

Long run performance of initial public offerings in India

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Key Words

Initial Public Offer, Stock Price, under performance, Long Run Performance

Abstract

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.

Introduction

Initial public offering (IPO) happens when a firm issues common stock or shares to the public for the first time. They are often issued by smaller, younger companies seeking capital to expand, but can also be done by large privately-owned companies looking to become publicly traded. Initial Public Offerings (IPOs) of equity capital are a common activity in financial market around the world. The main purpose of IPO is to raise fund from investors. There are some requirements to be fulfilled by the firms before they go public. Some of the requirements include that the firms raising funds through IPO must have some alternative sources of funds from either inside of the company or outside of the companies. Also, they should prepare necessary documents to disclose to the public before going for an IPO. The firms should also fulfill the requirements by SEBI (Securities and Exchange Board of India) regarding initial public offerings.

The changes that take place in the firm after IPO changes the firm performance in short and long term. The changes in stock prices reveal about the investor sentiments in the market, market trend and the signaling impact of IPOs. The IPO can experience underpricing which indicates that the price of the new listed company's share is trading below the price at which the share is trades in the secondary market at the first time. The firms issuing IPOs may also experience long term underperformance, which explains the stock price behavior of the firm in the period of more than two years after IPO has been issued. Various factors might influence the stock price behavior in the long term which can be studied to explain the stock price fluctuations in the post IPO period.

Ritter (1991) explained that there are some possible explanations for the underperformance condition; they are risk miss-measurement, bad luck, and fad and over-optimism. He also concluded that this condition indicates that the offering price is not too low, but the first aftermarket price is too high. On the other hand, a lot of findings showed that the higher the underpricing in the initial return, the higher underperformance happened in that stock exchange market.

In this study an attempt has been made to analyze the stock price behavior post IPO period and various factors influencing long term performance of firms after a firm has been listed on stock exchange.

Another contribution of this paper is the evaluation of the long-run post-issue price performance of Indian IPOs. The long-run performances of IPO's are measured using buy-and-hold abnormal rate of return (BHAR). In a multiple regression model, variables such as offer size, time lag, age of the firm and company size are used to explain the changes in firm' stock returns.



Source; Dealogic, Thomson Financial, Ernst & Young

Fig. 1. Year Wise IPO Activity in India

This study tries to examine the behavior of IPO issues during pre crises period and also examines the factors that must have had a n influence over the IPO reaction in the stock market.

SECTION II: Literature Review

There are various models suggested in the literature which throw light on the IPO behavior. Some of the studies are discussed here and are categorized based on various theories models on under pricing and influencing IPOs factors.

(A) Performance of an IPO

Lot of researchers are interested in finding the reasons why some companies show underperformance in the long-run IPO, while the others do not. Beatty and Ritter (1986) found that while under pricing is common, the "need" for and extent of under pricing is reduced if the uncertainty about the IPOs future cash flow is reduced.

McGuinness (1992) studies the after-market performance of 80 IPOs issued in the Hong Kong market during the period 1980-90. The pricing performance of new issues indicates an excess return of 18 per cent on the initial trading day (listing day). Additionally, he finds that IPOs yield negative market-adjusted returns in the post-listing period up to three years from listing.

Madhusoodanan and Thiripalraju (1997) analyse both short-run and long-run after-market pricing performance of the Indian IPOs issued prior to 1997. They indicate that in the short run, the Indian IPOs generate more market-adjusted initial return than the international IPOs. In the long run too (after one year of listing), Indian IPOs generate higher returns compared to the negative returns reported from other countries.

A unique research was conducted by Alvarez and Gonzalez (2001). They believed that the result of long-term IPO performance examination depends on the methodology used, and then they compared three different methods. They find the result of Buy-and-Hold Adjusted Returns (BHAR) is different from the Fama-French's model in explaining the long-run underperformance, and the BHAR gives different result if it is compared to Average Monthly Market Adjusted Return (MMAR).

(B) Financial and non financial characteristics of IPO

Many researchers want to examine the role of financial and non financial characteristics of IPOs in explaining initial day underpricing and long term underperformance, like what Dimovski and Brooks (2004) did.

There are various characteristics that have been investigated in previous researches. Dimovski and Brooks (2004) use both financial and non-financial factors, which are offer price, capital sought, market sentiment, share options, underwritten, EPS yield, DPS yield, franking and DRP, underwriter

options, capital retained, and limited liability. They found that only market sentiment and the underwriter options have positive coefficient, while share option and DPS yield have negative coefficient relationship. Goergen (2007) concluded that there are relationships between IPO and the pre-IPO financial performance, and also with the managerial decision taken before IPO side the other factor.

This study has employed a few factors that might have had an influence over the stock prices during IPO issue.

SECTION III Data and methodology

3.1 DATA

The IPO issues have been taken up from 2004 to 2008 from National Stock Exchange (NSE) website. A total 251 public issues were made in this period. The data has been chosen keeping in mind the following criteria

1. Data should be available for all the variables for the time period 2004 to 2008.
2. The sample will be observed for 3 years after the listing date.
3. Follow on Public Offer (FPO) has not been taken up in this study.

Table 1. Issue Details

	2004	2005	2006	2007	2008
No. of Issues	13	36	68	94	40
Withdrawn Issues	-	3	3	2	3
Not traded Issues	-	1	3	1	-
Not listed Issues	-	-	4	9	3
Eligible issues for this Study	13	32	58	82	34

From 251 companies listed in National Stock Exchange Market during 2004-2008, only 219 companies fulfill the requirement, thus they can be used as the sample. The IPO sample is derived from the Prime Database annual reports for the period 2004 to 2008.

3.2 METHODOLOGY

In the first part of the study the long-run performance of IPO's is measured by using buy-and-hold abnormal rate of return (BHAR).

Buy-and-Hold Adjusted Return

The Buy-and-Hold Adjusted Return (BHAR) that is defined as the raw return minus the corresponding market return is calculated by

$$BHAR_{i,t} = \text{Raw return}_{i,t} - \text{Market return}_{i,t}$$

Raw return is the individual return for each company, while market return is the average return from all company that is listed in stock exchange market (in this case is in National Stock Exchange). From that formula, we can know that if a company's raw return is more than the market return, which will result a positive BHAR, thus it means that the performance of that company is better than the average performance of company listed in stock exchange market. On the other hand,

if the BHAR is negative, because the company's raw return is lower than the market return, it means that the performance of that company is worse than the average performance of company listed.

Raw Return

$$\text{Raw Return} = \frac{(\text{Closing price of n day trading}) - (\text{Closing price of first day trading})}{\text{Closing price of first day of trading}}$$

Where,

n = the day of trading that the long-run calculated performance is based

Market Return

The market return is calculated as follows:

$$\text{Market Return} = \frac{\text{S\&P CNX Nifty}_1 - \text{S\&P CNX Nifty}_0}{\text{S\&P CNX Nifty}_0} \times 100\%$$

Where,

S&P CNX Nifty - general stock market index of the Indian stock market,

S&P CNX Nifty₀ - S&P CNX Nifty taken in the closing price of n-1th day,

S&P CNX Nifty₁ - S&P CNX Nifty taken in the nth day of trading.

3.2.1 VARIABLES SELECTION

For the second part, my objective is to study the long run price performance of the IPO. The variables used for the study was collected from different literatures on which similar kind of study were already done. The variables I have chosen for my study are the following:

3.2.2 DEPENDENT VARIABLE

Buy-and-Hold Adjusted Return (BHAR)

This research analysis the performance of Buy-and-Hold Adjusted Return (BHAR) of IPO until three years after go public, because it will be very difficult if daily data is being analyzed. BHAR is estimated with reference to both raw return and the market return. Through this method, we assess the change in the wealth of the investors for the sample IPOs by assuming that the same amount of money is passively invested in the initial day and held for a specified period (excluding initial day) and then compare these with a market benchmark.

3.2.3 INDEPENDENT VARIABLES

(i) COMPANY'S AGE (AGE)

The age of the issuing firm calculated as the difference between the date of registration and the date of listing (Goergen, 2007). An old company has longer operating history and more information available to the public, neither is young company (Gounopoulos, et. al., 2005). Hence, age influences the long-run IPO performance of a company positively. This condition will influence the long-run underperformance negatively. This will positively influence the long-run underperformance (Jaskiewicz, 2002). The condition will make the old company's long-run IPO performance worse than the younger one.

(ii) TIME LAG (TLAG)

The time lag is the period between the official date of the prospectus announcement and the listing date of an IPO (Thomadakis, 2007). It usually starts about four weeks later. This time lag has negative implication for both underwriter and the buying investor. For underwriter, the trading lag will need more distribution cost, to wait before the securities can be able to entry the secondary market. While the investor will get uncertainty, because they have to wait (need more time) to know the actual market value of their purchase security or before can liquidate it in the secondary market (Tsangarakis, 2004). During this period, there are any possibilities of the market condition of economy changing that will affect the price performance, in the initial or after market. Thomadakis,

(2007) showed that there is negative effect of time lag to the long-run IPO performance. If time lag increases, it means that the uncertainty about the IPO valuation and listing increases and this will lead the worse long-run underperformance (Gounopoulos, 2005).

(iii) ISSUE SIZE (IS)

Issue size is defined as the number of share that is offered (Gounopoulos, 2005). Previous studies used the size of issue to control the issuer's overall risk and issue uncertainty. Better-established firms often make larger issues and this large numbers of share are generally less risky than the smaller (Guo, Lev, and Shi, 2006). According to Brav and Gompers (1997), the long-run performance of non-venture backed IPOs are below than the other in the one until five-years. And the results show that small issuers drive that underperformance of non-ventured backed IPO. There is a finding that size of IPO is negatively related to the cumulative adjusted market return, which will lead less long-run underperformance (Corhay, et. al., 2002). The smaller the size of an IPO, the higher the IPO cumulative market adjusted return, because size is positively correlated to reputation, and more reputable firms will raise more money thus there is no need to underprice as much as smaller firms.

(IV) COMPANY SIZE

Large company has a negative relationship to the poor long-run performance. Drobetz, Kammermann, and Walchli (2005) said that in Swiss, IPO has poor long-run performance, in both of using BHAR and CAR, and the fact showed that those firms tend to be small firms. Gounopoulos, (2005) said that smaller firms tend to be more risky. Larger firms have a higher association with a larger flow of external information and the market's expectation is related to firm size. There was investigation to the family owned businesses that are small, have more negative long-run performance (Jaskiewicz, 2005). This condition will make the company difficult to accept investors from the outside. This condition will lead the decreasing trust from the investor.

3.3 MULTIPLE REGRESSION

For the 2nd part of the study a Ordinary Least Square (OLS) regression is done for the variables. The initial return is taken as the dependent variable and the others as independent variable.

The regression that being used is:

$$BHAR_t = \alpha + \beta_1 (AGE) + \beta_2 (TLAG) + \beta_3 (IS) + \beta_4 (CS) + \varepsilon_i$$

The model was subjected to Ordinary Least Square (OLS) regression and the significance of different variables was found.

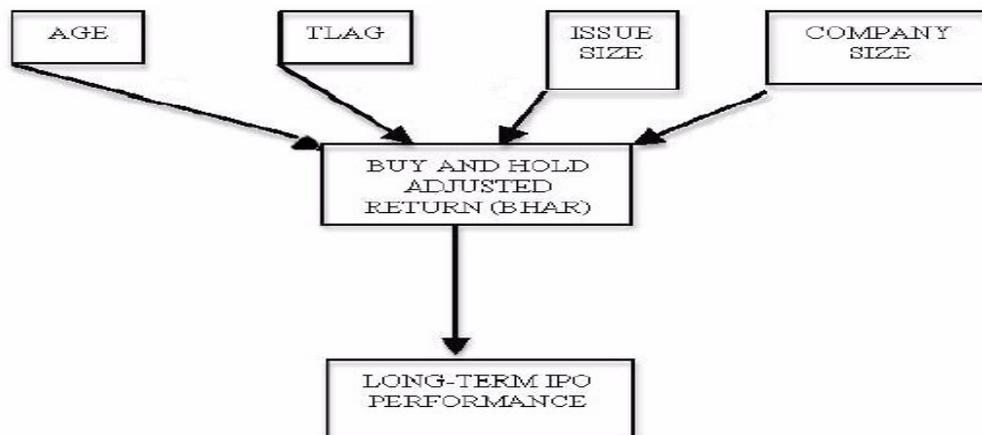


Fig 2. Theoretical Frameworks Chart

SECTION IV RESULTS

The raw return was calculated using BHAR methodology. The BHAR was calculated after adjusting for the market returns and the results are tabulated below. Table below shows the average offering sizes, raw return, market return and BHAR of IPOs for each of the 5 years from 2004 to 2008.

Table 2. Performance of IPO for the years 2004-2008

YEAR	NO. OF IPO'S	RAW RETURN	MARKET RETURN	BHAR
2004	13	3.4084	0.1339	3.2745
2005	32	0.5582	0.0860	0.4722
2006	58	-0.1454	0.0386	-0.1840
2007	82	-0.1572	0.0506	-0.2079
2008	34	-0.2418	0.0386	-0.0805

From the above table, the companies listed in 2004 earned massive returns comparing to the market return, which is 327% more than the market return. Companies listed in the year 2006-2008 are resulted negative returns. The raw returns have followed a decreasing trend. The raw returns on 2004 were 340 which has decreased to -24.13% by the year 2008. This might be because of the grading system adopted by the SEBI wherein any company which has filed the draft offer document for its IPO with SEBI, on or after 1st May 2007, is required to obtain a grade for the IPO from at least one Credit Rating Agency. 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 point scale with a higher score indicating stronger fundamentals and vice versa. The late-2000s financial crisis is another notable event which occurred during this period of study. Though, the latter cannot be considered as a very valid reason as the crisis had not affected the Indian markets much.

Out of the 219 IPOs between 2004 and 2008, 149 are trading below their issue prices. The stock market performance of majority of IPOs that came during the five-year-long bull-run (2004 - 2008) was disappointing. Overall 68% IPOs showed under-performance during 2004-2008.

Table 3. Regression Results

Variables	Coefficient	Std. Error	t-Stat	Prob
C	-2.164652	1.983105	-1.09	0.276
Age	-0.0000188	0.000031	-0.61	0.544
Tlag	-0.000827	0.0029436	-0.28	0.779
Issue Size	0.325904	0.1351393	2.41	0.017
Company Size	-0.1321565	0.0863402	1.53	0.127

Dependent variable = BHAR

After three years listed in IPO, the condition shows that actually the factors influence the condition (the long-run IPO performance in India) because the regression is significant, but only the Issue Size factor that positively influences the long-run IPO performance which is 0.326.

The Regression equation is:

$$\text{BHAR} = -2.165 - 0.0000188 \text{ AGE} - 0.0008 \text{ TLAG} + 0.326 \text{ IS} - 0.132 \text{ CS} + \varepsilon$$

There are some factors that will influence the performance of long-run IPO. In this study, there are four factors which are analyzed. The first factor is age of the company (Age). The age of a firm plays a significant role, because an older company will have more experience in running the business. Firm with a longer existence will have better information information available to the public, and hence pulic can make informed decisions.

From the regression results, age coefficient yields (β_1) = -0.0000188. however, TLAG, Issue Size (IS), and Company Size (CS) remained as it is.

The second factor is Time Lag, a period between the offer price date and the listing date of an IPO.

The longer the time period, the more worry the investor. That is because the investor will get uncertainty in that waiting time, while there are any possibilities of the changes of market condition during the waiting time. Here Time Lag coefficient parameter (β_2) = -0.0008. This condition means that on each one percent increase of BHAR, there would be an impact on 0.0008 percent decrease of TLAG percentage, with the assumption that Age, Issue Size (IS), and Company Size (CS) will remain the same.

The next factor is Issue Size (IS), the size of the stock. Issue Size is being used as proxy variable for uncertainty about the ex post value of IPOs. The more the Issue Size, the lower the uncertainty of ex post value. A better established firm also will issue a large number of shares, which is less risky than the smaller one. Thus, a large number of stocks offered will lead a lower underperformance of long-run IPO. From the regression results Issue Size (IS) coefficient parameter (β_3) = 0.326. This condition means that on each one percent increase of BHAR, there would be an impact on 0.326 percent increase of total share, with the assumption that Age, TLAG, and Company Size (CS) will remain the same.

The last factor is Company Size (CS). According to the previous research the smaller firms tend to be more risky. The family owned business had a strong block-holder (defined as the largest share holder ownership) toward their business, while the family owned businesses, that are small, have more negative long-run performance. Company Size (CS) coefficient parameter (β_4) = -0.132. This condition means that on each one percent increase of BHAR, there would be an impact on 0.132 percent decrease of total asset percentage, with the assumption that Age, TLAG, and Issue Size (IS) will remain the same.

Analysis and Interpretation of Results

The Table shows BHAR (buy and hold abnormal returns) of long-run IPO performance in India. The results show a negative coefficient. This signifies that if the company is in existence for a longer period of time, it will not result in a better long term performance. This also fails to explain that age influences the long run performance of IPO significantly. The results support study conducted by Goergen, *et. al.* (2007) who had shown age as not so significant factor in determining long run IPO performance. Study by Thomadakis, (2007) also concludes that firm age does not have an influence in the long run performance of firms after IPO issue.

The results of this study highlight the fact that investors in India do not consider the age of the company as a deciding factor when investing in IPO of a firm. Even a young firm is able to gain confidence of the investor in an emerging market like India, which is partially possible with information dissipated by the underwriters of an IPO Issue. They signal about the quality of IPO which is a deciding factor before investing in an IPO issue.

The data above shows that time lag (TLAG) influences the long-run IPO performance negatively. It is consistent with the previous result that long term time period will signal uncertainty. Investors need more time to gather information about the actual market price of IPO, before they can invest in a given IPO (Tsangarakis, 2004).

Issue Size (IS) is a significant factor influencing long-run IPO performance in India positively. This condition shows that investors in India consider the total number of share offered in IPO. A company, which offers a high number of shares, indirectly shows that this company is a larger and reputed firm. It also signals to the investors that larger firms are able to float larger IPOs. It is easier for investors to know the reputation of the company from the number of the total share offered.

Company size does not seem to have an influence on the investors' buying decision, and hence does not influence the long-run IPO performance. The results of this study summarize that investors in India do not consider the total asset before they buy the share. It could happen because it

is much easier to know the number of share offered and information about the company available in public, to define or judge the performance or reputation of the company.

SECTION V CONCLUSION

This study has examined the long run performance of IPOs in India. results show that there is a positive relationship between the issue size (number of share) at the time of IPO issue. However, the other variables used (age, time lag, and company size) do not influence the long-run IPO performance of the listed firms on National Stock Exchange.

The conclusions are:

1. There is significant long-run IPO underperformance in India. However during the research period, it is proved that the condition shows a declining IPO performance, because the IPO performance is getting worse year to year.
2. All of the factors are influencing the long-run IPO performance, but only Issue Size influencing it significantly.
3. From the regression:
 - a. Indian Stock Exchange Market shows underperformance long-run IPO.
 - b. The company age does not influence positively the long-run performance of IPO.
 - c. Time lag does not influence negatively the long-run performance of IPO.
 - d. The size of stock at the go public period influences positively the long-term performance.
 - e. Company size does not influence the long-run underperformance of IPO in India.
4. Investors in India do not really consider those factors before they buy the share, but the total number of stock offered is something easy to think before deciding to buy the share, and indirectly related to the size and the reputation of the company.

Implications of the Study

As discussed above, this research concludes that Indian Stock Exchange Market shows a long-run IPO underperformance condition. It is possible as per previous research studies undertaken in various other countries. Furthermore, it is observed that issue size is one of the most significant factors influencing long run IPO performance after an IPO is issued. Company Size (CS) influences the long-run IPO underperformance in Indian Stock Exchange Market insignificantly.

This study helps investors understand the Indian stock market sentiments. Investors in India should be more careful before they decide to invest in IPO activity. They can study the factors which influence long run performance of an IPO and then invest in any IPO. Issue size converge to be a significant factor in decision making. There are various other factors which might have an impact on the long run performances of a firm undertaking IPO, such as political factor, economical factor, government regulation, etc. Since India is an emerging market, these factors are very important. Factors which are important in India might be different from those which might have an impact in other developed nations like America, Europe etc.

For the firms undertaking an IPO issue, this research study has many takeaways. A firm can be more careful in making a going public decision after considering the factors presented in this study. Firms can prevent negative information to be dissipated in the stock market. There are various other factors which need to be explored before generalizing the results of this study.

Limitations

Theories on under-pricing detail about the litigation risk and the internal management of the firm which can affect the returns. These factors were not taken due to the complexity of collecting the data necessary for such a huge group of firms and relying on their authenticity. The grading system started by the SEBI on 2007 which value the firm based on their fundamentals is another

factor which might play a major role in investor decisions. As the grading started at a later time, this variable was not included. Other factors like type of underwriter, hot-cold market condition, ownership structure, security factor, macroeconomic factor (inflation and currency rates), and government regulations can be included in the model to make it more robust. Also, methodologies such as Fama-French's, average monthly adjusted return (MMAR), or Tobin's Q can be used to draw more meaningful insights from the data as a future scope of research

References

- Brav, A., and Gompers, P.A. (1997). Myth or reality? The long-run underperformance of initial public offerings: evidence from venture and nonventure capital-backed companies. *The Journal of Finance*, 52(4), 1971- 1821.
- Alvarez, S., and Gonzalez, V.M. (2001). Long-run performance of initial public offering (IPOs) in the Spanish Capital Market. Working Paper, University of Oviedo. Retrieved October 6, 2008, from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=274086.
- Corhay, A., Teo, S., and Rad, A.T. (2002). The long run performance of Malaysian Initial Public Offerings (IPOs): value and growth effects. [Electronic Version]. *Managerial Finance*, 28(2), 52-66.
- Bradley, D.J., Cooney, J.W., Dolvin, S.D., and Jordan, B.D. (2006). Penny stock IPOs. [Electronic Version]. *Financial Management*, 35(1), 5- 30.
- Chin, C.L., Lee, P., Kleinman, G., and Chen, P.Y. (2006). IPO anomalies and innovation capital. [Electronic Version]. *Review of Quantitative Finance and Accounting*, 27(1), 67- 91.
- Bessler, W., and Thies, S. (2007). The Long-run performance of initial public offerings in Germany. [Electronic Version]. *Managerial Finance*, 33(6), 420-441.
- Chahine, S. (2007). Block-holder ownership, family control and post-listing performance of French IPOs. [Electronic Version]. *Managerial Finance*, 33(6), 388-400.
- Mahardhini Fuadillah (Bank Mandiri Jakarta) and D. Agus Harjito (Fakultas Ekonomi Universitas Islam Indonesia Yogyakarta): Long-Run IPO performances and its influencing factors: The case of Indonesian stock exchange *Jurnal Siasat Bisnis* Vol. 13 No. 2, Agustus 2009 Hal: 151-171
- Peter, S. (2009). Performance of Initial Public Offerings and Privatized Offers, evidence from a developing country. [Electronic Version]. *Managerial Finance*, 33(10), 798-809.

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- www.nseindia.com
<http://www.capitalmarket.com/>
<http://www.cmlinks.com/moneypore/ipo/ba.asp>
<http://www.vjondalalstreet.com>
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