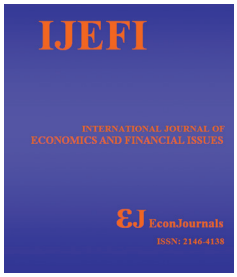

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Initial Public Offerings and Performance Evaluation: Evidence from the Indian Capital Market

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ABSTRACT

This paper attempts to prove the existence of under-pricing of Indian Initial Public Offerings (IPOs). We examine the aftermarket performance for up to 12 months using a sample size of 25 IPOs issued in 2015. The sample reveals a 3% raw initial returns on the first trading day close. Aftermarket performance is measured in terms of market adjusted initial returns for 30 days, 3 months and 12 months show an average of 6%, 17% and 26% respectively suggesting an over-performance of IPOs. Finally, using parameters employed in previous literature: Firm age, market, proceeds, risk, and size, we conduct a regression analysis showing no factor affecting the under-pricing level.

Keywords: Initial Public Offerings, Raw Initial Returns, Market Adjusted Initial Returns, Aftermarket
JEL Classifications: F3, G2

1. INTRODUCTION

In the layman language, an initial public offering (IPO) is the process through which firm issues or floats its equity shares or other securities in the market for the 1st time. The process is a complicated task that firms undertake to raise funds in the market to finance the future activities as mentioned in their prospectus. The firms alone cannot undertake such a complex task therefore hires an underwriter that can be an investment banker or any other financial institution to perform the services for which a commission is paid. To discover the issue price of the share, the underwriter uses a process called book building process which has been discussed earlier in the study as the regulations provided by the regulatory body in India, Securities, and Exchange Board of India-SEBI (BSE, nd). However, for years, a phenomenon pattern to the IPO has been observed namely Under-pricing for which various researches across the globe have been dedicated.

The Under-pricing refers to pricing an IPOs below its market value. It occurs when the offer price is below the price on the first trading day. A plethora of studies have been conducted and some researchers argue that underwriters deliberately under-price their shares mainly due to two hypotheses. The first one is of the risk aversion of the underwriters i.e., they deliberately set a lower price to minimize the risk of loss and the fear of revealing the true value of the securities. With the securities, under-priced, there is a possibly of over-subscription, surge in the price on the 1st day trading close resulting in a profit benefiting both investors and the corporate stockholders (Karlis, 2000). But there is a disadvantage to this hypothesis in the sense that underwriters would be targeting investors having little knowledge about the firm, the same interested in a rapid investment appreciation. On the other side, a market with well-informed investors would not lead to shares being under-priced as the real value is known to all. The second hypothesis is that an IPO under-pricing signals the quality of the firm. This is explained by a multiple issue strategy followed by firms as they attempt to price their shares at a lower price during the IPO later offset it by higher price during seasoned equity offering commonly known in India as Follow-on Public Offer.

(Ritter, 1998) advocated also three of the following reasons that could justify the IPOs under-pricing. The first of them is the bandwagon hypothesis. IPOs are subject to this hypothesis when the investors decide to pay attention not only to the information about the new offer that they possess but also to the purchasing movement of other investors in the market hence, developing the bandwagon hypothesis. The second one is the ownership dispersion hypothesis. Under this supposition, the issuing company

purposefully under-price the shares to build a surplus demand to be able to have large number of large shareholders. This method not only increases the market liquidity but makes it difficult for external investors to question the management. Finally, the third one is the investment banker's monopsony power hypothesis. Investment bankers have a complete knowledge of the market conditions and spend relatively less amount on advertising new issues and use those advantages to under-price deliberately IPOs.

With all being said above, there is a concept that comes into picture called "money left on the table" for the issuers of the offerings. Authors of previous studies have preconized that firms which under-price their IPOs leave money on the table. It is calculated by multiplying the amount under-pricing by the number of shares offered. Using the example of an American company namely Netscape that launched an IPO in August 1995, more light will be shed on this concept (Los Angeles Times, 1999). The offer price was $28 per share for a total of 5.75 million shares sold. On the trading day, the stock closed at $ 58.25 per share leaving on the table $173.9 million ($58.25–$28 = $30.25 per share multiplied into 5.75 million shares which gives $173.9 million). The company could have benefited if only it had decided to sell at $58.25 instead of $28 and cash in the entire $173.9 million (Ritter, 1998). Firms leaving money on the table do not seem to be upset with that transfer of wealth. A partial adjustment of the offer price explains this i.e., IPOs that have seen their price revised upward on the 1st day close will be more under-priced compared to those which the price has been revised downwards.

In the long-run, evidence show that there is an underperformance of the IPOs following a 12 months' period from the day of issue. The aftermarket underperformance of IPOs has been in studies conducted developed market such as Australia, Austria, Canada, USA, UK, Germany, and Singapore to mention a few (Wei, 2011). However, in developed markets, this IPO pattern remains largely unexplored due the scarcity of studies and evidence to preconize its existence. But we could assume by world standard that there is an under-pricing and under-performance of IPOs in the aftermarket. This could serve as a supposition to be tested with evidence from the Indian Capital Market by applying the same methodologies used in other markets.

2. LITERATURE REVIEW

There are numerous of recognized and published researches on under-pricing and long-run performance of IPOs elucidating these two patterns as phenomena associated with IPOs.

(Ritter, 1991) focused his interest on the long-run performance of IPOs and argued that the reasons for the underperformance of these IPOs could be linked to fads and investors overoptimistic approach on the earnings of those young companies or bad luck or risk mismeasurement. (Ljungqvist et al., 2006) discussed that the issuers can time their IPOs based on the investor sentiment during hot market which leads to positive 1st-day returns on average and underperformance of the stocks in the long-run. A company's IPO has been simulated to close the gap between underpricing, hot issue, and underperformance where the conclusion shows that all these anomalies have a common source: The presence of irrationally exuberant investors (Dell'acqua et al., 2014). Postulate that after 30 days following the IPOs, the initial returns are on an average lesser than those on the 1st day of the issue and the factors that affect the performance of stocks are the firm size, market demand, financial crisis, shares retention by existing shareholders and underwriters' reputation (Brau, 2006). In a study conducted in an emerging market, the investigators suggest that investors purchase IPOs at their offer price earning abnormal returns and the factors leading to underpricing of these IPOs on the long-run could be the firm size, age, market trend and offer rate (Kiymaz, 2000). As in the previous literature, authors have found that IPOs have underperformed on the long run and the IPOs issued in the Johannesburg Stock Exchange just confirmed the trend. The factors determining the under-pricing of stocks are relatively the same across different stock exchanges but (Chipeta and Jardine, 2014) suggest that underperformance of IPOs could be due to magnitude of growth forecasts made by managers in the issuing documents i.e., the BIG 4 audit firms could influence prospectuses and positive aftermarket performance of firms' stocks. (Agarwal et al., 2004) found from the evidence of the Hong-Kong Stock Exchange that investor demand and short and long-run performance of IPOs have a strong relationship. The IPOs with high investor demand have negative long-run excess return while IPOs with low investor demand have a positive long-run excess return which leads back to the "fads and over-optimism theory of Ritter" (Ritter, 1991).

Based on series of previous studies, (Kooli and Suret, 2002) attempted to study the aftermarket performance of the IPOs in the Canadian market; The results found converge towards "the fads and over-optimism" explained by (Ritter, 1991) because the issues underperform in the long-run and the performance variation are different across industries. In a research conducted in the Athens Stock Exchange, (Kasimati and Dawson, 2005) found out relatively similar results as in the prior studies conducted in different European Exchanges. The results reveal high IPOs returns for the first 3 months following the issue and no existence of long-run underperformance. In the analysis conducted on IPOs for SMEs in the Thai Market for Alternative Investments (MAI), using tools such as the cumulative adjusted returns, buy-and-hold returns, (Chorruk and Worthington, 2009) discovered that there is no statistical significance on the underpricing or overpricing of those IPOs.

3. METHODOLOGY

The main objective of this paper is to find out the existence of IPOs under-pricing and study the aftermarket performance of the same. We also extend our work by examining the determinants influencing the level of under-pricing in the long-run.

The methodology used by (Dell'acqua et al., 2014) to measure the initial performance on the first trading day through the conventional method of the raw initial return (RIR) as follows:

$$RIR_{i,t} = (P_{i,1}-P_{i,0})/P_{i,0} \quad (1)$$

Where $RIR_{i,t}$ is the raw initial return on the 1st day of the IPO listing; $P_{i,0}$ is the offer price of company i, and $P_{i,1}$ is the 1st day closing price. The closing price is used to measure IPO's initial

performance, as it is a price concept that reflects equilibrium price determined by the demand and supply forces of the market.

The equation (1) should be used in case of perfect market conditions, without opportunity costs and any time lag between the closing date of the subscription period of shares and the 1st day of trading. During this period, much information can be revealed and changes may happen in the market. For this reason, RIR must be adjusted for market changes, by considering movements of BSE Sensex Index, as a recognized indicator of the market performance. The market adjusted initial return (MAIR) is calculated as follows:

$$MAIR_{i.t} = [(P_{i,1}-P_{i,0})/P_{i,0} - (MI_{i,1}-MI_{i,0})/MI_{i,0}] \quad (2)$$

Where $MAIR_{i.t}$ is the market adjusted initial return on the 1st day of IPO listing; $MI_{i,0}$ is the market index at the end of the subscribing period of shares of company i, and $MI_{i,1}$ is the market index of the first trading day of the company i. The market index considered is BSE Sensex. For this study, the under-pricing is computed using both methods.

4. EMPIRICAL RESULTS AND DISCUSSIONS

The table shows the returns on the first trading day. The initial return is 3% with a median of 2%, a standard deviation of 18.6% and with a maximum and minimum of 41% and −44% respectively.

The Table 1 reveals the RIR of the firms' IPOs adjusted to the market index which is the BSE Sensex. It shows an average return of 4% with a confidence level of approximately 0.078. A high standard deviation of 18.9% is observed.

The average returns of the IPOs adjusted to the market index have seen a real increase passing from 6% to 26% in the in initial 30 trading days until reaching 12 months. In contrast of this surge in returns, the standard deviation has seen a significant rise passing from 0.172 to 0.635.

5. DISCUSSIONS

Table 2 shows the RIR of the IPOs after 1st trading session following the listing. A meagre return of 3 % is observed coupled to a median of 2% and a standard deviation of 18.6%. The upper and lower return that could be expected are 10.7% and −4.7% respectively. Table 1 illustrates the market adjusted initial return (MAIR) on the 1st trading session closure. It reveals the real returns made by the IPOs. A return of 4 % is observed which is 1% higher than the RIR. The standard deviation of RIR and MAIR is relatively similar varying between 18.6% and 18.9%. The Figure 1 is the performance representation of the RIR on the 1st day and 30th trading day with the returns fluctuating at the approximately similar rate. Figure 2 depicts the MAIR after 30 days and 60 days. The 60 days MAIR trendline is moving higher than the 30 days MAIR signalling an appreciation of returns interpreted in the Table 3. Table 4 is a descriptive statistics table of the MAIR for 30 days, 3 months and 12 months. It reflects an upward trend of mean from 6% after

Table 1: Descriptive statistics of MAIR

Descriptive statistics	
Mean (%)	4
Standard error (%)	4
Median (%)	1
Standard deviation (%)	18.9
Sample variance	0.036
Kurtosis	1.275
Skewness (%)	−0.044
Range	0.902
Minimum (%)	−44
Maximum −	46
Confidence level (95.0%)	0.078

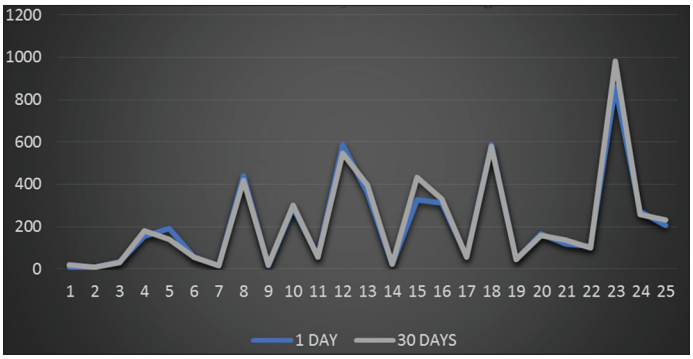
MAIR: Market adjusted initial return. Source: Chittorgarh (2014) Retrieved from http://www.chittorgarh.com/

Table 2: Descriptive statistics of RIR

Descriptive statistics	
Mean (%)	3
Standard error (%)	4
Median (%)	2
Standard deviation (%)	18.6
Sample variance	0.034
Kurtosis	1.277
Skewness	−0.082
Range	0.849
Minimum (%)	−44
Maximum (%)	41
Confidence level (95.0%)	0.077

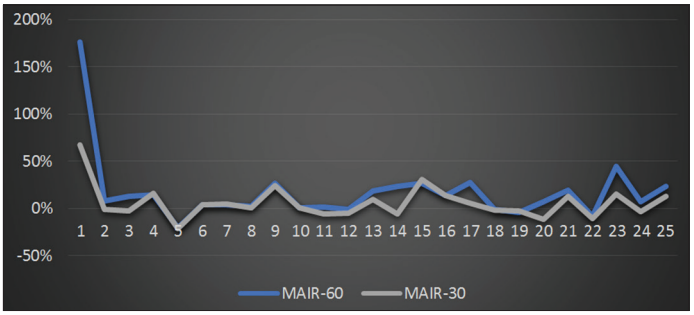
RIR: Raw initial return. Source: Chittorgarh (2014) Retrieved from http://www.chittorgarh.com/

Figure 1: Performance of IPOs on the listing day and on the 30th day after listing



IPO: Initial Public Offerings

Figure 2: Performance comparison between 30 days- market adjusted initial return (MAIR) and 60 days-MAIR



MAIR: Market adjusted initial return

Table 3: Regression analysis with MAIR as dependent variable

Regression statistics								
Multiple R	0.542							
R^2	0.294							
Adjusted R^2	0.108							
Standard error	0.600							
Observations	25							
ANOVA	**df**	**SS**	**MS**	**F**	**Significance F**			
Regression	5	2.843	0.569	1.581	0.213			
Residual	19	6.833	0.360					
Total	24	9.676						
	Coefficients	**SE**	**t Stat**	**P**	**Lower 95%**	**Upper 95%**	**Lower 95.0%**	**Upper 95.0%**
Intercept	0.654	0.285	2.295	0.033	0.058	1.251	0.058	1.251
Beta	0.007	0.008	0.954	0.352	−0.009	0.024	−0.009	0.024
Size	0.000	0.000	−0.573	0.574	0.000	0.000	0.000	0.000
Proceeds	−0.300	0.156	−1.919	0.070	−0.627	0.027	−0.627	0.027
Age	0.008	0.010	0.795	0.436	−0.013	0.029	−0.013	0.029
Market	5.891	3.340	1.764	0.094	−1.100	12.881	−1.100	12.881

MAIR: Market Adjusted Initial Return. Source: Calculated from, data available on http://www.chittorgarh.com/, Chittorgarh (2014).

Table 4: MAIR compiled descriptive statistics

Descriptive statistics	MAIR		
	30 days (%)	3 months (%)	12 months (%)
Mean	6	17	26
Standard error	3	7	13
Median	1	8	22
Standard deviation	17.2	36	63.5
Sample variance	0.030	0.129	0.403
Kurtosis	5.803	17.234	8.043
Skewness	1.906	3.843	2.375
Minimum	−21	−20	−40
Maximum	67	176	267
Confidence level (95.0%)	0.071	0.148	0.262

MAIR: Market Adjusted Initial Return. For calculation data of 30 Days, 3 Months and 12 months is considered. Source: Calculated from, data available on http://www.chittorgarh.com/, Chittorgarh (2014)

Table 5: The correlation analysis

Variables	Beta	Size	Proceeds	Age	Market
Beta	1				
Size	0.730	1			
Proceeds	0.616	0.414	1		
Age	0.075	0.086	0.221	1	
Market	0.018	0.020	−0.063	−0.026	1

For calculation data of 30 Days, 3 Months and 12 months is considered. Source: Calculated from, data available on http://www.chittorgarh.com/, Chittorgarh (2014)

30 days to 26% in the 12th month. The upper and lower return on the 12th month is 52.2% and −0.2% respectively. Table 5 suggests that Beta has a strong uphill relationship to both size and proceeds respectively 0.730 and 0.616. proceeds and size showing a weak correlation to Market respectively of −0.063 and −0.023. Table 3 preconizes that only 29.4% explain the dependence of MAIR on the variables that are beta, size, proceeds, market, and age. The P of the variables range between 0.352 and 0.094 which is above 0.05 which means the results are insignificant at 5%.

5.1. Under-pricing

The results found in the analysis have clearly confirmed the existence of under-pricing but do not justify the reasons for it to exist considering the book building process used for the price discovery of IPOs. To provide a valid justification, we will use the world standard explanation despite of the lack of common consensus.

In the market, we find two types of companies, the good ones, and the bad ones. Firms possess crucial information about themselves that no investor is aware of in the market as it is costly which leads to investors finding it beneficial not to proceed to further information investigation on the firm (Citeman, 2008). This can be associated to information asymmetry elucidated by the used-car model where the buyers should decide between the lemons and peaches. Assume the seller of the car knows the car worthiness but retains all information related to the state of the car. Even though the buyer performs a thorough investigation, it is not always in his best interest in terms of optimality. The lemons theory as given by its author George A. Akerlof implies that good used-cars should under-priced therefore helping find a link with the IPO market. Good firms decide to under-price their IPO to compensate the investors for risking their investments in relatively less known firms. Bad firms will set higher prices than their true value. We can conclude that the primary market is a channel of subsidy from good firms to poor firms.

The other possibility resulting in under-pricing could be the bandwagon theory explained earlier in this study. It is assumed that investors not only look at the information in their hands but also observe the market position of other investors. If other investors buy in the securities in bulk, the remaining follow the trend irrespective of how accurate is the information they possess. Hence firms, through their investment bankers having complete knowledge of the market conditions decide to under-price the IPOs to "to leave water in the mouth of investors". When the same firms will want to do a Follow-on Public Issue for instance, a higher price will compensate the low-priced IPOs as the stocks have provided satisfying returns. This is observed in the returns growth after 12 trading months.

5.2. Aftermarket

After 12 months, MAIR reaches a significant 26% doubling in just a year. The risk follows the trend. Using a regression analysis, the

results failed to prove the significance of the parameters selected to explain the under-pricing of IPOs in India with P-values above 5% significance level. The correlation analysis does not neither explain the dependence of MAIR on the parameters (Table 3). The MAIR results lead to the conclusion of an over-performance of the IPOs after 1 year.

6. CONCLUSION

The under-pricing phenomenon has been a subject of research during the last decades. This work is a contribution to the existing literature of IPO by analysing a set of data of IPOs in India. The findings in the 2015-16 period add new evidence to the hypothesis of the existence of under-pricing in the Indian capital market. The results also preconize the non-significance of the variables: Beta, firm's age, firm's size, IPO process, and market index returns affecting IPO under-pricing level. All the variables failed to reveal the reasons resulting in under-pricing like in other developed markets. Concerning the long-run performance, the results show that the IPOs over-perform after 12 months.

The results could suggest some policy implications: Firstly, the results can be significant to the stock exchange regulators and management of stock exchange for purpose of reviewing the efficiency of the Indian primary and equity market. Secondly, the aftermarket results can benefit the stock market authorities in conducting further extensive researches on finding impacting the long-run performance.

For future researches, the failure to test the significance of the variables affecting the aftermarket performance of IPOs opens a new gap that will probably be added to other contributions in the world especially in the developing markets.

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