Internet Appendix
for
“Security Issue Timing: What Do Managers Know, and When Do They Know It?”

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Changes in operating performance around put option sales

Section 3.2 in the paper shows that the first earnings announcement following a put sale is associated with positive abnormal returns. This suggests that the market may be positively surprised by put sellers’ post-sale profitability. In this appendix, we analyze the issuers’ operating performance before and after the put sales. We examine both raw and benchmark-adjusted performance to better understand what type of information investors may be missing when forecasting post-sale earnings.

1 Matching procedure

Following the methodology in Lie (2001 and 2005), we use two sets of control firms. We calculate industry-adjusted performance by selecting control firms that are in the same 2-digit SIC industry and are closest to the sample firms in terms of beginning-of-quarter book assets. We construct a second benchmark by selecting firms that are from the same 2-digit industry, have similar pre-sale operating performance, and similar pre-sale market-to-book ratios. Matching on pre-sale performance allows us to control for predictable mean reversion in accounting earnings.

We measure performance as return on assets (ROA), defined as operating income divided by the average of beginning- and end-of-quarter cash adjusted assets (cash adjusted assets is the book value of assets less cash and short-term securities[1]). For each put issuer, we identify all Compustat firms in the same 2-digit SIC industry that have: (1) ROA in the quarter before the put sale (quarter −1) within ±20% or within ±1 percentage point of the issuer; (2) ROA for the four quarters ending in quarter −1 within ±20% or within ±1 percentage point of the issuer; and (3) market-to-book ratios in the beginning

[1] We subtract cash from book assets since the scaled operating performance of firms that repurchase shares may increase solely because cash is removed from the balance sheet to fund repurchases.

of the sale quarter within ±20% or within ±0.1 of the issuer. If no firm meets all criteria, we select firms from the same 1-digit SIC industry, and finally without any industry requirement. If still no suitable firms are found, we disregard the performance and market-to-book criteria. Finally, among all candidate firms, we select the matching firm with performance characteristics closest to the put issuer, where distance is defined as:

$$
\begin{aligned}
& \left|ROA_{\text{Quarter } -1\text{, put seller}} - ROA_{\text{Quarter } -1\text{, matched firm}}\right| \\
+ & \left|ROA_{\text{Quarters } -4 \text{ to } -1\text{, put seller}} - ROA_{\text{Quarters } -4 \text{ to } -1\text{, matched firm}}\right| \\
+ & \left|M/B_{\text{Quarter } -1\text{, put seller}} - M/B_{\text{Quarter } -1\text{, matched firm}}\right|
\end{aligned}
$$

This procedure requires that both put issuers and matching firms have ROA data for the four quarters preceding the put sale available. To avoid matching with very small firms, we exclude control firms with book assets of less than $10 million.

2 Results

Table A presents operating performance around the 606 put sale quarters for which the matching procedure was successful. Panel A shows that put sellers are highly profitable and strongly outperform their size-matched industry peers both before and after the put sales. For example, in the quarter before the put sale (quarter -1), the mean unadjusted ROA is 7.73%, which is 3.39 percentage points higher than for the size- and industry-matched control firms (the medians are 5.63% and 1.48 percentage points, respectively).

The unadjusted ROA declines slightly after the put sale (the change from quarter -1 to quarter 4 is -0.54 percentage points, with a t-statistic of -2.48). Some decline may be expected by the market because of predictable mean reversion in earnings. To account for this, the final two columns in Table A report put issuers' operating performance relative to their industry-, performance-, and market-to-book-matched control firms. The put issuers outperform their benchmarks starting in the quarter of the put sale, and the outperformance increases over time. For example, the mean change in adjusted ROA from quarter -1 to quarter 4 is 1.27 percentage points (t-statistic 3.82), and the mean change from quarter -1 to quarter 8 is 1.63 percentage points (t-statistic 4.56).

Hence, the unadjusted ROA declines somewhat after put sales, but the decline is smaller than that of control firms with similar pre-sale performance. This pattern is qualitatively similar to the results found by Lie (2005) for the announcements of share repurchase programs, but the outperformance after put sales is several times larger than the outperformance after repurchase announcements. The results in Table A, combined with the earnings announcement evidence in Table 4 in the paper, suggest that investors may have expected larger earnings reversals for the highly profitable put issuers and were positively surprised by their post-sale profitability.

References

Lie, Erik, 2001, Detecting abnormal operating performance: Revisited, Financial Management 30, 77-91.

Lie, Erik, 2005, Operating performance following open market share repurchase announcements, Journal of Accounting and Economics 39, 411-436.

Table A

Quarterly operating performance around put option sales. Operating performance is measured as operating income scaled by average cash-adjusted assets. The put sale occurs in quarter 0. Industry-adjusted performance is the performance of put issuers less the performance of industry- and size- matched control firms. Performance-adjusted performance is the performance of put issuers less the performance of industry-, performance-, and market-to-book-matched control firms. T-statistics for means and Z-statistics from Wilcoxon signed-rank tests for medians are reported in brackets.

Quarter	N	Unadjusted		Industry-adjusted		Performance-adjusted	
		Mean	Median	Mean	Median	Mean	Median
Panel A: Levels of operating performance							
−4	606	**7.92**	**5.77**	**3.27**	**1.60**	**0.46**	**0.15**
		(27.56)	(20.93)	(10.25)	(9.76)	(2.96)	(2.77)
−2	606	**7.88**	**5.73**	**3.47**	**1.61**	0.19	-0.06
		(28.41)	(21.24)	(11.04)	(10.36)	(1.27)	(0.34)
−1	606	**7.73**	**5.63**	**3.39**	**1.48**	**0.21**	-0.01
		(27.14)	(20.96)	(10.62)	(9.92)	(2.48)	(0.68)
0	597	**7.72**	**5.67**	**3.55**	**1.57**	0.38	**0.21**
		(27.07)	(20.92)	(10.98)	(10.11)	(1.84)	(2.58)
+1	588	**7.56**	**5.35**	**3.41**	**1.25**	**0.71**	**0.06**
		(26.51)	(20.78)	(10.53)	(9.40)	(3.25)	(2.19)
+2	576	**7.51**	**5.32**	**3.35**	**1.31**	**0.79**	**0.22**
		(24.46)	(20.21)	(9.95)	(9.04)	(2.75)	(2.56)
+4	559	**7.43**	**5.23**	**3.37**	**1.46**	**1.46**	**0.28**
		(23.48)	(19.91)	(9.16)	(8.78)	(4.42)	(3.34)
+6	547	**7.40**	**5.37**	**3.21**	**1.47**	**1.49**	**0.10**
		(24.25)	(19.80)	(9.17)	(8.58)	(4.71)	(2.77)
+8	540	**7.27**	**5.11**	**3.07**	**1.34**	**1.88**	**0.33**
		(23.56)	(19.38)	(8.14)	(8.00)	(5.18)	(3.83)
Panel B: Changes in operating performance							
−1 to +1	588	-0.16	-0.08	0.07	-0.06	**0.50**	0.06
		(-1.14)	(-1.40)	(0.40)	(0.04)	(2.34)	(1.61)
−1 to +2	576	-0.31	**-0.17**	0.06	-0.07	**0.63**	**0.18**
		(-1.69)	(-2.49)	(0.28)	(-0.27)	(2.22)	(2.08)
−1 to +4	559	**-0.54**	**-0.32**	-0.08	-0.20	**1.27**	**0.07**
		(-2.48)	(-3.96)	(-0.31)	(-1.26)	(3.82)	(2.54)
−1 to +8	540	**-0.69**	**-0.66**	-0.34	**-0.34**	**1.63**	**0.33**
		(-2.90)	(-4.56)	(-1.07)	(-2.15)	(4.56)	(3.31)