

Performance of Initial Public Offerings in Public and Private Owned Firms of Pakistan

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Introduction

- ❑ When any private company first time sells his stock to general public is known as Initial Public offerings, while the term privatization of IPO refers to the procedure through which a government initially transfers ownership of assets and control of commercial activities to the private sector.
- ❑ Firms undergo IPO process for a variety of reasons:
 - IPOs forms the exit strategy for the present owners.
 - To meet high growth rates capital-raise by the IPO.
 - vertical and/or horizontal integration.
 - To meet the expansion requirements.

Introduction (cont'd)

- ❑ There are three most important anomalies found in the IPOs, the initial underpricing, the “hot issue” market phenomenon, and the long run under performance.
- ❑ Theoretical & empirical findings on the IPOs' abnormal stock returns, both in short-run and in long run, explain the puzzling phenomena and postulate new hypotheses. e.g. indicate an average IPO is underpriced. (Aggarwal, 1993; Loughran and Ritter, 2000).
- ❑ Underpricing phenomena, ownership structure are found to be important characteristics of IPO process by Varshney and Robinson (2004).
- ❑ In Pakistan IPO has increased due to privatization of public firms and expansion of private firms. This is the main motivation to see how public and private IPOs perform on first trading day, in short and long run.

Objectives

- ❑ The objectives of the study are as follows:
 - To measure, analyze and compare the IPO performance of short run for first trading day, weekly, over 3 and 6 months and the long-run aftermarket performance for first five years of public and private owned firms listed at the KSE.
 - The study examines the factors that affect the degree of underpricing and aftermarket performance of public and private IPOs.
 - The study also distinguishes the association of ownership structure and level of underpricing for public and private IPOs.

Research Gap

- ❑ Most of the research on this issue is done in developed markets. But in developing markets this area is still less explored. Especially in case of Pakistan, there is only one study which explicitly compared IPOs performance for private and privatize enterprises.
- ❑ This is the first study which compares the short run performance till 6 months, while long run aftermarket performance up to five years with their determinants, study also compares the association between underpricing and ownership structure for both public and private IPOs listed at KSE.
- ❑ The study provides information to investors, government, researchers, Capital Markets Authority and other regulatory agencies about short-run and long-run performance of IPOs.

Literature Review

Researcher	year	Research
Menyah and Paudyal	1996	Concludes Privatization IPOs offer a significant (market adjusted) underpricing of +38.70%, compared to 3.48% for private sector issues. The long-run performance is also better for privatization IPOs with a significant (BHAR) of +60.97%, in contrast to only +3.01% (not significant) for private sector IPOs. PIPO has higher IR and concentration ratio in ownership than private IPO.
Choi and Nam	1998	Concludes that privatization IPOs are underpriced to a greater degree than private IPOs. confirms +ve relation bw UP & ex-Ante uncertainty and stake sold.
Aussenegg	1999	IR +62% of privatization IPOs is about 40% points above the underpricing of private sector IPOs. +ve relation btw underpricing & subscription & stake sold. Privatize IPO experience a significantly better long-run performance (BHAR=+180 percentage points) than private IPOs

Literature Review

Researcher	Year	Research
Suchard and Singh	2007	PIPOs are significantly more underpriced than IPOs of privately owned companies and Australian PIPOs are significantly less underpriced than IPOs of privately owned companies. underperformance of IPOs of privately owned companies and the over-performance of PIPOs .
Rizwan and Khan	2007	MAR of PIPOs are 45.25% and 47.67 percent above those of private sector IPOs. The long run performance of privatization IPOs (12.69%) has been remarkably better than the private sector IPOs (-33.11%). Concludes +ve relation btw IR & stake sold and firm size.

Theoretical Background & Development of Hypothesis

Asymmetric Information Theory

- *H1: The mean initial market-adjusted return of privatize IPOs is lower than for public IPOs.*
- *H2: There is a negative relationship between underpricing and firm Size.*
- *H3: There is a positive relationship between underpricing and oversubscription.*
- *H4: There is a positive relationship between underpricing and ex-ante uncertainty.*

Market Volatility

- *H5: The relationship between the level of underpricing and the market volatility is positive.*

Theoretical Background & Development of Hypothesis

Signaling Theory

- *H6: There is a positive relationship between the initial market-adjusted return and the retention ratio of the shares at the initial offer.*
- *H7: The relationship between the level of underpricing and the fraction of the share retain at the initial offer is negative for privatize IPOs.*
- *H8: The larger the size of offer, the lower the underpricing.*
- *H9: The correlation between ownership structure and underpricing is higher in privatize IPOs than public IPOs.*

Divergence of Opinion

- *H10: The long-run abnormal performance of privatize IPOs is significantly better than the public IPOs.*
- *H11: For privatize IPOs the long-run aftermarket performance over 5 years is non-negative.*

Theoretical Background & Development of Hypothesis

Investor Sentiment Theory

- *H12: There is negative relation between subscription ratio and long run performance.*

Political Influence

- *H13: The lower the fraction of the shares owned at the initial offer, the lower is the direct political influence. This implies a better restructuring and therefore a better long-run abnormal performance.*

Measure of Initial Returns

Market Adjusted
Initial Return


$$\ln MAR_{i,t} = \ln\left(\frac{P_{i,t}}{P_{i,t-1}}\right) - \ln\left(\frac{I_{i,t}}{I_{i,t-1}}\right)$$


$$MAR_t = \frac{1}{n} \sum_{i=0}^n MAR_{i,t}$$

Measure of Aftermarket Performance

Aftermarket
Performance

$$[\prod_{t=1}^T (1 + R_{i,t}) - 1] - [\prod_{t=1}^t (1 + R_{KSE,i,t}) - 1]$$

$$BHAR_T = \frac{1}{n} \sum_{i=0}^n BHAR_{i,t}$$

Variables Definition

Measures of Ownership Structure

Equality of
S.H

- $Block = (\sum_{k=1}^m Blocksize - Retain) / offersize$

Herfindahl-
Hirschmann
Index

$$HHI = \sum_{i=1}^5 S_i^2$$

Variables Definition

- . Firm Size
- . Subscription Ratio
- . Retention Ratio
- . Aftermarket Risk

- . Natural log of total assets of issue at the listing time.
- . Times Subscribed
- . No. of share holdings by issuers.
- . S.D of daily share returns during first trading month.

Variables Definition

. Issue
Proceeds

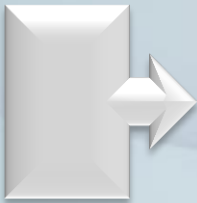
. Mkt
Volatility

. ROA

- Natural log of market capitalization of issue after listing.
- S.D of daily returns of KSE index.
- Net income by total assets.

Empirical Model

Determinants of Underpricing for Privatized & Private IPOs


$$MAR_i = \alpha_0 + \beta_1 D_SOE_i + \beta_2 M_volt_i + \beta_3 F_Size_i + \beta_4 Subs_i \\ + \beta_5 Risk_i + \beta_6 Ret_own_i + \beta_7 I_Proceeds_i + \varepsilon_i$$

Aftermarket Long Run Determinants of Privatized & Private IPOs


$$BHAR_i = \alpha_0 + \beta_1 MAR_i + \beta_2 D_SOE_i + \beta_3 M_volt_i + \beta_4 F_Size_i \\ + \beta_5 Subs_i + \beta_6 Ret_own_i + \beta_7 Risk_i + \beta_8 I_Proceeds_i + \varepsilon_i$$

Empirical Model

Effect of Ownership Structure on Underpricing for Privatized & Private IPOs


$$\text{Ownership}_i = \alpha_0 + \beta_1 \text{MAR}_i + \beta_2 \text{D_SOE}_i + \beta_3 \text{F_Size}_i + \beta_4 \text{Subs}_i + \beta_5 \text{ROA}_i + \beta_6 \text{Risk}_i + \varepsilon_i$$

Data & Sample Selection

Observations are from
Mar 2001 - June 2015

61 privately owned & 11
state owned companies
IPOs are listed at KSE.

Event study

Data is taken from
prospectuses collected from
SECP annual reports, balance
sheet analysis and KSE.

Results of Initial Return (Raw and Market adjusted) of Public and Private IPOs

Initial Raw Return				Initial Market adjusted Return		
	All	SOE	Non-SOE	All	SOE	Non-SOE
Mean	23.485	27.323	22.792	23.320	27.652	22.539
Probability	0.008*	0.687	0.033**	0.015*	0.654	0.048**
Median	9.198	20.943	8.158	8.940	19.763	6.956
Maximum	144.186	75.056	144.186	142.459	74.186	142.459
Minimum	-96.496	-9.531	-96.496	-98.101	-10.107	-98.101
Std.dev	43.114	26.333	45.616	43.377	27.022	45.835
Obs.	72	11	61	72	11	61

Panel A: Difference between Initial Raw Returns of Public and Private IPOs

Initial Raw Return	4.531
P-values	0.75

Panel B: Difference between Initial Mean MAR of Public and Private IPOs

Initial Mean Market adjusted Return	5.112
P-values	0.72

Note: * indicates significance at 1%, **significance at 5%,*** significance at 10%.

Results of Aftermarket Performance of IPOs (Short and Long Run)

Sample	Period	N	BHR%		WR	BHAR%	
			Issues	KSE		Mean	Median
All	1 week	72	24.915 (0.547)	0.428 (0.138)	1.34	24.487 (0.263)	19.982
	2 weeks	72	23.890 (0.615)	1.169 (0.519)	1.31	22.721 (0.594)	18.240
	1 month	72	23.639 (0.164)	2.323 (0.310)	1.29	21.315 (0.451)	9.431
	2 months	72	21.283 (0.206)	2.661* (0.000)	1.25	18.622 (0.439)	9.260
	3 months	72	22.185 (0.180)	4.26 (0.212)	1.24	18.680 (0.537)	2.731
	6 months	71	24.456 (0.362)	7.252*** (0.091)	1.22	17.879 (0.748)	-1.427
	1 year	66	28.556* (0.000)	17.540 (0.191)	1.13	12.760* (0.000)	-13.531
	2 years	65	20.905* (0.000)	4.024*** (0.088)	1.24	-18.009* (0.000)	-18.341
	3 years	62	17.966* (0.000)	6.856** (0.048)	1.16	-42.496* (0.000)	-48.516
	4 years	59	8.176* (0.000)	16.637 (0.129)	0.88	-62.740* (0.000)	-70.182
	5 years	57	36.836*	38.913*	0.97	-65.539*	-72.421

Results of Aftermarket Performance of IPOs (Short and Long Run)

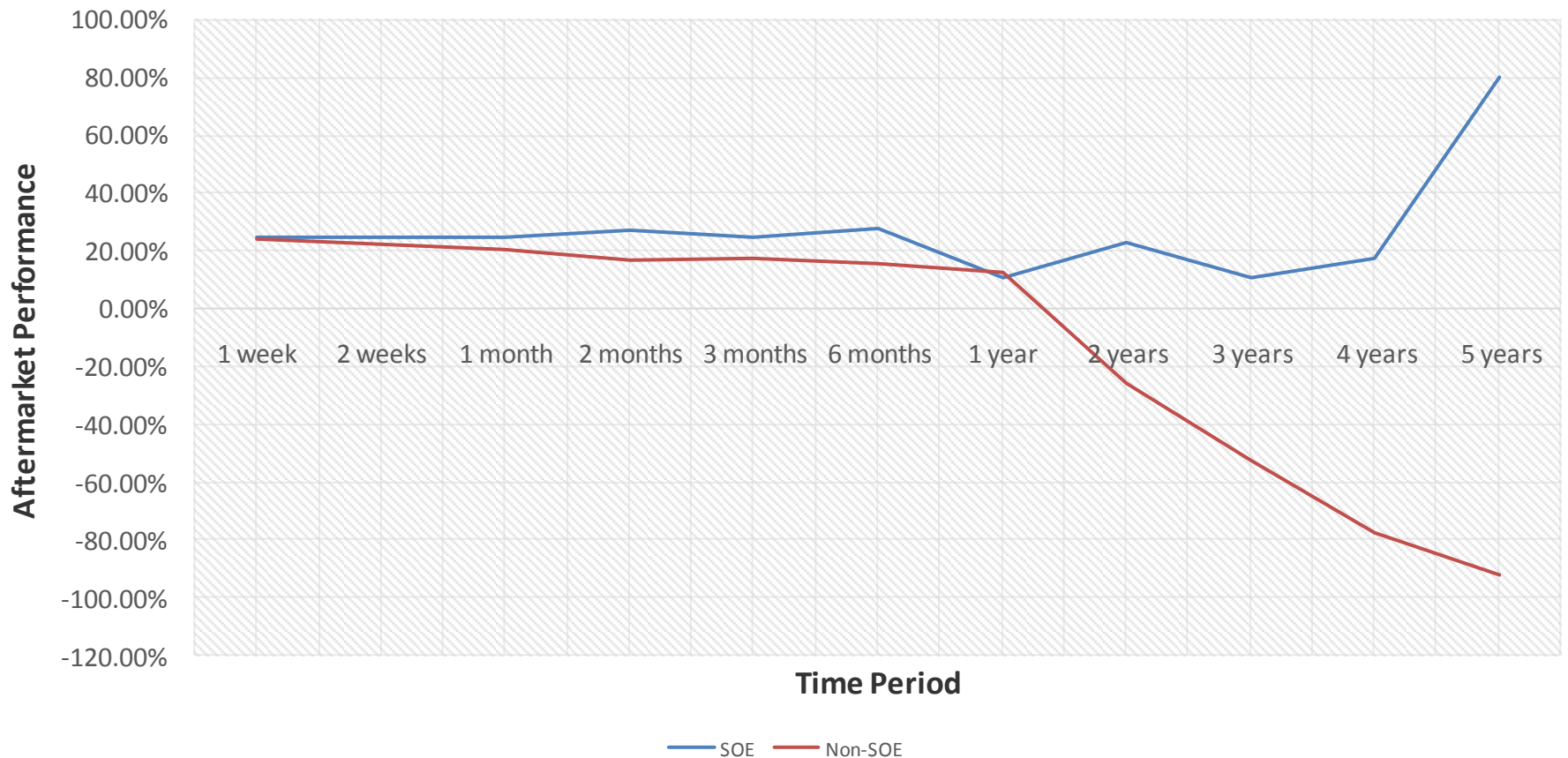
Sample	Period	N	BHR%		WR	BHAR%	
			Issues	KSE		Mean	Median
Public	1 week	11	24.797 (0.633)	-0.179 (0.278)	3.30	24.977 (0.594)	18.004
	2 weeks	11	24.541 (0.647)	-0.357 (0.822)	3.33	24.898 (0.570)	16.023
	1 month	11	26.550 0.620)	1.663 (0.447)	2.97	24.886 (0.645)	16.605
	2 months	11	29.929 (0.680)	2.517 (0.642)	3.02	27.411 (0.676)	19.390
	3 months	11	28.986 (0.696)	4.272 (0.635)	2.61	24.713 (0.642)	18.252
	6 months	11	40.367 (0.635)	12.274 (0.314)	2.20	28.093 (0.585)	17.574
	1 year	10	33.951 (0.666)	23.260 (0.119)	1.32	10.690 (0.770)	-13.051
	2 years	9	75.634 (0.572)	52.449 (0.869)	1.37	23.184 (0.803)	0.000
	3 years	9	90.391 (0.473)	79.439 (0.222)	1.12	10.951 (0.542)	-3.771
	4 years	9	100.841 (0.538)	83.529 (0.469)	1.18	17.310 (0.651)	-1.998
	5 years	9	130.401 (0.473)	49.942 (0.251)	2.36	80.457 (0.402)	-5.357

Results of Aftermarket Performance of IPOs (Short and Long Run)

Sample	Period	N	BHR%		WR	BHAR%	
			Issues	KSE		Mean	Median
Private	1 Week	61	24.936 (0.183)	0.538* (0.000)	1.39	24.398 (0.197)	20.952
	2 weeks	61	23.773 (0.208)	1.445 (0.630)	1.35	22.328 (0.301)	18.759
	1 month	61	23.114 (0.124)	2.443 (0.630)	1.32	20.671 (0.125)	7.809
	2 months	61	20.053 (0.144)	2.733* (0.000)	1.27	17.036 (0.153)	8.428
	3 months	61	23.051 (0.248)	4.225 (0.624)	1.28	17.591 (0.265)	0.724
	6 months	60	24.047 (0.126)	6.578 (0.318)	1.26	16.037* (0.197)	-3.259
	1 year	56	31.906* (0.000)	17.341 (0.207)	1.19	13.133* (0.000)	-14.01
	2 years	56	12.702* (0.000)	41.978*** (0.071)	0.70	-25.437* (0.000)	-27.618
	3 years	53	5.868* (0.000)	68.225** (0.032)	0.49	-52.134* (0.000)	-51.723
	4 years	50	-10.845* (0.000)	87.231 (0.000)*	0.28	-77.175** (0.051)	-77.092
	5 years	48	-12.540*	106.692*	0.22	-91.866***	-83.495

Short & Long run Aftermarket Performance of Public & Private IPOs

Short run & Long run Aftermarket Performance of Public & Private IPOs



Results of Mean Difference of Public and Private IPOs in Long run

Period	BHR%		BHAR%
	Issues	KSE	Mean
1 year	2.045 (0.9529)	5.920 (0.5804)	-3.875 (0.908)
2 years	62.932 (0.112)	10.471 (0.650)	52.461 (0.115)
3 years	84.523 (0.111)	11.214 (0.734)	73.309 (0.207)
4 years	111.68 (0.069)	-3.701 (0.932)	115.381 (0.291)
5 years	142.940** (0.037)	-56.75** (0.042)	199.690 (0.346)

Note: * indicates significance at 1%, **significance at 5%,*** significance at 10%.

Results of First day Underpricing Determinants of Public and Private IPOs

Independent Variables	Dependent variable: First day market adjusted return			
	Coefficient	t-Statistic	Prob.	
D_SOE	0.0838	0.63	0.533	R square = 0.482
M_Volt	-0.3707	-1.19	0.239	Adj R-squared =0.425
I_Proceeds	-0.0517	-1.25	0.215	Prob F-stat = 0.000
F_Size	-0.0417**	-2.15	0.035	DW stat = 1.984
Ret_own	-0.2485	-0.76	0.452	
Risk	1.3942**	2.10	0.039	
Subs	0.0365**	2.04	0.045	
Constant	-0.4549***	-1.68	0.098	

Note: * indicates significance at 1%, **significance at 5%,*** significance at 10%.

Results of After-market long run determinants of Public and Private IPOs

Independent Variables	Dependent Variable: Buy and hold abnormal return over 5 years.			
	Coefficient	t-Statistic	Prob.	
MAR_1	-1.1280*	-3.19	0.002	R square = 0.28
D_SOE	0.8176	1.27	0.205	Adj. R square = 0.19
M_Volt	1.5816*	2.81	0.006	Prob(F-stat) = 0.004
I_Proceeds	-0.1148	-0.68	0.497	DW stat = 1.96
F_Size	-0.0211	-0.27	0.782	
Ret_own	1.8757**	2.53	0.013	
Risk	1.6160	1.05	0.297	
Subs	0.0623	0.84	0.403	
Constant	-1.2836	-1.18	0.239	

Note: * indicates significance at 1%, **significance at 5%,*** significance at 10%.

Results of Effect of Underpricing on Ownership Structure (Concentration) of Public & Private IPOs

Independent Variables	Dependent Variable: Block			
	Coefficient	t-Statistic	Prob.	
D_SOE	0.058	0.65	0.52	R square = 0.148
F_Size	-0.037**	-2.46	0.016	Adj. R square = 0.07
MAR	-0.136**	-2.40	0.019	Prob(F-stat) = 0.04
Risk	-1.014**	-2.57	0.012	DW stat = 2.04
ROA	0.063***	1.80	0.076	
Subs	0.020	1.34	0.185	
Constant	1.080*	3.11	0.003	
Independent Variables	Dependent Variable: HHI			
	Coefficient	t-Statistic	Prob.	
D_SOE	0.056	1.07	0.290	R square = 0.174
F_Size	-0.022**	-2.50	0.015	Adj. R square = 0.09
MAR	-0.074*	-2.69	0.009	Prob(F-stat) = 0.04
Risk	-0.435**	-2.18	0.033	DW stat = 2.03
ROA	0.020	1.14	0.257	
Subs	0.005	0.61	0.546	
Constant	0.642*	3.28	0.002	

Conclusion

- Pakistan's Public and Private IPOs are underpriced for first trading day, but the mean difference of both IPOs is not statistically significant.
- Firm size, after market risk level of IPO and subscription ratio are significant factors of underpricing and supports winner's curse model (Rock, 1986).
- In a sample of All and Public IPOs, the positive BHAR up to one year period and underperforms in long run over 5 years period. While, Private IPOs BHAR outperforms in all years. But the positive mean difference in long run of Public and Private IPOs is statically insignificant.
- First day MAR, market volatility and retention ratio are significant factors that can influence aftermarket long run performance.
- Concentration of ownership structure is similar in both group of IPOs, which is against the signaling theory. First day MAR has negative and firm size, risk of IPO and ROA significant impact on concentration of ownership.

Policy implications

- ❑ The study proposes some following implications:
 - Market forces can do better instead of investment banks. It would make system efficient in long run.
 - Regulatory authorities needs to take some steps to minimize concentration in ownership structure of new issues.
 - To make dispersion in ownership structure, and to involve more small investors which are mostly uninformed of IPO prices, there should be some specific range of underpricing by issuers and Securities and Exchange Commission of Pakistan (SECP).

Future Research

- ❑ Future research may be conducted in following areas:
 - Researchers may compare the BHAR with matching firm portfolio (equal weighted) with firm's different characteristics as a benchmark in long run performance.
 - Researchers may also detect long run returns with cumulative abnormal returns (CAR) and may also use methodology of calendar time study to evaluate abnormal performances.
 - More explanatory variables which may influence underpricing level and aftermarket long run performance can be tested for Public and Private IPOs.
 - It will be interesting to test other underpricing and long run theories for Public and Private IPOs.

Thank You!

