Investor Pessimism and Post-Issue Outperformance: Evidence from Privatized Firms

Lobna Bouslimi[1]

[1] Concordia University, 1455 Maisonneuve Blvd, West Montreal, QC H3G 1M8, Canada

Correspondence: Lobna Bouslimi, Concordia University, 1455 Maisonneuve Blvd, West Montreal, QC H3G 1M8, Canada. Tel: 450-627-7390. E-mail: lobna.bouslimi@hec.ca

Abstract

Using a unique sample of privatized firms over the period 1980 and 2002, we explore how the policy risk which is a distinctive feature of privatization is perceived by investors and whether the post issue outperformance of these firms is associated to investor pessimism. We find evidence that market-adjusted abnormal returns are negatively related to analysts forecast errors used as a proxy for investor expectations. This result suggests that contrary to traditional private firms investors seem to be pessimistic in their forecasts of privatized firms' earnings projections in the beginning of the privatization procedure. However, they are more confident in the prospects of these firms over time consistent with the positive performance we find after privatization.

Keywords: analyst forecasts, privatization, policy risk, long run performance, investor pessimism

1. Introduction

Numerous studies argued that the long run underperformance of equity issuance is evidence of systematic overoptimism in investors'expectations using analysts' forecasts as a measure of investors' expectations (e.g. Rajan & Servaes, 1997; Derrien, 2005; Bradshaw, Richardson & Sloan, 2006; Yi, El Badawi & Lin, 2008 among others). In a nutshell, this evidence shows that financial analysts play a significant role in the valuation of firms by providing forecasts about earnings and long term growth forecasts, as financial analysts' forecasts are considered to be highly guided by investors' perceptions (Note1). However, no prior studies have tested directly the relationship between investor sentiment and aftermarket performance of newly privatized firms (NPFs) (hereafter). Our interest in privatized firms is motivated by two main considerations. First, compared to private IPOs, newly privatized firms are exposed to particular uncertainties related to (1) the change of ownership from government to private and the ability of new owners to make a successful transition, and (2) the governments' commitment towards the privatization process. Second, Perotti (1995) and Perotti and Guney (1993) argue that NPFs is exposed to a policy risk that is related to postprivatization policies that the government may undertake (e.g., deregulation). Thus, it is unclear how policy risk is perceived by investors, or financial analysts.

We investigate in this paper, first, how policy risk is taken into account in investors' expectations of NPFs that access the market through a share issue privatization (i.e., an IPO by the former State owned enterprise). Second, we assess the aftermarket performance of these firms and relate it to investor sentiment (by way of financial analysts' forecasts).

Our paper contributes to the literature on several grounds. First, we extend the studies on the long run performance of privatized firms, by providing further evidence on whether NPFs outperform in the long run, using different benchmarks and an international database of privatization transactions. Second, we also document how policy risk, which is a distinctive feature of privatization, contributes to our understanding of the behavior of privatized firms' returns over time. To the best of our knowledge, no prior study has directly tested the relationship between investor sentiment and post-issue performance of privatized firms.

In this paper, we use a sample of 302 privatized firms from 43 countries over the period 1980 to 2002. The context of privatization provides us with an opportune setting to explore the link between policy risk and the aftermarket performance.

Using different measures of market (investor) expectations of future earnings, we find evidence consistent with the fact that at the beginning of the privatization procedure investors are relatively pessimistic, however they

become more confident over time. This finding contrasts with the findings for private IPO's. Jain and Kini (1994) find that investors are over-optimistic about private IPO's and grow more pessimistic over time

Furthermore, we find also that post issuance abnormal returns (CARs and BHARs) of privatized firms are negatively related to analysts forecast errors. One interpretation of this is while investors in private IPO's are optimistic but grow disappointed as time advances, investors in NPFs are pessimistic at the time of the privatization   (when policy risk is higher) but grow more confident with time, when policies become credible.

The remainder of the article is as follows. Section 2 provides our motivations and hypothesis. Section 3 describes data. Section 4 presents financial analyst behavior towards privatized Firms. Section 5 provides evidence on market expectations and earnings performance. Section 6 and 7 present empirical results related to aftermarket performance of privatized firms. Sections 8 concludes.

2. Background and Hypothesis Development

A rich literature attempts to explain the long term underperformance of private initial public offerings (IPOs). According to Ritter (1991) and Loughran and Ritter (1995), the firms take advantage of windows of opportunity to issue stocks. Other explanation is related to earnings management (Teoh, Welch & Wong, 1998). Another view posits that firms issue new stocks when they are temporarily overvalued by the market (e.g., Bayless & Chaplinski, 1996). Interestingly, some studies have tested the link between the long run performance to investors' expectations, typically based on financial analyst data, suggesting that brokerage houses analysts reflect-or drive-investors' beliefs.

For instance, Rajan and Servaes (1997) find evidence that, for a sample of private IPOs, analysts' forecasts about earnings per share are optimistic. In a more comprehensive study of the relation between external financing activities and future stock returns, Bradshaw et al.(2006)   find that external financing   is positively related to overoptimism in analysts' forecasts which holds for different measures of financial forecast (short term earnings per share forecast, long term earnings per share forecasts). However, evidence also suggests that the basis of investors' expectations differs for private IPO's and privatized firms for several reasons.

First, the information asymmetry theory is one important explanation behind the underperformance of Private IPO's. However, it can be argued that privatized firms are generally large, well known firms, thus information asymmetry does not seem important in this context. Second, literature on privatization (Megginson, Nash & van Randenborgh, 1994; Boubakri & Cosset, 1998; Megginson & Netter, 2001; Djankov & Murrell, 2002) shows that privatized firms exhibit significant increases in profitability among other performance indicators. This evidence is in contrast with the findings for private IPOs which have been shown (Jain and Kini (1994) to exhibit a decline in their post-issue operating performance, leading to more negative perceptions by investors. Third, privatized firms may be exposed to additional uncertainties related to policy risk associated with governments' commitment to the privatization process. Policy risk is the cash flow risk associated with policy reversals or regulatory changes .Therefore, Jones, Megginson, Nash and Netter (1999) argue that political considerations are important in the pricing of privatized (IPO's). In addition, Lam, Tan and Wee (2007) find that policy risk rather than information asymmetry explains the underpricing of privatized firms. Thus, in the light of this evidence, policy risk may play an important role in markets' expectations of future earnings of privatized firms. Therefore, as privatized firms exhibit a transformation in their ownership structure, objectives and management, released information about their superior performance in the after-privatization time could help in building confidence among investors who will in return price the firm accordingly.

Based on these arguments and assuming that financial analysts' forecasts reflect those of investors, we expect that investors seem to be pessimistic about the   future earnings of newly privatized firms in the beginning of the process and we should observe that investors confidence in the future earnings of privatized firms increases as the time advances.

Therefore, we draw the following hypothesis:

Hypothesis H1: *Investors are pessimistic about future earnings of privatized firms* at the *time of the issue* a*nd they become more optimistic as time passes.*

Hypothesis H2: *There is a negative relation between investor pessimism and the outperformance of privatized firms.*

3. Data

To run our investigation, we rely on a unique data of 302 privatized firms from 43 countries that covers the period 1980 through 2002. The initial data is provided by Boubakri, Cosset and Guedhami (2005). The list of

privatized firms is collected from different sources such as the *World Bank* privatization database for DCs, the *Privatization Barometer* for OECD countries, and Megginson's (2003) list of privatized firms in developing and developed countries. Ownership structure is collected from numerous data sources including annual reports, Asian, Brazilian, and Mexican Company Handbooks, the Guide to Asian Companies, and Kompass Egypt Financial Year Book. The firms' financial statements, their web sites, and databases such as *Moody's International*, *Mergent Online*, *Worldscope Disclosure*, and *Bankscope* are used to calculate the financial informations. Data about Egyptian firms comes from Omran (2005).

We then match this original database with Institutional Brokers Estimate System (I/B/E/S hereafter). About 150 privatized firms are covered in the I/B/E/S database at some point after privatization (more specifically within three years after privatization). For this set of firms, we obtain the number of analysts, annual earnings per share forecasts, analyst earnings revisions, as well as actual annual earnings per share and long term earnings growth forecasts from the I/B/E/S international files summary.

We include in the final sample firms that have only available data on stock returns. The return data for individual and national indices come from Datastream International. Firms must have at least one year of available post-issue price data. After excluding observations with missing information on returns data, we end up with 134 firms. The geographical pattern of our sample is detailed in Table 1.

Table 1. Summary statistics

Distribution of Privatization					
By year					
Year	Number	Percentage	By legal origin	Number	Percentage
1980	1	0.33	Civil law	114	75.50
1981	1	0.33	Common law	37	24.5
1984	1	0.33	Total	151	100
1985	4	1.32	By industry		
1986	5	1.66	Energy	31	20.5%
1987	3	0.99	Financials	31	20.50%
1990	20	6.62	Telecommunication	16	10.5%
1991	36	11.92	Transport	20	13.24%
1992	32	10.6	Utility	23	15.23
1993	14	4.64	Others	30	20%
1994	21	6.95	Total	151	100
1995	24	7.95	By region (Note2)		
1996	38	12.58	North Africa and the Middle East	2	1.33%
1997	33	10.93	East and south Asia and the Pacific	34	22.5%
1998	12	3.97	Europe and central Asia	76	50.33%
1999	10	3.64	Latin America and the Caribbean	38	25%
2000	9	2.98	Sub-Saharan Africa	1	0.6%
2001	4	1.32	Total	151	100
			By analyst coverage over time		
			Followed within one year	123	81.5
			Followed within two and three year	28	18.5
			Total	151	100

Table 1 provides descriptive statistics for the 151 privatized firms followed by analysts.

4. Analysts' Behavior toward Privatized Firms

4.1 Earnings Forecast Errors

In this section, we explore analysts' forecasts accuracy made over time (through the three years after privatization). Time refers to the time period after privatization when the forecast is made. Financial analysts provide forecasts each month and are available for periods up to three years in the future.

We focus only on firms listed on I/B/E/S within one year of their issue. As argued by Rajan and Servaes (1997) "*including firms after one year will obscure some of results, because forecast errors would be influenced both by the addition of the new firms as well as revisions in forecasts of firms already listed*" (page 515). Forecast errors are measured as (Earnings forecast Actual Earnings) / stock price at the end of the fiscal year, as in Doukas, Kim and Pantzalis (2002). We use median values of earnings forecasts instead of means to ensure the robustness of results to extreme observations.

Table 2. Analyst earnings forecast errors

Time	Forecast Error	Number
3 months	0.028 (0.000)	234
6 months	0.0285 (0.000)	256
9 months	0.0387(0.000)	282
12 months	0.045(0.000)	300
15months	0.0444 (0.000)	320
18 months	0.0483 (0.000)	319
21 months	0.0558(0.000)	323
24 months	0.0577 (0.000)	322
27 months	0.0523 (0.000)	325
30 months	0.0562 (0.000)	313
33 months	0.0656 (0.000)	318
36 months	0.0737 (0.000)	313

The sample in Table 2 represents all earnings forecasts made by analysts in the three years period after the privatization. Only forecasts made for firms listed on I/B/E/S within one year of privatization are included. The forecast error is computed as the value of analyst forecast error deflated by stock price: forecast error = (Earnings forecast- Actual Earnings) / stock price. Time refers to the time period after the privatization that the forecast is computed. We report forecast errors for time after privatization of three through 36 months using intervals of three-month. P-values are in parentheses.

Table 2 reports forecasts errors calculated between the first and third year after privatization. The results indicate that forecast errors in earnings expectations for privatized firms are small at the beginning of the process, and tend to increase by the third year after privatization, which is consistent with the hypothesis that investors' expectations are negative (i.e., investors are pessimistic), but become positive over time (i.e., investors become optimistic).

4.2 Long Term Earnings Growth Projection

Financial analysts provide also forecasts about long term earnings growth projections (LTG). The long term considered by I/B/E/S is a five year horizon. Existing research (e.g., Rajan & Servaes, 1997; Sloan, Hutton & Dechow, 2000) argue that LTG earnings projection is a good measure of market expectations.

Table 3. Long term earnings growth forecasts

Time	Long Term Growth forecast (in %)	Number	Industry-Adjusted Long Term growth forecast (in %)	Number
3 months	16.82 (0.000)	22	1.64(0.72)	20
6 months	17.51(0.002)	32	3.28(0.43)	30
9 months	17.41(0.000)	36	3.45(0.39)	32
12 months	17.034 (0.0000	42	3.68(0.30)	34
15months	16.49(0.000)	44	1.05(0.72)	38
18 months	20.474 (0.000)	50	-0.24(0.920)	42
21 months	21.66(0.000)	58	-1.12(0.630)	49
24 months	15(0.000)	58	-0.84(0.62)	50
27 months	12.10(0.000)	60	-2.039(0.17)	55
30 months	14.19(0.000)	60	-1.09(0.45)	55
33 months	16.144(0.000)	59	-1.66(0.370)	52
36 months	14.095(0.000)	66	-2.36(0.22)	57

In Table 3, time refers to the time period after the privatization date that the forecast is computed. Industry-adjusted long term growth rates are calculated by subtracting the average of all companies in the same industry and country for the listed firms in I/B/E/S. Number is the number of firm that has forecasts. P-values are in parentheses.

Results in table 3 show that the initial long term earnings growth forecasts start with a level of (16.82%) for three months after the privatizations and reach 17.42% for 9 months and 20.47% for 18 months. However, this pattern is not sustained, as we note a considerable decrease in the two years after the issue. It seems that analysts are pessimist about the prospects of privatized firms in the beginning but become more optimistic over time. This result contrasts with the evidence for IPOs reported by Rajan and Servaes (1997). The authors indeed document an inverse pattern in the long term growth forecasts for private IPOs. Specifically, the long term earnings projections are high, however they drop by the third year after the IPO.

4.3 Analysts Earnings Revisions

Analysts also make upward and downward revisions. Upward revisions by time and window are reported in Tables 4 and 5. If investors' earnings expectations are initially too pessimistic, then subsequent forecasts are expected to be revised upward.

Table 4. Analyst earnings revisions

Time	Number of analysts	Upward forecast revision	Number
3 months	7.97(0.000)	0.729(0.000)	248
6 months	8.39(0.000)	0.825(0.000)	286
9 months	8.42(0.000)	0.858(0.000)	317
12 months	8.79(0.000)	0.973(0.000)	344
15months	8.88(0.000)	0.978(0.000)	370
18 months	9.15(0.000)	0.992(0.000)	382
21 months	9.29(0.000)	1.09(0.000)	402
24 months	9.22(0.000)	1.012(0.000)	407
27 months	9.35(0.000)	1.14(0.000)	434
30 months	9.24(0.000)	1.17(0.000)	433
33 months	8.95(0.000)	1.06(0.000)	445
36 months	9.10(0.000)	1.20(0.000)	446

The sample in Table 4 consists of all the number of revisions (upward and downward) provided by analysts in the three year period after the privatization. Only forecasts made for firms listed on (I/B/E/S) within one year of privatization are included. Time refers to the time period after the privatization that the forecast is made. P-values are in parentheses.

Table 5. Analyst earnings revisions

Window	Upward forecast revision	Downward forecast revisions	Number
Panel A: Forecasts Made Within one Year of The Privatization			
3 months	1.13 (0.000)	1.815 (0.000)	92
6 months	1.431 (0.000)	1.697(0.000)	109
9 months	1.5 (0.000)	1.358(0.000)	92
12 months	0.895 (0.000)	1.40(0.000)	96
15months	1.16 (0.000)	1.66(0.000)	84
18 months	1.09 (0.000)	1.44(0.000)	99
21 months	1.02 (0.000)	0.91(0.000)	78
24 months	0.657(0.000)	0.43(0.000)	70
27 months	0.58(0.000)	0.68(0.000)	58
30 months	0.31(0.000)	0.38(0.000)	70
33 months	0.30(0.0032)	0.21(0.006)	46
36 months	0.15(0.05)	0.09(0.08)	32
Panel B: Forecasts Made Within Two Year of The Privatization			
3 months	1.49(0.000)	1.914(0.000)	211
6 months	1.47(0.000)	1.726(0.000)	238
9 months	1.49(0.000)	1.616(0.000)	214
12 months	1.12(0.000)	1.488(0.000)	215
15months	1.48(0.000)	1.82(0.000)	189
18 months	1.26(0.000)	1.51(0.000)	209
21 months	1.13(0.000)	1.11(0.000)	172
24 months	0.69(0.000)	0.74(0.000)	154
27 months	0.61(0.000)	0.68(0.000)	140
30 months	0.47(0.000)	0.5(0.000)	144
33 months	0.33(0.000)	0.227(0.000)	101
36 months	0.16(0.000)	0.18(0.000)	77

The sample in Table 5 consists of all the number of revisions (upward and downward) made by analysts in the two year period after the privatization. Only forecasts made for firms listed on (I/B/E/S) within one year of privatization are included. We report revisions forecasts for forecast windows of three through 21 months in three-month intervals. Window is the number of months between the time the forecast is made and the fiscal end for which the forecast is made. P-values are in parentheses.

The results in Table 4 and 5 indicate that analysts indeed make upward forecast revisions in the months following privatization offerings. In addition, we note that the number of analysts that follow privatized firms increase over time, which suggests that these firms become more interesting to analysts over time. Consistent with our previous results, this evidence suggests that analysts become more optimistic about the future prospects of privatized firms over time which may explain their upward forecasts' revisions.

5. Market Expectations and Earnings' Performance of Privatized Firms

Following Jain and Kini (1994), we examine different measures of investor expectations of post-issue earnings growth of privatized firms. In particular, we examine the post issue market to book (M/B), price to earnings (P/E) and earnings per share (EPS) ratios for both NPFs and their matching firms. All the changes in these ratios are reported relative to the year of the privatization (year 0) and we analyze their yearly progression compared to the matching firms over the five year-period after divestiture.

Table 6. Market expectations and earnings performance

	Year 0 to 1	Year 0 to 2	Year 0 to 3	Year 0 to 4	Year 0 to 5
Panel A: M/B ratio					
Median change	-0.22	-0.23	-0.20	-0.17	-0.25
	(0.0066)***	(0.0352)**	(0.066)*	(0.368)	(0.0822)*
Median matching adjusted change	-0.16	0.17	0.31	0.21	0.20
	(0.25)	(0.49)	(0.07)*	(0.0855)*	(0.0625)*
Number of observations	102	102	102	102	98
Panel B: EPS ratio					
Median change	0	0.06	0.08	0.12	0.195
	(0.0067)***	(0.0002)***	(0.0007)***	(0.000)***	(0.000)***
Median matching adjusted change	0.01	0	0.03	0.08	0.03
	(0.24)	(0.911)	(0.073)*	(0.36)	(0.2564)
Number of observations	116	115	115	115	110

*, **, *** refer to 10%, 5% and 1% significance levels. P-values are in parentheses.

Table 6 presents the values of median change of market to book ratio (M/B), and earnings per share (EPS) for privatized firms and as adjusted to matching firms. The data on (M/B) and (EPS) are available from Datastream. Year 0 is the year of the issue. The matching adjusted change for each firm is the difference from matching firm value. We use the wilcoxon signed rank test for the significance tests.

The median raw and adjusted changes in levels of these ratios in years +1 to +5 are reported in Table 6. Panel A of Table 6 shows an increase in the median raw and matched adjusted (M/B) and (EPS) ratios in the post issue years relative to year 0, although the coefficients are not usually significant for all horizons. This result implies that investors' expectations are low at the time of privatization, but are adjusted upward over time. In other words, it seems that investors appear pessimistic about the earnings' growth potential of firms in the beginning of the privatization process, but tend to become more optimistic over time. These findings for privatized firms are in sharp contrast with those for private IPOs. Indeed, a similar analysis for IPOs, conducted by Jain and Kini (1994), shows a significant decline in the M/B, P/E and EPS ratios in the post-issue years relative to the issue year. The authors conclude that investors seem to value IPO firms based on expectations that earnings growth will continue to increase, but they are soon to realize that the levels of pre-IPO earnings growth are not sustained in the future.

We also examine the year by year levels of our proxies of investors' expectations for both NPFs and their matching firms in Figure 1.

Panel A: Market to Book Ratio

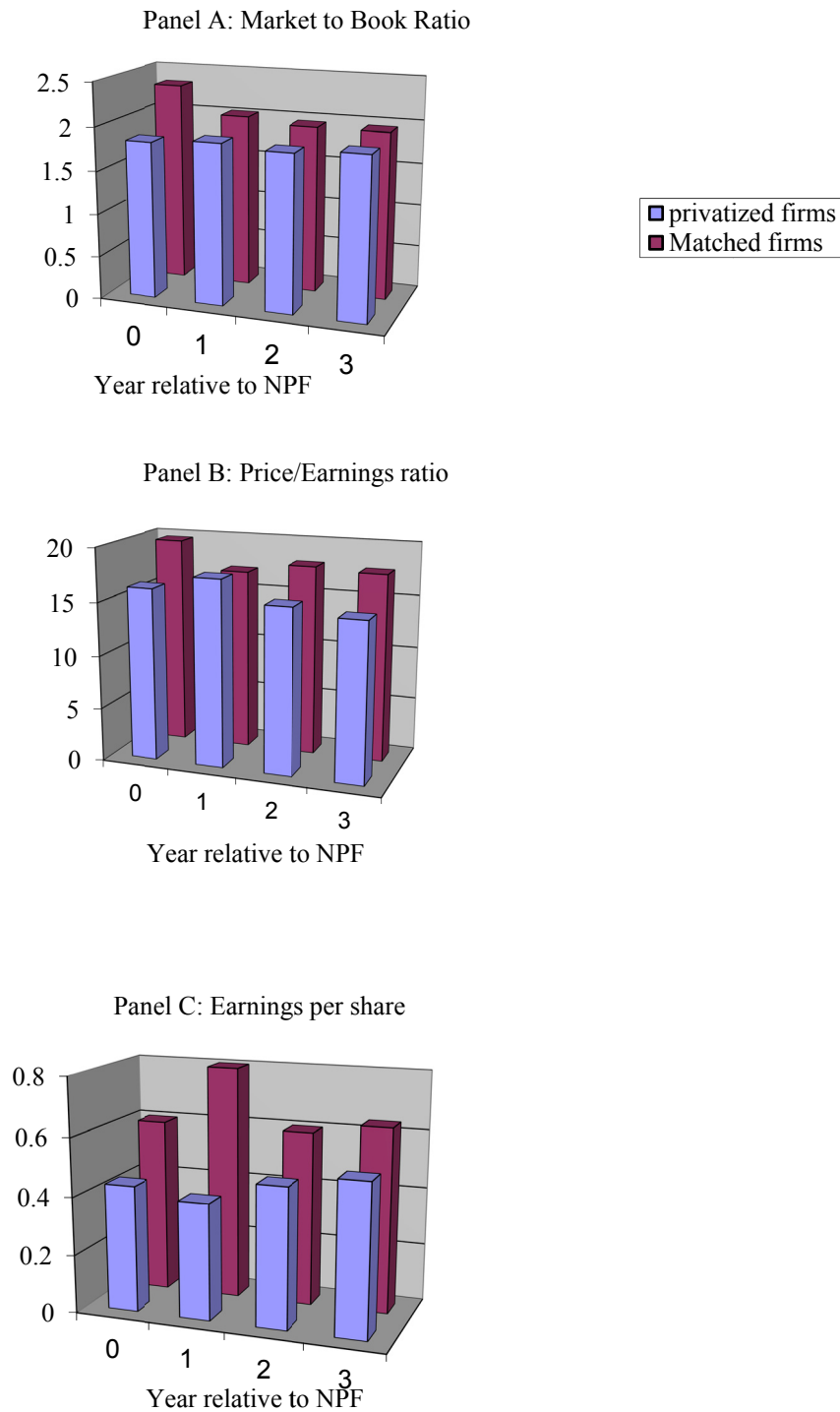Panel B: Price/Earnings ratio

Panel C: Earnings per share

Figure 1. Market expectation and earnings performance

The figure1 illustrates the median levels of market to book ratio (M/B), earnings per share (EPS) and price to earnings (P/E) for fiscal years 0 to 3 relative to privatization.

From Panel A, we can see that in the year 0, NPFs start with low M/B ratios compared to their matching firms. However, we note an improvement in the M/B over time which is relatively close to the pattern of matching firms. From Panel B, we note that the median levels of P/E ratios of NPFs increase over time. However, for EPS ratios in Panel C, the increase is not maintained. There is a decrease in the second year but the pattern of increase

picks up again afterwards.

Overall, we can conclude that NPFs start with low M/B and P/E ratios, which soon increase over time. Thus, it appears that investors are pessimistic and cautious in valuing NPFs firms at the beginning, but their confidence towards these firms starts building over time. This result is consistent with the view that investors appear to have pessimistic expectations about earnings growth, and revise these expectations upwards as these firms realize an unexpected positive earnings growth.

6. The Long Run Performance of Privatized Firms

While there is a rich literature on performance changes for privatized firms, relatively some studies look at these firms' aftermarket stock price performance. Most studies are limited to single countries (e.g., Levis, 1993, (UK); Aggrawal, Leal & Hernandez, 1993, (Chile), among others) (Note 3). These studies generally indicate that privatization IPOs outperform in the long-run which is in contrast to the finding for private initial public offerings (IPOs).

In the long run performance literature, there is still an important debate on how to measure the long-run abnormal stock returns. Barber and Lyon (1997) argue that the buy-and-hold abnormal returns (BHAR) are the appropriate estimator, because they measure "investors' experience". However, the authors show that abnormal returns using benchmark portfolios are biased. These biases arise from new listing, rebalancing and positive skewed long-run abnormal returns. The authors then suggest that the control firm approach can eliminate these biases. However, Mitchell and Stafford (2000) argue that the BHAR approach is not a measure of long-term abnormal returns because it assumes the independence of multi-year event-firm abnormal returns. Therefore, measuring adequately the long- run performance remains an open question. To ensure robust results, we therefore consider, in this study, different techniques, and more than one reference index to determine the long-run abnormal performance.

For three holding periods, we compute for each firm the CARs (cumulated abnormal returns), and BHARs (buy-and-hold abnormal returns) using the local market index, size and size-and-book-to-market matching firms as follows:

$$CAR_{i, s, e} = \Sigma r_{i, t} - r_{benchmark, t} \tag{1}$$

$$BHAR_{i, T} = \left[\Pi_{t=1}^{min(T, delisting)} (1+r_{i,t})-1 \right] - \left[\Pi_{t=1}^{min(T, delisting)} (1+ r_{benchmark, t})-1 \right], T=12, 24 \text{ or } 36 \text{ months} \tag{2}$$

Where $CAR_{i, s,e}$ is the cumulative abnormal return using the market index, size and size-and-book-to-market matching firm as a benchmark for stock i from the first trading of the privatization issue to the anniversary date (12, 24 or 36 months), or until the date of delisting.

$r_{i, t}, r_{benchmark, t}$ are the monthly returns for security and the corresponding benchmark in period t, respectively;

$BHAR_{i, T}$ is the buy-and-hold abnormal return for stock i in period T, where T represents the aftermarket trading period (12, 24 or 36 months), respectively; t=1 is the first   aftermarket trading month, and min (T, delisting) is the earliest last month before the delisting of the privatized firm.

The market index for each country is collected from Datastream. In particular, we use the value weighted Datastream Total Market Index.

  Following Barber and Lyon (1997), we identify matching firms in each local market using the following criteria. The matching firm must not be a privatized firm. We begin by identifying all domestic firms that have a market capitalization between 70 and 130 percent of that of our sample privatized firms. Then, we choose the firm that has the closest book-to-market (B/M) to that of our sample firm. In addition, we control also for firms that did issue during the three years before the event date to avoid the bias induced by the underperformance in the long run of new issuers. A similar approach is used to select a size matching firm. If a privatized company is delisted prior to its anniversary date (third year), we truncate its total return on that date.

Table 7. CAR of privatized firms over time using alternative benchmarks

Benchmark	Local market-matched		Size matched		Size –B/M matched	
	N	CAR	N	CAR	N	CAR
One-year Mean	135	9% (0.06)*	125	10% (0.050)**	74	19.65% (0.0053)***
Median		5.75 % (0.15)		4.13% (0.23)		6.95% (0.5614)
Two-year Mean	134	24.33%(0.000)***	125	12.12% (0.0811)*	74	24.54 (0.0077)***
Median		14.24% (0.034)**		6% (0.18)		19%(0.39)
Three-year Mean	129	30.30%(0.000)***	120	11.62% (0.1266)	74	25.87% (0.0247)**
Median		15.56%(0.003)***		7.9% (0.2615)		7.23% (0.2954)

*, **, *** refer to 10%, 5% and 1% significance levels. P-values are in parentheses.

From Table 7, we can see that NPFs exhibit significant positive cumulative abnormal returns (CARs) over one, two and three years (9%, 24.335% and 30.30%, respectively) when the local market index is used as a benchmark. This evidence supports the results find by Megginson, Nash, Netter and Schwartz (1999), Boardman and Laurin (2000), and Dewenter and Malatesta (2001). However, when size or size-and-B/M are used as a benchmark, we note that firms continue to have a positive long term performance over one, two and three years, although we lose significance. These results are consistent with the finding of Megginson, Lee and Choi (2010) who show that privatized firms outperform their market benchmark, but over three or five years the size and B/M adjusted returns   become non significant.

We acknowledge the fact that it is difficult, in some cases, to find a matching firm in the same industry as the privatized firm, especially when this latter is particularly large or operates in strategic industries. It should be noted that very few studies tried to find matching firms for privatized firms   (Note 4).

Table 8. BHARs of Privatized firms over time using alternative benchmarks

Benchmark	Local-Market matched		Size matched		Size –B/M matched	
	N	BHAR	N	BHAR	N	BHAR
One-year	132	7.57% (0.0671)*	119	8.79% (0.0549)*	71	13.38% (0.06)*
Mean Median		2% (0.3318%)		2% (0.357)		0.84% (0.5)
Two-year	131	38.35% (0.0076)***	119	24.32% (0.059)*	71	29.23% (0.0478)**
Mean Median		-0.055 (0.5693)		4.05% (0.1356)		5.24% (0.317)
Three-year	126	58.29% (0.0033)***	114	38.81% 0.0488)**	71	31.68% (0.1173)
Mean Median		7.69% (0.10)*		3.2% (0.4627)		8.85% (0.4)

*, **, *** refer to 10%, 5% and 1% significance levels. P-values are in parentheses.

For buy and hold abnormal returns (BHARs) in Table 8, NPFs provide significantly higher average returns ranging from 7.57% for one year to 38.35% and 58.29% for two and three years, respectively, relative to the local index market. In fact, the matching firm–adjusted BHARs tend to increase after privatization (8.79% for one year, to 24.32% and 38.81% for two and three years), when size is used for matching. Moreover, when size-and- B/M is used for matching, the BHARs average 13.38%, 29.23% and 31.68%, respectively. However, the coefficients for the matched firms benchmark are not all the time significantly different from zero.

This result may reflect the lower precision of the matching firms' sample, in particular, the book-to market matching firms' sample, which is half smaller. In addition, privatized IPO's are unique, because those state companies are typically the largest firms in each domestic market, thus it is difficult to find the appropriate matching firms Therefore, our evidence is consistent with the empirical challenges involved in calculating long-term excess stock returns (Lyon, Barber & Tsai, 1999; Fama, 1998 and Mitchell & Stafford, 2000).

7. Explaining the Long-Term Performance of Privatized Firms

Overall, our previous findings suggest that investor seem to be pessimistic in their valuation of newly privatized firms, at the time of the issue. However, as time passes by, investor becomes more optimistic about the future earnings prospects of these firms. Therefore, we expect that it is investors' pessimism about future earnings of privatized firms that will explain the outperformance of privatized firms. In this section, we conduct cross sectional regressions of post issuance abnormal returns to examine the determinants of the long-term performance of NPF's (one, two and three years). We consider four categories of variables: factors related to the firm, those associated to the institutional environment, those related to privatization characteristics and finally those related to analysts forecast factors. The definitions of these variables are described in Table 9.

Table 9. Description of variables and sources

Variable	Definition	Source
Institutional Environment		
RIGHT	An index of minority shareholder protection based on the anti-director right index	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998)
DEVELOPED	A dummy variable equals to unity if the country was not treated as developed country and zero otherwise.	World Bank
LIABILITY	An index of regulation of securities markets	La Porta, Lopez and Shleifer. (2006)
BUREAUCRACY	The Bureaucracy Quality index is scored by analysts on a scale of 0-4 with discrete Intervals of 0.5. It is an indicator of a country's institutional strength and its ability to handle Transitional changes when government changes.	International Country Risk Guide (ICRG)
POLRISK	An assessment of the country's political stability	International Country Risk Guide (ICRG)
Privatization Characteristics		
STATE	The percentage of share held by the government	Boubakri et al. (2005)
FOR	A dummy variable which equals to 1 when foreign investors are involved for the first time in the ownership structure. and zero otherwise.	Company prospectus and annual reports
RECENTP	A dummy variable that capture the timing of privatization equals to 1 if recent privatization in the country and zero otherwise.	Boubakri et al. (2005)
UNDERPRICING	Underpricing is calculated as: (First aftermarket price-offer price) ∕ offer price	Megginson (2001) Appendix and Datastream
Country and Firm Characteristics		
GDPG	Real GDP growth one year before privatization	World development indicators
STRATEGIC	Equal to 1 if the firm belongs to strategic industry (utilities, telecommunications, financials, and transportations) and zero otherwise.	World Bank group's privatization transaction Database
LOGSALES	The logarithm of the total sales at the time of privatization in ($)	Company prospectus and annual reports

7.1 Firm Specific Variables

According to asymmetric information theories, firm size can affect long term stock price performance. Larger firms should be less asymmetry than small firms, because uncertainty about larger firms is small. For IPOs, Ritter (1991) and Loughran and Ritter (1995) report that size is negatively related to long-run returns. Furthermore, we expect small firms to outperform large firms. We use *LOGSALES* as proxy for size. In addition, we consider the industry classification (STRATEGIC) which is a dummy variable that equal one if the firm belongs to strategic industry and zero otherwise.

7.2 Institutional Environment Variables

   In this article, the institutional environment includes legal institutions and securities laws. A good functioning legal system favors the protection of investors. In addition, as documented by La Porta et al. (2006) laws mandating disclosure and facilitating private enforcement through liability rules benefit stock market. We include the variables RIGHT, POLRISK and LIABILITY respectively as proxies for investor protection, political risk and for laws mandating disclosure.

As shown in the above sections, a well developed market may affect information disseminations and the long term allocation of resources. Thus, we include GDP growth (GDPG) and a dummy variable (DEVELOPED) to test the impact of market conditions on returns.

7.3 Privatization Characteristics Variables

Perotti and Van Oijen (2001) argue that the progressive resolution of political risk as the privatization program evolves, leads to more positive returns. In the same vein, Perotti (1995) documents that governments use gradual sales as a signal of their commitment. Thus, the higher is the percentage retained by the government, the higher is the risk that the government intervenes in the future activities of the firm. Therefore, the portion of retained government ownership (STAT) is likely to be positively related to the aftermarket performance. In addition, following Lam et al. (2007), we use the bureaucracy quality index (BUREAUCRACY) as a direct measure of policy risk. The authors find that underpricing is negatively related to policy risk measured by bureaucracy. In addition, the prior literature on private IPOs (Ritter, 1991) suggests that we include underpricing as an explanatory variable of the aftermarket performance. However, in our study we are unable to include this variable due to the limited observations we have about underpricing. If as documented by Lam et al. (2007), policy risk explains the underpricing of privatized initial public offerings, bureaucracy our proxy for policy risk will also capture underpricing.

In early privatizations, the government reputation is not built yet and investors do not have a previous track record. In addition, privatization at its early stages is more uncertain and represents an uncommon event, thus the risk is more important compared to those that are scheduled later, and we should expect higher compensation for risk for privatizations in early stage in our database. On the other hand, Boubakri and Cosset (1998) document that as privatization becomes a more common event, the industries classified as "strategic" were also included in the program. Privatized firms in the strategic industries are considered more risky firms. Thus, one could expect more returns for the most recent privatizations. Consequently, we construct a dummy variable, called RECENTP to capture the timing of privatization.

7.4 Analysts' Forecast Factors

Financials analysts' forecasts are of substantial interest to investors and to researchers. Thus, we assume that financial analysts' expectations could represent or influence investors' expectations.

If analysts are too pessimistic about the prospects of privatized firms in the beginning of the process, and there are substantial upward revisions in their expectations as documented in the previous sections, then we should expect a negative relationship between the long term performance of firms and analysts' predictions. In particular, following Doukas, Kim and Pantzalis (2002) Yi et al. (2008), we use analysts' forecast errors to measure investor optimism.

The forecast error (FE) is defined as the mean of the median consensus forecast made at the time of privatization for (one, two and three years after privatization) minus actual earnings standardized by the stock price at the end of the fiscal year. We use median values instead of means to avoid the influence of means values by extreme observations.

We test the following model to explain the aftermarket-performance of privatized firms:

$$Aftermarket_{i,\,T} = \alpha_0 + \alpha_1\,AnalystsForecast\;Error + \alpha_2\,Institutional\;Environment + \alpha_3\,Privatization$$
$$Characteristics_i + \alpha_4\,Firms_i + \varepsilon_i \qquad (3)$$

The heteoskedasticity-corrected regression estimates are reported in Table 10. The model is estimated for aftermarket returns over periods of one, two and three years following the privatization. The regressions are reported for both CARs and BHARs.

Table 10. Cross-sectional regressions of post-issuance return performance (CAR)

Regression models	INTERCEPT	LOGSALES	STRATEGIC	FE	RIGHT	LIABILITY	DEVELOPED	BUREAUCRACY	POLRISK	GDPG	RECENTP	STAT	R²	N
Panel A: CAR Local index benchmark														
12-Months														
1	0.372	-0.022	-0.39	-0.88				0.006				0.31	16%	69
	(0.303)	(0.673)	(0.011)**	(0.08)*				(0.901)				(0.17)		
2	0.603	-0.026	-0.424	-0.949	-0.059							0.379	17.5%	69
	(0.138)	(0.611)	(0.009)***	(0.069)*	(0.176)							(0.10)*		
3	0.56	-0.05	-0.411	-0.976		0.316	0.28				-0.067		28%	69
	(0.237)	(0.428)	(0.002)***	(0.032)**		(0.207)	(0.017)**				(0.565)			
4	-0.23	-0.05	-0.386	-0.95					0.009	0.034		0.257	24%	69
	(0.60)	(0.372)	(0.015)**	(0.011)**					(0.09)*	(0.073)*		(0.277)		
24-Months														
1	0.444	-0.041	-0.118	-0.76				0.0002				0.15	7%	72
	(0.334)	(0.587)	(0.495)	(0.004)**				(0.997)				(0.548)		
2	0.77	-0.053	-0.167	-0.77	-0.078							0.228	9%	72
	(0.16)	(0.477)	(0.356)	(0.003)***	(0.12)							(0.394)		
3	0.427	-0.0003	-0.206	-0.77		-0.063	0.202				-0.293		16%	72
	(0.405)	(0.997)	(0.176)	(0.026)**		(0.858)	(0.228)				(0.134)			
4	-0.038	-0.068	-0.11	-0.87					0.007	0.03		0.153	10.5%	72
	(0.935)	(0.397)	(0.524)	(0.001)***					(0.123)	(0.159)		(0.56)		
36-Months														
1	0.151	0.015	-0.24	-1.42				0.021				0.258	13%	67
	(0.833)	(0.905)	(0.298)	(0.005)***				(0.76)				(0.478)		
2	0.85	0.011	-0.33	-1.44	-0.19							0.439	19.6%	67
	(0.282)	(0.918)	(0.16)	(0.003)***	(0.01)***							(0.241)		
3	0.10	0.082	-0.225	-1.29		-0.285	0.326				-0.30		16.3%	68
	(0.89)	(0.528)	(0.274)	(0.036)**		(0.55)	(0.154)				(0.317)			
4	-0.59	-0.04	-0.265	-1.55					0.0133	0.045		0.298	19%	67
	(0.385)	(0.75)	(0.235)	(0.003)***					(0.032)**	(0.12)		(0.411)		

*, **, *** refer to 10%, 5% and 1% significance levels. P-values are in parentheses

Table 10. (Continued): Cross-sectional regressions of post-issuance return performance (BHAR)

Regression models	INTERCEPT	LOGSALES	STRATEGIC	FE	RIGHT	LIABILITY	DEVELOPED	BUREAUCRACY	POLRISK	GDPG	RECENTP	STAT	R²	N
Panel A: BHAR Local index benchmark														
12-Months														
1	0.537	-0.065	-0.382	-1.13				0.039				0.36	13%	68
	(0.239)	(0.35)	(0.017)**	(0.10)*				(0.569)				(0.132)		
2	0.775	-0.058	-0.401	-1.13	-0.052							0.41		
	(0.14)	(0.402)	(0.018)**	(0.09)*	(0.338)							(0.09)*		
3	0.86	-0.095	-0.39	-1.09		0.232	0.247				-0.126		24%	68
	(0.09)*	(0.175)	(0.01)***	(0.10)		(0.473)	(0.096)*				(0.40)			
4	-0.21	-0.08	-0.367	-1.172					0.11	0.044		0.292	21.5%	68
	(0.73)	(0.177)	(0.02)**	(0.035)**					(0.11)*	(0.063)*		(0.201)		
24-Months														
1	0.868	-0.133	-0.051	-1.3				0.042				0.057	9%	71
	(0.20)	(0.29)	(0.779)	(0.000)***				(0.609)				(0.872)		
2	1.27	-0.133	-0.096	-1.29	-0.085							0.14	10.5%	71
	(0.177)	(0.297)	(0.612)	(0.000)***	(0.335)							(0.72)		
3	1.05	-0.081	-0.18	-1.10		-0.46	0.098				-0.243		15%	71
	(0.139)	(0.41)	(0.307)	(0.000)***		(0.354)	(0.593)				(0.339)			
4	0.098	-0.155	-0.031	-1.46					0.011	0.065		0.065	14.28%	71
	(0.888)	(0.171)	(0.861)	(0.000)***					(0.083)*	(0.123)		(0.854)		
36-Months														
1	0.604	-0.081	-0.235	-2.48				0.043				0.419	15.6%	66
	(0.545)	(0.697)	(0.389)	(0.006)***				(0.746)				(0.487)		
2	1.45	-0.076	-0.345	-2.5	-0.233							0.64	19.7%	66
	(0.28)	(0.661)	(0.24)	(0.006)***	(0.132)							(0.341)		
3	0.035	0.118	-0.004	-2.37		-0.71	0.456				-0.353		10%	67
	(0.977)	(0.459)	(0.99)	(0.04)**		(0.43)	(0.303)				(0.467)			
4	0.739	-0.142	-0.26	-2.69					0.02	0.093		0.468	23.7%	66
	(0.35)	(0.407)	(0.288)	(0.002)***					(0.014)**	(0.064)*		(0.415)		

The coefficient for LOGSALES is insignificant. Therefore, it seems that the size of NPFs is not related to abnormal returns. This result is not consistent with the finding that smaller firms should outperform large firms based to asymmetric information theories. However, this result is not surprising because privatized firms are generally large and mature firms, operating in stable industries. However, the coefficient for STRATEGIC is consistently negative though it is significant for 12 months horizon, suggesting that firms belonging to non strategic sectors yield higher long run returns than those in strategic sectors.

For institutional variables, the coefficients for RIGHT and LIABILITY are not significant for all horizons, suggesting that good protection of investors and good laws mandating disclosure and faciliting private enforcement have no impact on the long term performance of privatized firms. The coefficient for political risk (POLRISK) is positive and significant suggesting that a progressive resolution of political risk leads to higher returns. We find also that GDPG and DEVELOPED have the expected sign (positive coefficients) for all horizons, but significant for only the 12 months horizons.

Moreover, it seems that the percentage of shares retained by the government has no impact on the post privatization performance. Nevertheless, the coefficient is consistently positive over all horizons, but it is relatively significant just for one year. This result is not supporting Perotti's (1995) signaling model.

The timing of the privatization offering (RECENTLP) does not have a statistically significant effect on long-run

market-adjusted returns, but the coefficient is negative. This suggests that investors do make a difference in assessing the value of later privatizations compared to earlier ones.

The key finding is that the forecast error variable (FE) is consistently negative and statistically significantly different from zero (at 1%, 5% and 10%) for all horizons and for both measures of performance CARs and BHARs (Note 5). Thus, the long term performance of privatized firms is significantly and negatively related to analyst forecast errors. This finding is consistent with the fact that investors are pessimistic about the earnings potential of privatized firms, but grow more optimistic afterwards, causing positive abnormal returns over time. This result is in contrast to the evidence reported for IPOs (Rajan & Servaes, 1997). In the same vein, Dechow, Hutton and Sloan (2000) document that analysts are overoptimistic about firm future prospects around equity offerings. Their results imply that investors overestimate the price of firms when analysts expect high growth prospects, and fall down the prices of firms when analysts expect low growth prospects.

Taken together, the evidence from market expectations, earnings performance and analyst forecast errors, rules out the behavioral explanation that the outperformance of privatized firms reflects the tendency of investors to underweight the recent performance of privatized firms, and tend to pay more attention to uncertainties related to the extent of government commitment to the privatization process. Thus, investors tend to assess the behavior of privatizing governments after IPOs, and slowly incorporate prospective performance improvements into stock prices as policy uncertainties disappear.

8. Conclusion

Since the early 1980s, privatization has become an important and interesting economic phenomenon across the world. Different studies attempt to study the financial and operating performance of privatized firms, however little studies focused on how policy risk is perceived by investors.

Using a sample of 302 privatized firms across 43 countries over the period 1980 to 2002, we provide further evidence on investor behavior and expectations around equity issue by privatized firms. In addition, we explore how the change in market expectations and earnings performance can provide an explanation of the aftermarket performance of privatized firms.

Using different measures for the investor expectations of future earnings, we document several interesting results. First, we find that investors are relatively pessimistic at the beginning of the privatization process because there are concerned about government policy uncertainties after privatization and hesitate to fully incorporate potential profitability gains into their expectations for quite some time thereafter. This finding contrasts with the behavioral explanation that sustains that the poor long run performance results from the tendency of investors to overweight recent experience when forming expectations for private firms. Second, we show that post issuance abnormal returns (CARs and BHARs) are negatively related to analysts forecast errors. This finding reinforces our conclusion that the market is pessimistic regarding future earnings and grows more confident as firms exhibit increased earnings following privatization. Overall, our results suggest that the long run performance is due, in part, to the fact that investors underestimate the future earnings potential of privatized firms at the time of privatization, because of the additional uncertainties related to the governments' commitment to the privatization process. Thus, this explanation is based on the human behavioral characteristic that makes investors tend to underweight the recent experience of privatized firms and overweight the political risk.

Our results may have interest implications for academics, practionners as well as policy makers. They help us to better understand how analysts assess the information, and their role in the price formation of privatized firms. In addition, policy makers have to realize that investing in reputation building to boost investors' confidence is important to reap the highest benefits from the privatization process, and help to achieve local stock market, and overall economic growth.

Acknowledgements

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Notes

Note 1. Hong, Lim and Stein (2000) report that more than 63 % of traded firms receive analyst coverage.

Note 2. World Bank classification.

Note 3. Megginson and Netter (2001) provide a survey of important national studies. In addition, Megginson, Lee and Choi (2010) provide a summary of the key results from the existing privatization IPO long-run return studies.

Note 4. In addition, we tried to find matching firms from private IPO, but since privatization IPO firms are typically the largest firms in each domestic market; it is difficult to find suitable private IPO matching firms within the domestic market.

Note 5. We conduct also additional tests using the return on equity (ROE) and the return on sales (ROS) as proxies for performance. Similar patterns for forecast errors (FE) are observed. We find also that the coefficient for BUREAUCRACY is negative and significant in all regressions.

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