

## Are IPOs Underpriced? Empirical Evidence from India

Dr. Yogesh C Joshi\*  
Dr. Ranjan Sabhaya\*\*  
Falguni H. Pandya\*\*\*

\*Professor, G H Patel Post Graduate  
Institute of Business Management  
Sardar Patel University, Anand, Gujarat

\*\*Faculty,, S P Luthra Institute of  
Management, South Gujarat University  
Surat (Gujarat)

\*\*\*Faculty, Centre for Management  
Studies, Dharmsinh Desai University  
Nadiad (Gujarat)

### Abstract

The paper attempts to analyse IPO performance from the day of listing to till 365 days for a period of 2005 to 2012. The sample of 150 IPOs considered for the present study were analysed based upon abnormal return and Wealth Relatives. The CARR and Wealth Relatives computed for individual IPOs gave mixed results-leading no conclusion. The CARR and WR computed on an aggregate basis resulted that only 43 IPOs are underpriced i.e. giving positive abnormal return while remaining 107 IPOs are overpriced i.e. negative return. In a similar way, WRs is found at the level of 2.1363 for first one month and then 0.8876 for a one year time period.

### Keywords:

IPO performance, India.

### Introduction

IPOs are one of the largest sources of capital for the firms to invest in growth opportunities. It encourages investment opportunities in the country by mobilizing funds from low growth opportunities to high growth opportunities. Broadly speaking literature regarding IPOs study reveal that 1) IPOs are listed with significant premium to issue price and due to this investors are able to earn significant return on the listing day. 2) The overpricing or in other words, underperformance of IPOs persists for a long way. The under pricing phenomena of the IPOs is supported by large number of researches which tries to justify large first day return as a compensation for bearing risk. Under pricing is the pricing of the IPO at less than the fair value of the issue. The degree of under pricing differs from country to country and issue to issue in the same country. The under pricing of the IPO is a loss of capital to the issuing company and gain for the investor as it yields them positive abnormal initial return. All these relevant literatures conclude that average IPOs is undervalued at the offer price as the first day market price is the indication of intrinsic value or fair value of the stock. The present paper focuses on the post issue performance of the IPOs issued and listed on BSE and NSE for a period of 365 days from year 2005 to 2012. Empirical evidence all over the world has been noted that on an aggregate basis IPOs generate positive abnormal listing day return (i.e. underpriced) followed by negative abnormal return for a reasonably long period say 1 year to 3 years (Purnanandan K Amiyatosh; Bhaskaran Swaminathan 2004).

In this paper, return of the IPOs is calculated from the day of listing to different time windows such as 1 day to 7 day, 1 day to 14 day to till 1 day to 365 days. Capital Asset Pricing Model (CAPM) is used to find out the return the given

IPO should provide and this is compared with the actual return earned by the IPOs. Abnormal return is then calculated by taking difference of actual return and required rate of return. Over performance and underperformance of IPOs is also calculated by another tool named Wealth Relatives (WRs).

### Review of Literature

Jain Neeta and Padmavathi C (2012), in their research paper titled, "Under pricing of Initial Public Offerings in Indian Capital Market" concludes that under pricing is the result of investors' high willingness pay, high demand of the issue, high firm value and high fluctuations in the market returns. The result shows that IPOs of high value firms are more under priced in India. Also under pricing is high when index is highly volatile in the market.

An empirical research by Sahoo Sesadev and Rajib Prabina (2010) in the research paper titled, "After Market Pricing Performance of Initial Public Offerings: Indian IPO Market 2002-2006" studies performance of 92 IPOs. The paper notes that on an average Indian IPOs are underpriced to the extent of 46.55 percent on the listing day compared to the market index. The paper has tested long run performance of the IPOs by taking 36 months after their issuance. Paper finds that underperformance is found in the initial year of trading i.e. up to 12 months and after that over performance is observed.

Ghosh Saurabh (2005), in the research paper titled, "Under pricing of Initial Public Offerings: The Indian Experience" has attempted to identify the factors explaining under pricing of Initial Public Offerings of 1842 companies of Bombay Stock Exchange for a period of 1993 to 2001. The paper finds that uncertainty plays a role for vicious under pricing in the Indian primary market. It finds that IPOs with large issue size and with seasonal offerings had less under pricing. Opposite to evidence found in international context, under pricing was found less during hot period compared to slump period in Indian market.

Purnanandan K Amiyatosh and Bhaskaran Swaminathan (2004), in their article titled, "Are IPOs really underpriced?" have studied more than 2000 firms from a time period of 1980 to 1997. The result indicates that the median IPO was significantly overvalued compared to valuation based on industry peer price multiples. The study reveals that overvalued IPOs provide first day high return but later on provide low long run stock adjusted return.

Teoh Hong Siew, Welch Ivo and Wong J T (1998), in their research paper titled "Earnings Management and Long run Market Performance of Initial Public Offerings", provide empirical evidence that issuers with unusual high accruals in the IPO year experience poor returns i.e. it results in to capital loss for such firms.

Welch Ivo (1989), in the research paper titled, "Seasoned Offerings, Imitation Costs and the under pricing of Initial Public Offerings" empirically presents a signalling model in which high-quality firms under price IPOs in order to obtain a higher price at seasoned offerings.

An empirical research by Ritter Jay (1991) studied the time and industry dependence of the long run performance of initial public offerings. As per the author's findings investing in the IPO at the end of the first day trading and holding them up to 3 years results in to 83 cents for each dollar invested. Moreover, the evidence

indicates that the offering price is not too low, but the first after market price is high. That is the reason that it is the unresolved issue that there is a long run under performance and short term under pricing phenomena.

Aggarwal Reena and Rivoli Pietra (1990) concludes that there are two reasons behind positive abnormal return in IPO, first the explanation is that under writers systematically price IPOs below their intrinsic value and second possibility is that IPOs are subject to over valuation or fads in early aftermarket trading. The results tested by the researchers in their research are of second type. Empirical evidence proves that IPOs provide positive abnormal return in the short run but loss in the long run.

Research paper by Loughran Tim, Ritter R Jay and Rydqvist Kristian (1994) discusses short run and long run performance of the companies going public in many countries. Evidence indicates that East Asian economies successfully time their offerings for periods when valuations are high and investors receive low return in the long run.

Levis Mario (1993), in their paper titled, "The Long-run Performance of Initial Public Offerings: The UK Experience 1980-1988" has empirically studied 712 IPOs listed on the London Stock Exchange. This study has recorded an average first day return of 14.3%. It shows that initial public offerings in the UK underperformed a number of relevant benchmarks in the first 36 months from the day of their listing.

### Empirical Methodology

#### Rationale for the study

Under pricing of the IPOs is one of the market anomalies found all over the world. It has been observed even in developed countries of the world that newly listed firms generate positive abnormal return immediately and also in the short run; thereafter they generate negative abnormal return in the long run. Also it has been found that issues which offer price above face value have lower under pricing. Thus, the results are mixed regarding overpricing/under pricing of the IPOs.

#### Objectives of the study

1. To study whether IPOs are underpriced or not in India?
2. To analyze the performance of IPOs for a different time framework.
3. To find out how investors can maximize their wealth gain in short term, medium term and long term?

#### Scope of the study

To study whether IPOs are under priced or not 150 IPOs from a period of 2005 to 2012 are considered. The index considered for the study is BSE Sensex. To find out the abnormal return of the IPOs, Capital Assets Pricing Model (CAPM) is used. The other tool used to study how investors can maximize their wealth over a short term, medium term or a long term is Wealth Relatives (WR). It has been taken care to cover the almost all the sectors of the economy while selecting 150 IPOs. To study IPOs performance and to reach to a conclusion, time period of 365 days from the date of listing of the IPOs is considered.

#### Collection of Data

Prices of the IPOs from the date of listing to 365 days are taken from www.bseindia.com, www.nseindia.com and www.moneycontrol.com.

Techniques used to study IPOs

1. Capital Asset Pricing Model

The model formula is

$$R = R_f + \beta (R_m - R_f)$$

Where,

R – Required return on a stock

β – Beta (Risk Co-efficient) of the stock

R<sub>m</sub> – Market rate of return

R<sub>f</sub> – Risk free rate of return

2. Wealth relatives

Wealth relatives are calculated on a group of IPOs at a specific

period of time.

$$WR_{it} = \frac{1 + \frac{1}{N} \sum_{i=1}^N R_{it}}{1 + \frac{1}{N} \sum_{i=1}^N R_{mt}}$$

Where

R<sub>it</sub> = is the return of the individual IPO i on day t from the offer day.

R<sub>mt</sub> = is the market index return for BSE for the corresponding time period of given IPO.

N= is total size of the IPOs in the portfolio.

If WR is greater than 1, it indicates better performance of IPOs over the market index; less than 1 value indicates under performance of IPOs.

**Empirical Findings**

**Table 1:-The CARR, beta and WRs of IPOs**

Sr. No.	Company name	CARR	Beta	WR		
				For 1 month	For 6 month	For 1 year
1	3i Infotech Limited	-2.7294	0.9954	0.7606	1.1324	0.9930
2	Action Construction Equipment Ltd.	53.3651	0.9348	1.6445	1.1466	1.1308
3	Adani Power Ltd.	9.6611	0.5514	0.7350	1.0408	1.0107
4	Aia Engineering Ltd	88.7414	0.9282	1.5505	1.1283	1.2070
5	Aishwarya Telecom Ltd	-113.002	0.5301	-1.1114	-0.1939	0.6977
6	Alkali Metals Ltd	-38.658	0.5814	0.2534	1.0078	0.8538
7	Allesec Technologies Limited	34.5493	0.733	1.4320	1.1730	1.0397
8	Alpa Laboratories Ltd	-145.662	0.2358	0.5412	0.6764	0.6609
9	Aqua Logistics Ltd	-125.274	0.5261	1.4327	0.8973	0.6618
10	Aries Agro Ltd	-111.599	0.7629	-0.4114	1.0829	-0.0224
11	Astec Lifesciences Limited	-42.4425	0.8026	1.0062	0.9614	0.8854
12	Aster Silicates Ltd	-251.126	0.8655	-2.4750	0.1190	0.3009
13	Autoline Industries Ltd	6.6267	0.9312	1.1607	0.7991	1.0208
14	Bajaj Corp Ltd	-107.871	0.6497	0.5985	0.4413	0.7117
15	Bang Overseas Ltd	-78.3355	0.2268	0.3820	1.7655	0.8050
16	Barak Valley Cements Ltd	-31.8598	0.5662	1.0135	0.8376	0.9367
17	Bhagwati Banquets & Hotels Ltd	-31.1414	0.5785	0.0346	1.0644	0.9616
18	C. Mahendra Exports Ltd.	12.7310	0.3341	3.6754	1.4487	1.0604
19	Cantabil Retail India Ltd	-155.673	0.6872	-0.1587	0.3887	0.5752
20	Central Bank Of India	-72.9492	0.8409	1.055	0.8283	0.80031
21	Coal India Ltd	17.7333	0.5812	0.9548	1.1237	1.0814
22	Commercial Engineers & Body Builders Co. Ltd.	-19.9031	0.7208	0.3792	0.5027	0.9589
23	Dccolight Ceramics Ltd	-110.868	0.9122	-0.3682	0.7305	0.6763

24	Development Credit Bank Ltd.	64.5116	1.2052	1.5354	1.424448	1.1749
25	Dhanus Technologies Ltd	-210.248	0.5512	0.4552	1.0726	0.4172
26	Dff Ltd.	26.0714	1.4449	1.2485	1.0918	1.0261
27	Eclerx Services Ltd	-4.2351	0.6885	0.5071	0.5999	1.0121
28	Educomp Solutions Ltd.	184.4269	0.9620	0.7426	1.3874	1.4425
29	Electrosteel Steels Ltd	-41.9246	0.7265	0.8943	0.8812	0.8966
30	Emami Limited	-7.8525	0.5595	1	0.7539	0.9252
31	Emmbi Polymers Ltd	-72.1537	0.5023	0.0705	0.7437	0.8036
32	Eros International Media Ltd	32.5065	0.8989	1.0623	1.0224	1.0984
33	Euro Ceramics Ltd	-30.2181	0.9411	1.3148442	1.0917	0.9193
34	Euro Multivision Ltd	-132.582	0.9611	-0.782169	0.705	0.6476
35	Fortis Healthcare Ltd	-29.1292	0.7515	0.4433	0.8258	0.9338
36	Gitanjali Gems Ltd.	34.9959	1.2446	0.9122	1.0623	1.1039
37	Godrej Properties Ltd	21.5282	0.5989	0.8267	1.1067	1.0631
38	Goenka Diamond & Jewels Ltd	-90.5525	0.8109	-0.2005	0.6809	0.7544
39	Gokaldas Exports Ltd.	1.8613	-0.1942	0.8705	0.8487	0.9968
40	Gravita India Ltd	182.6246	0.9424	1.5084	1.4348	1.5218
41	Gujarat State Petronet Ltd	8.8949	0.7703	0.5149	0.8819	1.0018
42	Hanung Toys & Textiles Ltd.	77.7008	1.0987	1.647722	1.1594	1.2034
43	Hathway Cable & Datacom Ltd	-68.8646	0.7650	0.7669	0.8729	0.8148
44	Housing Development & Infrastructure Ltd	-17.9919	1.7234	1.0136	1.1953	0.8285
45	Ht Media Ltd	-68.2287	0.5124	0.3659	0.7933	0.7764
46	Icra Ltd	-29.2545	0.5054	1.3249	0.9472	0.9207
47	Idea Cellular Ltd	-6.4090	0.8144	1.6083	0.9937	0.9782
48	India Infoline Limited	31.9447	1.4404	1.1201	1.1946	1.1386
49	Indiabulls Power Ltd	-61.0164	0.7354	0.4005	0.8048	0.8322
50	Indian Bank	26.9549	1.1876	0.8081	1.1051	1.0763
51	Indowind Energy Ltd	-67.7174	1.1821	1.6255	0.78615	0.7476
52	Insecticides (India) Ltd	-66.6635	0.7732	-0.0180	0.64235	0.8262
53	Intrasoft Technologies Ltd	-93.8235	0.5813	0.2772	0.658754	0.7523
54	Irb Infrastructure Developers Ltd	0.2366	0.5960	1.2402	0.7696	1.0703
55	Jagran Prakashan Ltd	64.1659	0.5094	0.8738	0.9070	1.1163
56	Jaypee Infratech Ltd	-41.7346	1.0289	0.8095	0.7955	0.8880
57	Jet Airway Ltd.	-119.873	0.7756	1.5638	0.8380	0.6890
58	Jindal Cotex Ltd	27.6465	1.1481	0.9843	1.0698	1.0749
59	Jsw Energy Ltd	-33.9506	0.8156	1.7935	1.0888	0.9094
60	Jubilant Foodworks Ltd	137.7913	1.1461	1.81396	1.3335	1.3651
61	Kaveri Seed Company Ltd	-29.3757	0.0984	0.6873	1.2677	1.1044
62	Lotus Eye Care Hospital Ltd	-38.1129	0.3228	0.9856	1	0.9613
63	Mahindra & Mahindra Financial Services Ltd	-31.064	0.4755	0.7276	0.9244	0.9225

64	Mahindra Holidays & Resorts India Ltd	-5.95141	0.8478	0.9329	1.1631	1.0036
65	Meghmani Organics Ltd	-0.7925	0.5431	0.5409	0.8543	0.7550
66	Mic Electronics Ltd	27.7659	1.0635	1.4636	1.4064	0.8542
67	Mudra Lifestyle Ltd	-30.0504	0.9842	0.6209	0.9620	0.8648
68	Nitin Fire Protection Industries Ltd	-84.549	0.6584	0.7693	0.9302	0.7726
69	Obero Realty Ltd	-10.1017	0.6399	0.9081	0.9544	1.0449
70	Oil India Ltd	12.2559	0.3353	1.2203	1.0527	1.0159
71	Omnitech Infosolutions Ltd	10.6960	1.0864	0.6064	0.9972	0.8700
72	Parabolic Drugs Ltd	-55.8407	0.6063	0.6452	0.7664	0.8670
73	Pipavav Defence And Offshore Eng Ltd	6.6124	0.9550	0.9744	1.2981	1.0877
74	Plethico Pharmaceuticals Ltd	6.1313	0.0087	-0.8668	0.9136	1.2293
75	Power Finance Corporation Ltd.	-7.8577	1.1821	0.9624	1.2971	1.0903
76	Pradip Overseas Ltd	-31.4037	0.7780	-0.1696	0.8351	0.8876
77	Precision Pipes And Profiles Company Ltd	-22.9528	0.6114	-1.6839	0.6597	0.8239
78	Prithvi Information Solutions Ltd	-10.7128	1.1061	1.3668	0.8739	0.9164
79	Raj Oil Mills Ltd	-30.112	0.8261	-0.1811	0.6080	0.6813
80	Raj Television Network Ltd	-33.3564	0.8621	0.1742	0.7531	0.8016
81	Reliance Power Ltd	-52.5586	0.0542	1.0072	0.7413	0.8756
82	Religare Enterprises Ltd	-2.8153	0.4339	1.5440	0.9834	1.0286
83	Renaissance Jewellery Ltd	-109.146	0.6152	-1.6013	0.4497	0.7131
84	Resurgere Mincs & Minerals India Ltd	-149.914	0.6534	-102.71	0.3269	0.5997
85	Royal Orchid Hotels Ltd	-27.4134	0.4098	0.3360	0.8145	0.8740
86	Ruchira Papers Ltd	-30.0174	0.5604	0.7096	0.9507	0.9108
87	Rural Electrification Corporation Ltd	60.5985	0.7803	0.7019	0.8577	1.1567
88	Shoppers Stop Ltd	15.7880	0.6604	0.6802	0.9707	0.9853
89	Shree Ganesh Jewellery House Ltd	10.8190	1.0256	0.1851	1.0677	1.0292
90	Shree Renuka Sugars Limited Bse	47.0088	0.5118	1.8192	1	1.0516
91	Sita Shree Food Products Lt	-116.174	0.8571	1.1168	0.1782	0.6931
92	Sms Pharmaceuticals Ltd	-53.1023	0.5430	0.2443	0.6438	0.8447
93	Supreme Infrastructure India Ltd	-62.6361	0.9840	0.245476	0.5278	0.8111
94	Suzlon Energy Limited	-12.2163	1.2970	1.2991	1.1225	1.0023
95	Syncom Healthcare Ltd	-123.567	0.3057	1.952	0.6961	0.6580
96	Take Solutions Ltd	-198.424	0.6503	0.9604	0.8227	0.4430
97	Tarapur Transformers Ltd	-112.35	0.9163	-0.1926	0.5793	0.6961
98	Texmo Pipes & Products Ltd	-95.4458	0.601	-0.9582	0.4952	0.7471
99	Thangamayil Jewellery Ltd	79.2369	0.4952	1.1843	1.3521	1.2009
100	United Bank Of India	19.7879	0.9360	1.7034	1.2483	1.0584
101	Vascon Engineers Ltd	-73.0279	0.8582	0.8680	0.967	0.8048
102	Visa Steel Ltd.	-70.4099	0.7687	0.5907	0.5868	0.8075
103	20 Microns Ltd	28.5682	0.4745	-10.3161	0.8149	1.0140

104	Archidply Industries Ltd	-22.2486	0.3481	0.0475	0.4103	0.8936
105	Ashoka Buildcon Ltd	-39.1995	0.2658	0.8443	0.9588	0.9369
106	Austral Coke & Projects Ltd.	-159.349	0.5822	3.8202	1.1996	0.5720
107	Bodmutha Industries Ltd	-179.468	0.8351	-2.0356	0.9348	0.4961
108	Birla Cotsyn (India) Ltd	-56.1912	0.6257	0.7404	0.6315	0.8390
109	Bs Transcomm Ltd	-11.6229	0.9755	-2.2539	0.5845	0.9683
110	Cox & Kings Limited	-12.8491	0.8237	1.0646	1.1361	0.9652
111	D B Realty Ltd	-167.833	0.7811	0.7729	0.8489	0.5503
112	Excel Infoways Ltd	-79.4011	0.822941	0.4426	0.8032	0.7876
113	First Wimmer Industries Ltd	-127.01	0.442137	1.5362	0.0679	0.641342
114	Globus Spirits Ltd	36.1209	0.7825	0.7624	1.2451	1.0942
115	Gyscoal Alloys Ltd	-141.646	0.8903	-1.7018	0.0368	0.6031
116	Hindustan Media Ventures Ltd	-36.6953	0.2797	0.8751	0.8233	0.9323
117	Indosolar Ltd	-115.947	1.3169	1.5050	0.8429	0.6602
118	Man Infraconst. Ltd	-101.669	1.0356	0.9670	0.8198	0.7163
119	Microsec Financial Services Ltd	-120.783	0.7453	-0.0048	0.4657	0.6709
120	Moil Ltd	-41.7173	0.5346	0.8188	0.8368	0.9126
121	Nu Tek India Ltd	-142.348	0.4254	324.021	0.4105	0.6087
122	Orient Green Power Company Ltd	-93.5576	0.9330	-0.0309	0.5224	0.7377
123	Persistent Systems Ltd	110.5167	21.1039	0.8238	1.0153	0.9348
124	Prakash Steelage Ltd	-35.118	0.0352	1	0.9005	1.0724
125	Prestige Estates Projects Ltd.	-33.5464	0.1559	0.6618	32.8602	0.9494
126	Rpp Infra Projects Ltd	1.6369	0.6876	0.4624	1.1428	1.0294
127	Gokul Refoils & Solvent Ltd	-26.5233	0.5235	4.1911	1.4675	0.9126
128	Titagarh Wagons Ltd	-59.3175	0.7490	1.4433	0.8770	0.8384
129	V-Guard Industries Ltd	-1.8209	0.3238	0.6936	1.0364	0.9756
130	Tulsi Extrusions Ltd	-128.934	0.7651	-1.0354	-0.0911	0.6515
131	Shriram Epc Ltd	-22.7374	0.3902	0.2159	0.8891	0.9541
132	Brigade Enterprises Ltd	-93.1281	1.0883	0.9938	0.5362	0.7230
133	Transformers And Rectifiers (India) Ltd	-27.5765	0.995	0.6464	0.7462	0.9209
134	Kolte-Patil Developers Ltd	-57.4584	1.1694	1.393	0.6977	0.8241
135	Consolidated Construction Consortium Ltd	-120.903	0.3094	1.7996	0.9542	0.7321
136	Advanta India Ltd	-8.171	0.6986	1.3094	1.1139	0.9816
137	Allied Digital Services Ltd	46.0373	0.4790	1.3392	1.5316	1.2176
138	Asian Granito India Ltd	-112.924	0.8984	0.7702	0.8279	0.6748
139	Broadcast Initiatives Ltd	-56.7633	0.5075	0.7790	0.7128	0.8346
140	Evinix Accessories Ltd	-67.9334	0.4805	1.5342	1.3357	0.8047
141	Ncleast Ltd.	-150.993	0.8076	0.0502	0.6612	0.5721
142	Omaxe Ltd	-109.425	1.1976	0.9231	0.8553	0.6420
143	Orbit Corporation Ltd	86.2245	1.3294	2.2851	1.7989	1.2327
144	Oriental Trimex Ltd	-71.4694	0.5075	0.3112	0.6405	0.7965



145	Page Industries Ltd	47.2436	0.2571	1.2956	0.9984	1.0933
146	Power Grid Corporation Of India Ltd	56.3142	0.8531	1.8681	1.0363	1.2039
147	Puravankara Projects Ltd	-123.879	1.0494	1.1279	0.8279	0.6117
148	Redington (India) Ltd	80.1561	0.6669	0.7297	1.2423	1.2165
149	Sel Manufacturing Company Ltd	-26.3431	0.6843	0.3672	1.6154	0.9525
150	Technocraft Industries (India) Ltd	-41.0024	0.7755	1.1901	0.6659	0.8896

From the table 1 the cumulative abnormal rate of return (Actual R – Req. R) for the companies is observed. The Beta values have been calculated from security wise data and market return data. The Beta values are for a period of 365 days and from the date of listing for respective stocks. The risk-free rate of return taken here is the 91-day treasury bills which is 8 percent p.a. and has been converted into daily rate by dividing the yearly rate by 365 days.

e.g.  $8 / 365 = 0.021917808$

The under pricing of the stock i.e. IPO is proved when cumulative abnormal rate of return is positive.

**Cumulative Abnormal Rate of Return** =  $\Sigma$  Daily Abnormal Rate of Return

**Daily Abnormal Rate of Return**

= Daily Actual Rate of Return – Daily Required Rate of Return

From the table 1 it can be observed that only 43 IPOs have given positive abnormal return starting from their day of listing to 1 year (365 days) time period, while remaining 107 IPOs have given negative abnormal return. This indicates that it is a really notion that IPOs are always under priced. It is also evident that from the very well talked IPOs from the market and investors point of view, many investors had to wash their hands. The results of WRs for a first month indicate that only 52 IPOs index was above one indicating they have performed less than the market. The WRs calculated for a 1 year indicates that 46 IPOs have performed better than the market as their WRs are greater than 1. Thus, from the table it can be concluded that there is no clear cut pattern regarding performance of IPO is observed.

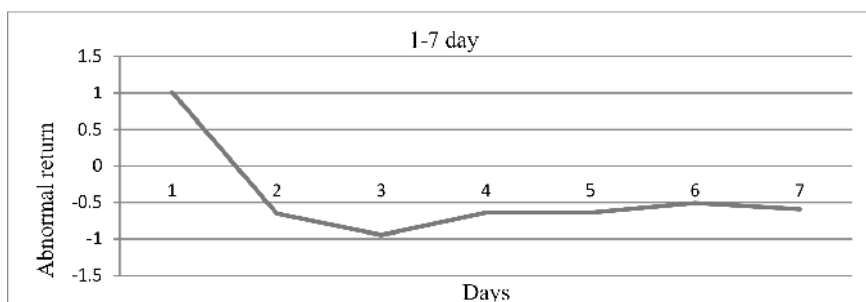
**Table 2:- Abnormal Rate of Return**

Time framework	Avg. Abnormal rate of return
1 day-7 day	-0.42362
1 day-15 day	-0.36624
1 day-30 day	-0.30896
1 day-60 day	-0.24971
1 day-90 day	-0.18433
1 day-180 day	-0.09163
1 day-364 day	-0.10168

The above table 2 shows the abnormal rate of return of 150 companies for different time framework after the listing of the IPOs. Here average abnormal rate of return is taken for that time framework. From the above table it can be observed that 1-day to 7 day to till 1 day to 364 days average abnormal return of the IPOs is negative; however negative abnormal rate of return decreases with

the faster rate as time increases. Thus, it can be interpreted that IPOs do not provide positive abnormal rate of return immediately from the date of listing. Thus, it is a notion that IPOs are always underpriced and provide positive abnormal rate of return in a short span from the date of their listing.

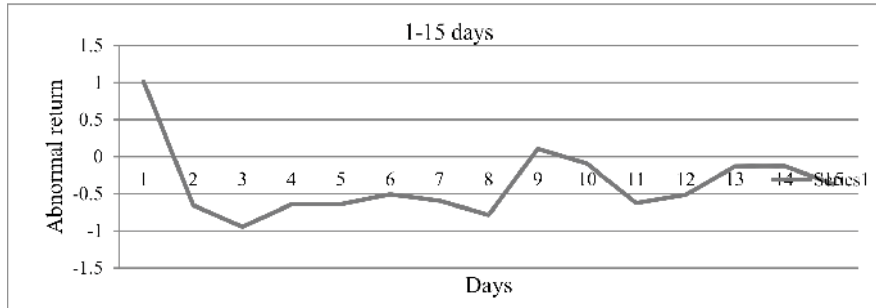
**Figure 1: Abnormal return for 1-7 days**



The above figure shows the average abnormal rate of return of 150 companies for the first 7 days from the date of listing of the

security. It shows that the abnormal return of the IPOs immediately decreases in the initial days.

Figure 2:- Abnormal return for 1-15 days



The above figure shows the average abnormal rate of return of 150 companies for the first 15 days from the date of listing of the security. It shows that the abnormal return of the IPOs decreased

immediately in the initial 1-8 days then it shows the slightly upward and then zigzag trend.

Figure 3:- Abnormal return for 1-30 days

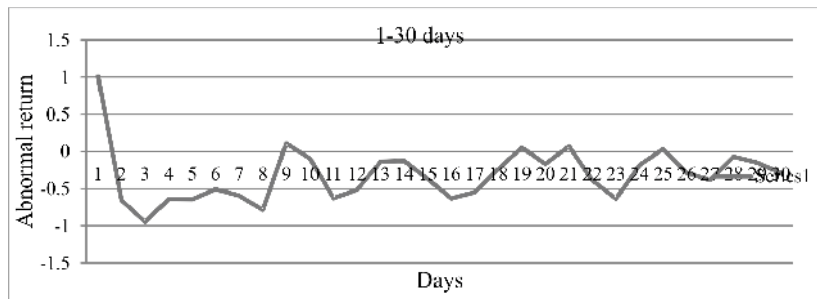


Figure 4:- Abnormal return for 1-60 days

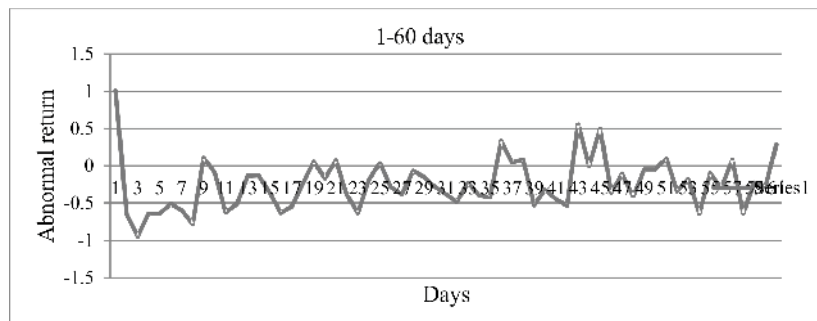


Figure 5:- Abnormal return for 1-90 days

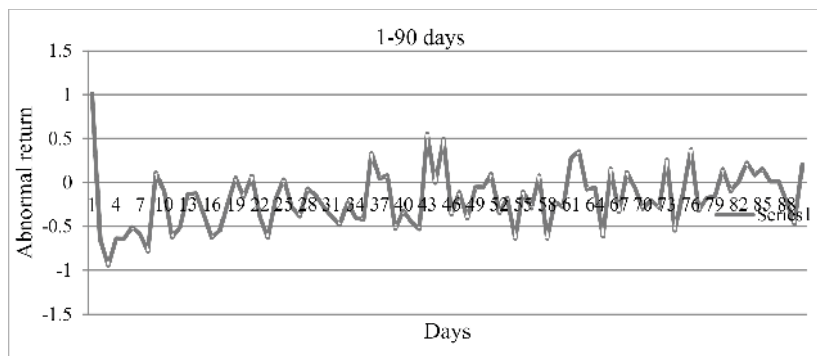




Figure 6:-Abnormal return for 1-180 days

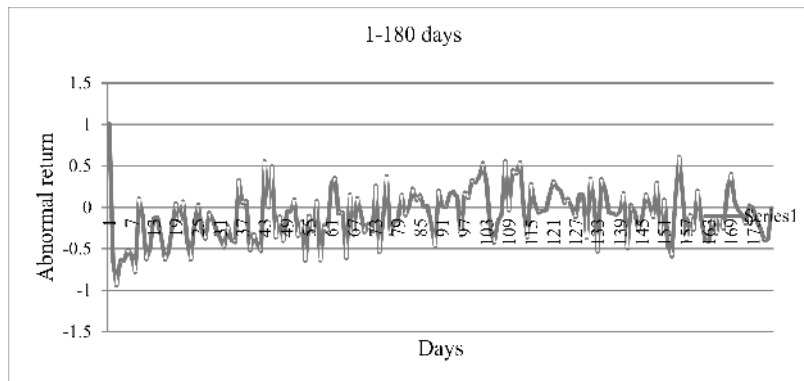
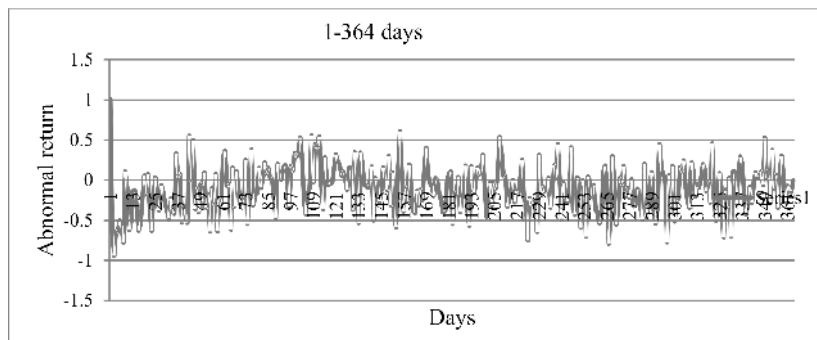


Figure 7:- Abnormal return for 1-364 days



From the figure 3 to 7 it can be concluded that as the time span increases tendency of the IPOs to give positive return increases.

Table 3:- Performance of IPOs

	CARR	
	No. of IPOs	Percentage (%)
Positive (Underpriced)	43	28.66 %
Negative (Overpriced)	107	71.33 %
Total No. of IPOs	150	100 %

From the table 3 it can be seen that total 43 IPOs out of 150 IPOs have given positive CARR while majority of the IPOs undertaken for the study 107 IPOs out of 150 have given negative CARR. Thus it can be concluded that now a day's majority of the IPOs are overpriced and do not provide positive abnormal return as they are meant for that in earlier time period.

Table 4:- Wealth Relatives (WRs)

Time Period	WR	Number of IPOs
1 Month	2.136331333	150
6 Month	1.105811367	150
1 Year	0.887673	150

If WRs is greater than 1, it indicates better performance of the IPOs compared to market and thus it shows IPOs are underpriced; while if WRs are less than 1, it indicates IPOs have given lesser return than the market and thus they are overpriced. Here it can be observed that on an average for one month time period IPOs have provided very high value of WRs, which decreases and becomes

approximately near to one for a six month time period while for a one year time period 150 IPOs undertaken for a study have provided WRs value less than 1. Thus, it can be concluded that as per WR's estimates in a comparatively shorter time framework, IPOs are under priced but as time spans their return decreases.

**Table 5:- Wealth Relatives for different time framework**

	WRs					
	1 Month		3 Month		1 Year	
	No. of IPOs	(%)	No. of IPOs	(%)	No. of IPOs	(%)
<b>Greater than one (Underpriced)</b>	55	36.66	54	36	46	30.66
<b>Less than one (Overpriced)</b>	95	63.33	96	64	104	69.33
<b>Total No. of IPOs</b>	150	100	150	100	150	100

Here looking at the calculation of WRs for a period of 1 month, 3 month and 1 year, it can be observed that tendency of the IPOs to give WRs value greater than 1 decrease as time spans from 1 month to 1 year. Also, for a one month time period 55 IPOs have shown WRs value greater than 1 (underpriced) and 95 IPOs have shown WRs value less than 1 (overpriced); while for a 1 year time period only 46 IPOs have shown WRs value greater than 1 (underpriced) and 104 IPOs have shown WRs value less than 1 (overpriced). Thus, over a long time span more and more IPOs give return less than the market.

### Findings and Implications

This paper studies the aftermarket price performance of IPOs from a date of listing to 365 days for a time period of 2005 to 2012. This paper presents clear cut evidence of IPOs performance anomaly that IPOs are initially underpriced and over a long term they show underperformance (i.e. over priced). The high initial day return observed in the figure 2 may be due to over expectation or speculation of the investors. Thus, the analysis conducted on an individual basis leads no conclusion while computed on an aggregate basis indicates that IPOs are under priced but only up to first month of their listing and then they start underperforming.

### References

- Seshadev Sahoo and Prabina Rajib (2010). "After market pricing performance of IPOs: Indian IPO market 2002-2006" *Vikalpa*, Vol.35.
- Neeta Jain and C Padmavathi(2012). "Under pricing of initial public offerings in Indian capital market", *Vikalpa*, Vol. 7.
- Teoh Hong Siew, Welch Ivo and Wong J T (1998). "Earnings Management and Long run Market Performance of Initial Public Offerings", *The Journal of Finance*, Vol.

III, No.6.

- Welch Ivo (1989). "Seasoned Offerings, Imitation Costs and the Under pricing of Initial Public Offerings", *The Journal of Finance*, Vol. 44, Issue 2,
- Loughran Tim, Ritter R Jay and Rydqvist Kristian (1994). "Initial Public Offerings: International Insight", *Pacific Basin Finance Journal*, Vol.2, pp. 165-199.
- Hanley Weiss Kathleen (1993). "The Under pricing of Initial Public Offerings and the Partial Adjustment Phenomenon", *Journal of Financial Economics*, Vol.34
- Welbourne M Theresa and Andrews O Alice (1996). "Predicting the Performance of Initial Public Offerings: Should Human Resource Management be in the Equation?" *The Academy of Management Journal*, vol.39, no.4, pp. 891-919.
- Ritter R Jay (1991). "The Long-run Performance of Initial Public Offerings", *The Journal of Finance*, Vol. 46, No.1, pp. 3-27.
- Aggarwal Reena and Rivoli Pietra (1990). "Fads in the Initial Public Offering Market", *Journal of Financial Management*, Vol. 19, No.4, pp.45-57.
- Levis Mario (1993). "The Long-run Performance of Initial Public Offerings: The UK Experience 1980-1988", *Journal of Financial Management*, Vol.22, No.1 pp.28-41.
- Websites**  
<http://www.bseindia.com/stockinfo/stockprc.aspx>  
<http://www.nseindia.com/products/content/equities/ipos/ipos.htm>  
<http://www.moneycontrol.com/ipo/>  
<http://www.equitymaster.com/research-it/ipo/archives08.html>