
DETERMINANTS OF SUBSCRIPTION: AN EMPIRICAL STUDY OF SELECTED INDIAN IPOs

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ABSTRACT

Oversubscription has been considered the most contributing cause of Initial Public Offers (IPOs) after listing price performance. The present study is an attempt to search out the determinants of subscription of IPOs. Various studies regarding Initial Public offers conclude about the positive and significant relationship between oversubscription and extent of underpricing of IPOs on listing day. The paper examines various characteristics of IPOs which may have impact on level of subscription of IPOs. A sample of 488 IPOs offered through Bombay Stock Exchange (BSE) during the year 1993-94 to 2007-08 has been considered to work out the level of subscription of IPOs. The summarized view of various characteristics of IPOs has been reported also. The zero order correlations have been used to test the association between different variables. The variables those may have significant impact on subscription have been traced through multivariate regression model.

Key Words: *Initial Public Offers, Underpricing, Subscription, Primary Market, Multivariate Regression Model, Bombay Stock Exchange.*

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INTRODUCTION

Various studies have proved that oversubscription has positive and significant impact on price performance of IPOs on listing day. The market adjusted initial return (MAIR), reputation of lead manager and age of the company have significant impact on level of subscription (Shelly& Singh 2008). Shelly & Singh stated that investors have shown confidence in the certification to issues provided by underpricing, the credibility of lead manager in the market, and the operating history (age) of a company are leading to the oversubscription of Indian IPOs.

It is vital to study the determinants of subscription level, because it is found that subscription has positive significant impact on market adjusted abnormal return of IPOs or underpricing of IPOs on listing day. Indian IPO market has shown 82.67 per cent underpricing on listing day during 1993 to 2007(Kumar Vinod & Dhanda Neelam 2013). It is significantly higher than developed countries like UK, USE, Canada, Brazil etc. Liberalization has triggered Indian Corporate for expansions. To hand out the intention, IPO is used as the most popular mean to acquire the funds from primary market (Annual Report 2011, SEBI). An initial public offer (IPO) is the first sale of stock by a public limited company to general public. It has observed a sharp rise in the initial years of the liberalized era. The growth observed during the first half of the 90s is mostly credited to the financial liberalization of the economy. Capital market reforms like abolition of the office of controller of capital issues (CCI), constitution of SEBI under the new security and regulation act and relaxation in pricing of capital issues played an important role in such rise. The study has been conducted to determine the extent of subscription of IPOs offered in India during year 1993-94 to 2007-08. The objective is also to find out the determinants affecting level of subscription.

It is appealing to study the IPO market 1993-94 to 2007-08 because it shows a variable trend. Indian IPO market has experienced boom in 1993-94 to 1996-97. But 1997-98 to 2002-03 can be considered as a cold period for Indian IPO market. Although, in year 1999-00 and 2000-01 IPO market tried to pick up but again failed in 2001-02 & 2002-03. During 2004-05 to 2007-08, again Indian IPO market attained its golden days (Various Annual Reports, SEBI). These ups and downs attract the researchers to appraise the Indian IPO market.

REVIEW LITERATURE

The reviews of the various studies regarding subscription of IPOs and price performance of IPOs are as:

Krishanmurti and Kumar (2002) analysed 386 IPOs to gauge the initial listing performance of Indian IPOs and to determine as to why IPOs are under priced in India. Results showed that for overall sample the market adjusted return using Sensex as proxy was 72.34 per cent. Singh & Singh, Mittal (2003) covered 500 IPOs floated between years 1992-1996. It was found that an average underpricing was 83.22 per cent. The market adjusted underpricing was 75.16 per cent. The study reported that par issues were more underpriced than premium issues.

Jankiramanan, S (2007) conducted a study on 116 IPOs issued by the companies in the Indian market during the period from 2000 to 2001. The study found that under- pricing exists in Indian Market. Kumar, SSS (2007) found underpricing of 26.35 per cent for a sample of 156 book-built IPOs offered during 1999-2006. Return on opening price was considered as the major determinant of underpricing.

Shelly, Singh (2008) reported that the market adjusted initial return (MAIR), reputation of lead manager and age of the company have significant impact on level of subscription. Study also proved that underpricing is in existence in Indian IPO market. Oversubscription has the positive significant impact on underpricing. Age and Issue Size have significant negative impact. Reputation of the lead managers & dummy industry, both have no significant impact on underpricing.

Sahoo, Seshadev & Rajib, Prabina (2010) covered 92 Indian IPOs issued during the period 2002-2006. It is reported that on an average IPOs were underpriced by 46.55per cent on the listing day.

Kumar Vinod & Dhanda Neelam (2013) cover 488 IPOs offered through BSE during 1993 to 2007, Study proves existence of underpricing in Indian IPO market. Average market adjusted return & wealth relative are used as price performance indicators. The average market adjusted abnormal return has been reported 82.67 per cent on the listing of IPOs. All the twenty three sectors have shown existence of underpricing with more than one value of wealth relative.

RESEARCH METHODOLOGY

Objectives of the study:

The study has been carried out to determine Average level of subscription of IPOs in India and to construct the multivariate regression model to find out the significant variables for subscription.

Sample Plan of the study:

This study is based on equity shares initial public offers offered on BSE during 1993-94 to 2007-08. For the years from 1993-94 to 1996-97, it was not feasible to cover all the IPOs offered due to their large number. Therefore, systematic random sampling is used and 400 companies are selected for the study, but due to non-availability of data 166 are companies finally considered for the study related to this time period. 322 companies have been taken for the years from 1997-98 to 2007-08. Thus, in total a sample of 488 companies has been constituted. The companies which issued right issue, bonus issue & who changed the face value of the share during first three years of the IPO listing have been excluded to maintain the accuracy level of the computations of the return.

Data Collection:

To achieve the objectives of the study, secondary data is used. Secondary data is collected from the different sources such as: annual reports of SEBI, Prowess, Primedatabase, The Economics Times, www.icicidirect.com, www.bseindia.com. & www.sebi.gov.in.

Hypothesis of the Study:

The study is conducted to test the following null hypothesis:

H₀: Independent variables (Age, Index return, Offer size, Offer price & Post issue promoter holding) have no impact of level of subscription.

Research Techniques used in the Study:

The Karl Pearson correlation coefficients have been used to study the relationship among the various variables. The multivariate regression has been used to find out the determinants of subscription. The following multivariate regression model has been constructed to study the subscription and its possible determinants.

$$\text{SUB} = a + B_1(\text{IR}) + B_2(\text{PIPH}) + B_3(\text{AGE}) + B_4(\text{OS}) + B_5(\text{OP}) + e$$

ANOVA- F statistics has been used to test the model.

RESULTS OF THE STUDY

This section provides a summarized view of different features of IPOs offered during from 1993-94 to 2007-8. Table 1 explains minimum, maximum, mean, standard deviation and coefficient of variation (CV) of the various features of IPOs such as: offer size (in lakhs Rs.), offer price, post issue promoter holding in percentage, number of times issue subscribed (Subs.), age in years & index return in percentage .

Table 1
Descriptive Statistics of Selected IPOs

Characteristics of IPOs	Mini. Value	Maxi. Value	Mean	Standard Deviation	Coefficient of Variation
Offer Price	10	1100	80.99	124.34	153.52
Size(Rs. lakhs)	75	918750	13411.5	60556.60	451.53
Index Return (%)	-20.59	24.15	1.95	7.35	376.17
Post Issue Promoter Hold. (%)	0	89.96	53.91	16.30	30.23
Subscription	0.1	283.5	17.20	31.96	185.79
Age	0	137	12.02	15.57	129.58

The average offer price of 488 IPOs is 80.99 rupees. The offer price of Jet Airway's IPO is found the highest (1100 rupees). Number of companies has issued IPOs at Rs. 10(minimum value). DLF Limited has launched the biggest IPO in terms of size. The offer size is Rs. 918750 lakhs (91875 million) rupees. Average index return is reported 1.95 per cent. The post issue promoter holding of Akruti Nirman Limited is noticed the highest (89.96 per cent). City Union Bank, South Indian Bank and Infrastructure Development Finance Company limited have zero per cent post issue promoter holding. The IPO of Sankhya InfoTech limited was the most oversubscribed IPO. Age of the company is the difference between the incorporation year and the year in which IPO is issued. Therefore, for few companies the age is reported zero, in other words, in the year of incorporation they have launched their IPO. The average age of the companies is found 12.02 years. The variability is compared among the different variable through standard deviation and coefficient of variation. The variability is very high in Size of the IPOs. The variables have been transformed in line with the other studies (Jain Neeta & Padmavathi C, 2012; Shelly& Singh Balwinder, 2008; Singh Balwinder & Mittal R K, 2003) & the following abbreviations have been used in the Multivariate Regression Models:

1. Index Return in percentage (Return of sensex one month before the IPO)=IR
2. Post Issue Promoters Holding in percentage= PIPH
3. Natural Log. Of Age (difference between incorporation year and year of IPO has been taken and one is added for computation of age) =AGE
4. Natural Log. Of Offer Size=OS
5. Natural Log. Of Offer Price=OP
6. Natural Log. Of Number of times issue subscribed=SUB

Table 2**Descriptive Statistics of Transformed Variables**

Variable	Mean	Std. Deviation	N
PIPH	53.91	16.30	488.00
IR	1.95	7.35	488.00
AGE	2.16	0.89	488.00
OS	7.51	1.86	488.00
SUB	1.71	1.50	488.00
OP	3.57	1.24	488.00

Table 3**Karl Pearson Correlation Coefficients among Transformed Variables**

Variables	PIPH	IR	AGE	OS	SUB	OP
PIPH	1					
IR	-.001	1				
AGE	.192**	.056	1			
OS	.277**	.146**	.489**	1		
SUB	.168**	.223**	.167**	.308**	1	
OP	.321**	.078	.439**	.760**	.377**	1

** Correlation is significant at the 0.01 level (2-tailed), *Sig. at the .05

Table 3 depicts the association among various variables. SUB has significant positive correlation with all other five features of IPOs.

Determinants of Subscription:

This section is an attempt to find out the factors affecting the level of subscription. To identify the Determinants of subscription, multiple regression of Ordinary Least Square (OLS) has been applied. The zero-order correlations of SUB with, OS, OP, AGE, PIPH and IR have been analyzed. All these five factors are significantly and positively correlated with subscription.

The following multivariate regression model has been used to study the subscription and its possible determinants.

$$\text{SUB} = a + B_1(\text{IR}) + B_2(\text{PIPH}) + B_3(\text{AGE}) + B_4(\text{OS}) + B_5(\text{OP}) + e$$

The Table 4 depicts the results of model. The value of F is high which rejects the null hypothesis that independent variables have no impact on SUB.

$$\text{SUB} = -.141 + .040(\text{IR}) + .005(\text{PIPH}) - 0.15(\text{AGE}) + .007(\text{OS}) + .411(\text{OP}) + e$$

Table 4

Multivariate Regression Model- Dependent Variable SUB

Independent Variable	Unstandardised Coefficient	Std. Error	Standardized Coefficient	Sig.
Intercept	-.141	.298		.635
IR	.040	.009	.195	.000*
PIPH	.005	.004	.058	.186
AGE	-0.15	.080	-.009	.851
OS	.007	.053	.008	.900
OP	.411	.078	.341	.000*
R ²	.183			
Adjusted R ²	.174			
F-Statistic	21.570			.000*

*Significant at five percent

Overall Impact of the selected independent variables explained by F statistics turns out to be statistically significant at five percent level of significance, leading us to conclude

that selected variables affect the level of subscription of the IPOs. The classified impact of index return & offer price turns out to be significant at five per cent level of significant as compared to other factors under consideration.

F-value of 21.570 (Sig. value 0.000) in the table 4 indicates that the model is robust. Null hypothesis that independents variables have no impact on SUB has been rejected and it is concluded that Model is a good fit. The value of R square is more than 18%. It explains that the variations in SUB can be explained 18% by independent variables. Out of all 5 independent variables, OP (Sig. value 0.000) and IR (Sig. value 0.000) are found to be significantly contributing to the model. Rest three variables are not significantly contributing to the model. Comparing the standardized beta values again indicate the same as these two variables have highest value of standardized beta. It is concluded that OP and IR has significant positive impact on SUB of the IPO. OS and PIPH have also positive impact on subscription but that is not significant. AGE of the company has negative impact on SUB, but it is also not significant. It is concluded that OP& IR have significant positive impact on SUB. To verify the result stepwise multivariate regression model has been also used.

Table 5

Stepwise Multivariate Regression Model – Dependent Variable SUB

Model		Unstandardized Coefficient	Std. Error	Standardized Coefficient	Sig.
1	(Constant)	.085	.191		.657
	OP	.454	.051	.377	.000
2	(Constant)	.073	.187		.698
	OP	.436	.050	.362	.000*
	IR	.040	.008	.194	.000*

*Significant at five percent

Table 6

SUB Model Summary

Model	R ²	Adjusted R ²	F	Sig.	Durbin-Watson

1	.142	.140	80.593	.000 ^a	
2	.180	.176	53.159	.000 ^{b*}	1.422

*Significant at five percent

a. Predictors: (Constant), OP

b. Predictors: (Constant), OP,IR

c. Dependent Variable: SUB

The stepwise regression has been used to find out the strongest model. Table 6 explains two models to estimate the SUB. Model 2 has been considered more robust than one. It has highest adjusted R². It is noticed that variations in SUB can be explained 17.6 through this model. Two variables OP and IR significantly contributed to model. Rest three variable are excluded in step wise regression.

CONCLUSION

The study has tested the different Multivariate Regression Models related to level of subscription of the IPOs. In total, three models of subscription have been tested. The strongest model is based on OP and IR. It has the highest adjusted R square. OP & IR have significant positive impact on SUB. The contribution of AGE, OS & PIPH is insignificant, therefore these determinants have been excluded by stepwise method of multivariate regression. It is concluded, companies going for public with high premium and at the time of hot market (secondary market is performing well) can get higher level of subscription.

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