

An Analysis on the Performance of IPO – A Study on the Karachi Stock Exchange of Pakistan

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Abstract

This study is an analysis of the performance of IPOs (Initial Public Offerings) listed on Karachi Stock Exchange (KSE) during last decade (a period from 2000-2009). This study is an attempt to reveal that just like other countries, Pakistani IPO market also reward to investors with some positive returns. Un-even performance of KSE is witnessed specially in the last decade. In order to measure the short run performance of IPOs capturing this un-even performance, the data of IPOs are divided into three different states of economy: Normal, Boom & Recession. In this study, KSE index is used as proxy to represent different states of economy of Pakistan. Normal (state of economy): Sample period from January 1, 2000 to August 31, 2005. Boom (state of economy): Sample period from September 1, 2005 to April 30, 2008. Recession (state of economy): Sample period from May 1, 2008 to April 30, 2009. The wealth relative model is also employed to capture the effect of these abnormal returns under different state of economy. The sector-wise analysis demonstrates that some sectors outperform even in recession state of economy. The year-wise analysis of IPOs is also documented.

Key words: IPO, Karachi Stock Exchange, Pakistan

1.0 Introduction

Karachi Stock Exchange (KSE) is the most volatile market of the world which is full of anonymity and escapade performances. This study provides investors and researchers information about short-run performance of initial public offerings (IPOs) in KSE. Study not only explore about the returns on IPOs, but also help investors in decision making regarding time of selling these shares in order to get maximum return on their investments. Some economic factor also affects badly the performance of KSE like the most current is so called war against terrorism. On the other hand KSE also facing its management's inability and internal frictions that is adding fuel to the fire for its inadequate performance. The Task Force that was set up after KSE's disaster in March, 2005, has released its investigative report, which holds KSE management's incapability, personal aggrandizements and big broker's intrigues responsible for the crash. Small investors have to suffer badly under such performances; such investors lost almost \$13 billion in the 2005 KSE crash. Some brokers were suspected of manipulation but no action was taken against them. Only Show Cause notices were served on 88 brokers. So, stock exchange's demutualization and the system of certification prior to transaction in KSE were suggested to overcome any such crisis in future.

Beside all the above mentioned facts KSE is also rewarding with positive return to those investors who buy stock from the primary market and sell them in the first trading day. Un-even performance of KSE is witnessed specially in the last decade. In order to measure the short run performance of IPOs capturing this un-even performance, the data of IPOs are divided into three different states of economy: Normal, Boom & Recession. In this study, KSE index is used as proxy to represent different states of economy of Pakistan. Normal (state of economy): Sample period from January 1, 2000 to August 31, 2005. Boom (state of economy): Sample period from September 1, 2005 to April 30, 2008. Recession (state of economy): Sample period from May 1, 2008 to April 30, 2009. Generally, the average market adjusted return is found to be 42.17%, 40.99%, 37.35%, 38.13% and 39.38% on the close of 1st, 5th, 10th, 15th & 20th day respectively under general state of economy (Normal, Boom & Recession). These returns get better to 55.19%, 52.17%, 49.14%, 47.59% and 45.76% on the close of mentioned odd days under boom state of economy, while these returns turn down under recession state of economy.

The sector-wise analysis demonstrates that some sectors outperform even in recession state of economy. The year-wise analysis of IPOs is also documented. The results show that year 2008 show an excellent performance; that investors can earn 95.60%, 102.26%, 92.42% and 81.66% market adjusted return if they sell these stocks at the end of 1st, 5th, 10th, & 15th day respectively under boom state of economy.

The main objectives of the study are:

1. To measure the IPOs performance on first trading day and some odd days (5th, 10th, 15th & 20th) under different state of economy, Normal, Boom & Recession and to confirm that Whether, investors can earn positive return or not on the close of first trading day and some Subsequent odd days (5th, 10th, 15th & 20th) as documented in the earlier studies.
2. How these IPOs perform in different sectors on first trading day and some odd days (5th, 10th, 15th & 20th) and to find the right time for investors to sell these shares in order to get maximum return on the investment under different state of economy, Normal, Boom & Recession.
3. To measure overall performance of these IPOs on yearly basis, considering overall economic conditions that are reflected in KSE.

2.0 Literature Review

The objective of any initial public offering (IPO) is to achieve the highest value for the issuer while ensuring an optimistic start to secondary trading and strong long-term (aftermarket) performance. The problem of underpricing has been expansively researched and clearly indicates some loss of value to the issuer. However, under pricing can act as a positive signal and thereby corroborate secondary market trading and aftermarket performance. Rock (1986) provided a more general explanation of underpricing in where underpricing arises because of an informational asymmetry between a group of informed investors and a less informed issuing firm. The findings from Rock's model reveal that uninformed investors face a 'winner's curse' since they have a greater chance of being allocated shares in undersubscribed issues than in oversubscribed issues. One implication of Rock's model is that the greater the uncertainty surrounding the post-issue value of IPO shares, the greater the advantage to becoming an informed investor and hence the greater the level of underpricing required to attract uninformed investors into the market.

Ritter (1991) examined 1,526 IPO stocks and finds a negative 15.08 percent average cumulative matching firm-adjusted return after 36 months. Comparing returns from firms of similar size and industry, the average IPO stock's cumulative abnormal returns are negative 26 percent. Ritter argues that the result is consistent with investors being overoptimistic about potential growth firms. Ritter also argues that the use of equally weighted monthly returns implies an increasing investment in poorly performing firms is avoided using independent monthly rebalancing. Similarly, (Spiess, Affleck-Graves, 1995) examined 1,246 seasoned equity offerings during the period 1975-1989 in the same way of (Ritter, 1991), and found a negative abnormal return of 22 percent.

Mcguinness (1992) in his study of 80 Hong Kong IPOs examined them over the period 1980-90. Examination of the post-listing returns for the IPOs indicates that significant positive returns occur during the first day of trading and disappear thereafter. Analysis of the initial excess market returns on these issues reveal underpricing of nearly 18 percent, on average, across the period of interest. He outlines and investigates a number of possible explanations for IPO underpricing. The results reveal support for three explanations of IPO underpricing.

Jelic, Saadouni and Briston (2001) studied the share price performance of Malaysian IPOs listed on the KLSE (Kuala Lumpur Stock Exchange) Main Board during the period 1980 – 1995. They report that the month 36, CAR (Cumulated Abnormal Return) is significantly positive at 24.83 percent; buy-and hold returns (BAHRs) adjusted for the KLSE index are also positive and statistically significant for month 36, at 21.98 percent and is consistent with CAR. They also find that their sample of 182 Malaysian IPO companies between 1980 and 1995 on average seems to insignificantly under-perform their matching companies after three years. The value-weighted mean BHARs for one, two, and three years are all negative but not statistically significant. This result is consistent with that obtained using the value weighted CAR measure, which produces a greater fall in returns, indicating that the performance of large IPO companies is inferior to that of small IPO companies. Wai-Yan, Yan-Leung and Ka-Kit (2004) examined the intraday patterns of IPOs in Hong Kong Stock market during the period 1995-1999. They also show that the Hong Kong market is efficient in adjusting for IPOs underpricing. They conclude that there is no profit opportunity for day-traders who buy and sell shares of newly listed issues during the first trading day.

Only those investors who purchase shares directly from IPOs can get profit. Alvarez (2005) in their paper portray two main things: First, they analyze the long-run performance of Spanish IPOs made during the 1987–1997 period, and they study the influence of under-pricing as a signaling mechanism in the post-listing performance of IPOs. Omran (2005) studied 53 Egyptian firms from 1994 to 1998 and shows that these firms yield statistically significant initial excess return. He finds mixed results in the aftermarket of those IPOs. In his several cross-sectional regression models, the results indicate that ex-ante uncertainty and over-subscription are the only significant variables in determining the initial excess returns, while over a one year period, the abnormal returns are driven by ex-ante uncertainty and price earnings ratio. However, the aftermarket abnormal returns over three and five year periods are significantly affected by the initial excess returns, the price earnings ratio, and, to a lesser extent by oversubscription variable.

Sullivan and Unite (1999) showed first-day returns earned by investors purchasing the initial public offer of a Philippine company are consistent with what has been documented in other countries. They conclude that these returns would be attributed to the under-pricing of IPOs. Initial returns of 22.69 percent are greater than those documented for U.S. IPOs. This finding confirms the view that investors in smaller countries with a less developed capital market are subject to greater risks, which may arise due to the diverse operations (Akhtar, Ali, & Sadaqat, 2011). However, this under-pricing of Philippine IPOs is dramatically less severe than under-pricing documented for other emerging market countries and less than other Pacific-Rim countries. Possible reasons for these differences include: (1) Stage of market liberalization, (2) Development of the stock market, (3) Stock market regulations, (4) Information disclosure and accuracy, and (5) Specific firm characteristics.

The review of above studies in general suggests that under-pricing of IPOs securities exist for almost all the countries. The investors who invest in these IPOs securities earn positive abnormal returns on short term basis.

3.0 Methodology

Methodology describes sample data of IPOs that fall under different state of economy and all essential variables that are used in determining the market adjusted short-run performance of IPOs at the end of 1st, 5th, 10th, 15th and 20th trading days by using practical statistical methods. Total sample data consists of 73 IPOs covering 84% of the total number of 87 new IPOs listed on KSE from FY00-FY09. 60% of the observation fall under Normal state of economy, 32% of the observation falls under Boom state of economy and 6% of the observation fall under Recession state of economy of the total sample size. To be consistent with existing empirical literature, the methodology used by (Aggarwal, 1993) to measure the short-run performance for each IPO and for groups of IPOs, the same methodology is adopted for this study. As Stock market is one of the best indicator to represent an economy of any country. In this study KSE index is used as proxy to represent different state of economy (Normal, Boom & Recession) of Pakistan. Therefore to evaluate the short run performance of IPOs under different state of economy, sample is divided into three categories.

To measure the short-run performance (close of the 1st, 5th, 10th, 15th & 20th trading day) and to test the hypotheses of IPO market adjusted short run-performance (MASRP i d) for each firm using the KSE index as bench mark. The total return (Raw Return) $R_{i,d}$, for stock 'i' at the end of the d th trading day is calculated as:

$$R_{i,d} = \frac{P_{i,d} - P_{i,0}}{P_{i,0}}$$

Where, $P_{i,d}$, is the price of stock 'i' at the close of the ($d=1, 5, 10, 15$ & 20) trading day, $P_{i,0}$ is the offer price. The return on the market index (bench mark) during the same time period is calculated as:

$$R_{m,d} = \frac{I_{m,d} - I_{m,0}}{I_{m,0}}$$

Where, $I_{m,d}$ is the market index value at the close of d^{th} trading and $I_{m,0}$ is the market index value on the offer day of the appropriate stock, while $R_{m,d}$ is the d^{th} day's equivalent market return. The market adjusted short run performance (MASRP i d) for each IPO on the d^{th} day of trading is computed as:

$$MASRP_{i,d} = 100 \times \{ [(1 + R_{i,d}) / (1 + R_{m,d})] - 1 \}$$

This market adjusted model measures the initial trading returns in excess market return form. Such measurement form commonly used in earlier studies of short-run performance of IPO by assuming the beta of the newly listed stock to be one for risk adjustment. After calculating the short-run performance, the null hypothesis that the cross sectional average short-run performance for sample of n new issues is tested at d^{th} day under different state of economy.

3.1 Hypothesis

H_0 : The cross sectional short-run performance (return) at the end of d^{th} day is equal to zero.

H_1 : The cross sectional short-run performance (return) at the end of d^{th} day is different from zero.

The sample mean of market adjusted short run performance turn for the d^{th} trading day. $MASRP_d$, may be viewed as a performance index which reflects the return, in excess of the market return, on investment divided equally among n new issues in a sample:

$$MASRP_d = \frac{1}{n} \sum_{i=1}^n MASRP_{i,d}$$

To test the hypothesis, that d MASRP equals zero, the associated t statistic is computed as:

$$t = [MASRP_d] / [s / (n)^{1/2}]$$

Where, s is the cross sectional standard deviation of $MASRP_d$ for the sample of n firms. The performance measurement for a group IPOs is assessed by the following Wealth Relative Model:

$$WR_d = \frac{1 + \frac{1}{n} \sum_{i=1}^n R_{i,d}}{1 + \frac{1}{n} \sum_{i=1}^n R_{m,d}}$$

Where WR_d is the Wealth Relative for the d^{th} trading day and n is the total number of IPOs in the sample. A wealth relative higher than one implies that the IPOs outperform the market in that period. A wealth, relative lower than one indicates, under performance.

4.0 Data Analysis

This section provides an analysis of market adjusted short-run performance under different economic states applying different models in various odd days as discussed in methodology part. Secondly, sector-wise performance of IPOs under Normal, Boom & Recession period of economy is also included in this section. Finally, the analysis of these IPOs is discussed on yearly basis. In Table 1.1, some measures of central tendency, minimum, maximum and variability of different measure used in this study under different state of economy is presented covering the sample period of 2000 to 2009. Under normal state of economy, the average share price remains at around Rs.17.9, the offer price ranges from Rs.10.00 to Rs.80.00, while information about KSE index, which is used as bench mark.

Table 1.1: State of Economy (Normal)

Particulars	Average	Minimum	Maximum	Median	SD
Offer price	17.90	10.00	80.00	10.00	16.40
Index at offer price	4875.00	1174.00	8695.00	5360.00	2074.00
1 st day raw return	0.4303	-0.1450	3.2400	0.1650	0.6681
1 st day market return	0.0489	-0.2186	0.4473	0.0077	0.1282
1 st day market adjusted return	0.3675	-0.1719	3.4586	0.1839	0.6252
5 th day raw return	0.4397	-0.2500	3.1600	0.1865	0.6918
5 th day market return	0.0605	-0.2151	0.5683	0.0156	0.1454
5 th day market adjusted return	0.3551	-0.2279	3.1340	0.1807	0.6098
10 th day raw return	0.4144	-0.2111	3.3150	0.1888	0.6791
10 th day market return	0.0796	-0.2116	0.5511	0.0435	0.1527
10 th day market adjusted return	0.3138	-0.2433	3.1313	0.1211	0.6108
15 th day raw return	0.4372	-0.2300	3.8400	0.1550	0.7467
15 th day market return	0.0917	-0.2285	0.3944	0.0524	0.1578
15 th day market adjusted return	0.3214	-0.2965	3.6298	0.0885	0.6723
20 th day raw return	0.4865	-0.2111	5.1600	0.2000	0.9203
20 th day market return	0.1138	-0.2553	0.4711	0.0639	0.1813
20 th day market adjusted return	0.3447	-0.3175	4.7791	0.1166	0.8211

The KSE ranges from 1,174 points to 8,695 with an average of 4,875 points. The stock return on average remains 43%, while it ranges from -14.5% to 324% with standard deviation of 66.81% in first trading day. The average market return during the sample period under normal state of economy was found to be 4.89% with a standard deviation of 12.82%. The mean market adjusted first day return remains 36.75%, ranges from 17.19% to 346%.

Similarly the detail can be seen in Table 1.1 for 5th, 10th, 15th and 20th days returns. Under boom state of economy, the average offer price improves from Rs.-17.90 to Rs.26.80. The average index on offer price remains at 11,389 points with a maximum of 15,056 points. The Average market adjusted returns also goes up to greater than 45% in a mentioned day of the sample period, shown in the Table 1.2.

Table 1.2: State of Economy (Boom)

Particulars	Average	Minimum	Maximum	Median	SD
Offer price	26.80	10.00	235.00	10.00	49.20
Index at offer price	11398	7512	15056	10947	2265
1 st day raw return	0.6268	-0.2240	3.2200	0.2867	0.8394
1 st day market return	0.0583	-0.0564	0.1680	0.0732	0.0673
1 st day market adjusted return	0.5519	-0.2956	3.1635	0.2522	0.8323
5 th day raw return	0.6259	-0.2200	3.1700	0.2610	0.8455
5 th day market return	0.0718	-0.0608	0.1994	0.0781	0.0685
5 th day market adjusted return	0.5271	-0.1878	2.7923	0.2334	0.8074
10 th day raw return	0.6006	-0.4000	3.1450	0.3000	0.8368
10 th day market return	0.0788	-0.0895	0.2050	0.0801	0.0667
10 th day market adjusted return	0.4914	-0.4285	2.7198	0.2577	0.7933
15 th day raw return	0.5827	-0.3600	2.7850	0.2230	0.7905
15 th day market return	0.0819	-0.0785	0.2082	0.1042	0.0739
15 th day market adjusted return	0.4759	-0.4161	2.4058	0.1000	0.7571
20 th day raw return	0.5493	-0.3720	2.6200	0.2429	0.8247
20 th day market return	0.0732	-0.0914	0.1886	0.0985	0.0764
20 th day market adjusted return	0.4576	-0.4233	2.5628	0.1707	0.8035

Similarly, under recession state of economy the average offer price remains at Rs.27.58, while average index goes down to 10,867 points with minimum of 7,217 points as displayed in Table 1.3. The Average raw return and market adjusted returns also goes down in mentioned odd days.

Table 1.3: State of Economy (Recession)

Particulars	Average	Minimum	Maximum	Median	SD
Offer price	21.50	10.00	235.00	10.00	31.04
Index at offer price	7408	1174	15056	7217	3787
1 st day raw return	0.4661	-0.224	3.24	0.19	0.712
1 st day market return	0.0351	-0.2538	0.4473	0.0136	0.122
1 st day market adjusted return	0.4217	-0.2956	3.4586	0.2149	0.679
5 th day raw return	0.4732	-0.324	3.17	0.258	0.73
5 th day market return	0.0458	-0.2477	0.5683	0.0281	0.136
5 th day market adjusted return	0.4099	-0.2279	3.134	0.2103	0.668
10 th day raw return	0.4513	-0.42	3.315	0.27	0.725
10 th day market return	0.0608	-0.222	0.5511	0.0499	0.14
10 th day market adjusted return	0.3735	-0.4285	3.1313	0.1805	0.673
15 th day raw return	0.4626	-0.4791	3.84	0.2036	0.753
15 th day market return	0.0663	-0.2558	0.3944	0.0558	0.15
15 th day market adjusted return	0.3813	-0.4161	3.6298	0.0894	0.709
20 th day raw return	0.4874	-0.4791	5.16	0.2	0.873
20 th day market return	0.0779	-0.2553	0.4711	0.0646	0.166
20 th day market adjusted return	0.3938	-0.4233	4.7791	0.1168	0.818

Generally, considering the three state of economy, the average offer price remains at around Rs. 21.50; it ranges from Rs.10.00 to Rs.235.00, while KSE index ranges from 1,174 points to 15,056 points with an average of 7,408 points during the sample period of 2000 to 2009. The stock return on average remains at 46.61%, while it ranges from -22.40% to 324% with standard deviation of 71.20% in first trading day. The average market return is found to be 3.51% with a standard deviation of 12.20%. The mean market adjusted first day return remains to 42.17% and it ranges from -29.56% to 346%. Similarly the average, minimum, maximum and standard deviation for the 5th, 10th, 15th and 20th days returns (raw return, market return & market adjusted return) are presented in Table 1.4.

Table 1.4: State of Economy (General)

Particulars	Average	Minimum	Maximum	Median	SD
Offer price	21.50	10.00	235.00	10.00	31.04
Index at offer price	7408	1174	15056	7217	3787
1 st day raw return	0.4661	-0.224	3.24	0.19	0.712
1 st day market return	0.0351	-0.2538	0.4473	0.0136	0.122
1 st day market adjusted return	0.4217	-0.2956	3.4586	0.2149	0.679
5 th day raw return	0.4732	-0.324	3.17	0.258	0.73
5 th day market return	0.0458	-0.2477	0.5683	0.0281	0.136
5 th day market adjusted return	0.4099	-0.2279	3.134	0.2103	0.668
10 th day raw return	0.4513	-0.42	3.315	0.27	0.725
10 th day market return	0.0608	-0.222	0.5511	0.0499	0.14
10 th day market adjusted return	0.3735	-0.4285	3.1313	0.1805	0.673
15 th day raw return	0.4626	-0.4791	3.84	0.2036	0.753
15 th day market return	0.0663	-0.2558	0.3944	0.0558	0.15
15 th day market adjusted return	0.3813	-0.4161	3.6298	0.0894	0.709
20 th day raw return	0.4874	-0.4791	5.16	0.2	0.873
20 th day market return	0.0779	-0.2553	0.4711	0.0646	0.166
20 th day market adjusted return	0.3938	-0.4233	4.7791	0.1168	0.818

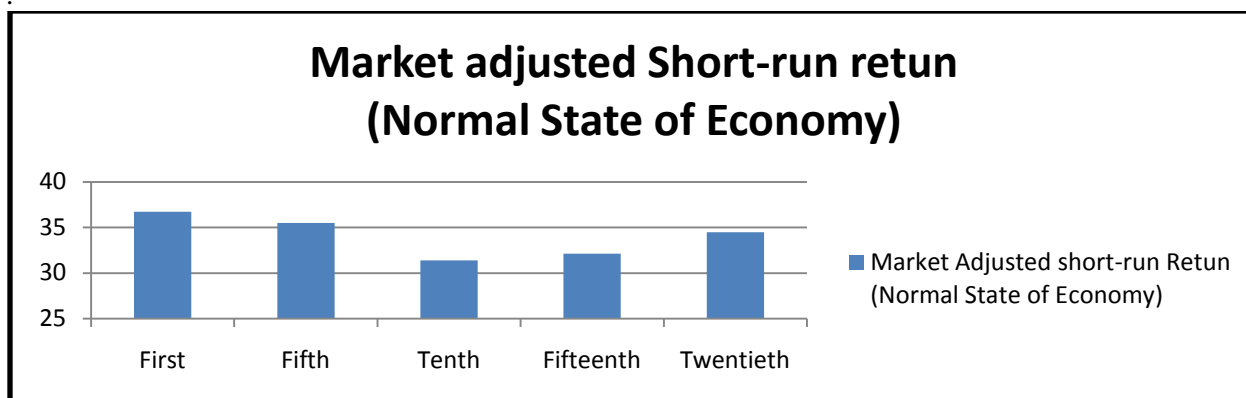
Market adjusted short-run performance under Normal, Boom & Recession; Normal State of Economy; When country's economy was normal, it provided investors with positive initial excess abnormal return of 36.75% at the end of first trading day with an associated t-statistic of 3.8986, which is highly significant different from zero at the 1% level. Similarly, investors can earn market adjusted initial return on close of 5th, 10th, 15th & 20th day with associated t-statistics that are also highly significantly different from zero at the 1% level as displayed in the Table 2.

Table 2: Market adjusted Short -run performance

Trading Days	No. of IPOs	Market adjusted Short-run Returns	SD (%)	t-statistics	Sig. (two tailed)
State of Economy : Normal					
1 st	44	36.75*	62.52	3.8986	0.00033
5 th	44	35.51*	60.98	3.8632	0.00037
10 th	44	31.38*	61.08	3.4074	0.00143
15 th	44	32.14*	67.23	3.1709	0.0028
20 th	44	34.47*	82.11	2.7844	0.00794
State of Economy : Boom					
1 st	23	55.19*	83.23	3.1803	0.00433
5 th	23	52.71*	80.74	3.1311	0.00486
10 th	23	49.14*	79.33	2.9706	0.00706
15 th	23	47.59*	75.71	3.0148	0.00637
20 th	23	45.76*	80.35	2.7311	0.0122
State of Economy : Recession					
1 st	6	32.00**	32.7	2.3976	0.06180
5 th	6	36.22	51.34	1.728	0.14456
10 th	6	35.92	66.73	1.3186	0.24446
15 th	6	45.75	86.96	1.2887	0.25391
20 th	6	50.93	97.09	1.2849	0.25512
State of Economy : General (Avg.)					
1 st	73	42.17*	67.87	5.3086	0.00000
5 th	73	40.99*	66.78	5.2443	0.00000
10 th	73	37.35*	67.28	4.7426	0.00001
15 th	73	38.13*	70.93	4.5925	0.00002
20 th	73	39.38*	81.81	4.1125	0.00010

*significant at 1%, **significant at 10%

If investor wants to hold these securities for short time period, and sell them in different days within a month, their returns are slightly declined except in the 20th day as shown in the following Graph



These findings disprove the null hypothesis. Based on these findings, it could be said with a confidence level of 99% that if investors purchase shares in the new issues in normal state of economy, at offer price, they would make an average profit of 36.75% by selling them at the close of first day while their profit decline slightly if they sell them any other day in a period of first month. These findings confirm the positive abnormal returns on short-run basis in Country as compared with other countries. The results of Wealth Relative model are also consistent with the market adjusted model on short-run basis as shown in the Table 3 above, describing that Pakistani IPOs give positive abnormal return to investors in short-run.

Table 3: Wealth relative return on short-run basis

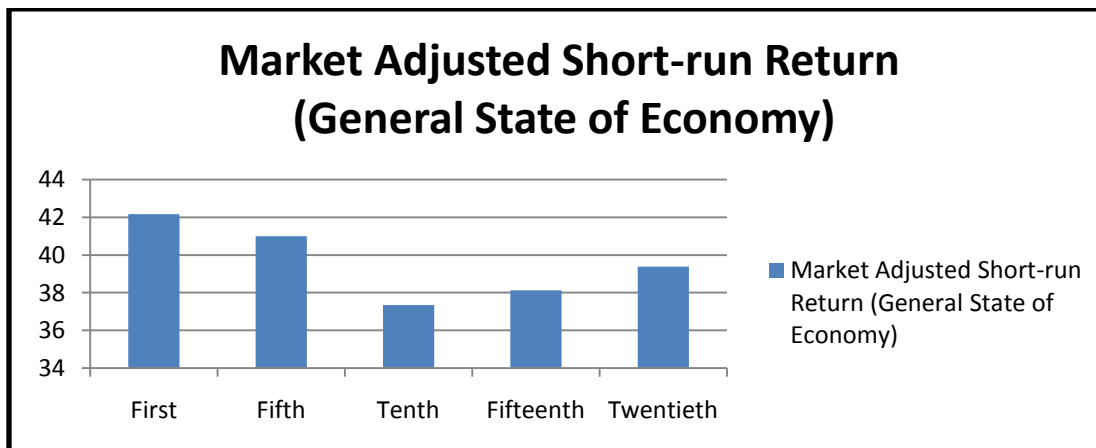
Trading Days	No. of IPOs	Raw Return	Market Return	Wealth Relative Return
State of Economy : Normal				
1 st	44	0.4303	0.0489	1.36
5 th	44	0.4397	0.0605	1.36
10 th	44	0.4144	0.0796	1.31
15 th	44	0.4372	0.0917	1.32
20 th	44	0.4865	0.1138	1.33
State of Economy : Boom				
1 st	23	0.6268	0.0583	1.54
5 th	23	0.6259	0.0718	1.52
10 th	23	0.6006	0.0788	1.48
15 th	23	0.5827	0.0819	1.46
20 th	23	0.5493	0.0732	1.44
State of Economy : Recession				
1 st	6	0.1124	(0.1546)	1.32
5 th	6	0.1334	(0.1614)	1.35
10 th	6	0.1419	(0.1461)	1.35
15 th	6	0.1880	(0.1805)	1.45
20 th	6	0.2574	(0.1672)	1.51
State of Economy : General (Avg.)				
1 st	73	0.4661	0.0351	1.42
5 th	73	0.4732	0.0458	1.41
10 th	73	0.4513	0.0608	1.37
15 th	73	0.4626	0.0663	1.37
20 th	73	0.4874	0.0779	1.38

Boom State of Economy: When country's economy was at boom, it provide investors with tremendous positive initial excess abnormal return of 55.19% at the end of first trading day with an associated t-statistic of 3.1803, which is highly significant different from zero at the 1% level. Similarly, investors can earn market adjusted initial return on the close of 5th, 10th, 15th & 20th day with an associated t-statistics that are also highly significantly different from zero at the 1% level as displayed in the Table 2. If investor want to hold these securities for short time period, and sell them in different days within a month, their returns are slightly goes down. Similarly the results of wealth relative model are also improved, when country's economy was performing well as shown in the Table 3, describing that Pakistani IPOs give tremendous positive abnormal return to investors in short-run.

Recession State of Economy: At the time of economic recession, even then investors were provided with positive initial excess return of 32.00% at the end of first trading day with an associated t-statistic of 2.3969, which is significantly different from zero at the 10%.

On the other hand if investors want to hold these securities for short time period of one month and do not sell them in the first trading day, their returns are not proved to be significant. Therefore Pakistani IPO market does not reward the investors if they fail to sell them in first trading day, when economy was in recession. The results of wealth relative model are also telling the same story.

General State of Economy: The results show that in general state of country's economy, investors can earn positive initial excess abnormal return of 42.17% at the end of first trading day with an associated t-statistic of 5.3086, which is highly significant different from zero at the 1%. This return is higher as documented in early study as regarding Pakistani IPO market that was 35.66. One reason for higher return may be the increase in number of IPOs from 50 to 73. The second reason might be that after 2006, KSE performance was remarkable, and KSE index cross the barrier of 15,000 index in 2008. Similarly, investors can earn significant positive market adjusted return on the close of 5th, 10th, 15th & 20th day. If investor want to hold these securities for short time period, and sell them in different days within a month, their returns slightly goes down except in the 15th and 20th day as shown in Graph.



These findings also disprove the null hypothesis. Based on these findings, it could be said with a confidence level of 99% that if investors purchased shares in the new issues in general state of economy, at offer price, they would make an average profit greater than of 37.35% by selling them at the close of any odd day. Sector-wise & Year-wise Market Adjusted Short-run Performance of IPOs under Different state of Economy: The results, in Table 4.1 indicate some sector-wise analysis of KSE under different state of economy in various odd days. Specifically, under normal state of economy investors can earn positive return in all sectors except Investment banks, Mudarabas, Refinery, Textile spinning, Textile weaving and Textile composite, if they sell these stocks in any odd day. The average market adjusted initial returns of some sectors particularly in the sectors Oil & Gas Exploration & Oil & Gas Marketing, Commercial Banks, Power Generation & Distribution, Chemical and Miscellaneous are found to be greater than 52%.

Under boom state of economy the sector-wise performance of these IPOs were excellent in mentioned odd days except closed end mutual funds, Textile Spinning and Technology and communication. The average market adjusted abnormal returns of some sectors particularly in the sectors Commercial Banks, hemical and Engineering were greater than 95%. In recession state of economy sector-wise market adjusted returns declined but were positive.

Table 4.1: Sector-wise Market adjusted short-run performance

Sector	No. of IPOs	First	Fifth	Tenth	Fifteenth	Twentieth
Normal state of Economy						
Automobile Assembler	1	27.33	21.03	7.81	2.38	13.46
Cement	2	13.01	27.95	23.24	23.29	19.42
Chemical	1	51.59	85.97	90.91	91.74	81.51
Closed & Mutual funds	8	23.97	24.17	24.15	22.54	19.59
Commercial Banks	6	90.65	85.79	78.02	96.69	112.85
Investment Banks	6	2.55	(2.08)	(6.75)	(9.46)	(11.73)
Misc.	1	100.34	127.98	142.77	123.13	103.30
Modarbas	2	(4.11)	(7.58)	(9.41)	(11.26)	(5.52)
Oil & Gas Exploration	2	74.13	77.98	83.14	77.57	76.51
Oil & Gas Marketing	1	156.16	128.56	86.49	77.95	87.06
Power Generation & Distribution	1	92.05	89.51	89.22	70.61	53.61
Refinery	1	(12.28)	(12.93)	(17.64)	(22.96)	(20.12)
Technology & Communication	7	26.19	26.79	23.63	29.20	32.32
Textile Composite	1	(8.39)	(17.10)	(24.33)	(26.07)	(20.12)
Textile spinning	1	5.09	(7.60)	(11.17)	(12.52)	(15.78)
Textile Weaving	1	1.85	(21.86)	(10.68)	(13.79)	(12.20)
Transport	2	51.39	44.61	23.50	18.21	40.45
	44	36.75	35.51	31.38	32.14	34.47
Boom state of Economy						
Cement	2	23.36	12.80	6.41	7.89	7.38
Chemical	1	316.35	247.95	227.17	191.76	182.86
Closed & Mutual funds	5	(5.87)	(12.14)	(5.68)	(5.18)	(9.25)
Commercial Banks	4	69.27	59.04	39.28	36.02	27.69
Engineering	1	152.75	136.43	179.52	184.57	256.28
Investment Banks	4	95.39	116.36	111.75	114.11	108.13
Misc.	2	73.29	70.11	55.67	51.61	41.05
Modarbas	1	15.65	33.14	30.68	5.02	17.90
Technology & Communication	1	(8.35)	(10.86)	(21.59)	(19.85)	(18.71)
Textile spinning	2	(14.74)	(0.49)	7.27	19.76	10.08
	23	55.19	52.71	49.14	47.59	45.76
Recession state of Economy						
Chemical	2	31.62	40.51	27.76	24.01	26.37
Investment Banks	3	30.03	10.75	3.78	6.02	5.92
Technology & Communication	1	38.71	104.05	148.67	208.41	235.10
	6	32	36.22	35.92	45.75	50.93

Table 4.2: Sector-wise Market adjusted short-run performance (General state of Economy)

S #	Sector	No. of IPOs	First	Fifth	Tenth	Fifteenth	Twentieth
1	Automobile Assembler	1	27.33	21.03	7.81	2.38	13.46
2	Cement	4	18.18	20.37	14.83	15.59	13.4
3	Chemical	4	107.79	103.73	93.40	82.88	79.28
4	Closed & Mutual funds	13	12.49	10.20	12.68	11.88	8.50
5	Commercial Banks	10	82.10	75.09	62.53	72.42	78.79
6	Investment Banks	1	152.75	136.43	179.52	184.57	256.28
7	Misc.	13	37.45	37.32	32.14	32.13	29.22
8	Modarbas	3	82.31	89.40	84.70	75.45	61.80
9	Oil & Gas Exploration	3	2.48	5.99	3.95	(5.83)	2.28
10	Oil & Gas Marketing	2	74.13	77.98	83.14	77.57	76.06
11	Power Generation & Distribution	1	156.16	128.56	86.49	77.95	87.06
12	Refinery	1	92.05	89.51	89.22	70.61	53.61
13	Technology & Communication	1	(12.28)	(12.93)	(17.64)	(22.96)	(20.12)
14	Textile Composite	9	23.74	31.19	32.50	43.66	49.18
15	Textile spinning	1	(8.39)	(17.10)	(24.33)	(26.07)	(25.71)
16	Textile Weaving	3	(8.13)	(2.86)	1.13	9.00	1.46
17	Transport	1	1.85	(21.86)	(10.68)	(13.79)	(12.20)
18	Cement	2	51.39	44.61	23.50	18.21	40.45
		73	42.17	40.99	37.35	38.13	39.38

Generally, in all state of economy if investors sell the securities in any mentioned odd day, they can earn positive market adjusted initial return in all sectors except Refinery, Textile composite, Textile spinning and Textile weaving sector displayed in Table 4.2.

In Table 5 some yearly analysis under different state of economy for every year of the examined period 2000-2009. The market adjusted short run return is found to be positive in a one month period in various odd days in each year except in year 2001 in the fifteenth day. In year 2008 the market adjusted return is found to be more than 90% in first, fifth and tenth trading day after listing.

Table 5: Year-wise Market adjusted short-run performance

Sr. #	Year	No. of IPOs	First	Fifth	Tenth	Fifteenth	Twentieth
State of Economy : Normal							
1	Jan-00	1	27.33	21.03	7.81	2.38	13.46
2	2001	3	0.19	1.10	0.78	(1.01)	5.54
3	2002	4	9.57	13.59	8.58	17.26	12.24
4	2003	6	41.40	48.16	40.45	47.16	60.02
5	2004	15	41.75	45.30	42.88	40.09	36.02
6	Aug-05	15	45.07	34.36	30.02	30.76	35.81
		44	36.75	35.51	31.38	32.14	34.47
State of Economy : Boom							
1	Sep-05	4	9.65	19.57	23.14	27.89	22.10
2	2006	4	51.62	39.21	29.24	29.61	18.98
3	2007	11	58.36	51.66	50.09	48.91	53.08
4	Mar-08	4	95.60	102.26	92.42	81.66	76.05
		23	55.19	52.71	49.14	47.59	45.76
State of Economy: Recession							
1	April-08	5	30.66	22.65	13.37	13.22	14.10
2	April-09	1	38.71	104.05	148.67	208.41	235.10
		6	32.00	36.22	35.92	45.75	50.93
State of Economy: General							
1	2000	1	27.33	21.03	7.81	2.38	13.46
2	2001	3	0.19	1.10	0.78	(1.01)	5.54
3	2002	4	9.57	13.59	8.58	17.26	12.24
4	2003	6	41.40	48.16	40.45	47.16	60.02
5	2004	15	41.75	45.30	42.88	40.09	36.02
6	2005	19	37.61	31.25	28.57	30.16	32.93
7	2006	4	51.62	39.21	29.24	29.61	18.98
8	2007	11	58.36	51.66	50.09	48.91	53.08
9	2008	9	59.52	58.03	48.50	43.64	41.63
10	2009	1	38.71	104.05	148.67	208.41	235.10
		73	42.17	40.99	37.35	38.13	39.38

Specifically under normal state of economy, an outstanding performance of these IPOs is observed in year 2005, while year 2001 showed the worst performance, in particular, at the close of day fifteenth.

5.0 Conclusion

Overall Pakistani IPOs outperform in short-run basis under different state of economy by rewarding the investors with positive abnormal return that is in line with the under-pricing happening of IPOs, which is widely documented in the earlier studies. This study analyses the short-run market adjusted performance under different state of economy: Normal, Boom & Recession of 73 IPOs listed from January, 2000 to April, 2009. These results are found to be consistent with earlier studies; that, investors can earn significant positive abnormal return if they buy the share from primary market and hold them for a period of one month. The results show that the IPOs give statistically significant market adjusted returns of 42.17%, 40.99%, 37.35%, 38.13% and 39.38% to the investors on the close of 1st, 5th, 10th, 15th & 20th day respectively under general state of economy. These returns improve to 55.19%, 52.17%, 49.14%, 47.59% and 45.76% on the close of mentioned odd days under the boom state of economy, while these returns decline under the recession state of economy. The results of wealth relative model are also found to be consistent with the market adjusted model on short-run basis, describing that Pakistani IPOs give positive abnormal return to investors on short-run basis. The sector-wise analysis show that some sectors outperform even in recession state of economy. Specifically, under normal state of economy investors can earn positive return in all sectors except Investment banks, Mudarabas, Refinery, Textile spinning, Textile Weaving and Textile composite, if they sell the stock in any odd day.

The average market adjusted returns of some sectors particularly in the sectors Oil & Gas Exploration & Oil & Gas Marketing, Commercial Banks, Power Generation & Distribution, Chemical and Miscellaneous is found to be greater than 52%. Under boom state of economy the sector-wise performance of these IPOs were outstanding in mentioned odd days except closed end mutual funds, Textile Spinning and Technology and communication sectors. The average market adjusted returns of some sectors particularly in the Commercial Banks, Chemical and Engineering sectors were greater than 95%. The year-wise analysis of IPOs reveals that the mean market adjusted return is found to be positive for each year. Specifically, year 2008 show an excellent performance, under boom state of economy, to have the investors with mean market adjusted return of 95.60%, 102.26%, 92.42% and 81.66% respectively in the mentioned odd day i.e. if investors sell these stocks at the end of 1st, 5th, 10th, & 15th day respectively. The results show that overall Pakistani IPOs outperform in short-run basis under different state of economy by gratifying the investors with positive abnormal return.

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