IPO Effect: Post Event Analysis

Parul Bhatia[1], Lipika Jain[2]
[1,2]Apeejay School of Management, (New Delh) India.

ABSTRACT

Initial Public Offering (IPO) is a phenomenon when the company's shares become available to public for the first time in the market. This is done either after incorporation or conversion of private limited company to public limited company. IPO witnessed a sharp decline in collections during 2008 quarter. Announcement of IPO may give a positive signal to the stakeholders that the company is working towards their interest. It may also indicate that the firm has ample opportunities and projects. The present study caters to the needs of shareholders and other stakeholders by analyzing the impact generated by IPOs on their returns. The study has incorporated analysis of share prices of companies initiating the IPOs between 2009-2016 and thereby computing its daily abnormal returns using CAPM. The daily stock prices of 20 companies have been taken for the concerned period from website of National Stock Exchange along with Nifty50 index values to compute market returns. t-test has been used to test for significance of abnormal returns in three event windows. Paired sample t-test has been used to find out difference in performance of IPO in varied time periods. The event study methodology has been used to find out the performance of the respective stocks since IPO announcement taking 24780 observations.

Keywords: IPO, AR, AAR, CAAR, event study.

I INTRODUCTION

Announcements in the capital market are an important indicator about a company's performance. An investor is always keen to know latest developments taking place due to managerial decisions which may lead to restructuring of a firm. There may be a variety of information or precisely news floated in the market about a particular company. One of the most significant could be an initial public offer by the concern. An IPO is a signal for the stakeholders that the company is planning to expand and may have ample opportunities to invest shareholders' money.

There may be mixed reactions for such an announcement in the market creating an impact on the stock returns in post IPO period. This likely effect may be studied by analyzing the stock prices of companies which announced IPO with the help of event study methodology. The time period of event window for an IPO has been broken into different time frames to understand the impact of announcement with varied angles. Using t-test, the significance of IPO effect on stock returns has been tested in SPSS V.20

II LITERATURE REVIEW

Stephen C. Henry and Greg N. Gregoriou documented "IPO Firm Characteristics Pre-and Post-Financial Crisis"[11]. The variables analyzed in the study are three-month centered moving average. The IPO market has returned more or less to its pre-crisis deal volume measured by number of transactions. The IPO market still exhibits hot and cold periods but were of shorter duration than they were prior decade. Firms going public are highly clustered in relative handful of industries with extent not changing in post-crisis period. Firms going public in post-crisis period are larger in terms of sales volume that the pre-crisis counterparts.

Vijaya B Marisetty and Marti G Subrahmanyam conducted study on "Group Affiliation and the performance of Initial Public Offerings in the Indian Stock Market"[16]. Tool of regression is used to examine causal relationship between extent of under pricing and firm characteristics. The long term return performance of firms is tested using BHAR and CAAR measures. The certification hypothesis asserts that group affiliation is a positive signal resulting in low under pricing than for standalone companies. On the other hand, tunneling hypothesis asserts that group affiliations are negative signal resulting in greater under pricing.

PierraNjeriMaina documented "The Effect of Initial Public Offers on the Financial Performance of firms listed at thr Nairobi Securities Exchange" [15]. Variables like Current Ratio, Net Profit Margin Ratio and Debt Equity Ratio formed basis of study. The average profitability of the firms is greater before going public. Even after the IPO there is slight decline in first two years and increases from third year onwards. The average liquidity of the companies is greater before the companies go public but continue decreasing from year three. The study concludes that financial performance of companies improves after issuing of IPO.

Loughran and Jay R Ritter articulated "The New Issues puzzle" (1995) [14]. The variable used for conducting statistical test is the paper also shows that the traditional measure of risk, beta is higher for issuing firms rather than non-issuers. The three procedures used reject the null hypothesis. Investing the same amount in non-issuing firms would give a higher return as compared to issuing firms. The reason identified for the poor performance. The

markets in which firms take advantage of transitory windows of opportunity by issuing equity arc overvalued.

Laura Casares field and Gordon hanka documented "The Expiration of IPO Share Lockups" (2001). The variables used in study are Cumulative Abnormal Returns, Abnormal Returns, and Abnormal Volume. It further shows that the abnormal returns arc not large enough to provide short term profits for traders. Hypotheses were formed to explain the negative abnormal returns. The results of study conclude that there exists statistically prominent abnormal return of -1.5 % along with permanent 40% increase in trading volume. The abnormal return is found to be caused due to downward-sloping demand curves, resulting in more negative with higher trade volume. The abnormal return and volume around the unlock day is larger when firm is financed by venture capital.

Alok Pande and R. Vidyanathan conducted a study on "Determination of IPO under Pricing in the National stock Exchange" [17]. The paper represents the pricing of IPO in NSE. The control variables for applying descriptive statistics include degree of under pricing, Issue Size, Marketing Expenditure etc. The Degree of under pricing has reduced over the years proving a good signal for firms as they form the indirect cost for the company. Another parameter for positive under pricing is the listing delay. According to study money spent on marketing of IPO does not help to reduce the under pricing significantly.

Narasimhan Jagadeesh and Mark Weinstein and Ivo Welch conducted a study on "An Empirical investigation of IPO returns and subsequent equity offerings" [13]. The main explanatory variable used to test signaling hypothesis is stock returns, Cross-sectional Standard Deviation. The firms with large IPO date returns more likely issue larger seasoned equity within three years of their IPOs. The market prices in two 20-day periods are related to probabilities of subsequent seasoning offering and their size. Contrary to signaling hypothesis the issuers do not have to rely on costly under pricing mechanism for information relevant for future equity issues.

Dr. L.Ganesamoorthy and Dr. H.Shankar conducted a study on "Performance of Initial Public Offerings in India during different market conditions-Empirical evidence" [10].The methodology of study includes variable like Market Return, Abnormal Return, Average Abnormal Return, Cumulative Average Abnormal Return and tests like t-test is applied on these variables. The study conducted reveals that Indian IPOs over performed during normal market conditions and under performed during growth and crisis market conditions. The study further reveals that the degree of underperformance is more severe during crisis and recovery than underperformance in growth market conditions.

Chang-Yi Hsu, Jean Yu and Shiow-Ying Wen conducted a study on "The Analysts' Forecast of IPO Firms during the Global Financial Crisis (2013)" [12]. The dependent variable for using regression is earning forecast error and independent variables include Size, Under pricing, IPO Number, Debt ratio, Rating of firms. The study identifies factors like number of IPO firms, the under pricing, the firm size and the listings on NYSE and NASDAQ affecting the analyst. While the analysts would make the predictions based on factors like under pricing, number of IPO firms in same year, the prior year earning change, rating of companies and whether listed on NYSE or NASDAQ during pre-crisis period. On the other hand during post-crisis period analysts consider only firm size.

Malcolm Baker and Jeffrey Wurgler conducted a study on "Investor Sentiment and the Cross-Section of stock returns (2003)" [2]. The study examines how investor sentiment can affect the cross section of stock returns. The research methodology consists of correlation analysis between its variables. The findings of the study is that cross-section of future stock returns is conditional upon beginning-of-period proxies for investor sentiment. When sentiments are high, stocks are relatively attractive to optimists and speculators and attractive for arbitrage.

Emmet King and Luca Banderet conducted a study on "IPO Stock Performance and the Financial Crisis" [2A]. The paper studies the impact of financial crisis on stock price performance of IPOs in short and long run. The variables used in study are Abnormal Return, Cumulative Abnormal Return, Buy-and-Hold Abnormal Return. The study finds that market as a whole does not significantly impact the level of under pricing. The level of under pricing was lowest in 2008 reaching above average in subsequent years. Firm going public during crisis have a higher three-year-return than other IPO firms.

Nurwati A. Ahmad-Zaluki, Kevin Campbell and Alan Goodacre conducted a study on "Earnings Management in Malaysian IPOs:the East Asian Crisis, ownership control and post-performance" [1]. The study provides evidence of earnings management decisions are significantly affected by environmental and company specific factors. Post IPO performance is found to depend on the benchmark adopted. Aggressive earnings management IPO companies performed less than their counterparts only during East Asia crisis period. For other periods, the performance is not affected by level of earnings management.

Sanjay Dessai conducted a study on "Post listing Performance of Initial Public Offer (IPOs) in Indian Capital Market" [4]. The paper deals with analysis of performance of IPO offered to public through BSE in period between 2010 and 2013. Analysis is conducted with the help of mean difference in return

and ANNOVA to test significant difference in return between sectors of industry. IPOs issued in first half of 2013 showed a positive return of 58%. Rest all the IPOs issued from 2010to 2012 showed negative returns. It further shows that in spite of Sensex moving up overall IPO of all sectors except gold has given negative returns. The IPO were overprices to take advantage of booming secondary market.

III RESEARCH METHODOLOGY

(a) **Event study -** Event study has been primarily used for the present study to investigate the impact of an IPO on stock returns. The day of announcement for IPO has been taken as the time period t for all sample companies. The event windows have been divided into three categories to look for very short, long term and very long-term impact of the event. These windows have been shown in the following table.

Table 1
Event Windows

Event Window	Time Period
t + 29	30 days
t + 245	1 year
t + 1239	5 years

(b) **Data -** The data for the study has been obtained from the website of National Stock Exchange. The data of IPO announcements, daily stock prices of companies and market data for Nifty has been taken from 2009-16. The risk-free rate has been assumed to be the interest rate on government bonds and their weighted average interest rates have been collected from the website of RBI.

(c) **Hypotheses of the study-**
  (i) H1: There is no significant effect of Initial Public Offering announcement on the abnormal returns of sample companies in short window.
  (ii) H2: There is no significant effect of Initial Public Offering announcement on the abnormal returns of sample companies in long window.
  (iii) H3: There is no significant effect of Initial Public Offering announcement on the abnormal returns of sample companies in very long window.
  (iv) H4: There is no significant difference between post performance of IPO in short and long window.
  (v) H5: There is no significant difference between post performances of IPO in short and very long window.

  (vi) H6: There is no significant difference between post performance of IPO in long and very long window.

(d) **Sample -** The companies have been randomly picked up with an objective to find out the impact of initial public offer announcement on their stock returns. However, in our next level study we may extend our research where a comparison can be drawn between different segments across companies.

There were forty-two companies picked up initially from the list of IPO announcement between 2009-2016 given on the website of National Stock Exchange. These companies were taken from different segments (ignoring the segment to which they belonged). In line with the time period chosen for the study, data was collected for a five-year window. Out of forty-two companies, twenty companies fulfilled the condition of data availability as per requirements in the study.

Further these companies were divided based on their current market capitalization into three categories; small cap, mid cap and large cap. 20 companies were finalized in the sample as per the requirement of event windows which required 30 days, 1 year and 5 years data.

Table 2
Showing list of sample companies

Company Name	Company Name
Coal India Limited	NHPC Limited
D.B. Corp Limited	NMDC Limited
D B Realty Limited	Oberoi Realty Limited
Infinite Computer Solutions (India) Limited	Oil India Limited
Intrasoft Technologies limited	Persistent Systems Limited
Jubilant Foodworks Limited	PG Electroplast Limited
Gujarat Papavav Port Limited	Talwalkars Better Value Fitness Limited
Mahindra Holidays & Resorts India Limited	TD Power Systems Limited
L&T Finance Holdings Limited	Ramky Infrastructure Limited

Table 3
Showing criteria for division of sample

Market Capitalization	Category
>1000 Cr	Small Cap
1000 Cr – 10000 Cr	Mid cap
<10000 Cr	Large Cap

(e) Stock Return - Stock return is the gain or loss during a particular period. It can be historical or expected return. The historical return of stock is calculated using below relation:

$$R_i = \frac{Pt-(Pt-1)}{Pt-1}$$

where,
Pt-1 = Previous Price
Pt = Current Price

Similarly, market returns are computed with the help of similar formula.

$$R_m = \frac{Pt-(Pt-1)}{Pt-1}$$

where,
Pt-1 = Previous Price
Pt = Current Price

(f) Expected Return: E(r) - It is the amount of profit or loss that the investor anticipates on an investment. It is based on the historical return of the stocks and is not guaranteed but may deviate from the anticipation. The expected return is computed using the CAPM model in the present study.

$$E(r) = Rf + \beta (Rm-Rf) + e_i$$

where, E(r) is the expected return
β is the beta value of stock
Rm is the return on market
Rf is the risk-free rate
e_i is the error term

(g) Abnormal Return (AR) - Abnormal Return also called excess return is the fraction of a security's or portfolio's return not explained by the rate of return of the market. The abnormal return obtained can be positive or negative depending on where the actual return falls in relation to the expected return. It is calculated using following formula-

$$AR_i = R_i - E(r)$$

where AR_i refers to abnormal return on a specific stock
Ri refers to realized (actual) return on a specific stock
E(r) refers to expected return on a specific stock

(h) Average Abnormal Return (AAR) - Average abnormal return refers to the combined average of all stocks taken together with the help of daily abnormal returns as calculated with the help of CAPM. The formula to compute this variable has been mentioned below:

$$AAR = \frac{\Sigma \, AR}{N}$$

Where, AAR refers to Average abnormal return for the respective day of observation

Σ AR refers to the sum of abnormal returns of all stocks for the respective day of observation

N refers to the number of stocks

(The number of observations in the study have been taken as 24780 i.e. 1239 observations for each stock with 5 years data after IPO)

(i) Cumulative Average Abnormal Return (CAAR) - The abnormal returns have been further converted into cumulative average abnormal returns for applying t-test in SPSS.

(j) Beta Values - Beta is the measure of volatility of the stock. It is the measure of systematic risk of a security or a portfolio in comparison to the market as a whole. Beta responds the tendency of a security's returns to respond to swings in the market.

$$Beta = \frac{Covariance \, (r_i, \, r_m)}{Variance \, (r_m)}$$

where,

R_i is the return of asset

R_m is the market return

A beta value equivalent to 1 indicates that security's price moves with the market, less than 1 means that the security is less volatile than the market and greater than 1 indicates that the security is more volatile than the market.

(k) The Model: CAPM - CAPM stands for Capital Asset Pricing Model. It is a model which describes the relationship between systematic risk and expected returns for assets particularly stocks. The model says that the expected return of a security or a portfolio equals the rate on a risk-free security plus the risk-premium. The expected return according to this model is given by the following formula-

$$\overline{r_a} = r_f + \beta_a (\overline{r_m} - r_f)$$

Where:

r_f = Risk free rate

β_a = Beta of the security

$\overline{r_m}$ = Expected market return

The model has been used to compute expected returns in the present study.

IV ANALYSIS & INTERPRETATION

(a) Abnormal Return (AR) - Abnormal returns for all the sample stocks from 2009-2016 for different event windows have been presented in this segment to obtain a quick glance of IPO performance in different time frames after IPO announcement. The values obtained with the help of CAPM provided platform to further investigate the impact of announcement on stock returns statistically.

Table 4
Showing AR values for 29th day, 245th day and 1239th day.

Stocks	29	245	1239
Bajaj Corpalln	-0.77066	-0.76461	-8.00385
Coal India	-3.86913	-3.86566	-2.12789
DB Corp	-2.74017	-2.74438	-4.33695
DB Realty	-1.96921	-1.99703	8.019049
GPPL	-1.52582	-1.55544	-1.23624
Infinite	-2.72694	-2.73657	-1.01289
ISFT	-2.2281	-2.38333	-2.57649
Jubilant	2.816398	2.785918	0.189752
L&T Finance	-2.44774	-2.47494	-0.03561
MHRIL	21.301	21.2879	-4.58126
Muthoot	-2.90979	-2.87771	-2.22166
NHPC	-3.47019	-3.47852	-0.81227
NMDC	-2.40662	-2.40598	-0.39776
Oberoi	-3.02889	-3.05716	0.026724
Oil India	-4.88333	-4.8895	-0.07935
Persistent	-2.536459	-2.562003	-2.947068
PGEL	-2.48469	-2.46858	0.55996
Ramky	-1.61019	-1.60305	2.790769
Talwalkars	-1.788436	-1.779099	1.4135699
TD Power	30.40956	30.42127	-1.70668

From the above table, it can be observed that DB Realty, Jubilant, Oberoi, PGEL, Ramky and Talwalkars provided returns to the investors beyond their expectations in the 5-year's time span. Jubilant, MHRIL and TD Power had shown a similar trend in a month which continued for a year's time after announcement of IPO.

(b) Average Abnormal Returns - The average abnormal returns as explained in the previous section of the paper for the respective days of investigation to understand the announcement effect from IPO have been presented below:

Table 5
Showing Average Abnormal Returns for respective windows

Day	AAR
29	0.556528
245	0.542577
1239	-1.15359

It may be observed from the above table that after 29 days of IPO announcement all the sample stocks taken on an average depicted positive abnormal returns. This phenomenon continued for a year (245 days) after announcement of IPO. However, in a time span of 5 years (1239 days) these abnormal returns turned negative indicating that IPOs may have provided abnormal returns for a year's time.

(c) **Beta Values -** The beta values of the sample companies are listed in table 4. Each company had different timing for the IPO announcement. Therefore, the beta values have been calculated for the time period around the announcement of IPO. The beta values for Coal India were highest in year 2013 making it the very risky stock. It shows the fluctuating trend throughout the 5 years under study. It may be due to increase in the net worth of the company in the period 2009-2013 and a subsequent decrease in the net profit of the company in the same time period. DB Realty had a fall in beta in initial years of IPO but it increased drastically from 2012 onwards.

The reason for the drastic change in beta value may be due to disturbance in the real estate industry in that decade. The fall of the industry as a whole might have impacted the stock prices of DB Realty making it a risky stock. Mahindra Holidays and Resorts India Limited started with the highest beta of 3.9 making it extremely risky as compared to other stocks. The reason for this is likely to be the growing position of company and investors being cheered on the release of IPO in that period. It is likely due to the expansion plans of the company to other areas for its operations. TD Power systems started its IPO with beta of 4.5 much higher risky with respect to the market. It may be due to the fact that TS Power systems raised a very huge amount through the IPO making it an expensive issue. Also, it may be due to a high ROE of 30% and high margins of 10%. The issue was not recommended by the research firms during that period.

Table 6
Beta Values of Sample Companies

Co Name	2009	2010	2011	2012	2013	2014	2015
BajCorp		0.90	0.41	0.49	0.62	0.05	
CoalIndia		0.51	0.65	0.38	1.2	0.74	
DB Corp		0.65	0.22	0.25	0.54	0.49	
DB Realty		0.75	0.70	1.10	1.42	1.94	
GPPL		0.80	0.50	0.09	0.46	0.85	
Infinite Sol		0.65	1.05	0.75	0.47	0.87	
ISFT		0.70	0.05	0.03	-0.13	0.69	
JublFood		1.35	0.91	0.80	0.36	1.01	

L&T Fin			0.70	1.09	1.07	0.95	0.99
MHRIL	3.9	0.66	0.70	0.42	0.45		
Muthoot Fin			0.66	0.17	0.96	0.70	0.72
NHPC	0.52	0.76	0.63	0.62	0.84		
NMDC		0.69	0.96	0.87	0.94	0.95	
Obe Realty		0.61	0.53	0.88	1.03	1.14	
Oil India	0.32	0.32	0.38	0.77	0.99		
Persistent		0.67	0.44	0.26	0.21	0.64	
PGEL			0.71	0.71	0.25	1.09	1.07
RAMKY		0.79	0.75	1.44	1.50	1.32	
TALWALKARS		0.77	1.11	0.65	0.88	1.16	
TDPOWER			4.5	0.17	0.62	0.77	0.78

(d) **Event Windows: Interpretation -** The t-statistics along with their significance value as obtained after applying paired sample t-test in SPSS V.20 have been demonstrated in this segment.

(i) **Short Window-** The first null hypothesis in the study stands to be rejected with the help of statistics shown in table 5 for 30 days window. It may be due to the investor's positive response towards the issues released after the financial crisis of 2008. It may have given a positive signal to the investors about the company and its stocks and may generate the desire to invest their money in the IPOs released. The results are significant at 5% level of significance. It may be likely to revive the companies after the financial crisis retaining their earlier positions in the financial markets.

(ii) **Long Window -** The p values of the sample companies have been found significant in the long window. Hence the second null hypothesis may be rejected and it may be said that IPO has affected the stock returns in the long window. It may be due to investors holding their investments in the companies for a long period of time. The investors might have seen the growth potential in the companies and may anticipate high returns in the future. The companies may likely to be in the expansion mode during the initial years of its release of IPO. The companies might also have been successful in generating expected returns for the investors giving them confidence to invest further in the stocks of the company.

(iii) **Very Long Window -** The results have been found significant in the very long window at 5% level of significance. The third null hypothesis may be rejected and IPO announcement may be found as an important indicator in the market which affected stock returns in five-year time frame. It may be possible that the stocks might have outperformed from the expectations of the investors. Investors might have gained confidence to keep their money being invested in the stocks of the company.

By statistically testing the cumulative abnormal returns of the sample companies it may be said that IPO has significantly affected the stock prices of the sample companies. These results have been found consistent in all the three windows of 30 days, 1 year and 5 years.

Table 7
t-statistics and p values

Companies	t- value			p-value
	30 days	1 year	5 years	0.000
Bajaj Corp Limited	-10.438	-27.749	-23.025	0.000
Coal India Limited	-10.418	-27.613	-61.462	0.000
D.B. Corp Limited	-10.418	-27.833	-43.384	0.000
D B Realty Limited	-10.412	-27.801	-42.97	0.000
Infinite Computer Solutions (India)	-10.401	-27.826	-32.377	0.000
Intrasoft Technologies limited	-10.445	-27.948	-31.586	0.000
Jubilant Foodworks Limited	10.385	27.779	-15.548	0.000
Gujarat Papavav Port Limited	-10.420	-27.655	-43.903	0.000
Mahindra Holidays & Resorts India	10.415	27.554	-42.174	0.000
L&T Finance Holdings Limited	-10.422	-27.663	-44.643	0.000
Muthoot Finance Limited	-10.420	-27.660	-43.637	0.000
NHPC Limited	-10.416	-27.558	-46.355	0.000
NMDC Limited	-10.440	-27.858	-43.395	0.000
Oberoi Realty Limited	-10.404	-27.666	-43.552	0.000
Oil India Limited	-10.408	-27.609	-36.053	0.000
Persistent Systems Limited	-10.409	-27.927	-42.841	0.000
PG Electroplast Limited	-10.502	-27.716	-43.318	0.000
Talwalkars Better Value Fitness	-10.385	-27.807	-32.167	0.000
TD Power Systems Limited	10.412	27.498	-39.748	0.000
Ramky Infrastructure Limited	-10.433	-27.675	-43.408	0.000

(e) Performance of IPO: Event WindowsComparison - The CAAR value in 29 days, 245 days and 1239dayshavebeenstatisticallycompared in thissectionusingpaired sample t test in SPSS. The resultsobtainedhavebeenpresentedbelow:

Table 8
Showingpaired sample t-test statistics for allwindowsat 5% level of significance

Showing results for Paired Sample t-test						
Pair	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
CAAR29-CAAR245	-0.981	0.345	0.022	-44.486	244	0.000
CAAR29-CAAR1239	-0.981	0.346	0.022	-44.373	1238	0.000
CAAR245-CAAR1239	3.661	2.385	0.068	54.018	1238	0.000

The abovetablepresents the results of paired sample t-test for alleventwindowstakentogether. Itmay be saidthatthereis a significantdifferencebetweenreturnsgenerated by stocks post IPO in different time periods. The abnormal stock returnsafter the announcement of IPO wasfound to be significantlydifferentbetween a month (29 days) and a year (245 days). Also, the p-valueindicatedthisdifference to be significantbetween 29 days and 1239days (5 yearswindow). The resultswerefound to be significantbetween 245 days and 1239days.

Thus, itmay be saidthat the nullhypothesesstands to be rejectedat 5% level of significance i.e.,
H4: There is no significant difference between post performance of IPO in short and long window.
H5: There is no significant difference between post performances of IPO in short and very long window.
H6: There is no significant difference between post performance of IPO in long and very long window.
From table 8, it may be interpreted that there were significant differences between three event windows taken pair wise. Hence, an investor may plan to invest his money in IPO depending upon his risk-taking capacity and return expectations. IPOs may give him different returns in varied time periods.

V CONCLUSION

IPO is regarded as an important structural change in the capital holdings of a company. It may bring a positive signal to potential investors that the company is on the rise and has various expansion plans and opportunities. However, it may also be done at a stage when the management strongly feels that the company is ready to dilute its ownership. This may be followed by mixed vibrations; on the one hand company gets easy access to funds but on the other hand common public becoming participative in decision making may pose interference. This kind of change in the structure may have an impact on the stock prices of the company in future after announcement of its IPO takes place. It has been examined in the study that IPO announcement significantly affected the stock returns for investors.

However, it has been observed that the results may be reflected with a high magnitude as the time period increases after IPO. It can be deduced that in the very long window IPO announcement may provide better returns as compared to smaller windows. The paired comparison between different time periods (windows) reflected possibility of varied abnormal returns at the time of announcement and afterwards; 29 days, 245 days and 1239 days. So, it may be said that the returns for an investor shall depend on the timing of his investment in an IPO. An investor entering an IPO at the start may receive different returns as compared to an investor who enters later. The study may be extended to a sector wise comparison of IPOs and their respective returns generated for investors.

REFERENCES

[1] Ahmad-Zaluki, N., Campbell, K., Goodacre, A. (2009). Earnings Management in Malaysian IPOs: the East Asian Crisis, ownership control and post-performance: Evidence from The International Journal of Accounting Vol 46 (2) (111-137)

[2] Baker, M., Wurgler, J. (2003). Investor Sentiment and the Cross-Section of stock returns: Evidence from Salomon Center for the study of Financial Institutions

[2A] Brands, L. (2014). The stock effect of Initial public Offerings on industry rivals: Evidence from http://www.nasdaq.com/markets/ipos/company/facebook

[3] Degrande, T. (1999). Initial Public Offering: Performance before and after the European Financial Crisis: Evidence from https://lib.ugent.be/fulltxt/RUG01/002/304/805/RUG01-002304805_2016_0001_AC.pdf

[4]   Dessai, S. (2015). Post listing Performance of Initial Public Offer (IPOs) in Indian Capital Market: Evidence from https://ssrn.com/abstract=2615497

[5]   Divya, K. (2013). A Sudy on Performance of Indian IPO'S During the Financial Year 2010-2011: Evidence from International Journal of Marketing, Financial Services & Management Research Vol 2

[6]   Drathen, C. (2007). The Performance of Private Equity-Backed Initial Public Offerings in Germany: Evidence from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1117182

[7]   Field, L., Hanka, G. (2001). The Expiration of IPO Share Lockups: Evidence from The Journal of Finance, Vol 50, (2)

[8]   Fishe, R. (1999). How stock flippers affect IPO Pricing and Stabilization: Evidence from The Journal of Financial and Quantitative Analysis Vol 37 (2) (319-340)

[9]   Ganesamoorthy, L., Shankar, H. (2014). Performance of Initial Public Offerings in India during different market conditions-Empirical evidence: Evidence from International journal of Management Research & Review Journal of Finance, Vol 4, (7) (6/746-760)

[10] Henry, S., Gregoriou, G. (2013). IPO Firm Characteristics Pre-and Post-Financial Crisis: Evidence from https://ssrn.com/abstract=2292307

[11] Hsu, C., Yu, J., Wen, S. (2013). The Analysts' Forecast of IPO Firms during the Global Financial Crisis: Evidence from International Journal of Economics and Financial Issues, Vol 3 (3) (673-682), www.econjournals.com

[12] Jagadeesh, N., Weinstein, M., Welch, I. (1993). An Empirical investigation of IPO returns and subsequent equity offerings: Evidence from Journal of Financial Economics, (153-175)

[13] King, E., Banderet, L. (2014). IPO Stock Performance and the Financial Crisis: Evidence from https://ssrn.com/abstract=2456220,

[14] Loughran, T., Ritter, J. (1995). The New Issues Puzzle: Evidence from The Journal of Finance, Vol 50, (1) (23-51)

[15] Maina, P. (2015). The Effect of Initial Public Offers on the Financial Performance of firms listed at thr Nairobi Securities Exchange: Evidence from http://erepository.uonbi.ac.ke/bitstream/handle/11295/93548/Maina_The%20effect%20of%20initial%20public%20offers%20on%20the%20financial%20performance%20of%20firms.pdf?sequence=4

[16] Marisetty, V., Subrahmanyam, M. (2010). Group Affiliation and the performance of Initial Public Offerings in the Indian Stock Market: Evidence from Journal of Financial Markets Vol 1 (1) (196-223)

[17] Pande, A., Vidyanathan, R. (2008). Determination of IPO Under Pricing in the National stock Exchange: Evidence from ICFAI Journal of Applied Finance, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1081272

[18] Smith, Z. (2009). An Empirical analysis of Initial Public Offering (IPO) Performance: Evidence from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1326967

[19] Stankeviciene, J., Akelaitis, S. (2014). Impact of public announcements on stock prices: relation between values of stock prices and price changes in Lithuanian stock: Evidence from Procedia-Social and Behavioral Sciences Vol 156 (538-542)

[20] Welch, I. (1996). Equity offerings following the IPO Theory and Evidence: Evidence from Journal of Corporate Finance Vol 2 (227-259)