Oversubscription of Initial Public Offerings of SMEs in India : A Quantile Regression Analysis

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Abstract

The present study examined the problem of oversubscription and identified underlying variables/determinants. Further research has evaluated some variables primarily responsible for oversubscribing the initial public offerings (IPO) of small & medium enterprises (SMEs). The study analyzed the cross-sectional data of 431 SME initial public offerings issued from February 2012 to January 2020 and listed on NSE EMERGE and BSE SME platforms. The econometric techniques of OLS (ordinary least square) and quantile regression model were applied to test the study's hypotheses. According to the findings, the independent variables such as issue size, issue price, pricing mechanism, and the listing delay had a negative effect. In contrast, the independent variables: firm size and under-pricing positively influenced the SME IPOs' oversubscription in the sample period under study. The current study provided a few implications for the investors, advisors, and regulators operating in the stock market. For the investors, the study suggested certain essential factors to consider while buying SME IPOs. For the regulator, that is, SEBI, the study provided insights for framing guidelines and amendments to regulate the SME IPOs in the future. Further, the research also suggested the issuers (SMEs) should issue their IPOs when the buyers of the IPOs are driven to invest in the primary market with the objective of optimization of returns with potential growth in the future. This study included an extensive review of literature on the IPO market, with specific attention to the period after 2012, after the introduction of the SME trading platform in India.

Keywords : oversubscription, SME IPOs, quantile regression, ordinary least square, underpricing, pricing mechanism

JEL Classification Codes : C52, C57, F65, G1

Paper Submission Date : August 10, 2021 ; Paper sent back for Revision : April 5, 2022 ; Paper Acceptance Date : May 25, 2022; Paper Published Online : July 15, 2022

A country's stock market always reflects its economic growth and acts as a parameter of solidarity in terms of investors' sentiments towards future growth prospects. Bajwa (2016) analyzed the relationship between economic growth and capital market growth as the generating amount through primary issuance and other factors. The SME (small & medium enterprises) IPOs (initial public offerings) allow small-size companies to retrieve funds from early-stage investors through the SME platform or exchange for the firm's growth. The mechanism of IPOs depends on the companies' solid fundamentals and possible potential, which creates excitement in the early stage and invariably a substantial demand from the various stakeholders of the

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DOI : https://doi.org/10.17010/ijf/2022/v16i7/170634

entire investment community. In recent times, particularly from 2020 – 2021, it has been observed that the start-ups and new private companies are willing to join the IPO league unprecedentedly. A recent study by EY on global trends in IPOs further accentuated and supported this change: IPO volume rose by 163% in 2021, and the proceeds rose by around 245% YoY. The first wave (Q1 2020) of the pandemic (COVID-19) in the Indian stock market reduced the movement in the IPO domain in Quarter1 & Quarter 2, 2021. Many initial public offerings were expected in the fourth quarter of 2021. The traditional IPO performance is always measured by its demand, subscription, and pricing strategies. According to a few reports, IPOs in the Indian market are influenced by different reasons such as the higher level of performance of the organizations, governing restructurings, beneficial business plans/models, teams in management, and estimates. As per the reports published by EY, several IPOs in the Indian stock market were expected to rank up to 12^{th} in the world in 2021. Key IPOs in Quarter 1 2022 can be from durable consumer products, retail industry, automobile products, and transport (Narang & Pradhan, 2021). Around 13 to 14 firms raised around 27000.05 crores through initial public offerings from 2020 to 2021 (Ong et al., 2021). Investors' behavior and hypothetical attitude are similar in the Indian IPO (primary) market. From 2010 to 2019, the most significant number of IPOs were issued in the Indian capital market. In the Indian primary market, before 2019, most issued IPOs had a high level of oversubscription from 2009 – 10 (Singh et al., 2021).

Asian and European countries have high oversubscription due to disclosing information on share allocations (Jamaani & Alidarous, 2021a). On behalf of many pieces of evidence, IPOs are assigned mainly to institutional investors. Mostly the oversubscription occurs between the offer date and the bidding deadline (Gupta et al., 2021b). The oversubscription and underpricing of the IPOs depend on the investors' demand. The demand and supply of IPOs exert substantial effects, but in the same direction. Some research revealed that the newly listed equities are rising in heterogeneity level on the higher market in IPOs. The issue of underpricing is positively correlated with oversubscription (Alanazi & Al-Zoubi, 2015).

In some developing countries, the oversubscription is high compared to rich/developed countries. IPOs with a lower rate of oversubscription seem to create more demand than those with a higher level of oversubscription (Sandhu & Guhathakurta, 2020). Research in India has found an oversubscription of 3.5 to 4.8 times, which positively correlates with underpricing. Wadhwa et al. (2014) concluded that the actual firm's value of the firms could be misinformed, which can be complicated in the process of bidding, leading to short information. The advisors forecasted the price based on the demand for the IPOs in the market and the critical information from potential investors during the issuance of initial public offerings. The pricing methods/mechanism of IPOs affects the nuances of potential investors' behavior toward domestic investors, but the 'fixed price' pricing mechanism doesn't change the investors' sentiments. The book-building pricing mechanism enables companies to disseminate consistent quality information from potential stockholders. In a few studies, a 'fixed price' pricing mechanism can increase the demand for IPOs. Thailand and Singapore practice a fixed price pricing mechanism for their IPOs.

According to Mehmood et al. (2020a), the higher level of oversubscribed IPOs is more representable and relevant. The "book-building" pricing mechanism has formed some complications among the firm's shareholders in evaluating the firm's value because the traders always participate in the bidding process, increasing evidence asymmetry and incorrect choice. Handa and Singh (2017) encouraged investors to invest, and investment bankers use the "book building" pricing method for the movement to assess its interpretations before the pricing of the IPOs to infuse more transparency and credibility in the valuation process. Therefore, the results indicate the current status of initial public offerings' practices in the Indian primary market. The present study also will be helpful for the regulators, business/corporate entities, stock agents, potential investors, and all the beneficiaries which might go public via SME IPOs. Uninformed potential investors may be better at comprehending the process of SME IPOs, and they could make appropriate and wise investment decisions. The methods used in IPO offering can decide the fate of IPOs and might explain the oversubscription. This study mainly focuses on the issue size, price, listing delay, firm size, and pricing mechanism for SME IPO oversubscription in the Indian primary market.

The first section of the present study focuses on understanding the IPO market, specifically SME IPOs, by examining the website and market information and the existing literature on IPO oversubscription and its determinants. Further, the second section dwells on the various aspects studied and the theoretical framework in previous research studies covering 2012 –2022. SME IPOs are rift with information asymmetry and uncertainty, which provide an understanding of other factors that most frequently affect the subscription of SMEs' IPOs. To evaluate the reasons for oversubscribing the SME IPOs, the study analyzes the issue size, issue price, listing delay, firm size, pricing mechanism, and underpricing of stock. The third section outlines the research methodology, data, and econometric model defined and collected for this study. Section four deals with the results and discussion of the findings. Finally, the last section provides the concluded views of the research, followed by practical suggestions/ implications. The study also states the limitations of the research and indications for further investigation.

Review of Literature

Prior Evidence and Theoretical Framework

The actual demand for initial public offerings causes a higher intensity of underpricing; this state of affairs can be assessed by the increasing ratio of oversubscription (Gupta et al., 2021a). Mahalakshmi et al. (2021) found that the level of oversubscription is generally based on the higher level of demand of the minor and institutional investors in the primary market, which can estimate the failure and success of the IPOs. According to Mehmood, Mohd - Rashid, Ahmad, and Tajuddin (2021), the increased level of demand reflects its preliminary performances and the higher level of the potential market for IPOs, which can raise a large fund. Similarly, underdeveloped countries published cases of IPO oversubscription. Most small countries follow the "fixed price" pricing mechanism for IPOs instead of the "book building" pricing mechanism (Mehmood et al., 2020b). In some other countries, the "book building" pricing mechanism of IPOs raised the demand of potential traders. Some models describe that the appropriate evidence revealed by the investors/traders leads to higher returns in terms of underpricing. "Fixed price" & "book-building" pricing mechanisms revealed that investors admitted to the underpricing (Mehmood et al., 2020a). According to Singh and Goel (2022), the entry routes of initial public offerings have an adverse and irrelevant role in estimating the initial returns; oversubscription may be the only factor that has a significant and positive effect on the initial returns of IPOs.

Singh and Anand (2020) analyzed that SME IPOs have provided a positive return on listing day and found that factors like issue price, age, subscription, market sentiments, and listing delay significantly impacted the listing day performance of SME IPOs. In contrast, according to Mangala and Dhanda (2021), the 'book building' pricing mechanism may cause more considerable fluctuations in the stock market and a situation of underpricing. Both methods, that is, "fixed price" and "book building," might be compared based on the demand and underpricing of the IPOs when the investors disclose the relevant information. Bansal and Khanna (2013) found as a finding that the "fixed price" pricing method has created optimistic news, which means the "book building" pricing method has some uncertainties. Evaluating the factors affecting the oversubscription of IPOs in India is indispensable. The present study shows that pricing mechanism is the primary variable; whereas, other variables, that is, financial crisis, IPO risk, financial leverage, and firm size, are the control variables. Some studies found that the United States of America (USA) had abnormal returns on IPOs (Dhamija & Arora, 2017b). The market capitalization of IPOs and oversubscribing ratios of IPOs are linked to the primary market.

In contrast, some other variables are linked to underpricing, such as, profit-earning ratio, share offered percentage, and issues evaluated in the secondary market. Dhamija and Arora (2017a) found, as research results, that underpricing positively correlates to oversubscription. The higher value of assets and the firm's growth are negatively associated with oversubscription. The company's market position always affects the investor's behavior and the oversubscription and demands of IPOs. Dhamija and Arora (2014) stated that the interest taken by investors decides the subscription and direction of the IPOs.

Similarly, before the issuance of an IPO, the company's market situation affects the investors' sentiments, which creates a higher oversubscription. The overall demand for IPOs is also influenced by a firm's attributes and the supervisory atmosphere. Profitability of pre-IPO, offer price, and board composition are the possible causes of oversubscription (Singh & Nayyar, 2017); whereas, sentiments of the investor, firm age, and firm size were essential variables determining the oversubscription of IPOs in Kenya. In a few types of research, the influence of pricing mechanism on the level of oversubscription was evaluated by examining around 80 to 85 IPOs from 2001 to 2017 (Zhao et al., 2017). The findings showed that the initial public offerings issued under the 'fixed price' pricing mechanism negatively impacted the IPO demand. Marketing techniques, ownership structure, and the upper management team's signaling function also affected the requirement of IPOs (Tajuddin et al., 2018). According to Krause et al. (2021), excitement for trading in IPOs is also a crucial reason for increasing oversubscription. A few types of research are mainly focused on SME IPOs. According to Mehmood, Mohd - Rahid, and Tajuddin (2021), a positive association between underpricing and oversubscription suggests that many privileged investors have a higher demand for IPOs. The rising demand for initial public offerings increases the market prices, which generates a large number of funds. In a few previous studies, the signaling theory, winner's curse, and fad theory were used to explain the relationship between underpricing and oversubscription of the initial public offerings (Mangala & Dhanda, 2021).

The signaling theory explains that companies with IPOs gain investors' confidence, generating demand in advance. The indication might be known before conservative parties are willing to subscribe to IPOs in the future (Sharma & Wazal, 2020). In the prospectus of IPOs, signaling variables like firm age, firm size, overall assets of the company, and market status of the underwriters must be readily available to the probable institutional or small investors for examination before the date (Shah & Mehta, 2015). So, it may be determined that diversified investors always encourage the market performance of the initial public offerings.

A study on behavioral factors in finance recommends that the psychological attitude of potential investors can influence the capital market. Experimental research on initial public offerings has documented two characteristics of post-IPO equity price performance (Setya et al., 2020). The initial aspect explains that IPOs are listed with an issue price, which results in the investor earning a higher return rate than the index benchmark on the day of recording (Reber et al., 2021). Another aspect explains that the underperformance of SME IPOs continues in the long run. After going public, the IPO's underperformance was initially found (Mangala & Dhanda, 2021). IPOs are the most significant source of funds for companies in India. It is also a lucrative opportunity for the investors, motivating them to mobilize their funds from the slow growth to the higher growth opportunity (Leow & Lau, 2020). Past studies regarding IPOs show that IPOs have been listed with an issue price premium on listing day one, and the potential investors get significant returns on the next day (Dai et al., 2021). At the first-day market price, much evidence worldwide indicates that the initial public offerings generate positive results on a listing day and lower returns after an extended period, or two to three years (Gao et al., 2013). Unaware and conversant may be two types of investors. Well-versed investors can oversubscribe to underpriced IPOs. The uninformed traders get a restricted number of subscriptions (Duong et al., 2022). According to Deng and Zhou (2015), on the contrary, if the initial public offerings are overpriced, they would be oversubscribed by uninformed investors. The "winner's curse" theory declares that the under-pricing of IPOs can be decreased if the irregular gaps are reduced between the aware and unaware investors (Jamaani & Alidarous, 2021b).

Research has examined the IPOs of 1,842 firms listed on the BSE (Bombay Stock Exchange). Its findings explained that uncertainty plays a significant role in IPO's underpricing in the primary market. IPOs with larger issue sizes have fewer underpricing conditions (Clarke et al., 2016). Deepak and Gowda (2014) found that in the primary market, market efficiency and underpricing of the IPOs played a vital role. Retail investors follow the institutional investors before investing in the primary market. Different studies are associated with asymmetric information, market capitalization, signaling, pricing mechanism, and the size of the initial public offerings in the global and domestic stock indices. For examining the attributes of aftermarket performance of the IPOs, "ex-ante" features and availability of asymmetric information are considered important factors before pre-listing (Cong & Howell, 2021).

Singh et al. (2021) found the importance of listing gains and underpricing as a factor of IPOs, which reduced within a year post-listing and provided additional knowledge of financial gains. Singh and Nayyar (2017) found a relationship between deliberate discounting and valuation errors. They found that out of 113 IPOs, 65 to 67 IPOs were underpriced, around 45 IPOs were overpriced, and traded only one IPO at its offer price on the first day of trading. The relationship between the pricing mechanism of IPOs and the oversubscription of IPOs was examined using "opinion day pricing" on different security indices by Brooks et al. (2014). In the case of IPOs in US firms, the book-building pricing mechanism is prevalent for IPO pricing; and in other developing countries, the IPO firms applied the fixed price pricing methods (Arora & Singh, 2020c; Singh & Goel, 2022). Sometimes, the pricing mechanism incorporates the investor's view of the firm's value in its offer price of IPO. Pricing mechanisms, either the 'book building' method or 'fixed price' pricing method, always affect the investors' sentiments (Arora & Singh, 2020a, 2020b).

Research Gap

No study is available to evaluate the oversubscription of SME IPOs after 2018. The research focuses on independent and quantifiable variables, and behavioral aspects for oversubscription are excluded. As substantial growth has been observed in small & medium-sized firms after 2018, the IPOs of these firms are examined in this research. This research provides a significant way to understand the reasons for the oversubscription of SME IPOs in the last decade.

Objective

The main objective of this research is to investigate the underlying determinants of the oversubscription of (SME) IPOs. Going further, the study proceeds to evaluate some of the variables primarily responsible for the oversubscription of IPOs.

Hypotheses

Issue Price

Demand for SME IPOs has increased by issuing at a lower price. Issue price indicates the firm's earning behavior and the country's macroeconomic condition. Some studies like Mehmood, Mohd - Rahid, and Tajuddin (2021), Arora and Singh (2020c), and Leow and Lau (2020) found a negative relationship between the lower issue price and demand of the IPOs and revealed that the offer price was fundamental to the success of IPOs, which had been measured through the subscription ratio. With some shreds of evidence and discussions, the following hypothesis is formulated :

↬ **H1 :** Issue price negatively impacts the oversubscription of IPOs.

Pricing Mechanism

In the book-building pricing mechanism, high cost is involved, leading SME IPO firms to follow the fixed price method. In a few studies, like the one by Arora and Singh (2020a), the pricing mechanism under the fixed price and book building regimes impacted oversubscription. Almost all SME IPOs follow the 'fixed price' pricing mechanism. Accordingly, the hypothesis is :

↬ **H2 :** 'Fixed price' pricing mechanism has a negative effect on the oversubscription of IPOs.

Issue Size

The SME IPO firms generally issue a small issue size. Based on a prior study, a significant issue size reflects lower demand for the IPOs; whereas, the small size results in a higher oversubscription (Shah & Mehta, 2015). According to the signaling theory, a significant issue size is an excellent signal to the investors. Wadhwa et al. (2014) found the relationship between oversubscription and offer price. Due to the relationship between issue size and oversubscription, the hypothesis is formulated as :

↬ **H3 :** Issue size negatively impacts the oversubscription of IPOs.

Firm Size

Firm size is a significant factor in deciding the firm's quality in public. IPOs from these firms create higher demand resulting from the higher oversubscription. As per Dhamija and Arora (2014), according to the investor's perception, higher biding is possible for the higher asset-sized firm than for smaller asset size. After the review, the hypothesis is formulated as follows:

↬ **H4 :** Firm size positively affects the oversubscription of IPOs.

Listing Delay

The listing delay is the time difference between the listing date and the close issue date. It is a massive factor for study in case of oversubscription. Studies like Mangala and Dhanda (2021) revealed that a long gap could cause lower demand for IPOs and vice-versa. It shows the lower quality of SME IPOs. Subsequently, based on prior findings, the hypothesis is formulated as :

↬ **H5 :** Listing delay negatively impacts the oversubscription of IPOs.

Underpricing

The initial returns represent the increased market value of the firm from its book value evaluated by investment bankers. Sometimes, firms intentionally underprice their IPOs for superior quality investors, but financially unsound firms cannot underprice the offerings (Alanazi & Al-Zoubi, 2015; Wadhwa et al., 2014). According to the prior findings, underpricing positively correlates with oversubscription. Hence, it is hypothesized that :

↬ **H6 :** Underpricing has a positive correlation with the oversubscription of IPOs.

Research Methodology and Econometric Models

Sample Size and Data Collection

For this study, 431 SME IPOs were taken from BSE (Bombay Stock Exchange) SME platform and NSE (National Stock Exchange) EMERGE platform. They established these platforms in 2012 to provide accessible information about SME equities. We retrieved secondary data for the independent variables such as issue size (IS), listing delay (LD), firm size (FS), issue price (IP), and pricing mechanism (PM) from the prospectuses downloaded from the BSE SME & SEBI (Security Exchange Board of India) websites. The underpricing has been estimated through the closing market price and the raw return obtained from BSE SME. The period from February 2012 to January 2020 has been taken for the study.

Measurement Variables

↳ ***Dependent Variable.*** Oversubscription in this study is the dependent variable, measuring the demand for the IPOs in the primary market. Oversubscription is considered the "Time of Issue" and the "Number of Times" subscribed by the investors. The measurement criteria can understand the mean value; if the average value is greater than 1, it has been subscribed by more than one, and if the average value is less than 1, it will indicate that it has not been wholly subscribed.

↳ ***Independent Variables.*** The study includes independent variables such as issue size, issue price, firm size, listing delay, pricing mechanism, and underpricing. Table 1 describes the independent and dependent variables.

Model Specification

The research applies the OLS regression model to investigate the oversubscription variables or determinants of SME IPOs. The following is the cross-sectional regression used :

$$OS = \alpha + \beta_1 RR + \beta_2 LD + \beta_3 \ln(FS) + \beta_4 \ln(IS) + \beta_5 PM + \beta_8 IP + \mu \qquad ....(1)$$

Table 1. ***Variables Defined***

Variables	Description
Oversubscription	The dependent variable "Oversubscription" has been measured based on the "Time of Issue" of the IPOs and the "Number of Times" subscribed by the potential investors.
FS	The value of the actual asset recorded in the firm's books (in lakhs) has been converted using the natural logarithm.
LD	Listing delay can be defined by the number of days between the listing of IPOs on exchange and the closed date of the issue.
PM	The pricing mechanism is established as a dummy variable by assigning the value '1' for "Fixed Price" pricing methods, where 0 is for difficulties in the "Book-Building" pricing mechanism of SME IPOs.
IS	The number of IPOs issued by the firms (size of lots) has been transformed into natural logarithms.
IP	The issue price at which the IPOs are launched in the primary market.
Underprizing / Raw Return (RR)	Underpricing has been calculated by taking the "Percentage Difference" between the issue price and the closing prices on a listing day.

Where, μ represents the error term. In addition, the finding's robustness has been tested using quantile regression, meaning a complete result of the influence of different independent variables on IPO oversubscription.

Analysis and Results

Descriptive Analysis

As can be inferred from Table 2, the situation of oversubscription can be found at 12.38 times with a value median of 2.42 times. Some (IPOs) issues were highly subscribed, with the highest subscription level of 366.098 times. In addition, the difference between the values of mean & median of oversubscription shows that the requirement for initial public offerings (IPOs) in India is changing yearly. The IP (issue price) shows that the small & medium enterprises (SMEs) issued their IPOs at an average cost of ₹ 48.67, the lowest price at ₹ 15.20, and the highest price of ₹ 910.45. The higher standard deviation indicates the disparity in security prices on which the leading SME IPOs companies trade the shares. The mean value of IS (issue size) is 7.60, which confirms that the small & medium firms issue a reasonable issue size instead of a smaller size. The difference between the highest (10.90) and lowest (4.44) values of firm size shows the differences in the asset base of various SMEs. The mean value of underpricing is 8.5%, which means similarities with other markets globally. Indian firms also depict the underpricing for generating higher returns at 230% of these small and medium firms.

Regression Analysis Results

The ordinary least square (OLS) regression analysis model has been used to evaluate the underlying variables or determinants of oversubscription on the sample of 431 IPOs. The study applies the quantile regression model to examine the robustness of the oversubscription factors in settings of IPOs from small & medium size enterprises. The quantile regression model is a controlling econometric model that explains the independent variable's distributional structure over the oversubscription (Arora & Singh, 2020a). The quantile regression model is much more reliable than the OLS regression model; it is helpful to decrease the weighted sum of absolute errors against the sum of squared residuals. In Table 4, the heteroscedasticity problem has been removed by applying the skewness and bootstrapping method to change the conditional mean distribution into conditional quantile distribution by aligning data in quantile 25th, quantile 50th, quantile 75th, and quantile 90th. The various distribution level of the outcome variables and the fundamental association with the outside value of the mean describes the great understanding.

Table 2. ***Descriptive Analysis of Dependent & Independent Variables***

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
Oversubscription	12.38	2.43	33.00	0.96	366.098
IP	48.67	35.00	56.00	15.20	910.45
IS	7.6	6.61	0.825	4.45	9.34
FS	8.84	7.92	1.09	4.44	10.90
LD	11.8	9.10	3.03	1.30	26.00
RR	8.5	3.33	19.80	-38.80	230.00

Table 3. *Results of the OLS Regression*

Dependent/Independent Variables	Estimates	*t*-Statistics	VIFs
Constant	01.1810	1.865*	1.262
IP (Issue Price)	–0.0010	–1.578*	1.273
PM (Pricing Mechanism) Dummy	–00.315	–1.735*	2.198
IS (Issue Size)	–0.0980	–1.224	1.724
FS (Firm Size)	0.096	1.617*	1.579
LD (Listing Delay)	–0.064	–3.3870***	1.674
RR (Raw Returns) / Underprizing	0.026	2.645***	1.044
F-Statistics	20.648***		
Adjusted *R* Square	0.3419		
Diagnostic Test			
Heteroscedasticity test statistics (*p*-value)	134.119*** (0.000)		

Note. Three asterisks (***), two asterisks (**), and one asterisk (*) describe the 1%, 5%, & 10% levels of statistical significance.

Table 3 enlightens the results of OLS regression analysis by showing the issue of heteroscedasticity by white heteroscedasticity consistent and standard errors, even though multicollinearity problems are not existing in the model, that is, VIFs < 10.00. The adjusted *R* - square value is 31.190%, which specifies that the inequality in the level of oversubscription has been communally defined using the study's independent variables. The estimates of future predictions have been explained with the adjusted *R* - square value, which is higher than the earlier research, and variations have been created at around 28.0%. Singh and Anand (2020) described 19.0% differences in the SME IPO's oversubscription.

Robustness Test

The quantile regression analysis has been used to measure the oversubscription factors and robust assurance of the OLS (ordinary least square) findings. Providing a comprehensive and detailed analysis of the variables, the model quantile regression estimates the influence of the descriptive determinants on the right tail, namely 90th quantile, 75th quantile median, 50th left tail quantile, and 25th quantile of oversubscription (dependent variable). The impact is higher in the 90th quantile at (<1% level) in comparison to the 75th quantile (5% level), where the 25th quantile shows a lower level of significance at 10%.

Table 4 explains the significance of the quantile regression model. In the quantile regression model, issue price lacks statistical significance, that is, it relates negatively to the dependent variable. According to the results, hypothesis H1 fails to be rejected. The pricing mechanisms are a substantial interpreter at 10.02% in the median quantile, that is, 50% at the 90th quantile, that is, right tail. In this case, the pricing mechanism negatively correlates with oversubscription. Hence, the study fails to reject hypothesis H2. The (IS) issue size is negatively related to higher, medium, and lower oversubscription levels, such as the 25th and 50th quantiles. The negative correlation indicates the higher demand and oversubscription (Mehmood, Mohd - Rahid, & Tajuddin, 2021; Tajuddin et al., 2018). According to the findings, H3 also fails to be rejected. Firm size affects the oversubscription at a 10% level in the 25th quartile, which indicates a positive correlation between firm size and oversubscription. In this case, hypothesis H4 has not been rejected. So, the quantile regression results conclude that if the listing delay is longer, it will strongly reduce the oversubscription at its greater level, that is, 90th and 75th quantiles, that is, at 1% and 5%

Table 4. *Robustness Test of the Results of Quantile Regression*

Variables	25th	50th	75th	90th
PM (Dummy)	–0.057 (–0.43)	–0.553* (–1.77)	–0.669*(–1.62)	–0.245(–0.18)
IP	0.0003 (0.59)	–0.0002 (–0.45)	–0.0003 (–0.40)	–0.001 (–0.51)
Constant	0.651** (2.07)	1.531** (2.46)	3.127** (2.85)	3.296*** (3.14)
IS	–0.315*** (–3.42)	–0.088*** (–2.68)	–0.195*** (–2.98)	–0.101 (–0.82)
FS	0.035* (1.83)	0.035 (0.80)	0.121* (1.88)	–0.009 (–0.09)
LD	–0.008 (–1.21)	–0.015 (–1.25)	–0.074** (–2.08)	–0.120***(–3.75)
RR	0.005* (1.82)	0.009* (1.75)	0.037*** (2.72)	0.069***(3.80)
Diagnostics				
"Pseudo *R* - Square"	0.0534	0.1358	0.4046	0.4058

Note. "*t*-tests" are in parentheses. Three asterisks (***), two asterisks (**), and one asterisk (*) describe the 1%, 5%, & 10% levels of statistical significance.

significance levels. In this situation, the results do not reject hypothesis H5. Underpricing also positively affects oversubscription at the 75th and 90th quantiles at the 1% level. Therefore, hypothesis H6 has not been rejected.

Conclusion

The oversubscription ratio is the best way to examine the demand for SME issues. The present study examines the level of oversubscription of the 431 SME IPOs of the sample time duration from February 2012 to January 2020 listed on BSE (Bombay Stock Exchange) SME platform and NSE (National Stock Exchange) EMERGE platform. The OLS (ordinary least square) regression has been used to extract the underlying variables responsible for the oversubscriptions of SME IPOs. The robustness of the findings has been tested through the quantile regression model. The findings reveal the relationship between the level of oversubscription and the independent variables. According to the results, issue size, pricing mechanism, issue price, and the listing delay influence negatively; whereas, the underpricing and firm size positively influence the level of oversubscription of SME IPOs. Arora and Singh (2020c) and Deng and Zhou (2015) also gave similar results.

Managerial and Financial Policy Implications

The present research provides a few critical managerial and financial implications for investors, researchers, regulators, and issuers (SMEs). Investors are suggested through certain factors which should be well-thought-out while buying SME IPOs; it includes some additional information on the value estimation of the SME IPOs for investors. This study will guide the investors by revealing important factors like issue price, price mechanism, etc. while investing in SME IPOs. The study also suggests that advisors should find potential investors for investing in better quality or highly subscribed SME IPOs. The advisors can conduct their investors to manage the SME IPOs in the future. It can prepare them with the best ways to use the shreds of evidence in the prospectus, increasing their confidence, and enhancing their chances of success by higher subscription. Regulators, that is, SEBI, are suggested to manage the future SME IPOs in the primary market efficiently. Most small and medium firms use the fixed-price pricing mechanism, which adversely affects oversubscription ; so, the policymakers should encourage issuers of SME IPOs to implement the book-building pricing mechanism. Further research also suggests that the

SMEs (the issuers) should introduce/issue their IPOs when the small and institutional investors have also driven the investment in the stocks to optimize returns with potential growth in the future.

Limitations of the Study and Scope for Future Research

The present study uses a limited number of variables for examining the problem of oversubscription — macroeconomic variables like interest rate, inflation, and GDP. The study can take the industry-specific IPOs to review the SME IPO oversubscription issue. Further, the present study may be extended to a cross-country analysis, and future research can be developed to investigate the impact of the pandemic (COVID-19) on SMEs' IPO oversubscription.

Authors' Contribution

➢ Himadri Srivastava: She identified the problem, reviewed the literature, collected data, performed analysis and interpretation, and concluded the paper with suggestions.

➢ Dr. Priya Solomon: She discussed the research framework, results and interpretations, and suggested the research's policy implications.

➢ Dr. Satyendra P. Singh: He discussed the topic of the research.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this manuscript.

Funding Acknowledgement

The authors received no financial support for this article's research, authorship, and/or publication.

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