

Article

IPOS Factors Determining the Under pricing
of IPOS by buy and hold Raw Return in Long
run

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ABSTRACT

This study analyzed empirically evaluate the IPOs factors determining the under-pricing of IPO factors performance of long run, observed the effects of factor impact of IPO performance through secondary data of IPOs and the data was collected from NSE. In that the factor impact of IPOs are evaluated Lead time, Issue size, Issue price and IPO Grade, in influencing the IPO performance by buy and hold raw return on listing day and various timeframes in the long run use regression analysis as well as their influence on under pricing using logistic regression analysis of IPOs was observed that the values of independent variables in the logistic regression

Keyword: factor impact, long run, lead time, Issue size, Issue price, IPO Grade, raw returns, under pricing

Introduction:

An initial public offering is the first time that the stock of a private company is offered to the public. IPOs are often issued by smaller, younger companies seeking capital to expand their business. Certainly, companies have other ways of financing such as retention of earnings, bank loan, overdraft etc., but the equity shares are the major source of funding. Factors impact on IPOs need every investor and companies because the negative side IPOs are gives lose to the investors and companies so that the research focused on factors impact to preventive works for investors and companies. performance of IPOs in the under and over price performance suggestion to the investor and companies for economical growth because the time and price performance lacking will happened for every beginner so its factor impact analysis much importance for beginner Those shares can be further sold by investors through secondary market trading In that short run analysis was analyzed by raw return on listing day and various timeframes 1 year, 2 year, 3 year from 93 companies (sector wise selected) in the short-run use regression analysis was affected by various factors those are 1.Lead time- lead time mean it is absolutely imperative that company is supremely well-prepared. Hence the timeliness of this guide. It takes through the IPO process in a clear and concise way, exploring key issues such as

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how to position business with investors, company structuring, and the increased focus on corporate governance and, important for IPO 2. Issue size- The issue size of a security is the total value, stated in nominal rather than market value terms, of the security issued. Sometimes the amount outstanding will differ from the original issue size it may affect with IPO challenges .3 Issue Price- The issue price of an IPO is the price at which a company sells its shares. The IPO is then listed in exchange. The listing price is the opening price of the share on the listing day. Demand and supply for the shares is a major factor in difference between issue and listing price 4. IPO Grade -The grade represents a relative assessment of the fundamentals of that issue in relation to the other listed equity securities in India. Such grading is generally assigned on a five-point scale with a higher score indicating stronger fundamentals are grade 1-Poor, grade 2-Below Average, grade 3-Average , grade 4-Above Average , grade 5-Good these four variables are consider for their influence on under pricing and over pricing using logistic regression analysis of IPOs by the values of independent variables

Review of Literature

Craig G. D. (2000) – “Factors affecting investment bank initial public offering market share”. The researcher examines the effects of several factors on the market share of investment banks that act as book managers in initial public offerings between 1984 and 1995. The researcher concluded that for established banks, IPO first day returns, one year abnormal performance, abnormal compensation, industry specialization, analyst reputation and association with withdrawn offer have a significant impact on changes in market share. These factors have a more significant effect on market share changes in low volume IPO markets. These factors have less significant effect on market share, statistically and economically, for less established banks, consistent with the notion that less reputation is placed at risk.

Vichakorn C, Kennedy D. G. (2005) – “The factors affecting on IPO return in Thai Stock Market”. The main objective of the researchers was to study relationship between factors and initial return of IPO by multiple regression models. The data for the study was secondary and initial return of IPO was dependent variable and the other nine variables were independent variable. The researchers concluded that 14% to 24% IPO Returns in Thai stock market in given period. This figure is same with international Stock markets. In addition to that the factors affect the initial return of IPOs also disclosed. By using the publish data that can be acquired by general investor, the researchers investigate those data which have relations to the return of IPOs.

Leila B & Farshid A. (2014) – “Study of Factors Affecting the Initial Public Offering (IPO) Price of the Shares on the Tehran Stock Exchange.” The main objective of the researcher was to examine whether pricing the initial offering exchange in Tehran Stock Exchange is less than actual and to study the factors that affect pricing of initial share on stock exchange. The researcher for the purpose of the study included 115 stock exchange companies from 2006 to 2012. The researcher concluded that P/E variable has significant relation with price changes on initial offerings and had highest impact on price of initial offerings.

Madhuri Malhotra, N. Premkumar (2017) - In this study, an attempt has been made to find whether Indian stock market indicates underperformance of IPOs in the long run. This study also highlights the factors which might have an influence on the price reactions around IPOs by firms. IPO performance is represented by four variables namely, age of the firm, time lag, IPO issue size, and company size. Long run IPO performance is represented by Buy-and-Hold Adjusted Return (BHAR). This study employs data from companies listed in National Stock Exchange (NSE), which have gone public from 2004 to 2008. The results show that Indian Stock Exchange Market shows IPO underperformance in the long run and there is a positive relationship between the number of shares offered at the time of IPO and underperformance. Variables such as firm age, time lag, and company size do not have any significant impact on the long run underperformance of an IPO issue

RESEARCH METHODOLOGY

Research Objectives:

- To study the factors that influence 3 years analysis through IPO
- To study logistic regression analysis of selected IPOs by impact factor
- To study the influence of under pricing value by impact factor

Variables under study: Independent variables-Lead time, Issue size, Issue price, IPO Grade with constant value.

Research Design

The correlation analysis is carried out by multivariate analysis between IPO factors and IPO performance variables in the short-run with the different time frames listing day, 1 year, 2 year, and 3 year by raw returns

Sample selection

93 companies performance through secondary data of IPOs and the data was collected from NSE.

Regression model for Methodology

Statistical significance of the BHRR is ascertained by t-statistic calculated as per the formula defined

$$BHR_{iT} = \prod_{i=1}^T (1 + r_{it}) - 1$$

The specification of the regression model is here under.

$$Y = \alpha + \beta_1 leadtime + \beta_2 issue\ size + \beta_3 issue\ price + \beta_4 IPO\ grade + \varepsilon$$

Where

Y =Raw return, Market adjusted excess return, α =Intercept (Constant)

$\beta_1, \beta_2, \beta_3 \& \beta_4$ =Estimated coefficients, ε =Error-term

The specification of logistic regression model is as given below.

$$\ln\left(\frac{P}{1 - P}\right) = \beta_0 + \beta_1 \text{leadtime} + \beta_2 \text{issue size} + \beta_3 \text{issue price} + \beta_4 \text{IPO grade}$$

Where

P is the probability of under pricing, which is coded as 1 and 1-P is the probability of overpricing, which is coded as 0. β_0 Is constant, and $\beta_1, \beta_2, \beta_3 \& \beta_4$ are the estimated coefficients.

Analysis of factors affecting the IPO performance

Correlation between IPO Variables and Buy and Hold Raw Return (BHRR) in the Long-Run (1 Year, 2 Years and 3 Years)

IPO Factors	Buy and Hold Raw Return (BHRR)		
	1 Year	2 Years	3 Years
Lead time	0.203*	0.275**	0.193#
Issue Size	0.265**	0.101	0.058
Issue Price	-0.075	-0.048	-0.056
Grade	0.404**	0.308**	0.227*

Source: Secondary Data.

#Significant @10% level; *Significant @5% level; **Significant @1% level

Regression Results Showing IPO Factors Determining BHRR in the Long Run

IPO Factors (Independent)	Dependent Variable: BHRR		
	1-Year	2-Years	3-Years
Intercept	-1.610** (-3.82)	-1.567** (-3.90)	-1.301* (-2.58)
Lead time	0.043* (2.09)	0.053** (2.70)	0.045# (1.80)
Issue Size	0.0008 (1.31)	0.0000 (-0.07)	-0.0002 (-0.25)
Issue Price	-0.0003 (-0.65)	-0.0003 (-0.51)	-0.0003 (-0.57)
Grade	0.293** (3.30)	0.236** (2.80)	0.219* (2.06)
R ²	0.2180	0.1657	0.0891
Adjusted R ²	0.1824	0.1278	0.0477

F value	6.13**	4.37**	2.15 [#]
DF	4,88	4,88	4,88

Source: Secondary Data. #Significant at 10% level; *Significant @5% level; **Significant @1% level.

Logistic Regression Results Showing IPO Factors Determining the Under-Pricing (Based on BHRR) of IPOs in 1 year

IPO Factors (Independent)	Dependent Variable: 1-Year Buy-Hold Under-Pricing					
	Beta	Standar d Error	Wald Statistics	df	p Value	Odd Ratio
Constant	-5.8840	1.7416	11.41**	1	0.0007	0.0028
Lead time	0.1928	0.0770	6.27*	1	0.0123	1.21
Issue Size	0.0044	0.0017	7.14**	1	0.0075	1.0044
Issue Price	-0.0033	0.0024	1.96	1	0.1620	1.00
Grade	0.5420	0.2492	4.73*	1	0.0296	1.72
Model χ^2	29.52**					
Degrees of	4					
Cox & Snell R ²	0.2720					
Nagelkerke R ²	0.3801					

Source: Secondary Data. *Significant @5% level; **Significant @1% level

Logistic Regression Results Showing IPO Factors Determining the Under-Pricing (Based on BHRR) of IPOs in 2 years

IPO Factors (Independent)	Dependent Variable: 2-Year Buy-Hold Under-Pricing					
	Beta	Standar d Error	Wald Statistics	df	p Value	Odd Ratio
Constant	-4.3541	1.3346	10.64**	1	0.0011	0.013
Lead time	0.1178	0.0597	3.89*	1	0.0486	1.12
Issue Size	0.0009	0.0014	0.36	1	0.5497	1.00
Issue Price	-0.0015	0.0016	0.84	1	0.3580	1.00
Grade	0.6003	0.2241	7.18**	1	0.0074	1.82
Model χ^2	16.42**					
Degrees of	4					

Cox & Snell R ²	0.1619
Nagelkerke R ²	0.2277

Source: Secondary Data. *Significant @5% level; **Significant @1% level

Logistic Regression Results Showing IPO Factors Determining the Under-Pricing (Based on BHRR) of IPOs in 3 years

IPO Factors (Independent)	Dependent Variable: 3-Year Buy-Hold Under-Pricing					
	Beta	Standar d Error	Wald Statistics	df	p Value	Odd Ratio
Constant	-4.0880	1.2860	10.11**	1	0.0015	0.017
Lead time	0.1050	0.0580	3.27#	1	0.0704	1.11
Issue Size	-0.0003	0.0015	0.04	1	0.8369	1.00
Issue Price	-0.0011	0.0015	0.55	1	0.4582	1.00
Grade	0.6463	0.2226	8.43**	1	0.0037	1.91
Model χ^2	14.99**					
Degrees of	4					
Cox & Snell R ²	0.1488					
Nagelkerke R ²	0.2093					

Source: Secondary Data. *Significant @5% level; **Significant @1% level

Findings

The correlation analysis between four IPO factors and Buy and Hold Raw Return (BHRR) from IPO listed between 2010 and 2014 in the long run duration of 1, 2 and 3 years.

From the perusal of the correlation values reported in the table, it is evident that positive BHRR in all three long-run periods is associated with ‘lead time’ and ‘grade’ but the degree of association between ‘grade’ and BHRR has been higher compared to the degree of association between BHRR and lead time. There is significant association between ‘issue size’ and 1 year BHRR.

The issue size is unrelated to the BHRR in other two long-run periods. In sum, it is found that there is significant positive association between BHRR in all three long-run periods and IPO factors - IPO grade and lead time. The 1 year BHRR is significantly associated with issue size in the long-run. The collective impact as well as unique influence of each one of four IPO factors on BHRR is evaluated by multiple regression analysis and the results of the analysis are reported

It can be observed from the table that the regression model for 1 and 2 year BHRR is fitted significantly at 1 per cent level (F value is 6.13 and 4.37; p < 0.01) with coefficient of determination of 21.80 per cent ($R^2 = 0.2180$) and 16.57 per cent ($R^2 = 0.1657$). The model for 3 year BHRR is fitted significantly at 10 per cent level with just 8.91 per cent of the explained

variance ($R^2 = 0.0891$). The estimated coefficient is significant for lead time and grade in all three models, but the level of significance of lead time in the model for 3 year BHRR has been at low level of 10 per cent. Further all significant coefficients are positive. Overall, it is found that BHRR in the long-run is likely to increase with increase in lead time and the level of IPO grade and the extent of increase in BHRR against increase in the level of IPO grade is more than that of lead time.

The logistic regression results identifying the effect of IPO factors in determining the BHRR based underpricing in 1 year from listing day.

The logistic regression model for 1 year BHRR with IPO factors as predictors is statistically significant at 1 per cent level accounting for variance between 27.20 per cent (Cox & Snell $R^2 = 0.2720$) and 38.01 per cent (Nagelkerke $R^2 = 0.3801$) in underpricing. The coefficient of lead-time and grade is significant at 5 per cent level and that of issue size is significant at 1 per cent level. From significant coefficient of lead time, it is understood that the odds of underpricing is 1.21 higher than the odds of overpricing for every one unit increase in lead time. Similarly, odds (probability) of underpricing is higher by 1.72 times and 1.0044 times than overpricing for every one level increase in IPO grade and one unit increase in issue size respectively. Hence, it is deduced that the probability of increase in 1 BHRR based underpricing is significantly related to IPO grade, lead time and issue size.

Logistic regression analysis eliciting the power of IPO factors in predicting the probability of 2 year BHRR based underpricing between 2010 and 2014.

The logistic model for 2 year BHRR based underpricing with IPO factors as predictors is significant at 1 per cent level ($\chi^2 = 16.42$, df = 4, $p < 0.01$). The model explains between 16.19 per cent (Cox & Snell R^2) and 22.77 per cent (Nagelkerke R^2) of the variance in underpricing of IPO raw returns in 2 years with buy and hold strategy. From the observation of Wald statistics, it is evident that the coefficient of ‘lead-time’ and ‘grade’ is positive and significant. That is, ‘lead time’ and ‘grade’ significantly predict the 2 year BHRR based underpricing. From coefficient values, it is understood that the odds of 2 year BHRR based underpricing is 1.82 times higher than overpricing for every one level increase in IPO grading and the odds of underpricing is 1.12 times more than the odds of overpricing for every one unit increase in lead-time.

The logistic regression results measuring the probability of 3 year BHRR based underpricing using four IPO factors, viz., lead-time, issue size, issue price and grade.

The fit of regression model for 3 year BHRR based underpricing with four IPO factors is statistically significant at 1 per cent level with Cox & Snell explained variance of 14.88 per cent and Nagelkerke explained variance of 20.93 per cent in underpricing.

The Walk statistics have indicated that ‘grade’ has high predicting power ($\beta=0.1050$, Wald = 3.27, $p < 0.10$) and ‘lead-time’ has moderate predicting power ($\beta=0.6463$, Wald = 8.43, $p < 0.01$) on 3 year BHRR based underpricing (underpricing in 3 years duration with buy and hold method).

So, it is found that the odds of underpricing of IPO raw return in 3 years with buy and hold methods is 1.91 times higher than that of overpricing for every one level increase in grading of IPOs and the odds of such underpricing is 1.11 times higher than that of overpricing for every one unit increase lead-time.

Conclusion

There is a significant positive association between BHRR in all three long-run periods and IPO factors - IPO grade and lead time. The 1 year BHRR is significantly associated with issue size in the long-run. It is found that BHRR in the long-run is likely to increase with increase in lead time and the level of IPO grade and the extent of increase in BHRR against increase in the level of IPO grade is more than that of lead time. The odds of 2 year BHRR based under pricing is 1.82 times.

Suggestions

IPOs factors by long run analysis obtained by this buy and hold raw return in long-run and the issuer, the investor needs to make their own independent decision regarding on investing in any issue after studying the contents of the prospectus including impact of IPOs risk factors carefully. The lead time (listing delay) is an important factor for IPO return. Hence, the IPO issuing companies should avoid lengthening listing date and the process of listing should be quick and prompt. As issue size is the important predictor of IPO returns both in long-run, the investors must consider size of the IPO while investing. The IPO grading also has influence on IPO returns in the presence in issue size. So, while considering issue size, the investors should take the grading of IPOs into account as the grading is based on fundamental and past history of the issuing companies.

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