

Security Issue Timing:

What Do Managers Know,
And
When Do They Know It?

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Market timing

- A sizeable literature argues that managers try to time the market with their security issue and repurchase decisions.
 - Equity issues and repurchases, stock mergers, debt issues.
- The importance of market timing explanations for corporate behavior is hotly debated and still unresolved.
 - Evidence: Long-run returns. Surveys. Insider trading.
- Corporate security issues have many motives: Investment opportunities, changes in risk, optimal capital structure. Changing firm and risk characteristics make it difficult to interpret the return evidence.

Three necessary ingredients for “Market Timing” story:

- 1. Managers are able to identify mispriced corporate securities.**
- 2. Managers are willing to trade on the corporate account against their own investors.**
- 3. The market under-reacts to news about the security issue or repurchase.**



Put option sales by firms

- We examine all sales of put options on company stock by U.S. firms between 1991-2004.
 - Put option sales are a bet on rising stock prices.
- Useful research setting:
 - Put option sales are likely motivated by market timing.
 - Put option sales have too small an effect on firms' asset structures to explain subsequent abnormal returns.
 - The put options have short maturities, hence fewer concerns about measuring long-horizon returns.
 - Put options are non-linear bets; allow to examine volatility timing.
- Drawbacks:
 - The number of put sellers is not large (even though the put sellers are).
 - The dollar amounts involved tend to be small (for most issuers).



Results

- We observe 802 put sales by 137 firms from 1991 to 2004.
 - The average put is issued slightly out-of-the-money, and has a six month maturity.
- **Managers successfully predict returns: Put issuers outperform their benchmarks by 4 to 5% in the 100 trading days after a put sale.**
 - Robust to different specifications of the abnormal return model.
- **A substantial part of the abnormal return occurs after the first earnings release date after the put sale.**
 - Suggests that inside information not limited to one-quarter ahead earnings.
 - Put issuers' operating performance outperforms their benchmark firms after put sales.
- **There is suggestive evidence for successful volatility timing.**
 - Volatility declines after a firm's first put sale and increases after the last sale.
- **Exercise frequencies and payoffs to put holders are abnormally low.**

Results II



- The results provide support for the idea that managers can identify mispriced equity and use securities issues to time the market.
 - Managers seem to act on short-term inside information about both first and second moments of stock returns.
- Our paper provides no evidence on the efficiency of financial markets



Institutional background

- A 1991 SEC ruling allows firms with repurchase programs to issue puts on their own stock.
- The put sales are privately negotiated transactions, with a broker or an investment bank as counterparty.
 - The counterparty likely hedges the purchase by buying shares or selling puts.
- Firms do not publicize the put sales, but have to report them in the footnotes of the next quarterly report.
- The proceeds (premiums) are tax-free and directly booked into shareholders' equity. No income statement effects until recently.
- Issues have dried up since 2002: FAS No. 150 came into effect in 2003 and requires the puts to be marked-to-market, with changes in fair value recorded through earnings.



Firms' motivation

- The prior academic and practitioner literature discusses several potential rationales for put option sales:
 1. **Signaling** (Gibson, Povel, and Singh (2006)): If true, firms should tout their put sales. Instead, they hide them. (McDonald (2003), Atanasov, Gyoshev, Szewczyk, and Tsetsekos (2004)).
 2. **Taxes**: Put premia are tax free, but put sales are tax-disadvantaged compared to the equivalent synthetic put position (McDonald (2003)).
 3. **“Selling volatility”**: The prices for out-of-the-money puts may be attractive (volatility smile); there may be volatility arbitrage with the market for index options.
 4. **Hedging**: Put sales are sometimes described as a hedge for a share repurchase program. This doesn't make sense: Risk is increased, not reduced, by put sales.



Firms' motivation II

5. **Ignorance** (McDonald (2003)): Firms may have written puts for mistaken reasons. Difficult for managers to understand ex-post that they made a mistake, especially if stock prices are rising.
6. **Market timing**: Firms may use inside information about stock returns or volatility to time their put sales.
 - Since put sales are not anonymous, the put sale proceeds should be adjusted downwards for asymmetric information. Put sellers should be unable to make money (McDonald (2003)).
 - But: If the buyer of the puts hedges the puts in the market, the buyer in effect secretly trades with the public on behalf of the issuer. The put issuer and put buyer share the informational rents generated at the expense of uninformed traders in the market (Atanasov et al. (2004)).

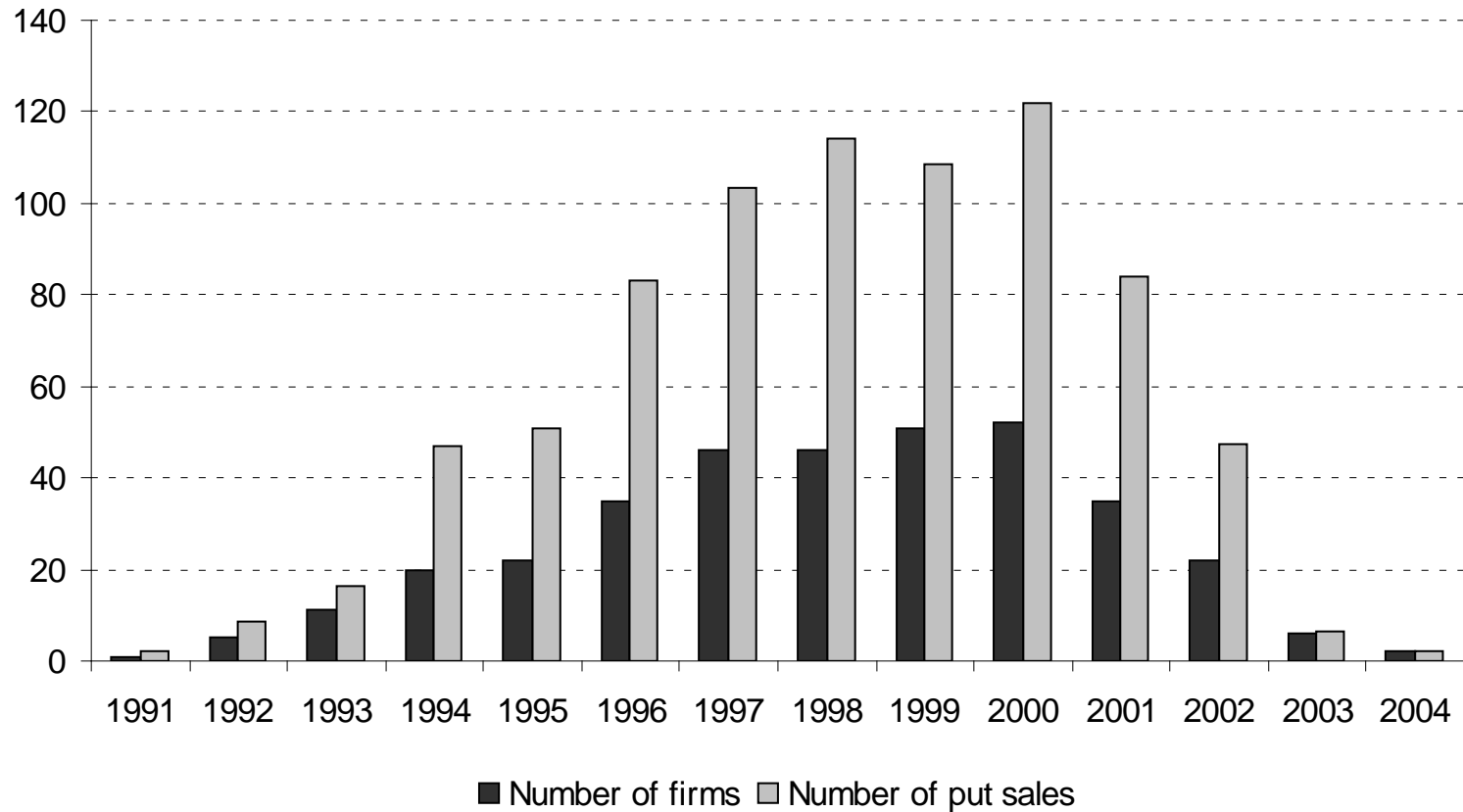


Data collection

- We identify all firms that sold put options on their own stock between 1991 and 2004 by searching annual and quarterly reports on the Lexis-Nexis, Factiva, and Edgar databases.
 - We eliminate any puts issued in conjunction with other securities and retain only stand-alone puts.
- Put sellers make no pre- or post-sale announcements of specific put sale transactions, and all data is collected from subsequent financial statements.
 - The detail and quality of the reported information varies widely.
 - The exact date at which the put sale occurs is usually not given; we only know the month or quarter of the transaction.
- The options are described as European whenever that information is provided.
- Some of the puts have non-standard features, such as early settlement options, but the information given is again incomplete.



Figure 1: Number of put sales and issuing firms by year



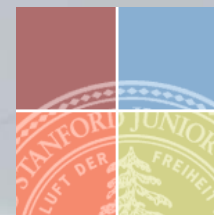
Put characteristics



Panel A: Individual put sales, n=796

	Mean	10th Pctile	Median	90th Pctile	Obs.
Number of puts sold (mil. of shares)	4.9	0.1	0.8	8	657
... scaled by number of shares outstanding	0.88%	0.08%	0.40%	2.05%	657
Face value (\$ mil.)	67.6	2.7	18	131	461
... scaled by equity market capitalization	0.83%	0.07%	0.42%	1.61%	461
Proceeds (\$ mil.)	10.5	0.25	2.1	20	475
... scaled by equity market capitalization	0.09%	0.01%	0.04%	0.22%	475
Moneyness (strike price / stock price)	95%	81%	96%	108%	567
Maturity (days)	211	81	182	367	574
Fraction of put sales that are exercised or settled	36%	-	-	-	447

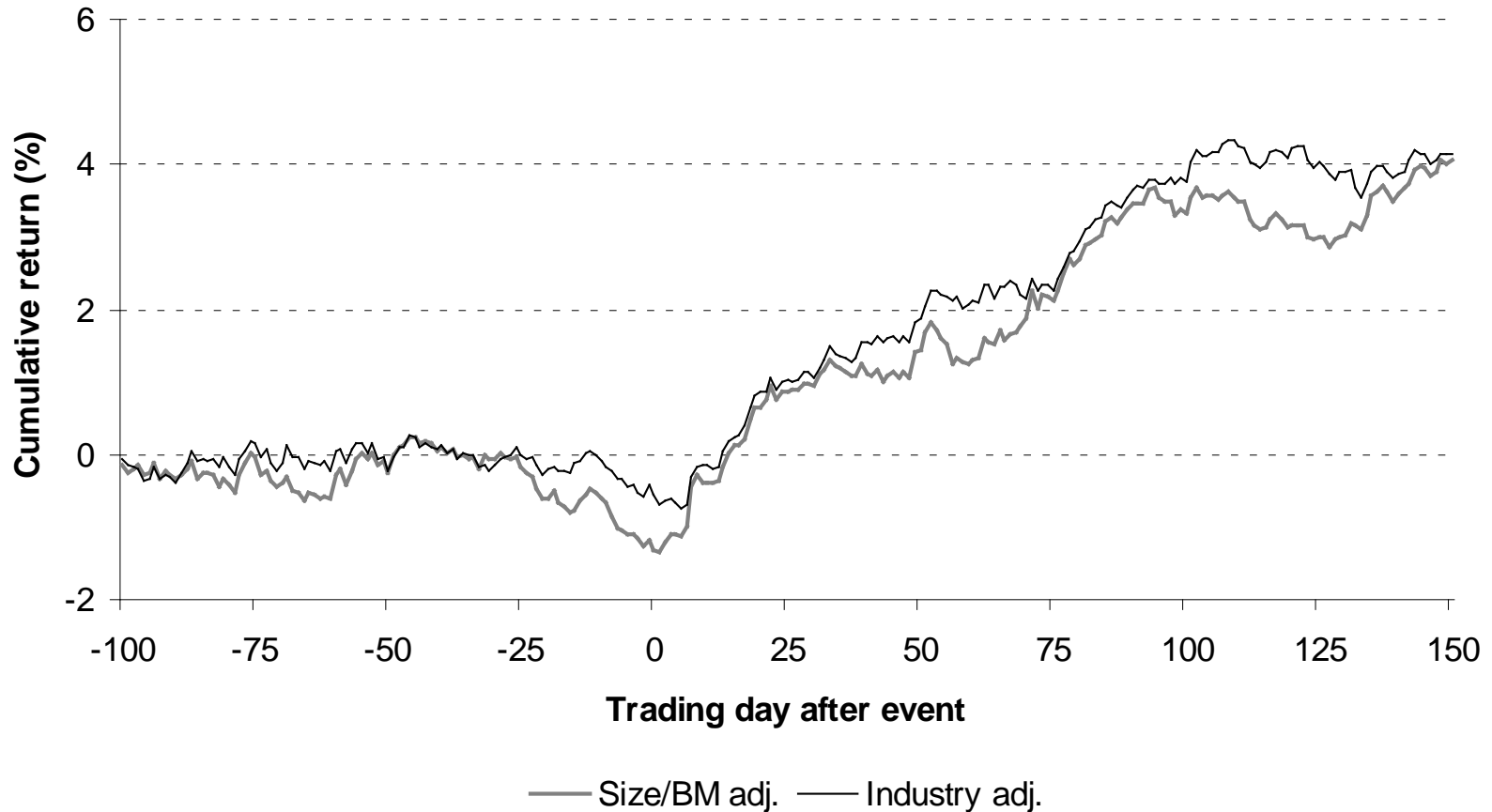
Put sale programs



Panel B: Put sale programs, n=137

	Mean	10th Pctile	Median	90th Pctile	Obs.
Number of put sales	5.8	1	4	13	137
Number of puts sold (mil. of shares)	21	0.4	2.6	25.2	108
... scaled by number of shares outstanding	4.15%	0.52%	1.84%	9.37%	108
Face value (\$ mil.)	223.4	5.2	43.7	286	68
... scaled by equity market capitalization	3.47%	0.56%	1.84%	7.99%	68
Proceeds from put sales (\$ mil.)	53.4	0.43	5.8	85.1	84
... scaled by equity market capitalization	0.42%	0.03%	0.14%	1.18%	84
Program length (years)					
... from the first to the last put sale	2.1	0.08	1.3	5.3	137
Number of quarters with a put sale	5.4	1	4	11	137

Stock price performance around put sales



Stock price performance around put sales II



Trading days after event	Mean returns				N
	Raw returns	Market adj.	Size/BM adj.	Industry adj.	
-100 to -50	2.01	-0.07	-0.22	-0.22	601
-50 to 0	0.58	-1.15	-1.02	-0.34	605
0 to 50	4.91	3.04	2.78	2.47	603
50 to 100	4.68	2.26	1.88	1.88	602
100 to 150	3.57	1.71	1.32	1.04	596
150 to 200	2.01	0.48	0.34	0.59	593

Trading days after event	T-statistics				N
	Raw returns	Market adj.	Size/BM adj.	Industry adj.	
-100 to -50	2.44	-0.09	-0.29	-0.30	601
-50 to 0	0.65	-1.48	-1.37	-0.48	605
0 to 50	5.72	3.98	3.74	3.66	603
50 to 100	5.60	2.89	2.44	2.61	602
100 to 150	4.23	2.20	1.68	1.42	596
150 to 200	2.38	0.62	0.44	0.83	593

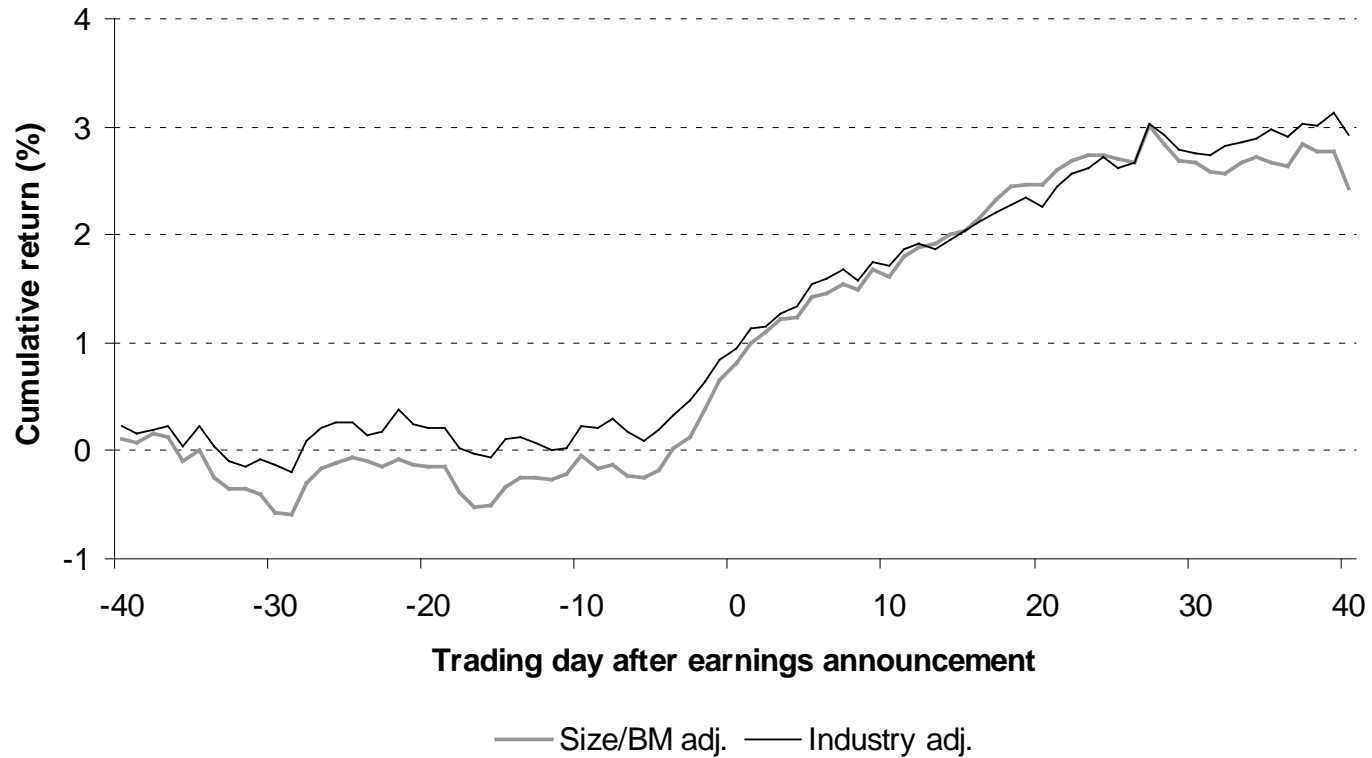
Stock price performance around put sales III



Alphas from rolling portfolios (Fama, 1998)

Portfolio horizon (calendar days)	Alpha		T-statistics	
	EW	VW	EW	VW
70	0.07%	0.09%	3.32	3.33
140	0.05%	0.08%	2.93	3.57

Earnings announcements after put sales



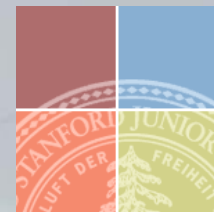
Earnings announcements after put sales



Cumulative returns around earnings announcements after put sales

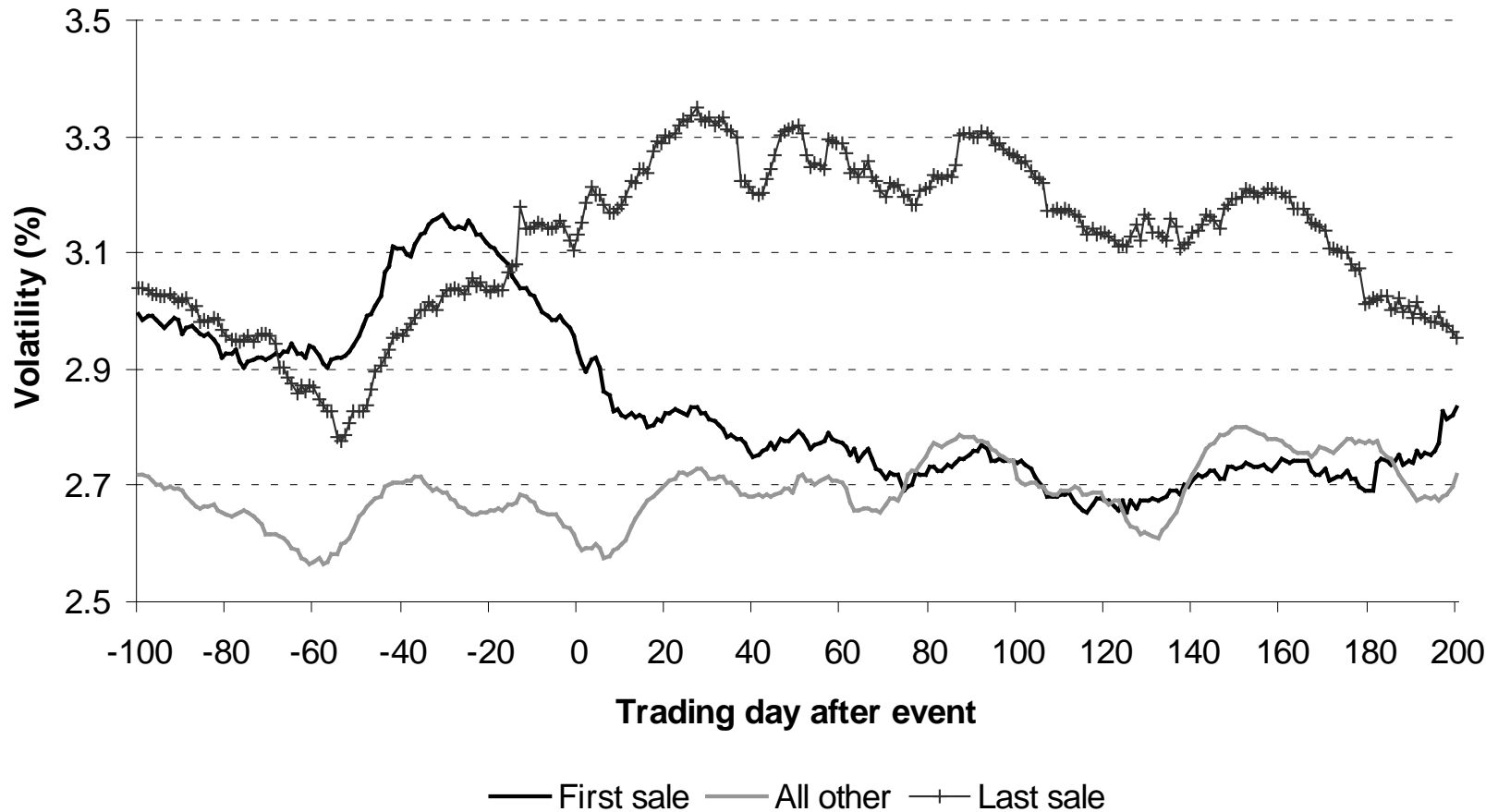
Earnings ann. #	Trading days	Mean cumulative returns			T-statistics			N
		Market adj.	Size/BM ajd.	Industry adj.	Market adj.	Size/BM adj.	Industry adj.	
1	-2, 2	1.03	0.96	0.67	3.20	3.06	2.41	631
	-5, 5	1.94	1.66	1.44	4.79	4.24	4.04	631
	-10, 10	2.15	1.84	1.69	4.26	3.73	3.74	631
2	-2, 2	0.42	0.54	0.23	1.00	1.31	0.59	338
	-5, 5	0.92	0.92	0.44	1.65	1.64	0.85	338
	-10, 10	1.13	1.28	0.52	1.62	1.82	0.83	338
3	-2, 2	-0.28	-0.35	-0.72	-0.48	-0.62	-1.35	242
	-5, 5	0.14	0.10	-0.40	0.21	0.14	-0.63	242
	-10, 10	0.89	0.60	-0.04	1.01	0.68	-0.06	242

Volatility timing

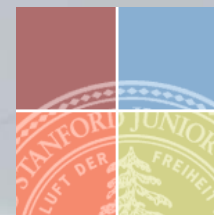


- The value of a put option increases in volatility.
 - Possible that managers sell put options when they expect future volatility to be lower than predicted by the market.
- We do not observe the market's (or the put purchaser's) volatility forecast.
- We can only examine volatility changes around put option sales, and especially around put sale program initiations and terminations.
 - Finding that volatility declines after program initiations, stays low or declines further after subsequent sales, and increases after program terminations would be consistent with volatility timing.

Volatility changes around put sales



Volatility changes around put sales II



Event	Tr. days	Changes in volatility before to after				T-statistics for changes			
		Raw returns	Market adj.	Size B/M adj.	Indust. adj.	Raw returns	Market adj.	Size B/M adj.	Indust. adj.
First sale	50	-0.15	-0.11	-0.09	-0.09	-1.42	-1.12	-1.00	-0.96
	100	-0.20	-0.17	-0.15	-0.18	-2.36	-2.10	-1.99	-2.31
	200	-0.19	-0.17	-0.15	-0.16	-2.56	-2.31	-2.19	-2.43
All other	50	0.10	0.08	0.09	0.07	1.96	1.62	1.80	1.55
	100	0.05	0.03	0.05	0.04	1.02	0.74	0.99	0.86
	200	0.06	0.05	0.06	0.05	1.35	1.04	1.27	1.11
Last sale	50	0.24	0.21	0.23	0.19	2.34	2.24	2.53	2.12
	100	0.32	0.30	0.30	0.26	3.11	3.15	3.05	2.75
	200	0.17	0.13	0.12	0.12	1.79	1.42	1.28	1.25

Volatility = daily std of benchmark adjusted returns (%)

Abnormal exercises and payoffs



Panel A: Percentage of puts exercised

Put issuer	Control firms matched by industry - market/book - size		
Percentage exercised		Percentage exercised	T-test
33.33%	Control firm 1	37.57%	1.93*
	Control firm 2	40.45%	3.07***
	Control firm 3	41.06%	3.57***
	Control firm 4	43.77%	4.58***
	Control firm 5	44.46%	4.66***
	Avg. of 1 - 3	39.69%	3.48***
	Avg. of 1 - 5	41.46%	4.61***

Panel B: Payoffs to put holders

Put issuer	Control firms matched by industry - market/book - size		
Average put payoff		Average put payoff	T-test
6.28%	Control firm 1	8.37%	3.10***
	Control firm 2	10.17%	4.91***
	Control firm 3	9.14%	3.94***
	Control firm 4	11.31%	6.19***
	Control firm 5	11.51%	6.03***
	Avg. of 1 - 3	9.23%	5.33***
	Avg. of 1 - 5	10.10%	7.12***



Summary and conclusion

- We focus on a setting in which firms issue securities that have no obvious corporate purpose other than market timing.
 - Management's belief that it can time the market seems the most plausible rationale for put sales.
- **We find strong evidence that managers are able to identify mispriced equity and predict returns.**
 - **Put issuers outperform their risk-based benchmarks by approximately 5% in the 100 trading days after a put sale.**
 - **A substantial part of the outperformance is realized after the first earnings announcement following the put sale.**
 - **We find suggestive evidence that managers successfully time the volatility of their stock returns.**
- Our results are consistent with managers' self-professed belief that they can time the market, and show that this belief is based on more than managerial overconfidence.