

Long run performance of privatization versus private sector Industrial IPOs in Pakistan

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Abstract

The performance of industrial initial public offerings (IPO) in both the short-run and the long run is examined, based on a sample of 35 Pakistani offerings from 2000 to 2006. In particular, it compares the price behavior of privatization initial public offerings and private sector initial public offering in Pakistan. By analyzing a sample of 35 industrial IPOs, it can be concluded that IPOs tend to out perform the market with a positive initial market-adjusted return of 36.48%. This is consistent with the previous international evidence on new issues, which consistently finds excess returns in the short-run.

The long run aftermarket performance for the first two years shows some differences between the three samples. For the sample of all issues the ABHR return is -23.68%. On the other hand, the two years long run performance of privatization IPOs is not only positive (12.69%) but also very large when compared with the private sector IPOs, which is negative (-33.11%), though both the values are not significantly different from zero.

The long run performance of privatization IPOs has been remarkably better than the private sector IPOs in Pakistan's market. Privatization IPOs yield a highly significant mean unadjusted 2-year return of 109.70%. This is nearly two times higher than the average BHR of private sector IPOs.

Field of Research: Finance

I. Introduction

The private sector played an important role in the economic developed of the country in its initial years in the 1950s. Almost all the economic activities were open to the private sector with the exception of infrastructure (Kemal (1993). However, the growth of private sector suffered a set back in the decade of 70s, when a huge process of nationalization of a large number of private industrial units was undertaken by the then government. Important private industrial units and enterprises like banks, insurance companies, energy, communications, ghee and rice mills were taken over by the public sector in a series of nationalization programs in 70s. (see e. g., Hasna, 1998). Since the early 1970s, as in most developing countries, Pakistan has relied on the public sector to

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operate almost all infrastructure and financial services and many industrial units. Over the decades the experiment proved to be a failure because of a number of factors including mismanagement and overstaffing, inappropriate and costly investments, poor quality and coverage of services by the State Owned Enterprises (SOEs), high debt via coerced lending from state-owned banks and fiscal losses and production and profits that were well below their potential (Pakistan privatization policy). Consequently most of the publicly owned industrial units in Pakistan currently are making losses. Not only do the consumers pay for the losses by paying higher taxes, the quality of most industrial goods is below comparable imported products and their prices are often higher.

Privatization was systematically initiated by the then government in the early 1990s. Various privatization commissions were set up in subsequent years and the privatization process got some momentum during the present government and many large and profitable firms were privatized 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, privatized many firms through public offerings on a case-by-case basis. Privatization is aimed at strengthening public finances and bringing in new investment while simultaneously enhancing the quantity and quality of goods and services.

The objectives of this paper are; first, to what degree Privatization IPO's and private sector IPOs differ with respect to under-pricing in Pakistan? Second, how can the under-pricing of Privatization IPOs and private sector IPOs be explained? Third, how does the long-run performance of Privatization IPOs compare to private sector IPOs and how does the fraction sold affect the long-run performance of Privatization IPOs?

Karachi Stock Exchange (KSE), established in 1947, is the oldest and the most active of the three stock exchanges in Pakistan, and currently lists 662 companies with a total market capitalization of about \$52 billion. The KSE-100 Index represents major blue chips companies and is fairly representative of the market. Besides the KSE-100, there are two regional stock exchanges in Lahore and Islamabad. The other two exchanges are however relatively inactive.

Two major methods for going public are used around the world. The initial public offering can be made by either a fixed-price offer or offers for sale by tender. In the U.S. and UK, IPOs are generally issued via the fixed-price offer method, where potential investors specify the number of shares to which they wish to subscribe at a pre-announced price. In Pakistan, firms employ the fixed-price method to go public and the shares are sold in lots with each lot consisting of either 200, 500 or 1000 shares. 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 PIPOs 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 first day return of 35.66% for subscribers. In analyzing 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% 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. 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. The present paper also compares the performance of privatization IPOs with private sector IPOs with major focus on how much government of Pakistan’s privatization program is successful and how PIPOs have performed relative to IPOs. 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 PIPOs 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 summarized as follows. First, The results provide evidence consistent with previous empirical findings that report short-term excess returns associated with IPOs. Additionally, results indicate that privatization IPOs are statistically significantly under priced more than the private sector IPOs. Second, a multivariate cross-sectional analysis reveals that, pure signaling models are not able to explain the initial market-adjusted return of Pakistan PIPOs and private sector IPOs. Third, the initial market-adjusted return of PIPOs and IPOs is positively related to firm size which indicates that the larger the firm, higher the initial market-adjusted return which shows that Government of Pakistan sold large and well-known enterprises at a lower issue price which reveals the evidence that Pakistan government is market-oriented, trying to build up its reputation for its privatization policy by under-pricing. Fourth, the two-year long run performance of PIPOs is very large when compared with the private sector IPOs, which is negative, though both the values are not significantly different from zero. The hypothesis 4 can therefore, be accepted on the basis of above results. The long run performance of privatization IPOs has been remarkably better than the private sector IPOs in Pakistan’s market.

The rest of the paper is organized as follows. Section 2 reviews the empirical evidence of studies examining the price performance of Privatization IPOs and presents testable hypotheses about the short- and long-run price behavior of PIPOs and IPOs. Section three describes the data and methodology and discusses empirical results of the study and section four concludes the paper.

Literature Review and Testable Hypotheses

A. The under-pricing of Privatization IPOs and IPOs

Numerous empirical studies focusing on privately owned new issues identified two main phenomena: Positive initial returns or 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% for a 15-month period. Studies analyzing the price behavior of privatized state-owned enterprises show that Privatization IPOs are, on average, also under-priced. Early studies in this topic were carried out by Jenkinson and Mayer (1988) for French and UK IPOs. Other studies are for example Perotti and Guney (1993), Dewenter and Malatesta (1997), Huang and Levich (1998) and recently Jones et al. (1999) they study a 59-country sample of Privatization IPOs and they document 34.1% an average initial return. A significantly positive under-pricing also observed for Hungarian PIPOs (see Jelic and Briston (1999)).

There are only few studies comparing the price behavior and the characteristics of Privatization IPOs and private sector IPOs. These studies find contrasting empirical evidence though. Choi and Nam (1998) studied 185 privatizations in 30 countries and found those privatizations IPOs were on average more under priced than IPOs of privately owned enterprises. Considering information asymmetry for UK privatizations, Meyah et al. (1990) proposed that UK privatization should not possess differential information because of large amount of prior 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. On the other hand, Dewenter and Malatesta (1997) find no general tendency for privatizations to be under-priced more than private sector IPOs for a 7-country sample. Similar results were provided by Jelic and Briston (1999) for Hungary and Easto and Pinder (1996) for seven Australian PIPOs from 1989 to 1995 who conclude these PIPOs were no more under priced than non public sector IPOs. In contrast, Ausennege (2000) Paudyal, Saadouni, and Briston (1998) report that the average initial return on Spanish and Malaysian PIPOs is significantly higher than on private sector IPOs respectively.

Many theories have been put forward to explain the under-pricing of initial public offerings. In order to formulate hypotheses to explain the first-day return level of Pakistan Privatization IPOs and private sector IPOs, the most common and for Pakistan most relevant testable explanations will be examined.

Asymmetric information theories imply that the uncertainty about the value of smaller, not established firms is higher than that of larger, well-known firms. As larger firms are better known to investors, they should be easier to value and, hence experience a lower initial market-adjusted return. As Privatization IPOs tend to be larger than private sector IPOs this hypothesis also suggests that initial returns in PIPOs should be lower than initial returns in private sector IPOs. We test the following hypotheses:

Hypothesis 1: The initial mean market-adjusted return of Privatization IPOs is lower than for private sector IPOs.

Hypothesis 2: The initial market-adjusted return of large firms is lower than for small firms.

Seasoned Offerings

Rittner (1991), and Welch (1989) conclude that issuing firms possess better information about the true value of the offer than most of the investors. In these (pure) signaling models, high quality firms sell a low fraction of the share capital at the initial offer and purposely choose an offer price below the intrinsic value to signal their quality to investors (Ausennegg, 2000). This under-pricing is motivated by the possibility of achieving higher offer prices in subsequent seasoned issues. The capital raised in future offering will more than compensate for the initial under pricing. We test the following hypothesis:

Hypothesis 3: High-quality firms will under-price their issues and offer only a small fraction of their share capital at the initial issue. This implies a negative relationship between the initial market-adjusted return and the fraction of the share capital sold at the initial offer.

B. The Long-Run Performance of Privatization IPOs and IPOs

The empirical evidence of the long-run performance of privatizations indicates that Privatization IPOs and private sector IPOs do not perform similarly. Evidence supports the notion that Private sector IPOs mostly experience a negative excess return over the first three to four years of aftermarket trading, whereas Privatization IPOs mainly experience a better or an equal aftermarket performance to that of benchmark firms. For example, Megginson et al. (2000) document a significantly positive aftermarket performance for a 33-country sample of privatizations and Menyah and Paudyal (1996) for a sample of UK Privatization IPOs. Similar results are reported by Jelic and Briston (1999) for Hungarian Privatization IPOs. We test the following hypothesis for Pakistan's privatizations:

Hypothesis 4: The long-run aftermarket is non-negative for Pakistan Privatization IPOs.

Going public is a one-time event for a private sector firm and their managers/owners whereas for the government, going public is a continuous event as it sells many firms in the course of time. A committed government will therefore be interested in a good long-run performance in order to attract investors for future issues. The following hypothesis is therefore, test:

Hypothesis 5: The long-run abnormal performance is significantly better for Privatization IPOs than for private sector IPOs.

Data and Methodology

Data and sample characteristics

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 privatization 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, to be included in the sample, a company must have 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 privatization IPOs and remaining 28 are from private sector IPOs. The privatization IPO companies are controlled by Government of Pakistan and for most of them 100 percent of the shares were held by the government prior to the issue. Table 1 reports for the sample of privatization IPOs and private sector IPOs as well as the total sample number of issues per year.

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 Privatization Initial Public Offerings and IPOs stands for Initial Public Offerings for private sector firms.

Three main sources were used to collect the data for the sample. First, the historical database of the Karachi Stock Exchange for sample companies announcement history. Second, online data base of Business recorder, Pakistan's premier first financial daily stock prices on the companies for a period of two years for each company beginning from the formal enlisting on the Karachi Stock Exchange. Third, yahoo finance which provides information on daily stock prices for KSE-100 Index.

Methodology

Short-term performance

The objective of this paper is to analyze 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 behavior of the initial returns of the IPOs, that is, the return realized in the interval from the offering of the shares to the first trading day on the KSE. The long-run performance refers to the price behavior of the newly issued shares beyond the day of their listing. In this study we analyze 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.

First, we calculate initial raw returns and initial market-adjusted returns. Following the methodology of Asussenegg (2000), the initial raw return for IPO_j corresponds to its buy-and-hold return (BHR) from the issue price to the closing price on the first trading day and is defined as:

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

Where $P_{j,0}$ represents 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 realized 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) 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 for each IPO is defined as the difference between initial raw return (BHR_j) and the corresponding return on the market index: market adjusted returns are thus calculated as increases in share price over and above the returns achieved by KSE-100 Index over the same period.

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

Where IR_j is initial market adjusted return of an IPO j and $BHR_{kse,j}$ is the buy-and-hold return of the KSE-100 Index, a bench mark index.

Similar to equation (1) the BHR for KSE-100 index is calculated as:

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

$KSE_{j,0}$ 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 end of the first trading day of the IPO j .

Summary statistics for raw (simple) returns and market-adjusted (excess) returns for all companies; privatization IPOs and private sector IPOs are reported in Table 2

Table 2—Descriptive Summary Statistics of Initial (Short term) Pakistani PIPOs and IPOs Returns from 2000 to 2006.

	Initial Raw Return Panel: A			Initial Market-Adjusted Return Panel: B		
	All	PIPOs	IPOs	All	PIPOs	IPOs
Mean	41.89*	77.828*	32.573*	36.476*	74.332*	26.662*
T-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 Privatization 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% 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% 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% raw return on its investment. On the other hand, if the investor had invested only in the privatization IPOs, his or her investment would have yielded 77.28% 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 realize 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% for all, 74.33% for privatization IPOs and 26.67% for private sector IPOs. These findings suggest that relative to the rest of the market Pakistan IPO investors realized 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 Khalid and Nasr (2007) for Pakistan's market and previous research in other markets (see e.g. Aussenegg, 200), Pakistan's privatization 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 PIPOs and 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 privatization IPOs are 45.25% 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 privatization IPOs are statistically significantly under priced more than the private sector IPOs. Hypothesis 1 which implies that the initial market adjusted return of privatization 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
T-statistic	1.91
P-values	0.07
Panel B:	
Difference between Market-adjusted PIPOs and IPOs Returns	Mean
Initial Market-adjusted Return	47.67
T-statistic	2.12
P-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 Cross-Sectional Analysis

We investigate the determinants of the initial market-adjusted returns in PIPOs and private sectors IPOs in a multivariate cross-sectional analysis using Ausenegg (2000) methodology. 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.

$$IR_j = \beta_0 + \beta_1 F_j + \beta_2 Size_j + \varepsilon_j \text{-----(4)}$$

Where IR_j = initial market-adjusted return of issue j

F_j = Fraction of the share capital sold at the initial offer (for hypothesis 3), and

$Size_j$ = Logarithmic market value of issue j on first trading day (for hypothesis 2)

Table 4—Multivariate Cross-Sectional Regression Analysis

Model: $IR_j = \beta_0 + \beta_1 F_j + \beta_2 Size_j + \varepsilon_j \text{-----(4)}$

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 the regression results of equation (4). The coefficient for the fraction of the share capital sold at the initial offer (β_1) is significantly positively related to the initial market-adjusted return of Pakistan's private sector IPOs and PIPOs. This rejects the hypothesis 3, which states that high quality firms sell less at the initial offer. The results indicate that pure signaling theory is not applicable for Pakistani privatization and private sector IPOs. One interpretation for this result might be that a higher political uncertainty require selling a large fraction to transfer control rights credibly (Ausenegg, 2000). Secondly, the initial market-adjusted return of PIPOs and IPOs is positively related to firm size which indicates that the larger the firm the higher the initial market-adjusted return or higher the under pricing. Hypothesis 2 states that smaller firms should experience a higher initial market-adjusted return because they are less known. The regression results in Table 4 reports results that are in contrast to hypothesis 2. Results indicate that Government of Pakistan sold large and well-known enterprises at a lower issue price. This is consistent with the present government's commitment to generate support for its privatization program in particular by building reputation for its privatization policy over time by under pricing and to develop capital markets in general. Overall, both the variables have the expected explanatory power for the initial market-adjusted return of Pakistan's PIPOs and IPOs.

Tests for Long Term Performance

It is important to examine new issues from the viewpoint of the investor who purchases the stock in the aftermarket. This section, therefore, examines the aftermarket performance of privatization and private sector IPOs on the Karachi Stock Exchange by testing three specific hypotheses (hypothesis 4, 5 and 6) 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).

To calculate the aftermarket performance of IPOs, buy-and-hold returns are calculated for each issue by the following equation:

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

Where $R_{j,t}$ is the return of IPO j in period t and $t=2$ indicates 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 and 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 measure the abnormal performance of IPO in the aftermarket, KSE-100 (value-weighted) index is used in the paper as a benchmark. Similar to equation (5), the BHR of the KSE-100 for IPO j ($BHR_{kse,j,t}$) is calculated as:

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

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

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:

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

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 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 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% and -3.11% 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% and 68.87% respectively. As shown by many such other studies (see e.g., Ausenegg 2000), the short run aftermarket performance (for the first one and two weeks) is not significantly different from zero. The ABHR over the first two weeks for a sample of all issues is -5.24%. Similarly, we observe negative short run (one week and two week period returns) abnormal returns for privatization as well as private sector IPOs. The statistically insignificant short-run results show that the after market is quite efficient, and most prices adjusts fairly quickly after trading starts. 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. Investors who purchased the issues in the aftermarket at the closing price on the first trading day and held for one year received mean and median excess returns of 11.26% and 14.61% respectively. The mean excess returns become -23.68% for holding period of two years. On the other hand, the two years long run performance of privatization IPOs is not only positive (12.69%) but also very large when compared with the mean return of private sector IPOs, which is negative (-33.11%), though both the values are not significantly different from zero. The hypothesis 4 (long-run non-negative PIPOs performance) can therefore, be accepted on the basis of above results. It could be expected that a market-oriented government trying to build up reputation over time, be not interested in a significantly negative long performance of

privatization IPOs (Perotti, 1995). The non-negative long run performance of Pakistan's privatization IPOs is indication for a market-oriented government.

The long run performance of privatization IPOs has been remarkably better than the private sector IPOs in Pakistan's market. Privatization IPOs yield a highly significant mean unadjusted 2-year return of 109.70%. This is nearly two times higher than the average BHR of private sector IPOs. Like PIPOs, private sector IPOs also experience statistically significant unadjusted average returns over the first two years. The mean ABHR is -31.11% (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 privatization IPOs that out perform the market in the long run with mean excess return of 12.69%, though it is statistically insignificant (Table 5).

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	-45.98	12.69	19.77	-33.11	-56.82
	(-1.26)		(0.52)		(-1.46)	

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 privatization 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

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%) 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 (Ausenegg, 2000).

Table 6—Test for differences in the Long-run aftermarket performance. Difference between privatization IPOs and private sector IPOs (PIPOs minus IPOs)

Period	BHR Issues	ABHR
1 year	0.5071	-4.21359
t-statistic	0.013502	0.116052
p-values	0.989311	0.908337
2 Years	57.7216	45.7964
t-statistic	1.187912	0.984663
p-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)

Conclusion

This paper examines the short and long run price behavior of two groups of firms going public in Pakistan: Privatization Initial Public Offerings (PIPOs) and private sector IPOs. Privatization process in Pakistan got tremendous boost and momentum during the present government and many large and profitable firms were privatized 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, privatized many firms through public offerings on a case-by-case basis. The study uses data for the period from 2000 to 2006 as major privatization took place during this period. Short and long run IPO performances were measured and examined in the context of privatization and private sector IPOs.

Results indicate that privatization IPOs are statistically significantly under priced more than the private sector IPOs in the short run. The difference between mean market-adjusted returns of PIPOs and IPOs is statistically different from zero. Hypothesis 1 which implies that the initial market adjusted return of privatization IPOs is lower than for private sector IPOs was, therefore, rejected.

A multivariate cross-sectional analysis reveals that, pure signaling models are not able to explain the initial market-adjusted return of Pakistan PIPOs and private sector IPOs. One interpretation for this result might be that a higher political uncertainty, require selling a large fraction to transfer control rights credibly (Ausenegg, 2000). Secondly, the initial market-adjusted return of PIPOs and IPOs is positively related to firm size which indicates that the larger the firm, higher the initial market-adjusted return. Hypothesis 2 states that smaller firms should experience a higher initial market-adjusted return because they are less known. Hypothesis 2 is rejected in Pakistan's case. Results indicate that Government of Pakistan sold big and well-known enterprises at a lower issue price. This is in consistent with the present government's commitment to generate support for its privatization program in particular and to develop capital markets in general.

The long run aftermarket performance for the first two years shows some differences between the three samples. For the sample of all issues the ABHR return is -23.68%. On the other hand, the two years long run performance of privatization IPOs is not only positive (12.69%) but also very large when compared with the private sector IPOs, which is negative (-33.11%), tough both the values are not significantly different from zero. The hypothesis 4 can therefore, be accepted on the basis of above results. It could be expected that a market-oriented government trying to build up reputation over time, be not interested in a significantly negative long performance of privatization IPOs (Perotti, 1995). The non-negative long run performance of Pakistan's privatization IPOs is indication for a market-oriented government.

The long run performance of privatization IPOs has been remarkably better than the private sector IPOs in Pakistan's market. Privatization IPOs yield a highly significant mean unadjusted 2-year return of 109.70%. This is nearly two times higher than the average BHR of private sector IPOs.

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