Focus of the Problem

Most companies in Indian capital market start up by raising equity capital from a small number of investor. To finance the growth of the company, it has to go public by issuing securities to a large number of investors. Due to its presumed importance, it has become one of the most widely researched topics in the finance literature. In fact, public issue has become the most popular way of raising finance in India. The sheer increase in number and volume of initial public offerings post SEBI period has generated considerable research interest in the Indian IPOs market.

The present study was an attempt to examine the short run as well as long run performance of Indian IPOs in primary market after the abolition of the Controller of Capital Issue (CCI) in May 1992. This research was intended to test the performance of Initial Public Offerings (IPOs) in the Indian stock market between from 1992 to 2007. After the abolition of the Controller of Capital Issue (CCI) in May 1992, the Securities and Exchange Board of India (SEBI) was established and the power was transferred from the CCI to SEBI. The abolition of CCI had a major impact on the activities in the Indian primary market. It witnessed a boom phase (1992-96) when more than 50 companies got listed every month. The boom period continued till 1996. It is generally believed that during this period (1992-96) many new companies approached the capital market and raised large resources on the basis of rosy projections. Thereafter, there was a steep decline in the IPOs market in term of volume and value. This slump period continued till 2007. Even in 2002-2003 only 6 IPOs came in the primary market. So, a need has been felt to examine the performance of Indian IPOs of both the boom and the slump period.

Objectives of Study

The main objective of the study was to evaluate the performance of IPOs in India. Keeping the above in consideration, the present study has been conducted with the following objectives
1. To find out the performance of Indian IPOs for short period, i.e. from the date of offer to the public to the date of their first day of trading after listing on stock exchange.

2. To measure the long term performance of Indian IPOs including and excluding initial returns.

3. To examine the factors affecting the short-term and long-term performance of IPOs.

4. To examine the mechanism of pricing in IPOs through Fixed Pricing Method and Bookbuilding Pricing Method.

5. To compare both the boom period (1992-96) and the slump period (1997-2007) to draw a better conclusion.

**Research Design**

The present study was essentially descriptive in nature to describe the short term and long term performance of Initial Public Offerings (IPOs) in the Indian capital market with selected sample of Indian IPOs.

**Period of the Study**

The period chosen for the study was from March 1992 to April 2007. This period has been chosen because Indian IPOs market experienced both boom and slump during this period.

**Universe of the Study**

The universe of this present study consisted of all Indian companies which raised capital through IPOs during the study period. Universe of study was based on 4772 Indian companies which raised capital from Indian primary market during 1992 to 2007. The study was confined to only those companies which raised their capital through equity only as equity is the most popular source of raising funds. The raising of funds from other instruments has been excluded from the universe of this study.
Sample Selection of the Study

The present study was mainly confined to secondary data. The secondary data pertains to sample of 230 companies whose IPOs got listed on the Bombay Stock Exchange (BSE) and in formations have consistently been available. The sample of the study was based on the following criteria

- Firstly, the size of population was limited to the companies which are presently trading in Bombay Stock Exchange (BSE) up to 2010. Out of the total universe size of IPOs of 4772 companies only IPOs of 1594 companies fell in this category.

- Secondly, IPOs of these companies were classified on the basis of eleven prominent sectors such as chemical, computer software, textile, food, metal product, other financing assets & services, construction, banking, non-metal product, transport and communication which came to 1115 companies.

- Thirdly, the companies so arrived were grouped into four major market capitalization segments such as mega cap (Above Rs. 10000 crore), large cap (Rs.1000-10000 crore), mid cap (Rs.100-1000 crore) and small cap (Rs.10-100 crore).

- Fourthly, the sample was further restricted to 20 per cent of the companies from each sector. Finally a sample of 230 companies was selected.

- BSE- Sensex was selected as the Market Index for the study because Bombay Stock Exchange of India is the oldest stock exchange and most of IPOs were listed in the stock exchange.

Data Collection

Secondary data were used to analyse the performance of Indian IPOs under study. Various data inputs of the present study were offer price, offer date, offer size, listing price, listing date, age of firm, prices of IPOs for different time intervals i.e.
after one month, three months, six months and one year, two years & three years and Market Index (BSE- Sensex) of these same date/periods have been taken into consideration.

Companies disclose information on stock prices to the printing media and upload on their websites. The data has been calculated from the disclosures made by these companies. The information published by electronic and print media has also been used for the study. Requisite information in this study has been procured from the PROWESS database maintained by the Centre for Monitoring Indian Economy (CMIE), Bombay. Therefore, the nod of public availability of information concerning daily stock prices, market index and market capitalization are presumably being the same as is stated in the PROWESS database. So, the researcher of the present study has checked and collected the data as per requirement from the information in the “Prowess” database maintained by the Centre for Monitoring the Indian Economy.

Beside the above, the data has been obtained from the annual reports of SEBI, the annual reports of NSE- ISMR, annual reports of RBI, RBI Handbook statistics on Indian economy, Official directory of Bombay stock exchange whenever, adequate information were not available from CMIE DATA PROWESS.

Quantitative Techniques used for study

For the purpose of the present study the following measures have been taken to examine the performance of IPOs

- Financial Techniques
- Statistical Techniques

PART - A

Financial Techniques used to Measure Short term Performance of IPOs

Most of the empirical studies showed that IPOs offer higher returns on the first day of trading (short run). The short term performance has been calculated by using the traditional method, i.e. the difference between the closing price on the first day of
trading and offer price and divided by the offer price. The result figure was multiple by 100 to set the figure in percentage.

To measure the raw return of IPOs, whether an investor gained or lost by buying the share during the IPO on offer date and selling at the prevailing price on the opening day the following formula has been used

\[ R_i = \frac{P_1 - P_0}{P_0} \times 100 \]

...............(i)

Where

\( R_i \) = Subscribers initial return (hereafter raw return)

\( P_1 \) = Closing Price on the first day of trading

\( P_0 \) = offer price

If \( R_i \) is more than zero, one can interpret that short term returns were positive and the issues were under-priced, if \( R_i \) is less than zero, one can interpret that short term returns were negative and the issues were overpriced, and if \( R_i \) was zero, it means there were no returns.

**Market Adjusted Excess Returns (MAERs)**

The returns measured by eq. (i) would be valid in a perfect market, where there is no time gap between the application closing date and first day of trading but in India this time gap is quite long. During this period, a major change could occur in market conditions. As there was a lag between offer date and listing date, the price observed in the market on the listing day may be different from the offer price as a result of the overall market movements, the researcher also computed market adjusted returns of the IPOs for the same period. Therefore, the initial return estimated by eq. (i) is adjusted for market return as under;

\[ \text{MAER}_{it} = \frac{P_1 - P_0}{P_0} - \frac{M_1 - M_0}{M_0} \times 100 \]
Where

\[ P_1 = \text{Closing Price on the first day of trading} \]
\[ P_0 = \text{offer price} \]
\[ M_1 = \text{Market Index on the first day of trading} \]
\[ M_0 = \text{Market Index on the offer date} \]
\[ \text{MAER}_{it} = \text{Market Adjusted Excess Return} \]

**Annualizing Factor**

Since for different companies, the time taken to list varies so in order to normalize it annualized return has been taken into consideration. Annualized return has been calculated by multiplying raw return and MAER with annualizing factor. Annualizing factor has been computed as under

\[
\text{Annualizing Factor} = \frac{365}{\text{After Market trading Lead time}}
\]

**Financial Technique used to Measure Long term Performance (Including Initial Returns) of IPOs**

To evaluate long-term performance of Indian IPOs, long-term returns (Including initial returns) has been measured by the difference between the offer price and the price occurring at different time intervals i.e. at the end of one month, three months, six months and one year, two years, three years after listing. These figures were compared with the market Index (BSE-Sensex) in order to calculate long term MAERs. The following formula has been applied for this purpose

\[ R_{it} = \left( \frac{P_{it}}{P_{io}} \right) - 1 \times 100 \]
\[ R_{mt} = \left( \frac{S_{mt}}{S_{mo}} \right) - 1 \times 100 \]
\[ \text{MAER}_{it} = R_{it} - R_{mt} \]
\[ P_{it} = \text{Price of the share of firm i at time t} \]
\[ P_{io} = \text{Offer price of share of the ith firm} \]
As mentioned earlier, Annualised Long run returns (Including Initial returns) have been calculated by taking annualized factor.

**Financial Technique used to Measure Long term Performance (Excluding Initial Returns) of IPOs**

To calculate the long term performance (Excluding initial returns) of Indian IPOs, measured by the difference between the closing price of the first day of trading and price occurring at different time intervals i.e. at the end of one month, three months, six months and one year, two years, three years after listing. These figures were also compared with market Index (BSE-Sensex) in order to calculate long term MAERs. In this case, annualised Long run returns (Excluding Initial returns) have not been calculated because there was no listing delay time in this case. Following formula has been applied for this purpose

\[
R_{it} = \left( \frac{P_{it}}{P_{ic}} \right) - 1 \times 100
\]

\[
R_{mt} = \left( \frac{S_{mt}}{S_{mo}} \right) - 1 \times 100
\]

\[
MAER_{it} = R_{it} - R_{mt}
\]

Where

\[
P_{it} = \text{Price of the share of firm i at time t}
\]

\[
P_{ic} = \text{Closing price of the first day of trading of share of the ith firm}
\]

\[
S_{mt} = \text{Sensex at time t}
\]

\[
S_{mo} = \text{Sensex on the first day of trading}
\]

\[
R_{it} = \text{raw return of firm i at time t}
\]
Wealth Relative (Index)

To analyze the long-term performance, another measure, Wealth Relative Index (WR_{it}) using the procedure employed by Ritter and Levis is calculated. WR_{it} for a sample of ‘n’ stocks from offer date, to date ‘t’ is calculated by using the formula

\[
\text{Wealth Relative (WR}_{it}) = \frac{1 + \frac{1}{N} \sum_{i=1}^{n} r_{it}}{1 + \frac{1}{N} \sum_{i=1}^{n} r_{mt}}
\]

Where \( r_{it} = R_{it}/100 \)

\( r_{mt} = R_{mt}/100 \)

\( N = \text{Total number of IPOs in the sample} \)

The magnitude of this measure is an indication of the performance of IPO’s vis-à-vis the market. A wealth relative greater than unity implies that IPO’s outperformed the market in that period, while a wealth relative below 1 indicates under-performance of the IPOs.

PART - B

Statistical Tools and Techniques Used in the study

In this section various statistical techniques used to carry out the analysis have been briefly described. All the statistical work and analysis of data has been done on the SPSS/PC+ software.

One-Sample t -Test

In order to examine the validity of null hypothesis, researcher used t-test to confirm whether the average raw returns and average MAERs are statistically significant or not. The corresponding ‘t’ value indicated that the listing returns and MAERs were statistically significant on different levels or not. The statistical
significance of the average return (AR) is determined by using the usual t-statistic, which is computed for each period as

$$t(AR) = \frac{AR_{rt}}{SE(AR_{rt})}$$

Where SE (AR_{rt}) is the standard error of the average return in period t and t(AR_{rt}) is the t-statistic (with n-1 degrees of freedom) for the null hypothesis that ‘the average returns in any given period are zero’.

**Two-Sample t-Test**

In order to check the validity of null hypothesis, the study used t-test to examine whether the difference between the returns of both the boom and slump period are statistically significant or not. The corresponding ‘t’ value indicated that the difference between the returns of both the periods are statistically significant on different levels or not. To test whether the two populations’ means are equal or whether the difference is significant, researcher used two sample t-test and which is computed for each period as

$$t = \frac{X_1 - X_2}{S \cdot \sqrt{\frac{n_1 n_2}{n_1 + n_2}}}$$

Where S (AR_{rt}) is the standard error of the average returns in period t and t (AR_{rt}) is the t-statistic (with n-1 degrees of freedom) for the null hypothesis that ‘there is no significant difference between returns of the Boom Period and the Slump Period’.

**Regression Analysis**

Multiple regression technique has been applied to check the extent and direction of relationship between the dependent variable and several independent variables. The adjusted $R^2$ value indicates the proportion of the variation in the dependent variable explained by the independent variables. In this study, regression analysis has been used to determine the factors affecting the short-term and long-term performance of Indian IPOs.
Analysis of Variance (ANOVA)

Due to the large variances between the units of the variables such as issue size, different sector and issuance year of IPOs, one way - ANOVA test was applied to test the effect of these factors on the short term performance and long term performance of Indian IPOs.

Utility of Study

The present study will extend the existing literature on Indian IPOs market by examining both the initial returns and the aftermarket performance of IPOs at the Bombay Stock Exchange (BSE) in the Indian capital market.

Limitations of the Study

Thus all efforts have been made so that the study present a true picture of the Indian IPOs market but in spite of all care and efforts taken, few limitations were considered in the presentation of study finding. The limitations of the study are as follows

1. Only secondary data was used for the present study.
2. Only equity shares have been considered in this study.
3. Due to the limited availability of data, the researcher has taken a few variables to find out the performance of Indian IPOs. Other factors such as EPS, gestation period of the project, post issue equity holding patterns, foreign technical/financial collaboration, reputation of promoters, lead manager and underwriters also affect the performance of IPOs but could not be incorporated due to non-availability of adequate information.
4. The IPOs considered in this study belong to the free pricing era of SEBI. The period under Controller of Capital Issues (CCI) has not been considered.
5. Due to the long study period from 1992 to 2007, sometime historical daily stock prices of companies were not 100 per cent accurate which were provided by CMIE DATA PROWESS.

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The entire study has been divided into the following chapters

1. Introduction.
2. Review of Literature.
3. Research Methodology.
4. Short Term Performance of Indian IPOs.
5. Long Term Performance of Indian IPOs.
6. Factors Affecting Performance of Indian IPOs.
7. Findings and Conclusions.

The first chapter, ‘Introduction’, presented the aspects of the Indian stock market both qualitative development and quantitative development with the help of tables and figures, growth of Indian IPOs market and its regulatory framework, including pricing mechanism of Indian IPOs i.e. Fixed Price Method and Bookbuilding Method.

The second chapter, ‘Review of Literature’ described the past studies about the problem. In this chapter all concepts has been reviewed relating to the present study problem. This chapter was categorised in two-sections. First section related to the studies on other countries’ IPOs market. Second section related to the studies on Indian IPOs market and different pricing mechanisms were also covered in these studies.

In the third chapter, ‘Research Methodology’ described the need of the study, Objectives of the Study, Research Design, Sample Size, Sample Selection, Data Collection, Analytical Tools used in the present study and limitations of study.

The forth chapter under the title ‘Short Term Performance of Indian IPOs’ displayed the tables of short term returns of IPOs and one sample t-test was used to test check the statistically significance of the results. Interpretation of the results was described with these tables.

Fifth chapter, titled as ‘Long Term Performance of Indian IPOs’. This chapter displayed the tables of different time intervals of aftermarket performance of Indian IPOs from the first day of trading and t-test was used to check the statistically
significance of the results. Interpretation of the results was described with these tables.

The sixth chapter under the title ‘Factors Affecting Performance of Indian IPOs’ described the different factors such as issue at Par & Premium, Pricing methods Fixed Price Method Vs. Book building Method, Offer Price, Listing Delay, Age of the firm, Offer Size, Different BSE Groups, different 11 sectors and issuance year of IPOs under study.

The last and the seventh chapter, titled ‘Findings and Conclusions’. In this chapter the findings of the study were given and conclusions to this problem were given.