference category-coded as zero), holding the other predictor variables constant. A perusal of the coefficients of all the sector dummies shows that the market-adjusted listing day return (using Nifty and Sensex) is lowest for IPOs brought by financial and insurance sector SMEs as compared to IPOs of the remaining 5 sector categories. Statistically, the most significant explanatory variable in the regression models 1 and 2 is the financial and insurance sector dummy variable, which has a negative sign. Since financial institutions are under the surveillance of regulatory agencies, the ex-ante uncertainty problem about the value of the new SME issues is less severe at the time of the IPO as compared to the other non-regulated firms. As a result, the IPOs of financial SMEs are less under-priced (lower market-adjusted abnormal returns). This argument is in line with the one used by Alli, Yau & Yung (1994) who found that IPOs brought by financial institutions are less under-priced than those of non-financial organizations. However, the results of Model 3 are insignificant and thus, we do not reject the null hypothesis H_{39}.

On the basis of the empirical results shown in Table 4, we do not reject the null hypothesis H_{12}, H_{26} and H_{40}. Therefore, it can be concluded that the difference in the market-adjusted returns of IPOs launched by firms belonging to the wholesale and retail trade sector (coded as one) relative to those of IPOs that come from the sector category 'Others' (reference category-coded as zero) is not significant.

There is not enough evidence to reject the null hypothesis H_{13}, H_{27} and H_{41} and therefore, it can be concluded that there is no significant impact of IPO firms belonging to the information, communication and education sector on the Nifty-adjusted, Sensex-adjusted and BSE SME IPO Index-adjusted listing day returns.

On the basis of the empirical results of Models 1 and 2, it can be concluded that there is no significant impact of IPO firms belonging to the construction sector on the Nifty-adjusted and Sensex-adjusted abnormal returns. So, we do not reject the null hypothesis H_{14} and H_{28}. For Model 3, there is enough evidence to reject the null hypothesis H_{42} at 5 per cent level of significance. The significant negative coefficient of the dummy variable suggests that the SME IPO Index-adjusted returns of IPOs launched by SMEs belonging to the construction sector (coded as one) is significantly lower relative to those of IPOs that come from the sector category 'Others' (reference category-coded as zero), holding the other predictor variables constant. A perusal of the coefficients of all the sector dummies shows that the market-adjusted return (using BSE SME IPO Index) is lowest for IPOs brought by construction sector SMEs as compared to IPOs of the remaining 5 sector categories. Moreover, statistically the most significant explanatory variable in regression model 3 is the construction sector dummy variable.

Table 3: Summary and ANOVA of Models 1, 2 and 3

	R-Square	Adjusted R-Square	Standard Error of the Estimate	F-statistic	Probability (F-statistic)
Model 1	0.157	0.083	12.519	2.115**	0.014
Model 2	0.156	0.082	12.565	2.107**	0.014
Model 3	0.174	0.099	13.56	2.330***	0.006

Note: *** Significant at 1 per cent level of significance; ** Significant at 5 per cent level of significance

Table 4: Estimates of parameters of Models 1, 2 and 3 and their significance

	Dependent Variable: $MAAR_{Nifty}$			Dependent Variable: $MAAR_{Sensex}$			Dependent Variable: $MAAR_{SME}$		
	Sample Size (n): 174			Sample Size (n): 174			Sample Size (n): 170		
	B	Beta	Sig.	B	Beta	Sig.	B	Beta	Sig.
CONSTANT	-4.877	-	0.570	-4.921	-	0.568	-9.921	-	0.294
AGE	-0.240	-0.141	0.073*	-0.249	-0.146	0.063*	-0.340	-0.184	0.020**
SUB	0.501	0.182	0.020**	0.503	0.183	0.020**	0.573	0.193	0.014**
INVIP	85.417	0.194	0.057*	87.808	0.198	0.051*	87.427	0.183	0.073*
LNSIZE	2.913	0.177	0.085*	2.984	0.180	0.079*	3.113	0.174	0.091*
LD	0.894	0.199	0.014**	0.878	0.195	0.016**	0.834	0.171	0.035**
PIPH	-0.102	-0.141	0.122	-0.100	-0.138	0.130	-0.042	-0.054	0.556
LMREPTOP3	4.820	0.183	0.036**	4.729	0.179	0.040**	5.483	0.191	0.029**
MKTCOLD	-3.057	-0.100	0.194	-3.016	-0.098	0.202	-3.203	-0.094	0.223
SENTPOS	-0.743	-0.028	0.721	-0.630	-0.024	0.763	3.149	0.110	0.167
SECMAN	-2.440	-0.088	0.444	-2.411	-0.087	0.451	-3.382	-0.112	0.333
SECFIN	-7.676	-0.210	0.040**	-7.609	-0.207	0.043**	-6.446	-0.158	0.123
SECTRADE	-3.479	-0.105	0.323	-3.551	-0.106	0.315	-2.923	-0.081	0.449
SECIT	-3.971	-0.093	0.331	-4.070	-0.095	0.321	-4.102	-0.086	0.369
SECCONS	-6.385	-0.142	0.130	-6.540	-0.145	0.122	-9.517	-0.195	0.039**

Note: *** Significant at 1 per cent level of significance; ** Significant at 5 per cent level of significance; * Significant at 10 pe cent level of significance

CONCLUSION AND IMPLICATIONS OF THE STUDY

The present paper expands Singh & Anand's (2020) study by analysing the listing

day returns provided by BSE SME IPOs over and above the market indices namely, S & P CNX Nifty, S & P BSE Sensex and BSE SME IPO Index. It further examines the factors affecting listing day abnormal returns of IPOs listed on the BSE SME Exchange. The results show that the average raw initial return on listing day is 8.66 per cent. The average market-adjusted abnormal returns over and above Nifty and Sensex are 8.2 per cent while that over BSE SME IPO index is 6 per cent. Thus, SME IPOs not only provide positive returns on the listing day but also outperform the Nifty, Sensex and BSE SME IPO Index.

The linear regression analysis shows that in all the models- age, subscription, issue price, issue size, listing delay and lead manager reputation have a significant impact on listing day excess returns. Theoretically, the empirical findings of the study support the information asymmetry, ex-ante uncertainty and signalling hypothesis. Prestige of the lead manager organising the SME issue plays a significant signalling role by portraying the quality of the SME firm going public. Favourable underwriter reputation signals good firm quality creating greater investor interest on listing day and higher abnormal returns. A second possibility could be that it is mandatory for SME IPOs to be 100 per cent underwritten. As the prestigious lead managers are managing large number of issues, they price it in such a way that they are not burdened by the responsibility of buying the unsubscribed portion in future. Thus, under-pricing is done to ensure that the SME issue is a success and lead managers do not lose due to undersubscription.

For the benefit of IPO investors and firms, SEBI has made continuous efforts to reduce the IPO listing timeline over the years. The listing timeline of 6 days was implemented with effect from 1st January, 2016. Prior to this, the listing time was 12 days (effective 3rd May, 2010) and before that 22 days. The empirical findings of this paper conclude that the more the time lag between the issue closing date and listing date of the SME IPOs, the greater is the degree of under-pricing (higher listing day excess returns). Under-pricing increases as listing delay increases because the market begins revising its expectation about the IPO firm during this period, resulting in higher uncertainty and investors demanding higher returns (Mok and

Hui, 1998). Besides, investors also must be compensated for the longer duration of illiquidity of their stocks due to long listing delay. Pande & Vaidyanathan (2007) found that a one day's delay in listing increases the under-pricing by 2.88% as investors demand more premium for their locked-in money. Therefore, there is a need for SEBI to take steps to minimize the listing timeline for SME IPOs by seeking cooperation of the market participants, government and bankers. Thus, this study has practical implications for market regulators to further reduce the IPO listing delay in order to minimize the investors' exposure to market volatility. This would make the SME platform more attractive for investors and firms that want to raise finance. Early liquidity for investors and quick access to the capital raised for issuers will enhance the ease of doing business.

All researches open new ways and directions for future endeavours. Further studies can extend this research by including IPOs listed on the NSE Emerge platform. According to extant literature, while IPOs tend to provide positive returns on the listing day, their long-run performance tends to be mixed. Therefore, future studies can evaluate the long-run price performance of SME IPOs over a period of 3 and 5 years by using methods like wealth relative (WR) and buy-and-hold market-adjusted return (BHAR). In addition to this, the initial aftermarket price behaviour over certain trading days (say, 7, 30,100 days, etc.) following the offering can also be analysed.

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