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Evaluation of Short-run Market Performance of Initial Public Offerings: Evidence from Karachi Stock Exchange

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Abstract

This study analyses short-run underpricing of Initial Public Offering at Karachi Stock Market of Pakistan by applying different event study models. The data were used for the period 2001-2013. The short-run performance of the IPO was evaluated by initial return on first day, yearly return for the first, fifth, tenth and fifteenth days after being listed of a firm and abnormal returns in different states of the economy. For analysis of short-run performance of IPO under different states of economy, data were divided into four states i.e. normal, boom, recession, recovery and general. It was found that IPOs gave positive significant initial return of 182.35%. In normal, boom and general states of economy, it provided significant positive return but in recession and recovery, it was insignificant

Keywords*: IPO, Short run performance, Karachi Stock Exchange, Pakistan.*

1. Introduction

The importance of stock market cannot be denied in the modern corporate world. Stock markets provide a mechanism for channelization of savings of people, pooling the individualized funds to create wealth and sharing of risk. The debate on offering of new issue has been complex since the early era of finance studies. Initial Public Offering (IPO) is the first time sale of securities by a company to the public. It is obvious that through this mode

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funds are raised by the corporations to meet their financial needs. Much empirical work has been done to justify the short-run underpricing of IPO in developed economies and in emerging economies as well. The researchers tried to figure out the anomalies in IPO market.

Initially, Ball and Brown (1968) and Fama et al., (1969) examined the impact of information on the performance of publicly traded stocks. Subsequently, Reilly and Hatfield (1969) tested investor's experience with new shares listed on New York stock exchange. Ibbotson (1975) evaluated performance of IPO issued between 1960 and 1969.His results showed negative performance from second to fourth year after being listed of firms. He concluded that there was an initial abnormal return and rejected the previous studies' hypothesis of no abnormal return in IPO market. Miller (1977) found that investors have heterogeneous expectations about value of firms. Rock (1986) introduced Winner Curse model in IPO market and examined the performance of new issues. Ritter (1991) analyzed the long-run performance of IPO of US market for 1526 firms during 1975 to 1984.The sample consisted of matching firms for 36 months after being listed. As literature shows that, initially, newly listed companies offer a positive abnormal return and then, subsequently, these abnormal returns vanish or may become negative in the long run.

1.1 Significance of the Study

The present study has investigated initial and odd day i.e. 5^{th}, 10^{th} and 15^{th}day's performance of IPO in emerging market of KSE which will provide information to researchers and investors about behavior of IPO in four phase of the economy. Thus, it is the first study of its nature in Pakistan. This study would also fill the gap in the literature, as only Sohail and Nasr (2007) for the first time studied the short-run and long-run performance of IPOs in Pakistan. Afterwards, Sadaqat et al. (2011) studied short-run

performance. Moreover, the present study will help the investors while making the decision in which state of economy they have to sell their security to get maximum return from Pakistan IPO market.

1.2 Objectives of the Study

The purpose of this study is to achieve the following objectives:

1. To assess degree of underpricing of Initial Public Offering.
2. To test various theories on evaluation of IPO performance in Pakistan.
3. To determine the short-run underpricing of IPO on yearly basis and on odd days i.e. 1^{st}, 5^{th}, 10^{th} and 15^{th}day in Pakistani Stock market.
4. To examine the short-run underpricing in different states of economy i.e. normal, boom, recession and recovery.

2. Pakistani Stock Markets

In Pakistan, there are three stock exchanges which are Karachi STOCK Exchange (KSE), Lahore stock exchange (LSE) and Islamabad stock exchange (ISE).The first and the largest of all in Pakistan is the Karachi stock exchange, which was established immediately after independence in 1947. There were 560 listed companies with3.41 billion share turnover at the end of 2013. As the Karachi stock exchange is the largest and highly liquid market in Pakistan, it is considered as the platform for sale and purchase of all types of securities and shares around the country. For empirical analysis of this research, we used data of companies which were included in KSE 100 index.

Karachi stock exchange is considered as highly volatile capital market of the world with full of anonymity and escaped performances. KSE remained uncertain due to some economic factors which adversely affected its performance. The most prominent were two factors that adversely affected performance of KSE. The first was terrorism and the other one was that KSE

faced incompetent management. Further, internal clashes were also a great hurdle for its adequate performance. A committee was constituted to investigate the crash of KSE in March 2005. According to the investigation report, KSE crashed mainly due to personal aggrandizements, brokers' intrigues and management incapability. Afterwards, in 2008 the KSE suspended working for two months due to economic crisis in Pakistan. So, it was suggested that a new system of certification prior to transaction in KSE be introduced to rule out occurrence of any such crisis in future. After 5 years, KSE recovered and value market value of its 100 index moved to 23000. Despite all the above mentioned crises, KSE is rewarding its investors with positive return who invest in IPO firms.

3. Literature Review

The literature on the performance of initial public offering for emergent markets is enormous. We will present a brief review of the most relevant studies.

3.1 Empirical Evidence

Reilly and Hatfield (1969) set the foundation while studying investors' experience with new share issues of New York stock exchange. The sample consisted of 53 new issues of New York Stock Exchange. For short-term analysis, it was considered as the Friday following the offering and fourth Friday following the offering and for long-term analysis, the Friday one year after the offering was considered. The study spanned from December 3rd, 1963 to June 14th, 1996.The over the counter average and Dow Jones industrial average were used for analysis. The test procedure for investigation was percentage price changes to relative percentage price changes in various stock markets of DJIA and OTCA. The results for Friday offering showed that most of new issues outperformed the market which was from 1% to 95% and for long run it was 45%. This provides the information

how the investors of a new issue enjoyed high short-run and long-run return as compared to the general market.

Reilly (1973) studied further evidence on short-run results of new issues in New York Stock exchange. Basically, it was an extension of previous studies by the author to provide evidence of study conducted by Stoll and cruelly in 1970. The data set consisted of 53new issues covering the time period from 1960 to 1965 for stocks listed on DJIA and OTCIA. In this study, purchase price of new issue was compared with percentage of market price. Furthermore, individual new issues were also compared with randomly selected stocks. The results indicated that the number of new issue stocks outperformed market indicator series and randomly selected stocks. He found that average short-run price of new issues was higher than average price for DJIA and OTCIA. These outcomes did not change and restrict by the notion of "underpricing of new issues".

Vong and Trigueiros (2010) investigated short-run behavior of initial public offering by analyzing first day stock return. They used a model based on sets of observations for 480 IPOs in Hong Kong during the period: 1994 to 2005.They found clear evidence of signaling effect of reputation of the underwriter which was closely related to underprice. Moreover, they found that offering of underwriting by two or more underwriters were less underpriced and underpricing itself signaled to them. They concluded that currently the IPO underpricing was not aggressive in the Hong Kong stock market.

Sadaqat et al., (2011) studied the performance of IPO floated on KSE during the period of 2000 to 2009.They segregated this ten year period into three sub-periods: 2000-2005 was treated as normal period; 2005 to April 2008 as the boom and from May 2008 to April 2009 as the recession. By using

wealth relative model, they analyzed stock return under three different periods. They found that overall IPO outperformed in Pakistani market.

Kaya (2012) studied the short-run performance of initial public offering in Istanbul stock exchange offered during January 2010 to 2011. The sample size consisted of 32 IPOs of Istanbul market. He used event study methodology to calculate market adjusted stock return and adjusted risk return in order to know short-run performance of IPOs. He took returns on daily basis, end of week, quarterly and 6 months. His results did not match with the results of previous studies i.e. positive return only on first day of trading. He concluded that there was no significant relationship between IPO size, sector operated in, firm, shares sold, age and IPOs' short-term performance.

Cheng et al.(2004) studied the intraday pattern of IPO in Hong Kong market during the time span: 1995-1998. The sample included 159 IPOs. SHEK had two trading sessions: one ran from 10:00 am to 12:30 pm and the other ran from 2:30 pm to 3:55 pm. The opening price was taken after five minutes and closing price was taken in the last five minutes. They used Parkinson (1980) measures to compute the intraday return volatility in order to avoid any problem faced by new issues. The findings showed that IPO return volatility was higher during the first trading session and afterwards rapidly declined in the second session. The practical implication of this paper for investors was that they could seek advantage of underpricing if they were willing to bear uncertain prices in emerging markets.

Cassia et al. (2004) examined IPO underpricing of Italian stock exchange during the period: 1985 to 2009. As many as 259 newly listed firms on Milan stock exchange were studied. The initial underpricing was studied by adjusted market return volatility from 1 to 10 days on daily basis. Moreover, they used multivariate regression model to investigate first day underpricing.

The independent variables were firm-specific market sentiment variable and IPO-specific variables. They found that IPO first day return for 182 firms was underpriced by 21.87% that was very high. When prices were fixed, underpricing was highly affected by age and for open price the age of the firm was no longer significant. This study suggested that in 1999-2000 IPO underpricing was too high but exclusively limited to technology and internet stock.

Aktas et al.(2003) forecasted short-term underperformance of Istanbul stock exchange. The sample data set consisted of 190 IPOs from 1992 to 2000. The event study i.e. cumulative abnormal return was used to assess short-run performance of 1st, 7th and 15th day from 1992 to1996. For analysing the future performance of IPO, three data sets were developed. The first set was used for multiple regressions for CAR1 day, CAR7 days and CAR 15 days. The multiple discriminate and logit models were estimated using the second and third data sets, respectively, for the time span from 1997 to 2000. They found that short-term performance from CAR was significant and econometric models, and multiple discriminate analyses correctly classified negative and positive abnormal return 65% of the time. The other two models, namely, multiple regression and logit models showed slightly over 50% of the time. This study revealed that both approaches explained a significant implication in favor of market short-run performance.

Chi and Padget (2005) empirically studied the short-run underpricing and its characteristics in Chinese IPO market. They used data of 668 new issues listed on Shanghai and Shenzhen Stock Exchange. The duration of the study was from 1st January 1960 to 31st December 2000. The Price of new issues was collected on the first, fifth, tenth, and twentieth days after being listed. The market adjusted abnormal return and wealth relative models were used to determine the short-run performance. Furthermore, ordinary least square

estimation was also applied. Market adjusted initial return was taken as the dependent variable and independents variables were offering size, government ownership at issuing, EPS in listing year, odds of winning the lottery, two years after being listed, high tech features, year and quarter dummies. Their findings showed the market adjusted initial return on 1^{st}, 5^{th}, 10^{th}, 20^{th} trading day to be, respectively 129.16%, 126.93%, 126.93% and 124.95%. The cross-sectional analysis showed the extraordinary severe underpricing of Chinese IPO and this underpricing was caused by large proportion of individual investors being uninformed and high demand due to quota system.

Heerden and Alagidede (2012) investigated the short-run underpricing of IPO's of Johannesburg stock exchange. The data set consisted of 138 South African IPO's, covering the time span from 2006 to 2010.The market adjusted abnormal return and market relative model were used to estimate returns for the 1^{st},5^{th},10^{th},15^{th} and 20^{th} day after being listed on JSE. Moreover, they analyzed sector-wise and year-wise abnormal return. This study revealed significant underpricing of IPO from 2006 to 2010. The average market adjusted return for the 1^{st}, 5^{th}, 10^{th}, 15^{th}, and 20^{th} day were 108.33%, 102.43%,109.58%, 201.22%, and 197.82%, respectively. Furthermore, Sector-wise results showed that financial sector had the highest return, followed by mining and then others and year-wise analysis showed that not even a single sector outperformed consistently. This study provided the evidence that investors preferred to invest in IPOs of those companies who were already well established and well known in the market.

3.2 Theoretical Review

There are a number of reasons for advancing the phenomenon of underpricing of new issue. The theories mainly focus on the relationship that

exists among issuers, investors and the investment banks involved in the offering process. These theories are not mutually exclusive in general.

The Signaling Theory is based on asymmetric information between potential investors and IPO insiders. So, it is an important component of IPO academic research. Leland and Pyle (1977) proposed that there is a negative signal to the investors if the firm sells large number of its own and insider shares in initial offering. On the other hand, researchers argue that IPO is to advance. Idea of certification is used in the signaling theory. Different researchers used different benchmarks that serve as strong signals.

Booth and Smith (1986) and Carter et al. (1997) used u*nderwriter;* Barry et al. (1990) used VC backing; and Beatty (1989) used accounting firm. In literature, there are other three positive explanations of signaling. First was explored by Allen and Faulaber (1989), Welch (1989) and Chemmanur (1993), in which underpricing is only offered by good firms. Secondly, Courteau (1995) and Baron and Holmstrom (1980) offered a model according to which insider has a strong commitment to a lockup period in which after offering investor holds the shares for long time and is not willing to sell his shares. It signals that the firm gives higher return. Lastly, Teoh et al. (1998) explored that strong earnings send strong signal to market for firm's future performance.

The Winner Curse Theory was discussed by Rock (1986). According to winner curse hypothesis, it is assumed that investors are fully aware of prices and invest in new shares if the price is below their investment so IPO are underpriced. In case of overpriced IPO firm, investor assumes that the share price will be overpriced or we can say in real life investors have different perceptions about price. Due to higher price issuer firm and investor fear a winner curse, it is also known as a negative cascade by Welch (1992).

Another asymmetric information model was introduced by Lucas and McDonald (1990) which is known as market timing theory. Under this theory, firm knows that its offered shares are undervalued and postpone the offering. The firm first assesses if the trend is bearish and market value is low for the firm then they delay new offering and provide knowledge to investors. Firm will wait for bullish trend when market offers a favorable return to IPO. Different researchers interpret this theory differently. According to Choe et al. (1993), when some other reputable firm issues shares firm avoids the initial equity offering in that time period. Subrahmanyam and Titan (1999) argued that market provides valuable information to the investor in return investor responds due to this increase in prices.

In the current era, the researchers are focusing more on the trend of allocation of shares and how these shares are traded in the market. The reason is that public is focusing its attention on expected unfairness how shares are allocated and most of the money is left on the table. The main attention area is individual investor versus institutional shares allocation. Benveniste and Spindt (1989) provided a seminal model known as. According to this model, underwriter has potential to take information from investors due to this average underpricing reduces and IPO process increases.

4. Data Description and Sources

This study has analyzed short-term performance of average return of IPO. The sample size of IPO that has been used for short-term performance analysis contains companies listed on emerging market i.e. Karachi Stock Exchange during past thirteen years which covered the time span from 1 January 2001 to 31 December 2013. The total number of firms listed during the period was 77 and out of which59 firms were taken for this study and the rest 18 were excluded due to non-availability of data. Thus, the sample is

comprised of unseasoned Initial Public Offering, and seasoned offering. The sources used to extract the required data were Karachi stock exchange, SCS trade and business recorder website.

Table 1. Number of IPO Firms Included In Short-Run Analysis

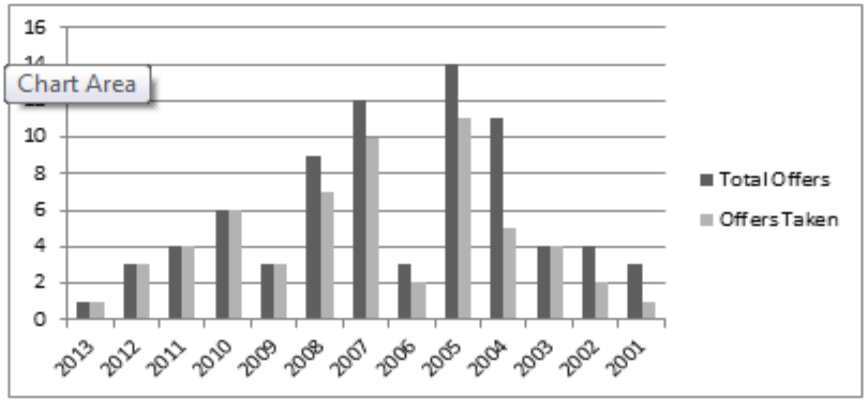
Year	Total Offers	Offers Taken
2013	1	1
2012	3	3
2011	4	4
2010	6	6
2009	3	3
2008	9	7
2007	12	10
2006	3	2
2005	14	11
2004	11	5
2003	4	4
2002	4	2
2001	3	1
Total	77	59

Source: KSE data (floatation history).

Source: Authors' own plot using data from Karachi Stock Exchange (floatation history).

Figure 1 shows comparison of total number of initial public offerings in Karachi stock exchange and total offers taken for Short-run performance analysis for the period of 2001 to 2013.

Figure1. Short-run Data Sample



5. Methodology

The measurement of the magnitude and statistical significance of initial and short-run performance of IPOs is estimated by means using methodologies most often applied in the current literature.

Initial market return is the first day return after being listed of a firm on stock exchange. The short-run performance can be computed by three steps which are empirically tested by Aggarwal et al. (1993), Sohail and Nasr (2007), Vong and Trigueiros (2010), Sadaqat et al., (2011) and Kaya (2012). Performance of IPO is measured as:

$$R_{i,1} = \frac{P_{i,1} - P_{i,0}}{P_{i,0}} \quad (1)$$

Where $R_{i,1}$ is the total first day raw return for stock "i" at the close of first day. $P_{i,1}$ Is the price of ith stock at the end of first day,$P_{i,0}$ is the offer price of the stock. The return on market index is used as a bench mark and is calculated during the period as follows:

$$R_{m,1} = \frac{I_{i,1} - I_{i,0}}{I_{i,0}} \quad (2)$$

Where $R_{m,1}$ is total first day market return, $I_{i,1}$ is the market index at the end of first day. $I_{i,0}$ is the market index at the offer day. The market adjusted return is calculated as:

$$MAAR = \{[(1 + R_{i,1}) / (1 + R_{m,1})] - 1\} *100 \quad (3)$$

After computing MAAR, Average Market Adjusted Abnormal Return is calculated as, MAAR divided by n firms in the sample, to know whether IPO firms have average positive return on the first day?

$$AMAAR = \sum MAAR/n$$

This study examined the short-run abnormal return in Pakistan. The short-run performance is measured through market adjusted average return (MAAR), daily return and Average Market Adjusted Abnormal return (AMAAR) on the 1st, 5th,10th and 15th days after being listed at KSE. In order to measure short-run performance of IPO at the end of 1st, 5th,10th and 15th trading days we used methodology of Aggarwal et al. (1993) which is the Market Adjusted Abnormal Return for each IPO firm using the KSE index as the benchmark. The MAAR model basically measures the initial trading return in excess of market return of a firm. These sorts of calculations are commonly used by researchers for measuring short-run performance of IPO both in polished and emerging markets, while computing SRP beta is assumed to be risk adjusted factor for newly listed stock. After measuring MAAR the total return is averaged out in the sample firm.

The t- statistic is computed as follows:

$$t_{MAAR} = \frac{\overline{MAAR_{i,t}}}{\sigma_{MAAR_{i,t}}}$$

The performance for a group of IPOs is measured and assessed by wealth relative (WR) Model:

$$WR = \frac{\frac{1}{N}\sum_{i=1}^{N}(\prod_{t=1}^{T}(1 + r_{i,t}))}{\frac{1}{N}\sum_{i=1}^{N}(\prod_{t=1}^{T}(1 + r_{m,t}))}$$

Where wealth relative is for t days of trading and N is the total number of IPO in the sample firm. If the wealth relative is higher than 1it implies that IPO outperformed during the event time and if wealth relative is lower than 1it means IPO firm underperformed in specified time. The hypotheses are as follows, while models are provided in the methodology section.

Hypotheses

H_{10}: The initial return of IPO is equal to zero.

H_{11}: The initial return of IPO is different from zero

H_{20}: The short-run average return in a state of economy of IPO is equal to zero.

H_{21}: Theshort-run average return of IPO in a state of economy is different from zero.

5.1 Data Analysis and Discussion

Short-run price performance includes initial underperformance of IPO, yearly analysis of IPO and short run performance indifferent states of the economy.

5.1.1 Initial underperformance of IPO

The initial return analysis shows that investors are having positive abnormal return on first day of trading in IPO market. To study initial return of IPO firms, a total of 59 companies were included in investigation during January 2001 to December 2013. Out of 59 companies, 41 gave positive abnormal return and 18 showed negative abnormal returns on first day trading in

primary market. The investors jointly earned 2370.37% MAAR which confirmed the existence of underperformance which was empirically found in all previous studies. For all 59 companies, the AMAAR was 182.34% with statistical significance on the basis of t-test for the first day. The first day return was higher as compared with Chi & Padget (2005) and Heerden & Alagidede (2012) for Chinese and Johannesburg market which were 129.16%, and 108.33%, respectively. The market adjusted abnormal return ranged from a maximum of 201.28% to a minimum of 159.70% for all companies during 2001 to 2013 and maximum standard deviation of 100.77%. Furthermore, it was observed that if investors bought shares of new companies they had positive abnormal excess return and the null hypothesis was rejected. If investors want to sell their shares on first day of trading, they will make profit.

5.1.2 Short-run Performance in Different States of Economy

In this section, short-run performance by market adjusted models for the 1st, 5th, 10th and 15th day is analyzed in different states of economy. For measuring short-run performance, the analysis was also based on minimum, maximum, averages, median and variability of different measures under different states of economy, that is, normal, boom, recession and recovery.

Firstly, under the normal state of economy, the offer price ranged from Rs. 57.75to Rs. 10, with average share price remaining at around Rs. 21.6.The Karachi stock exchange 100 index was used as a bench mark that ranged from 9459.72 to 1655.63 and average stock return was 6% while its minimum was -.26 % and the maximum was 31% on the first day of trading. The mean market adjusted return for the first day was 45.47% which ranged from 302.12% to -41.27. Under the normal state of economy, the average market return was 45% with standard deviation of 69.76%. Details can be seen in Table 2.

Table 2. Short-run IPOs Performance in Normal State of Economy

Particular	Average	Maximum	Minimum	Median	SD
Offer price	21.26	57.75	10.00	10.00	15.94
Index at offer price	5627.91	459.72	1655.63	5323.5	2422.97
1st day raw return	0.45	2.71	-0.62	0.27	0.66
1st day market return	0.06	0.31	-0.26	0.04	0.13
1st day market adjusted return	.45	3.02	-.41	.26	.69
5th day raw return	0.51	2.58	-0.60	0.40	0.69
5th day market return	0.09	0.42	-0.10	0.05	0.13
5th day market adjusted return	.60	3.01	.-35	.46	.74
10th day raw return	0.48	1.89	-0.60	0.40	0.63
10th day market return	0.10	0.41	-0.10	0.06	0.13
10th day market adjusted return	.58	2.30	.-30	.41	.67
15th day raw return	0.45	1.59	-0.46	0.40	0.55
15th day market return	0.10	0.38	-0.14	0.07	0.12
15th day market adjusted return	.55	1.73	.-16	.42	.56

Source: Authors' own calculations using data from (KSE).

The average offer price improved from Rs. 21.26 to Rs. 34.29 under booming state of economy. The average KSE index under this state remained

at 12145.28 points with a minimum of 5597.44 and a maximum of 15469.74 points. Similarly, the average market adjusted return also moved upward to79.93% as shown in Table 3 under boom state. There was a maximum offer price of Rs. 235 and an increasing trend was noticed.

Table 3. Short-run IPOs Performance in Booming State of Economy

Particular	Average	Maximum	Minimum	Median	SD
Offer price	34.29	235.00	10.00	14.00	57.04
Index at offer price	12145.28	15469.74	5597.44	12273.82	2432.92
1st day raw return	0.75	3.22	-0.62	0.30	0.96
1st day market return	0.05	0.59	-0.51	0.06	0.21
1st day market adjusted return	.80	3.27	-1.13	.61	1.01
5th day raw return	0.50	3.17	-0.69	0.24	0.87
5th day market return	0.05	0.44	-0.53	0.07	0.18
5th day market adjusted return	.55	3.26	-1.21	.33	.93
10th day raw return	0.42	3.15	-0.69	0.24	0.84
10th day market return	0.04	0.39	-0.47	0.08	0.17
10th day market adjusted return	.46	3.24	-1.15	.31	.91
15th day raw return	0.33	2.79	-0.74	0.09	0.83
15th day market return	0.03	0.40	-0.50	0.07	0.18

15th day market adjusted return	.37	2.89	-1.24	.19	.90

Source: Authors' own calculations using data from (KSE).

5.1.3 Recession State of Economy

In the recession state, the average offer price of IPO sample period decreased to Rs. 10 and KSE average index fell down to 7831.02 points with a minimum of 5333.95 points, as shown in table 4. The mean market return, average raw return and market adjusted return also went down or we can say that there was a general decreasing trend prevailing in the economy under recession state.

Table 4. Short-run IPOs Performance in Recession State of Economy

Particular	Average	Maximum	Minimum	Median	SD
Offer price	10.00	10.00	10.00	10.00	0.00
Index at offer price	7831.02	9836.5	5333.95	9154	2177.3
1st day raw return	-0.06	0.28	-0.65	0.02	0.35
1st day market return	-0.17	0.23	-0.55	-0.15	0.32
1st day market adjusted return	.-22	.51	-1.19	.-18	.63
5th day raw return	0.03	0.44	-0.61	0.00	0.41
5th day market return	-0.16	0.21	-0.53	-0.15	0.30
5th day market adjusted return	-.13	.65	-1.14	.-05	.65
10th day raw return	0.09	0.83	-0.70	0.02	0.56

10th day market return	-0.17	0.20	-0.55	-0.15	0.30
10th day market adjusted return	.-08	.51	-1.25	.05	.71
15th day raw return	0.13	1.26	-0.73	0.03	0.72
15th day market return	-0.19	0.17	-0.53	-0.25	0.28
15th day market adjusted return	.-07	.90	-1.26	.04	.81

Source: Authors' own calculations using data from (KSE).

Fourth state of the economy is recovery. This stage basically shows how IPO market revived during the sample period. The average price rose to Rs. 15.22with the minimum of Rs. 10.0 and maximum of Rs. 30.0. The average index also improved to 11255.71 points, with the minimum of 6847.99 points and the maximum being 23487.23 point as displayed in Table 5.

Table 5. Short-run IPOs Performance in Recovery State of Economy

Particular	Average	Maximum	Minimum	Median	SD
Offer price	15.22	30.00	10.00	13.25	6.38
Index at offer price	11255.71	23487.23	6847.99	10099.78	4296.87
1st day raw return	-0.01	0.56	-0.62	-0.01	0.24
1st day market return	0.03	0.40	-0.26	0.03	0.14
1st day market adjusted return	2.24	39.30	-65.15	1.70	24.06
5th day raw return	-0.04	0.34	-0.61	-0.03	0.20
5th day market return	0.04	0.45	-0.25	0.03	0.15

5th day market adjusted return	-0.61	37.65	-62.16	-0.94	22.03
10th day raw return	-0.06	0.33	-0.62	-0.04	0.20
10th day market return	0.03	0.44	-0.24	0.03	0.15
10th day market adjusted return	-3.26	38.32	-62.75	-6.07	22.85
15th day raw return	-0.09	0.20	-0.62	-0.06	0.19
15th day market return	0.04	0.45	-0.26	0.04	0.16
15th day market adjusted return	-5.45	38.38	-60.38	-6.34	21.80

Source: Authors' own calculations using data from (KSE).

Generally, we considered the four states of the economy. The average offer price was around Rs. 23.41 and it ranged from Rs. 10 to Rs. 235. While KSE 100 index average points ranged from 23487.23 points to 1655.63points during the 2001 to 2013 period. The average raw return was 38% while its minimum level was -65% and maximum was 322% with standard deviation of 73%. The mean adjusted return ranged from -55% to 59%. The market adjusted return ranged from minus 55% to 327.44%. The average, minimum, maximum and standard deviation of raw return and market return and market adjusted return for the 5^{th}, 10^{th} and 15^{th} days are also shown in table 6.

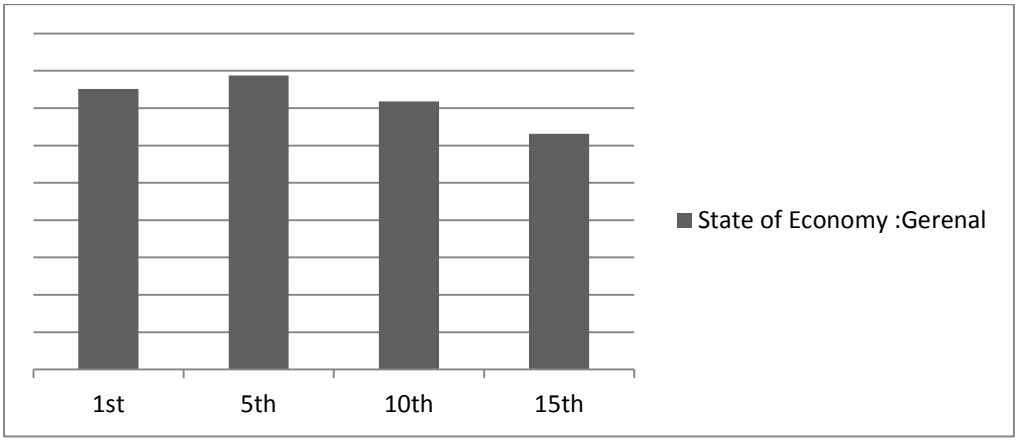
Table 6. Short-run IPOs Performance in General State of Economy

Particular	Average	Maximum	Minimum	Median	SD
Offer price	23.41	235.00	10.00	12.50	33.17
Index at offer price	9099.5	23487.2	1655.63	9154	4096.9

	27	3			4
1st day raw return	0.38	3.22	-0.65	0.10	0.73
1st day market return	0.03	0.59	-0.55	0.04	0.18
1st day market adjusted return	.38	3.27	-1.19	.-16	.78
5th day raw return	0.39	3.17	-0.69	0.19	0.75
5th day market return	0.04	0.45	-0.53	0.04	0.18
5th day market adjusted return	.43	3.26	-1.21	.30	.82
10th day raw return	0.36	3.15	-0.70	0.14	0.73
10th day market return	0.04	0.44	-0.55	0.04	0.18
10th day market adjusted return	.40	3.25	-1.25	.24	.79
15th day raw return	0.32	2.79	-0.74	0.08	0.69
15th day market return	0.04	0.45	-0.53	0.05	0.18
15th day market adjusted return	.35	2.88	-1.26	.19	.74

Source: Authors' own calculations using data from (KSE).

Figure 2. Market Adjusted Abnormal Return in General State of Economy



Source: Authors' own plot using data from (KSE).

Short-run performance of market adjusted return in four states of economy is analyzed in this paper. Under the normal state of economy, it offered positive initial abnormal return of 45.47 % at closing of the first trading day with an associated t-statistic of 3.05, which was different from zero at 1% of significance level. Under the boom period, abnormal return went up to 55%. It was observed that investors earned positive market, adjusted initial return at the end of 5^{th},10^{th} and 15th day even under the recession state of economy with an associated t-statistic being different from zero as shown in Table 7. The results rejected the null hypothesis. According to these findings, investors had a 99% confidence that if they purchased shares of newly listed company under normal, boom and recovery states of economy, they would have made an average profit of 45.47%, 79.93%, and 2.24%, respectively by selling these shares at closing of the first day. If they sold the securities at any other day within the month, profit slightly declined but still positive return would be confirmed on short run basis.

5.1.4 Wealth Relative Model

The findings of wealth relative models are in line with market adjusted model on short run basis as displayed in table 7, which shows that investors gained positive abnormal return in short run while investing in Pakistani IPO. Under the boom state of economy, when Pakistani market was at its peak, it provided maximum return to the investor.

Table 7. Wealth Relative Return on Short-run Basis

Trading Days	No. of IPOs	Raw Return	Market Return	WR
State of Economy: Normal				
1st	22	0.45	0.06	1.51
5th	22	0.51	0.09	1.6
10th	22	0.48	0.10	1.58
15th	22	0.45	0.10	1.55
State of Economy: Boom				
1st	17	0.75	0.05	1.8
5th	17	0.50	0.05	1.55
10th	17	0.42	0.04	1.46
15th	17	0.33	0.03	1.37
State of Economy: Recession				
1st	5	-0.06	-0.17	0.78
5th	5	0.03	-0.16	0.87
10th	5	0.09	-0.17	0.92
15th	5	0.13	-0.19	0.93

State of Economy: Recovery				
1st	14	-0.01	0.03	1.02
5th	14	-0.04	0.04	0.99
10th	14	-0.06	0.03	0.97
15th	14	-0.09	0.04	0.95
State of Economy: General				
1st	59	0.38	0.03	1.4
5th	59	0.39	0.04	1.36
10th	59	0.36	0.04	1.33
15th	59	0.32	0.04	1.28

Source: Authors' own calculations using data from (KSE).

5.1.5 Year-wise Analysis Based on MAAR and AR

Table 8 shows results of yearly analysis of the 1st, 5th, 10th and 15th day of IPOs after being listed. The total years of study are thirteen from 2001 to 2013. For investigation, the period from 2001 to 2005 was considered as normal under which returns were positive except in 2002 on the first day. The period from 2006 to June 2008 fell under boom and AMAAR in the year 2007 on first day was the highest at 6.36 percent.

Recession period started from July 2008 to December 2009.During this period, investors faced negative return for the 1st, 5th, 10th and 15th day after being listed. Afterwards, from 2009 to 2013, market slowly moved up and recovery period started although investors did not have high and positive return till 2011 but from 2012 to onward market started giving positive return. If we look at general state of economy from 2001 to 2013, it shows

overall market trends, under boom state of economy market outperform outperforms while worst performance is under recession.

Table 8. Year-wise Short-run Performance

Sr. #	Year	No. of IPOs	First	Fifth	Tenth	Fifteenth
State of Economy: Normal						
1	2001	1	0.26	0.30	0.32	0.31
2	2002	2	-0.27	0.15	0.11	0.31
3	2003	4	2.07	2.56	2.34	2.34
4	2004	5	3.92	4.43	4.76	4.76
5	2005	11	5.85	5.82	4.86	4.89
State of Economy: Boom						
1	2006	2	2.41	2.34	1.65	1.65
2	2007	10	6.36	5.66	5.86	5.86
3	Jun-08	5	3.92	4.70	3.96	2.85
State of Economy: Recession						
1	Jul-08	2	-1.37	-1.31	-1.43	-1.64
2	2009	3	0.25	0.65	1.03	1.03
State of Economy: Recovery						
1	2010	6	0.05	-0.16	-0.04	-0.04
2	2011	4	-0.09	-0.20	-0.36	-0.34
3	2012	3	0.20	0.19	0.01	0.01
4	2013	1	0.16	0.09	-0.06	-0.01
State of Economy: General						

1	2001	1	0.26	0.30	0.32	0.31
2	2002	2	-0.27	0.15	0.11	0.31
3	2003	4	2.07	2.56	2.34	2.34
4	2004	5	3.92	4.43	4.76	4.76
5	2005	11	5.85	5.82	4.86	4.86
6	2006	2	2.41	2.34	1.65	1.65
7	2007	10	6.36	5.66	5.86	5.86
8	2008	7	2.55	3.39	2.54	2.54
9	2009	3	0.25	0.65	1.03	1.03
10	2010	6	0.05	-0.16	-0.04	-0.04
11	2011	4	-0.09	-0.20	-0.36	-0.34
12	2012	3	0.20	0.19	0.01	0.01
13	2013	1	0.16	0.09	-0.06	-0.01

Source: Authors' own calculations using data from (KSE).

6. Conclusion and Practical Implications

The results of this study are similar to the results of previous studies found in the developed markets. Underpricing was also noticed in IPO market of Pakistan. For investigation of the initial return, results showed that IPOs gave positive significant initial return as well as underpricing happening to IPO, which were mostly documented in previous studies. The investors earned market adjusted return of about 182.35%. Analysis of different states of economy showed that overall Pakistani IPO outperformed under different states of economy and rewarded the investors with positive abnormal return that is in line with IPO underpricing which is generally discussed in earlier studies.

The results show that IPO market gave significant market adjusted return of 45%, 60%, and 10% to the investor at the end of the 1st, 5th, 10th and 15th day. The results improved in the boom state of economy to 80%, 55%, 46% and 37%, respectively, at closing of the 1st, 5th, 10th and 15th day. Similar results were also reported by Sadaqatet al. (2011).However, in recession and recovery states of economy market gave insignificant market adjusted return. These results supported the market timing theory as IPO companies were well-informed and postponed their offering in recession. Only 5 IPOs were offered under recession and most of the offerings were in normal state, which were 22 and in boom state these were 17. The year-wise analysis for the 1st, 5th, 10th and 15th day revealed that the market adjusted return for the first day was in most of the times positive under boom, normal and general states but under recession and recovery it turned to be negative. In general state, first to fifth day price rose and then slightly decreased up to 15th day.

This research study has filled the gap in the existing literature and is also beneficial for the investors to buy and sell IPO at suitable timing in order to get maximum return in Karachi stock exchange. No researcher has yet studied all the four states of economy in Pakistan and non-Pakistan IPO markets. This study first time covered the latest period from 2000 to 2013 for Karachi Stock Exchange.

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