

Long-run Performance of Public vs. Private Sector Initial Public Offerings in Pakistan

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1. INTRODUCTION

The private sector had its major share in the economic development of the country in the early years of its independence in the 1950s. However, the private sector suffered a set back in the early 1970s, when a huge process of nationalisation of a large number of private industrial units was undertaken by the then government. Over the decades these enterprises were not professionally managed and the political influences in the management and running of these enterprises played havoc with them and consequently the experiment proved to be a failure. Attending to the weaknesses and inefficiencies inherent in the public sector enterprises, privatisation was systematically initiated by the then government in the early 1990s. Various privatisation commissions were set up in subsequent years and the privatisation process got some momentum during the present government and many large and profitable firms were privatised in the last few years, particularly at a time when the overall climate in the country was responsive and conducive for investment. The government, however, privatised many enterprises through public offerings on individual-case basis.

The objectives of this paper, therefore, are; first, to what degree Privatisation Initial Public Offering's (IPOs henceforth) and private sector IPOs differ in terms of under-pricing in Pakistan? Second, to find out the reasons of the under-pricing of Privatisation and private sector IPOs. Third, how can we compare the long-run performance of Public and private sector IPOs?

In Pakistan, firms employ the fixed-price method to go public and the shares are sold in lots with each lot consisting of 100, 200, 500 or multiple of these lots. An investor can apply for only one lot at the pre-announced subscription price. In case of over subscription of shares by the investors, the company reserves the rights to over subscribe up to a certain percentage of the pre-announced amount of equity. Empirical evidence for the Pakistan stock market is generally scarce. Especially, evidence on Pakistani Private sector IPOs is non-existent. Sohail and Nasr (2007) is the only study, to our knowledge, to have been conducted on the performance of IPOs in Pakistan, who investigated 50 IPOs during the period 2001 to 2005 that subsequently listed on the Karachi stock exchange. They find significant under pricing for Pakistani IPOs and reported an average

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first day return of 35.66 percent for subscribers. In analysing the longer-term performance of IPOs, Sohail and Nasr (2007) found a buy (at the closing price of the listing day) and hold (to the end of the twelfth month) strategy resulted in a mean -38.1 percent return by using market adjusted model. Their study of new equity issues in Pakistan market only examines initial performance and one-year long run performance. The major advantage of our paper relative to Sohail and Nasr (2007) is that the present paper compares the performance of privatisation IPOs with private sector IPOs with major focus on how much government of Pakistan's privatisation program is successful and how private sector IPOs have performed relative to private sector IPOs. Moreover, this paper differs from Sohail and Nasr (2007) in several other important aspects. In addressing long run performance, the present study measures long run performance up to 2 years post listing to facilitate comparison with the majority of previous studies conducted in other markets. Given the relative small number and newness of the phenomenon of IPOs in Pakistan, a full analysis of IPO performance in the long and short run was not possible. However, a sort of preliminary study to examine pricing of Pakistan IPOs and comparison of Public sector IPOs and private sector IPOs in the short and long run is described in the balance of the paper.

The results of the paper can be summarised as follows. First, the empirical results provide evidence that is consistent with some previous studies that document short-term excess returns associated with Initial Public Offerings. Additionally, results indicate that public sector IPOs are statistically significantly under priced more than the private sector IPOs. Second, a multivariate cross-sectional analysis reveals that, pure signalling models can not be used to explain the initial stock returns of Pakistani Public and private sector IPOs. Third, the initial excess returns of Public and private sector IPOs is positively related to the firm size which shows that Government of Pakistan sold large and well-known enterprises at attractive issue prices for the general investors. Fourth, the long run performance of public sector IPOs has been remarkably better than the private sector IPOs in Pakistan's market.

The remaining portion of the paper is organised as follows. Next section briefly summarises the previous literature on the subject and lists the hypotheses to be tested about the price behaviour of Public and private sector IPOs. The third section describes the data and methodology and discusses empirical results of the study and section four concludes the paper.

2. LITERATURE REVIEW

(a) The Under-pricing of Privatisation IPOs and IPOs

Various empirical studies conducted on privately owned new issues identified two main phenomena: Positive initial returns of firms going public are under-priced and second, negative long-run under performance or they tend to under-perform benchmark firms in the long run. The extent of under pricing, though, has varied from study to study due to the different number of IPOs that were issued, the methodology used and time periods examined [Prasad, *et al.* (1995)]. Ritter (1984), for instance, found average initial returns as high as 48 percent for a 15-month period. Tsangarakis (2004) finds on average large positive returns for Greek IPOs

both in the short and the in the long-run. On the other hand, Kendal and Stien (2004) document that the government IPOs is not, on average, under-priced more than the privately owned IPOs for the Australian market.

There are only few studies comparing the price behaviour and the characteristics of Privatisation IPOs and private sector IPOs. These studies find contrasting empirical evidence though. Choi and Nam (1998) studied a large sample of 185 enterprises which were privatised in 30 markets and concluded that those privatisations IPOs were on average more under priced than IPOs in the private sector.

Considering information asymmetry for UK privatisations, Meyah, *et al.* (1990) proposed that UK privatisation should not possess differential information because of large amount of prior knowledge before going public. Contrary to their hypothesis, they found excess returns that significantly exceeded private sector IPO returns for initial and long run performance. Perotti and Guney (1993) found returns of government sector IPOs greater than non-government IPO for eight countries. Omran (2004) documents significant improvements in the financial and operating performance of the newly privatised firms by the Egyptian government during 1994 to 1998. On the other hand, Dewenter and Malatesta (1997) do not find evidence that privatisations in the seven countries, studied in the paper, tended to be under-priced more than the privately owned IPOs. In line with this were the results reported by Jelic and Briston (1999) for Hungarian and Easto and Pinder (1996) for Australian Public sector IPOs. In contrast, Ausegne (2000) and Paudyal *et.al* (1998) report higher mean initial return for public sector IPOs as compared to privately-owned IPOs for Spain and Malaysia respectively.

According to the Asymmetric information theory, uncertainty associated with the value of the firm is negatively related to the size of the firm. As larger firms are better known to investors, they should be easier to value and, therefore, should experience a lower initial return, a sign of less under pricing. As Privatisation IPOs are expected to be larger than private sector IPOs, this theory also indicates that sector IPOs should be less underpriced as compared to the private sector IPOs. We, therefore, test the following hypotheses:

- H₀₁: The initial mean market-adjusted return of Privatisation IPOs in Pakistan, during the period under investigation, is lower as compared to the returns for private sector IPOs.
- H₀₂: The larger firms are less underpriced than the smaller firms; hence the initial market-adjusted return of large firms is significantly lower as compared to returns of small firms for Pakistan's Market.

Rittner (1991) conclude that managers of the issuing firms have superior information about the true value and the future prospects of the offer than most of the outside investors. Ausenegg (2000) argues that these signalling models imply that high quality firms sell, at the time of the IPO, a low fraction of the share capital and purposely select an offer price below the intrinsic value in order to signal the firm's quality to investors. This under-pricing is motivated by the possibility that the firm may achieve higher prices in subsequent offerings. The capital raised in future offering will more than compensate for the initial under pricing. On the basis of the above arguments, we test the following hypothesis:

H₀₃: There is significant negative relationship, for Pakistani IPOs, during the period under investigation, between the initial market-adjusted return and the portion of the share capital sold at time of the IPO.

(b) Long-run Performance of Privatisation IPOs and Private Sector IPOs

The share price performance of the privatisation and privately-owned IPOs in the long run have generally been found to be dissimilar in empirical studies. Evidence tends to support the notion that Private sector IPOs mainly experience a negative excess return over the first three to four years of aftermarket trading, whereas Privatisation IPOs mainly observe a better or an equal aftermarket performance to that of benchmark firms. For example, Megginson, *et al.* (2000) finds a significantly positive aftermarket performance for privatisations using a large sample for 33 countries. Similar results are reported by Jelic and Brison (1999) for Hungarian Privatisation IPOs.

For a country like Pakistan where it has pursued a rigorous privatisation policy going public can be considered a recurring event and it may sell many firms over the period of the time. A government dedicated to the success of its privatisation policy will, therefore, be interested in a good long-run performance with an objective to attract investors for future new issues. The following hypotheses are, therefore, tested for Pakistan's public sector IPOs:

H₀₄: The long-run aftermarket share price performance, for the period under investigation, is non-negative for Pakistan Privatisation IPOs.

H₀₅: The long-run abnormal performance is significantly better for Privatisation IPOs in Pakistan, during the period under investigation, than for private sector IPOs.

3. METHODOLOGY

The study uses data for the period from 2000 to 2006. The main reason for using IPOs from 2000 to 2006 is that there were not many initial public offerings prior to 2000 and, in fact, major privatisation took place during this period. We include in our sample those companies that offered shares to the general public through IPOs and exclude companies, which generated equity through private placements. Moreover, IPOs of mutual funds of any type were excluded from the sample. The sample initially consisted of Eighty-Eight companies, which offered shares to general public through IPOs during the time period selected for the sample. Those companies, which came through mergers, and the mutual funds, were excluded from the sample. Also, only those companies were retained in the sample that has daily share price information available for at least 2 years after initial public offerings. Therefore, the final sample shrunk to 35 companies, seven of which are privatisation IPOs and remaining 28 are from private sector IPOs. The privatisation IPO companies are controlled by Government of Pakistan and for majority of them 100 percent of the ownership were held by the government prior to the issue. Table 1 presents details about privatisation and private sector IPOs during each year of the sample period.

Table 1

| Years | All | PIPOs | IPOs |
|-------|-----|-------|------|
| 2000 | 3 | 0 | 3 |
| 2002 | 4 | 1 | 3 |
| 2003 | 3 | 1 | 2 |
| 2004 | 10 | 2 | 8 |
| 2005 | 13 | 2 | 11 |
| 2006 | 2 | 1 | 1 |
| Total | 35 | 7 | 28 |

Note: All stands for number of issues per year for the sample, PIPOs stands for Privatisation Initial Public Offerings and IPOs stands for Initial Public Offerings for private sector firms.

Two main sources were used to collect the data for the sample. First, Sample Company's IPO announcement history was sourced from the online database of the Karachi Stock Exchange while the online data base of Business recorder, Pakistan's premier financial daily, was used to collect data on daily stock prices of the companies and the KSE-100 Index, for a period of two years for each company beginning from the formal enlisting on the Karachi Stock Exchange.

Short-term Share Price Performance

The objective of this paper is to analyse the price performance of Pakistan IPOs both in the short-run as well as in the long run. By short-run performance we mean the behaviour of the initial returns of the IPOs, that is, the return realised in the interval from the offering of the shares to the first trading day of the issue on the KSE. The long-run performance refers to the price behaviour of the newly issued shares beyond the day of their listing. In this study we analyse the long run performance over a period of two years after the listing day. We estimate simple (raw) returns as well as the market-adjusted returns over the various selected intervals.

Following the methodology of Asussenegg (2000), the initial raw return for IPO_j is given by:

$$BHR_j = \frac{P_{j,1} - P_{j,0}}{P_{j,0}} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

Where BHR_j stands for Buy-and-Hold Returns for a company j , $P_{j,0}$ is the issue price and $P_{j,1}$ the closing price on the first trading day of IPO_j . The time index $t=0$ refers to the first day of the subscription period. These returns measure the relative wealth gain (loss) an investor would have realised had he or she purchased an IPO at the offering price and sold at the prevailing market price at the close of the first trading day.

Market-adjusted (Excess) Initial Returns

Given the phenomenon that prices of individual stocks may move in response to the movement of the overall market, it is necessary that we also estimate market-adjusted returns for the same period that we used to calculate the raw returns. The market adjusted return (IR_j) for each IPO_j is measured as the difference between initial raw return (Buy-

and-Hold Return for issue j) and the corresponding return on the market index (KSE-100 Index) over the same period.

$$IR_j = BHR_j - BHR_{kse,j} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

Similar to Equation (1) the Buy and Hold Returns for KSE-100 index ($BHR_{kse,j}$) is calculated as:

$$BHR_{kse,j} = \frac{KSE_{j,1} - KSE_{j,0}}{KSE_{j,0}} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (3)$$

where $KSE_{j,0}$ represents the closing value of the KSE-100 Index on the first day of the subscription period of $IPO j$ and $KSE_{j,1}$ is the KSE-100 Index closing value at the close of the first trading day of the $IPO j$.

Table 2

Descriptive Summary Statistics of Initial (Short-term) Pakistani PIPOs and IPOs Returns from 2000 to 2006

| | Initial Raw Return | | | Initial Market-Adjusted Return | | |
|---------------------|--------------------|---------|---------|--------------------------------|---------|---------|
| | Panel: A | | | Panel: B | | |
| | All | PIPOs | IPOs | All | PIPOs | IPOs |
| Mean | 41.89* | 77.828* | 32.573* | 36.476* | 74.332* | 26.662* |
| <i>t</i> -statistic | 4.20 | 2.64 | 5.19 | 3.81 | 5.36 | 2.46 |
| Median | 21.302 | 68.333 | 10 | 15.567 | 75.519 | 7.87 |
| Maximum | 270.736 | 131 | 270.736 | 240.353 | 134.376 | 240.353 |
| Minimum | -20.435 | 37.4 | -20.435 | -23.765 | 36.825 | -23.765 |
| Std. Dev. | 58.104 | 29.934 | 60.335 | 55.765 | 36.665 | 56.133 |
| Observations | 35 | 7 | 28 | 35 | 7 | 28 |

Note: All stands for number of issues per year for the sample, PIPOs stands for Privatisation Initial Public Offerings and IPOs stands for Initial Public Offerings for private sector firms. All the values are in percentages. The * indicates significance at 5 percent level.

Table 2 presents summary statistics of the raw (Panel A) and market-adjusted initial returns (Panel B) for all three samples. Mean return of 41.89 percent of initial raw returns shows that if investor invests equal amount of money in each IPO at the issue price and selling each IPO on its first trading day, he would have earned an average of 41.89 percent raw return on its investment. On the other hand, if the investor had invested only in the privatisation IPOs, his or her investment would have yielded 77.28 percent percent raw return on his investment while the same strategy would have earned him 32.57 percent raw return by investing only in the private sector IPOs of the sample firms. These returns suggest that investor who subscribe to Pakistan IPOs and pay the offer

price realise substantial wealth gains by holding these shares till the end of the first trading day.

Similar to initial raw returns, mean market-adjusted returns (Panel B, Table 2) for all three samples are positive: 36.47 percent for all, 74.33 percent for privatisation IPOs and 26.67 percent for private sector IPOs. These findings suggest that relative to the rest of the market Pakistan IPO investors realised substantial wealth gains for investors in case of initial market-adjusted returns.

All mean returns reported in Panel A and B of Table 2 are significantly greater than zero at 5 percent significance level. Our results are in line to the findings reported in Sohail and Nasr (2007) for Pakistan's market and previous research in other markets (see e.g. Aussenegg, 2000), Pakistan's privatisation IPOs as well as private sectors IPOs are significantly under priced. Also, the results show that PIPOs are more under priced than IPOs.

Difference of Means between Short-run Privatisation IPOs and Private Sector IPOs Returns

Table 3 reports results for the Difference of Means between Short-run PIPOs and IPOs Returns. As the Table 3 indicates that the initial mean raw and market-adjusted returns of privatisation IPOs are 45.25 percent and 47.67 percent above those of private sector IPOs respectively. The test statistic of 2.12 for initial market adjusted return indicates that the difference between returns of PIPOs and IPOs is statistically different from zero. However, test statistic of 1.91 for raw return difference is statistically insignificant. This indicates that privatisation IPOs are statistically significantly under priced more than the private sector IPOs. Hypothesis 1 which implies that the initial market adjusted return of privatisation IPOs is lower than for private sector IPOs, therefore, has to be rejected.

Table 3

Difference of Means between Short-run PIPOs and IPOs Returns

| Panel A: | |
|--|-------------|
| Difference between Raw PIPOs and IPOs Raw Returns | Mean |
| Initial Raw Return | 45.26 |
| <i>t</i> -statistic | 1.91 |
| <i>p</i> -values | 0.07 |
| Panel B: | |
| Difference between Market-adjusted PIPOs and IPOs Returns | Mean |
| Initial Market-adjusted Return | 47.67 |
| <i>t</i> -statistic | 2.12 |
| <i>p</i> -values | 0.04 |

Note: Returns are in percentages. In panel A it is tested whether the difference in the mean initial returns between PIPOs and private sector IPOs are significantly different from zero. In panel B it is tested whether the difference in the mean market-adjusted between PIPOs and IPOs are statistically different from zero.

Multivariate Analysis

Following the methodology of Aussenegg (2000), the following Ordinary Least Squares regression is performed on the data using initial (or first-day) market adjusted returns as the dependent variable. The market adjusted returns are calculated relative to KSE-100 Index.

$$IR_j = \beta_0 + \beta_1 F_j + \beta_2 Size_j + \epsilon_j \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (4)$$

Where IR_j is initial market-adjusted return of issue j , F_j stands for Portion of the share capital sold at the initial offer (for H_{03}), and $Size_j$ is Logarithmic market value of issue j on the first trading day (for H_{02}).

Table 4

Multivariate Cross-sectional Regression Analysis for Initial Excess Returns for the Whole Sample
 Model: $IR_j = \beta_0 + \beta_1 F_j + \beta_2 Size_j + \epsilon_j$

| | | | |
|----------------------|--------------------|--------------------|--------------|
| F-statistic | 11.741 | | |
| Prob. (F-statistic) | 0.000 | | |
| R-squared | 0.43 | Adjusted R-squared | 0.39 |
| Variable | Coefficient | t-statistic | Prob. |
| β_1 (Fraction) | 421.54 | 2.85 | 0.01 |
| β_2 (Size) | 32.77 | 4.67 | 0.00 |
| β_0 | -760.39 | -4.27 | 0.00 |

Table 4 presents results for Equation (4). The coefficient β_1 is positive and significant for Pakistan's private sector and Privatisation IPOs. This rejects the hypothesis 3, which states that high quality firms sell less at the initial offer. The results indicate that pure signalling theory is not applicable for Pakistani privatisation and private sector IPOs. Secondly, the coefficient β_2 (Size) is positive and significant which indicates that larger firms experience higher initial excess returns or, alternatively stated, higher under pricing. This contrasts to hypothesis 2. Results indicate that Government of Pakistan sold large and well-known enterprises at a lower issue price. This is in line with the government's commitment to generate support for its privatisation program in particular by under pricing the state-owned enterprises, to benefit retail investors and to help develop capital markets in general. Overall, both the variables, the portion sold and size of the issue, are able to explain some changes in the initial excess returns for Pakistan's privatisations and private sector IPOs.

Tests for Long Term Performance

This section examines the aftermarket performance of privatisation and private sector IPOs on the Karachi Stock Exchange by testing hypotheses 4, and 5 related to IPO's long-term performance. As stated earlier, long-run performance refers to the price behavior of the newly issued shares beyond the day of their listing. We estimate the simple (raw) returns by comparing the closing price of each IPO at the first trading day to the closing price at the end of each interval (one week, 2 weeks, 1 year and 2 years)¹. To calculate the post-listing performance of IPOs, buy-and-hold returns are calculated for each issue by the following equation:

$$BHR_{j,T} = \prod_{t=2}^T (1 + R_{j,t}) - 1 \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (5)$$

Where $BHR_{j,T}$ stands for buy-and-hold returns for a company j at time t , $R_{j,t}$ is the return of $IPO j$ in period t and $t=2$ represents the second trading day in the after market. $T = 1$ week, 2 weeks, 1 year and 2 years.

These returns measure the relative wealth gain (loss) of an investor who purchased an IPO at the market price of the first trading day and sold it at the end of the respective interval. From an investor point of view, these returns can indicate whether the opportunities for profits from investing in Pak IPOs extend to late buyers of IPO or are exhausted at the time of the public offering.

Market Adjusted (Excess) Returns

To calculate the abnormal performance of IPO after the first trading day in the market, KSE-100 (value-weighted) index is used in this paper as a benchmark. Similar to Equation (5), the Buy-and-Hold Return of the KSE-100 Index for $IPO j$ ($BHR_{kse,j,t}$) is calculated as:

$$BHR_{kse,j,T} = \prod_{t=2}^T (1 + R_{kse,j,t}) - 1 \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (6)$$

$R_{kse,j,t}$ is the return on KSE-100 Index in period t where $t=2$ indicates the second trading day of the IPO in the market.

Abnormal buy-and-hold returns (ABHRs) are used in the paper to measure the market-adjusted performance. To calculate the market-adjusted returns, we simply subtract the market return from the simple return of each respective interval. ABHRs are thus defined by the following equation:

$$ABHR_{j,T} = BHR_{j,T} - BHR_{kse,j,T} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (7)$$

Table 5 presents aftermarket performance for All IPOs, PIPOs and IPOs. Panel A refers to the raw returns whereas panel B refers to the market-adjusted (excess) returns. Column 1 shows different specifications of the returns, column 2 the average and median returns for each interval for the whole sample, column 3 and 4 the

¹Same methodology was also followed by Aussenegg (2000).

Table 5

Aftermarket Performance

| | (1) Period | (2) All | | (3) PIPOs | | (4) IPOs | |
|--|----------------|--------------------------|--------|--------------------------|--------|-------------------------|--------|
| | | Mean | Median | Mean | Median | Mean | Median |
| Panel A: Simple (Raw) Returns | | | | | | | |
| BHR | 1 Week | 1.56 (0.82) | 0.34 | -2.73 (-1.02) | 0.29 | 2.67 (1.19) | 0.39 |
| | 2 Weeks | -3.11 (-0.79) | -2.1 | -4.35 (-0.64) | -6.44 | -2.79 (-0.59) | -1.64 |
| | 1 Year | 30.68 (2.05) | -9.17 | 31.08 (1.58) | 51.87 | 30.57 (1.67) | -19 |
| | 2 Years | 63.87 (3.23) | 13.05 | 109.7 (2.8) | 138.81 | 51.98 (2.31) | 1.91 |
| KSE | 1 Week | 0.92 (1.05) | 0.96 | -0.4 (-0.31) | -0.54 | 1.27 (1.21) | 1.85 |
| | 2 Weeks | 2.12 (2.25) | 3.04 | 1.64 (0.68) | 4.36 | 2.25 (2.17) | 2.88 |
| | 1 Year | 41.94 (7.76) | 42.74 | 45.69 (5.5) | 44.03 | 40.97 (6.29) | 41.16 |
| | 2 Years | 87.55 (8.43) | 77.27 | 97.02 (4.77) | 99.8 | 85.09 (7.03) | 77.27 |
| Panel B: Market-adjusted (Excess) Returns | | | | | | | |
| ABHR | 1 Week | 0.64 (0.34) | 1.07 | -2.33 (-1.08) | 1.16 | 1.41 (0.61) | 0.98 |
| | 2 Weeks | -5.24 (-1.37) | -3.89 | -5.99 (-0.9) | -2.44 | -5.04 (-1.11) | -4.29 |
| | 1 Year | -11.26 (-0.78) | -53.49 | -14.61 (-0.89) | -2.81 | -10.4 (-0.58) | -59.84 |
| | 2 Years | -23.68 (-1.26) | -45.98 | 12.69 (0.52) | 19.77 | -33.11 (-1.46) | -56.82 |

Note: BHR stands for buy-and-hold raw return, KSE represents KSE-100 Index returns and ABHR stands for Abnormal buy-and-hold returns calculated by Equation (7). 'All' stands for all IPO sample issues, PIPO represents privatisation Initial Public Offerings, IPOs stands for public sector Initial Public Offerings. BHR are calculated by Equation (5). All mean and median values are in percentages. *T*-stat in parenthesis

average and median returns for PIPOs and IPOs respectively. As shown in Table 5, the average simple (raw) returns one week and two weeks after listing is 1.56 percent and -3.11 percent respectively. The negative average simple returns for two weeks interval indicate that investing in Pak IPOs by buying after the offering period is not a profitable strategy, at least, in the short run. For the intervals of 12 and 24 months after listing, the average simple returns are 30.68 percent and 68.87 percent respectively. As shown by many such other studies [see e.g., Aussenegg (2000)], the short run aftermarket performance (for the first one and two weeks) is not statistically significant. The Annual Buy-and-Hold return over the first two weeks for a sample of all issues is -5.24 percent. Similarly, we observe negative short run (one week and two week period returns) abnormal returns for privatisation as well as private sector IPOs. The statistically insignificant short-run results show that the after market is quite efficient, and most prices adjust reasonably quickly when

trading begins in the shares of the company. This implies that for Pakistan's IPOs there is full price adjustment in the short run. The long run aftermarket performance for the first two years shows some differences among the three samples.

An Investor who bought the shares of the IPO at the closing price on the first trading day in the market and held it for one year, earned mean and median excess returns of 11.26 percent and 14.61 percent respectively. The average excess returns corresponds to -23.68 percent for holding period of two years. In contrast, the two-year long-run performance of privatisation IPOs is not only positive (12.69 percent) but also very large when compared with the mean return of private sector IPOs, which is negative (-33.11 percent), though both the values are not significant. The hypothesis 4 (long-run non-negative PIPOs performance) can therefore, be accepted on the basis of above results.

The positive long run performance of Pakistan's privatisation IPOs, which has been remarkably better than the private sector IPOs in Pakistan's market, is indication for a market-oriented government. Privatisation IPOs provide significant mean (raw) 2-year return of 109.70 percent. This is almost two times higher than the average returns of private sector IPOs. Like Privatisation IPOs, private sector IPOs also experience statistically significant unadjusted average returns for the first two years. The mean ABHR is -31.11 percent (Table 5). Pakistani private sector IPOs therefore, tend to under perform in the long run. This is in contrast to the long run performance of privatisation IPOs that out perform the market in the long run with mean excess return of 12.69 percent, though it is statistically insignificant (Table 5).

Hypothesis 5 states that Pakistan's PIPOs experience better long run abnormal performance than their private sector IPOs. The results for hypothesis are reported in Table 6. The table reveals that the 2-year abnormal performance difference (difference in ABHRs) is positive (45.79 percent) but statistically insignificant. Therefore, we reject hypothesis 5. This result is in line with findings for Malaysia [see e.g, Paudyal, *et. al* (1998)] and Poland [Aussenege (2000)].

Table 6

Test for Differences in the Long-run Aftermarket Performance
Difference between Privatisation IPOs and Private Sector IPOs (PIPOs minus IPOs)

| | BHR | ABHR |
|---------------------|----------|----------|
| Period | Issues | |
| 1 Year | 0.5071 | -4.21359 |
| <i>t</i> -statistic | 0.013502 | 0.116052 |
| <i>p</i> -values | 0.989311 | 0.908337 |
| 2 Years | 57.7216 | 45.7964 |
| <i>t</i> -statistic | 1.187912 | 0.984663 |
| <i>p</i> -values | 0.243611 | 0.332176 |

Note: This table provides mean differences between privation IPOs and private sector IPOs (PIPOs minus IPOs) for buy-and-hold (BHRs) and abnormal buy-and-hold returns (ABHRs).

4. CONCLUSION

This paper examines the short and long run price behaviour of Privatisation and private sector IPOs in Pakistan. Privatisation process in Pakistan got tremendous boost and momentum during the Musharaf regime and many large and profitable firms were privatised in the last few years, particularly at a time when the overall climate in the country was responsive and conducive for investment. The government, however, privatised many firms through public offerings on an individual case basis.

The study uses data for the period from 2000 to 2006 as major privatisation took place during this period. Short and long run IPO performances were measured and examined in the context of privatisation and private sector IPOs. Empirical results of this study indicate that privatisation IPOs are statistically significantly under priced more than the private sector IPOs in the short run. The difference between mean market-adjusted returns of Public sector and private sector IPOs is statistically different from zero. H_{01} was, therefore, rejected. A multivariate cross-sectional analysis reveals that, pure signaling models can not be used to explain the initial excess returns of Pakistani Public and private sector IPOs. One plausible explanation for this result might be that, given a higher political uncertainty, a government may be tempted to selling a large portion to transfer control rights credibly. This was the case when government of Pakistan sold 26 percent stake in Pakistan Telecommunication, a telecom giant in Pakistan and also transferred control rights with the sale. Secondly, the initial excess return of all IPOs has positive relation with firm size which indicates that larger firms experience higher initial excess returns. Results indicate that Government of Pakistan sold big and well-known enterprises at a lower issue price. This is in line with the government's commitment to generate support for its privatisation program in particular and to develop capital markets in general. A positive long run price performance of Pakistan's public sector IPOs is indication for a market- oriented government. The long-run share price performance of public sector IPOs has been remarkably better than the private sector IPOs in Pakistan's market.

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