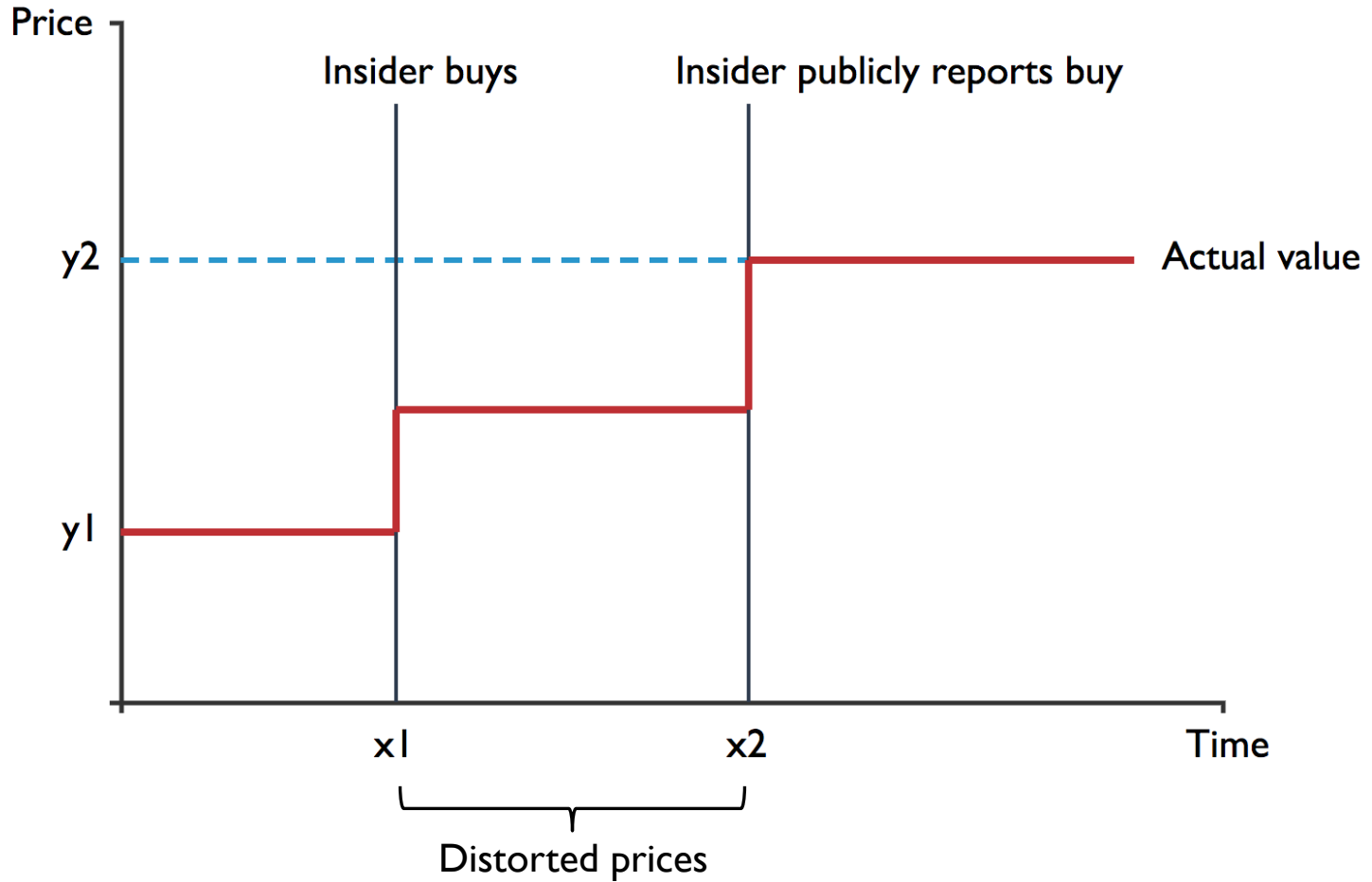


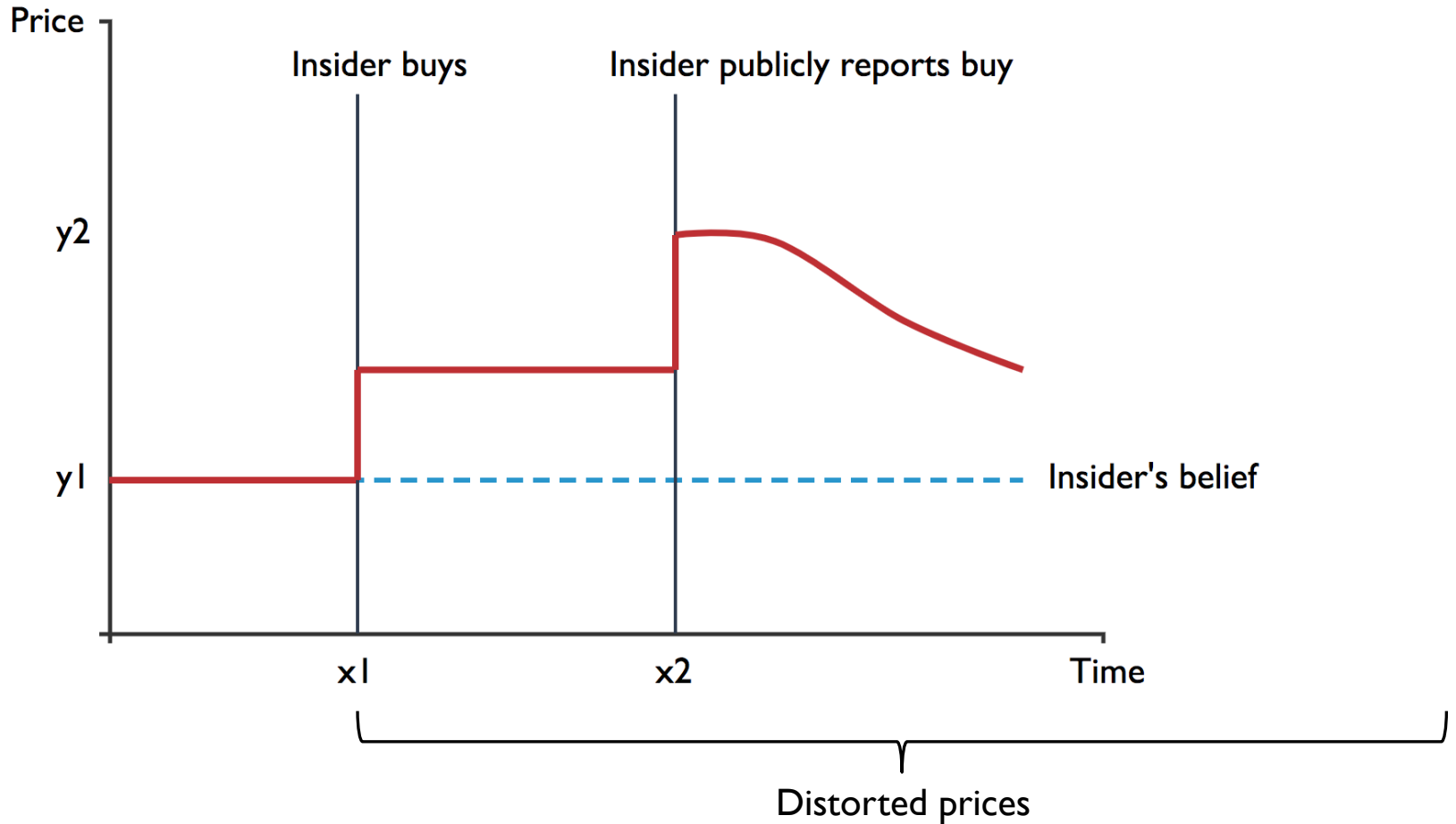
Insider Trading Transparency

Maris Jensen

Motivation



Motivation



Today

- I. Are insiders strategically hiding trades?
- II. Are insiders strategically reporting trades?

Reported Trades

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

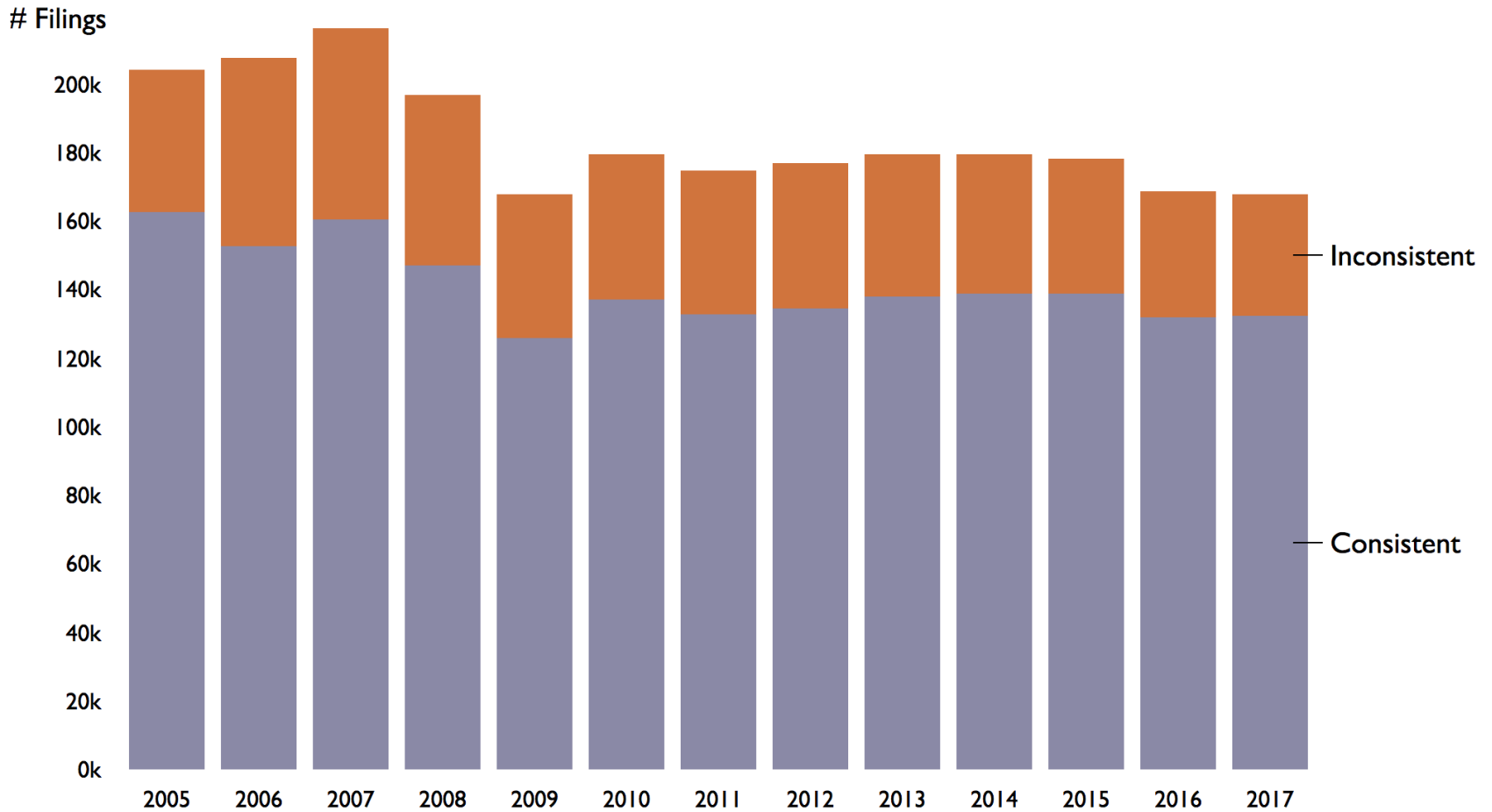
1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)
			Code	V	Amount	(A) or (D)	Price		
1. Common Stock	02/07/2008		P		1,000	A	\$6.8	12,757	D
2. Common Stock	06/05/2008		P		15,000	A	\$1.13	27,757	D
3. Common Stock	12/08/2008		P		60,000	A	\$1.5833	87,757	D
4. Common Stock	03/31/2009		A ⁽¹⁾		15,000	A	\$2.62	99,821	D
5. Common Stock	03/31/2009		A		25,000 ⁽¹⁾	A	\$0	124,821 ⁽¹⁾	D

Implied Trades

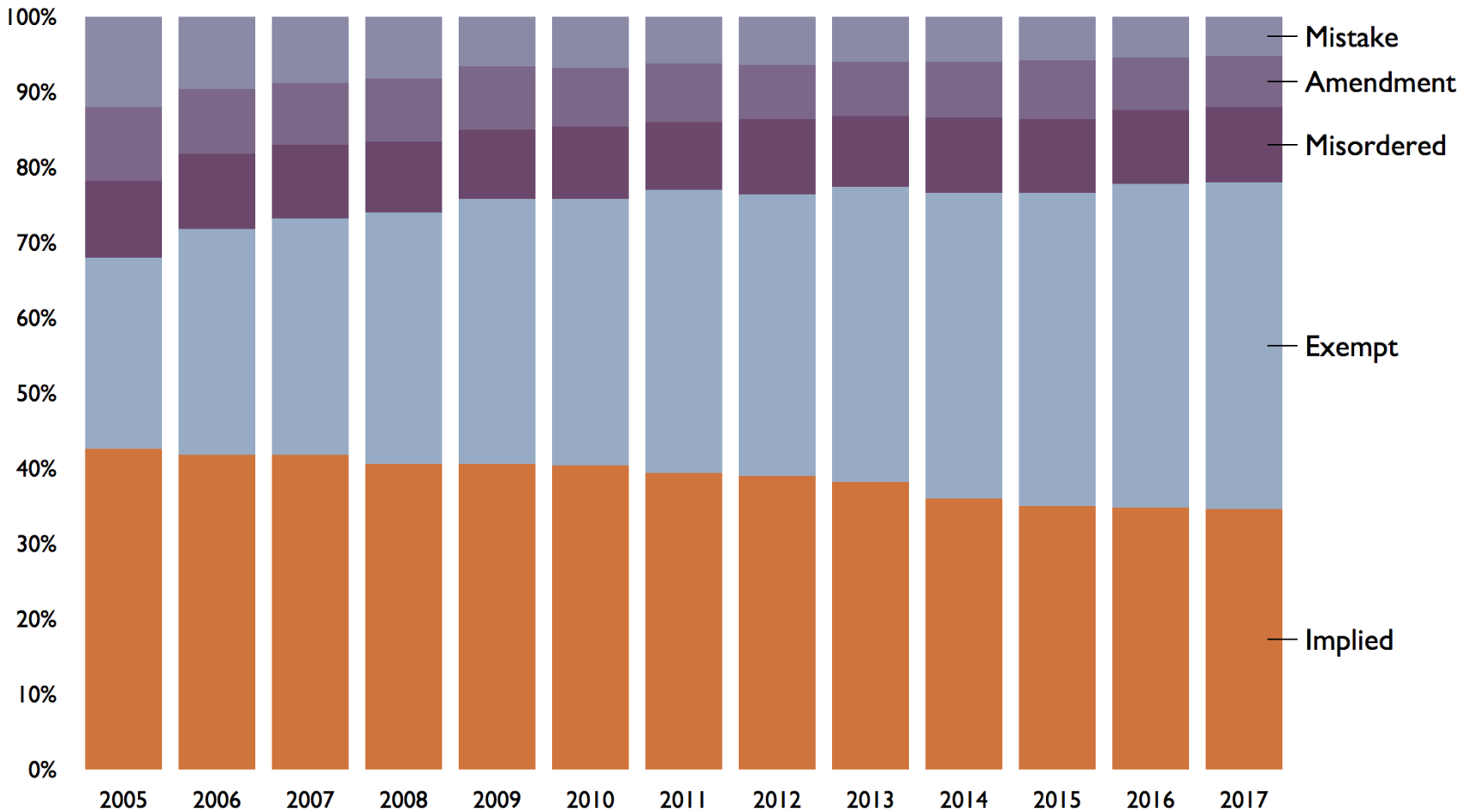
Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	Before	Implied
			Code	V	Amount	(A) or (D)	Price				
1. Common Stock	02/07/2008		P		1,000	A	\$6.8	12,757	D	11,757	
2. Common Stock	06/05/2008		P		15,000	A	\$1.13	27,757	D	12,757	0
3. Common Stock	12/08/2008		P		60,000	A	\$1.5833	87,757	D	27,757	0
4. Common Stock	03/31/2009		A ⁽¹⁾		15,000	A	\$2.62	99,821	D	84,821	-2,936
5. Common Stock	03/31/2009		A		25,000 ⁽¹⁾	A	\$0	124,821 ⁽¹⁾	D	99,821	0

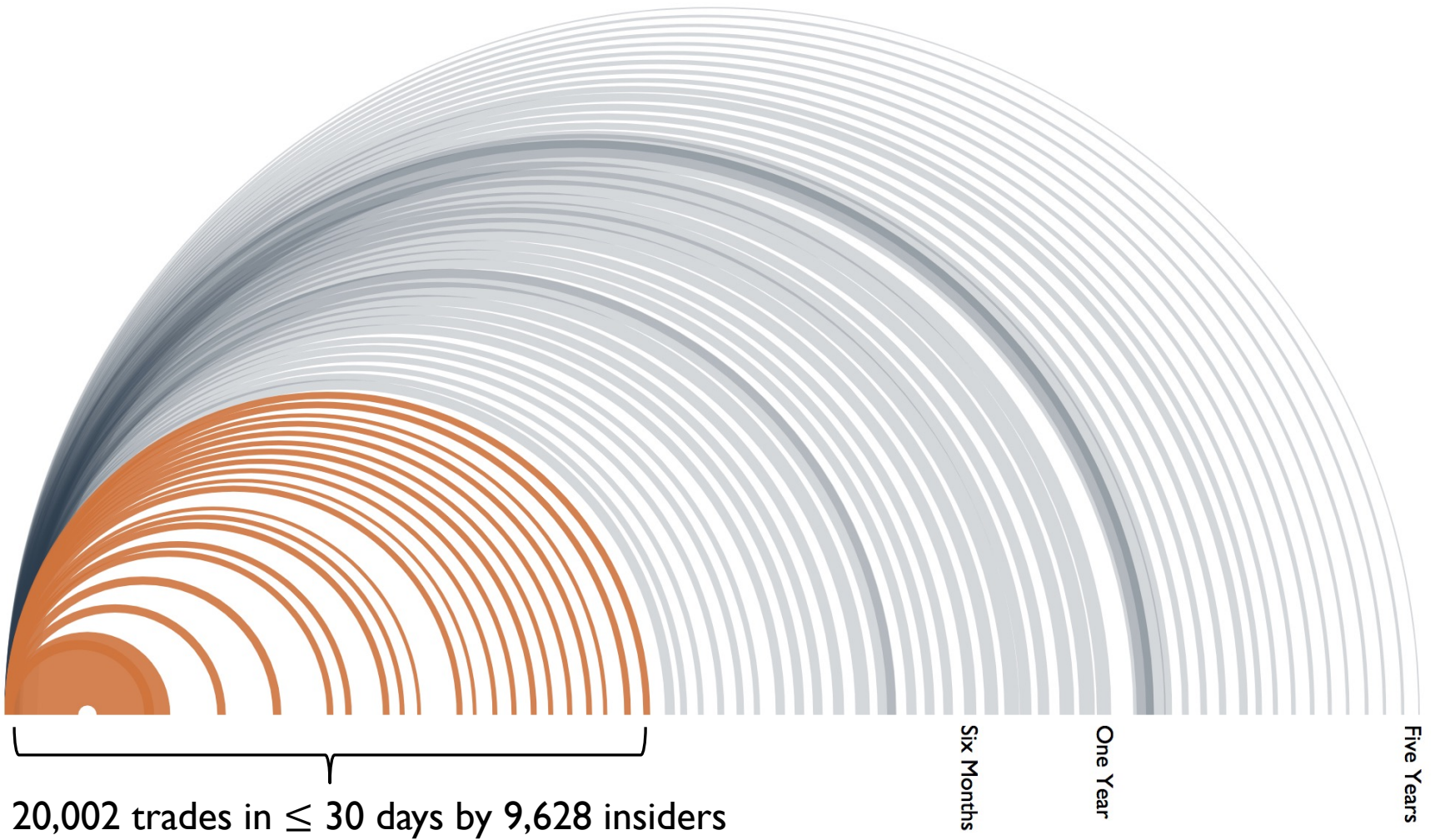
Consistency of Filings



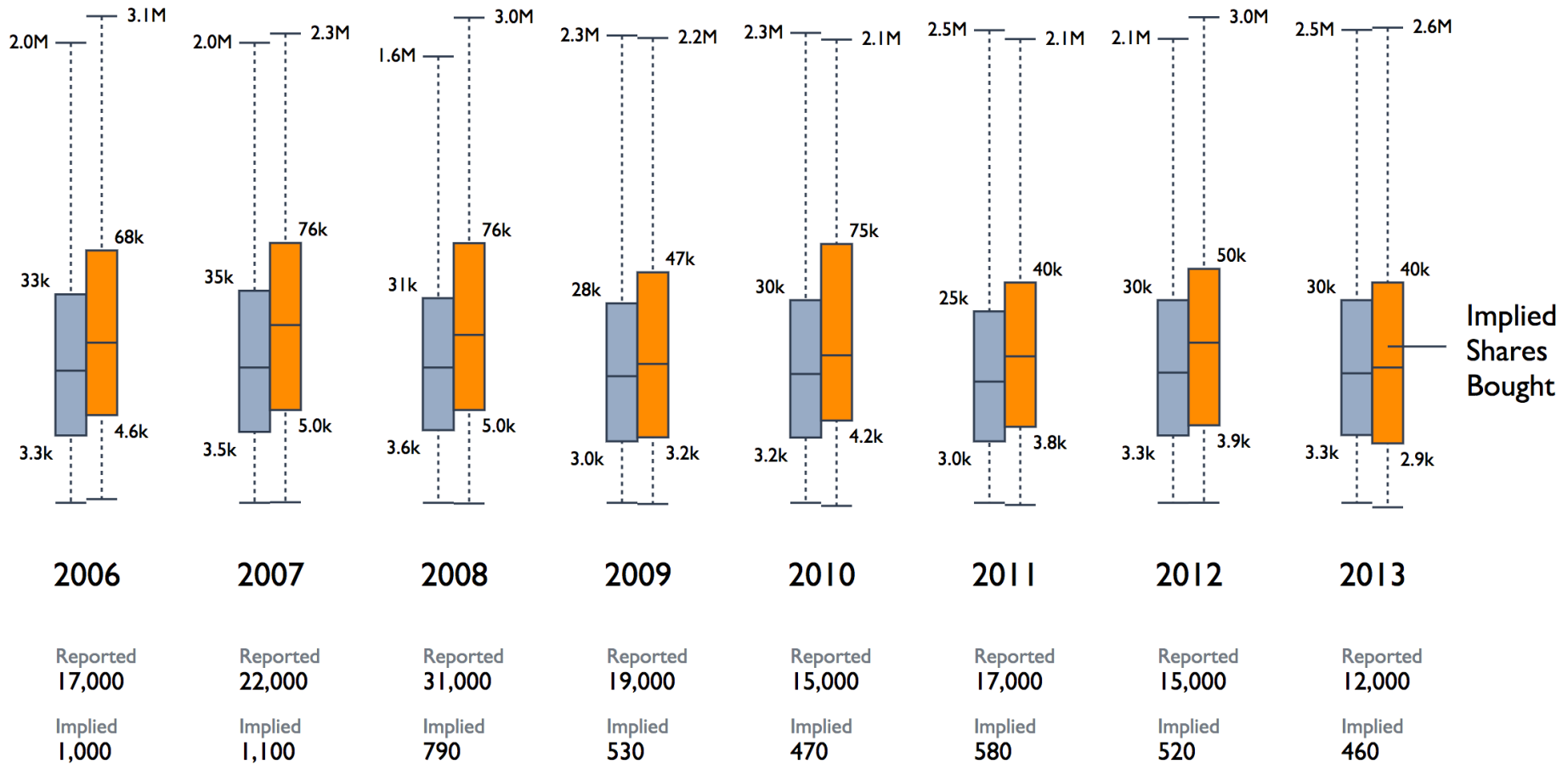
Inconsistent Filings



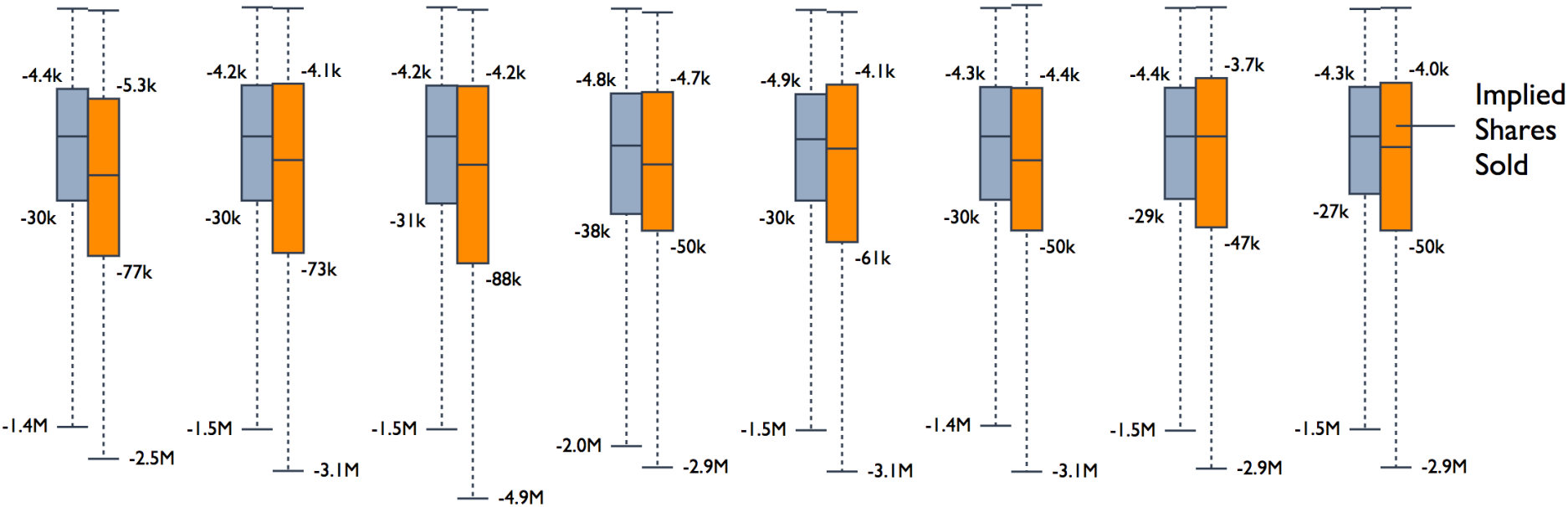
Implied Trade Date Ranges



Reported vs. Implied Buys



Reported vs. Implied Sales

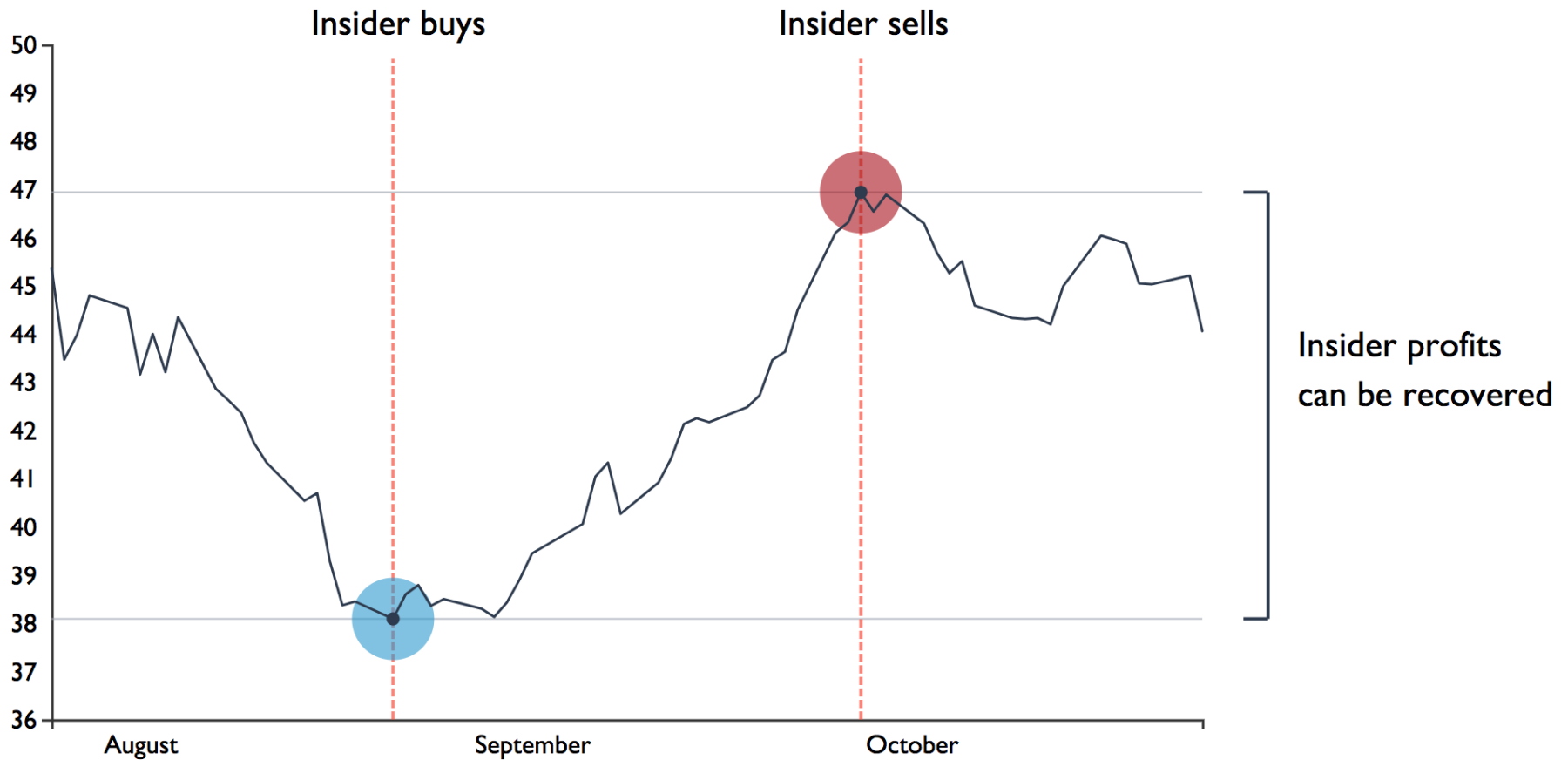


2006 2007 2008 2009 2010 2011 2012 2013

Reported
58,000 Reported
53,000 Reported
34,000 Reported
36,000 Reported
47,000 Reported
41,000 Reported
46,000 Reported
52,000

Implied
1,100 Implied
1,100 Implied
800 Implied
640 Implied
550 Implied
610 Implied
690 Implied
510

The Short Swing Profit Rule



The Short Swing Profit Rule

$$\begin{aligned} \text{ImpliedTrade}_{t,k} = & \alpha + \beta_1 \text{SalesConstrained}_{t,k} + \beta_2 \text{BuysConstrained}_{t,k} \\ & + \beta_3 \text{SalesConstrained}_{t,k} \text{BuysConstrained}_{t,k} + \text{FixedEffects} + \epsilon_{t,k} \end{aligned}$$

Sales Constrained = Buy in Past 6 Months

Buys Constrained = Sale in Past 6 Months

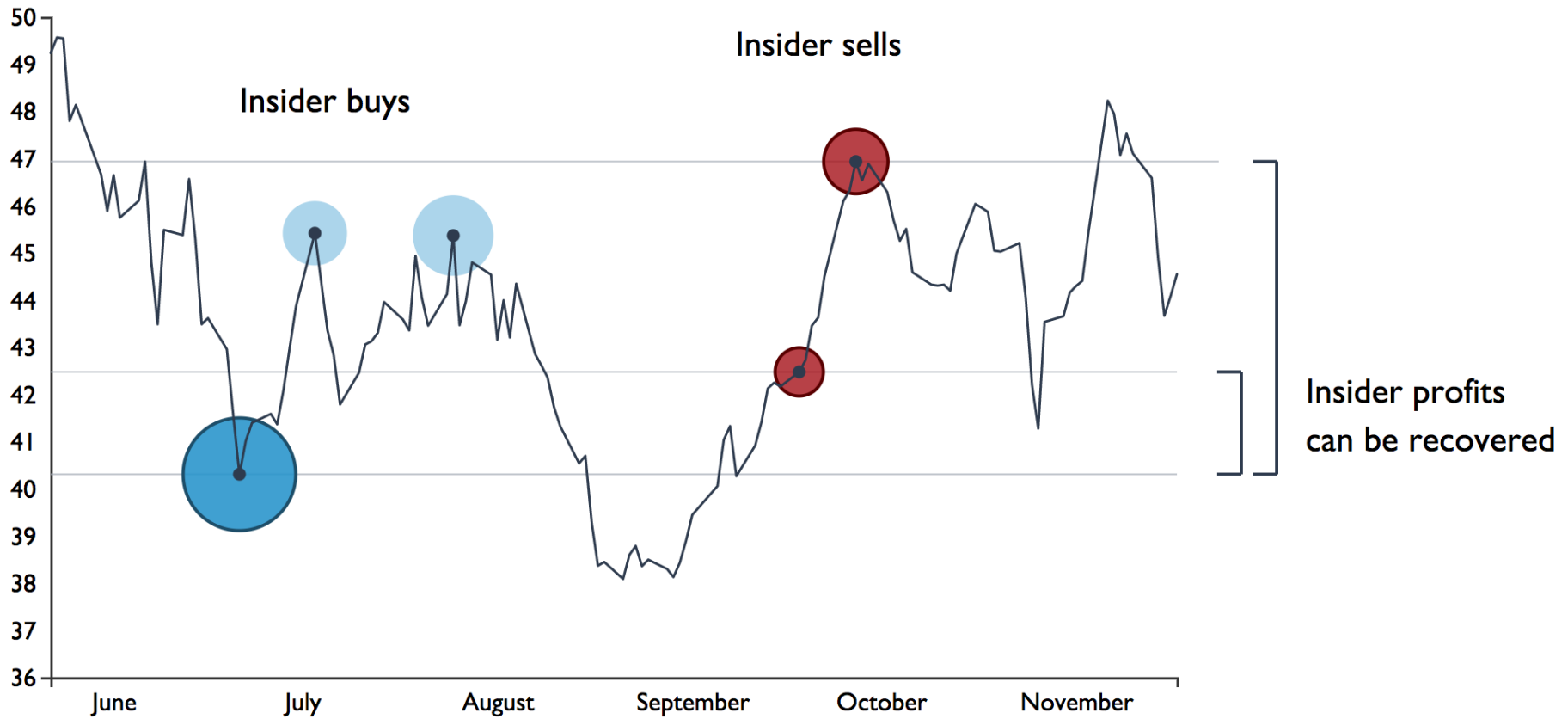
Results: Dispositions

	(1)	(2)	
A. Reported Sale	Sales Constrained (Buy in Past 6 Months)	0.00 (0.22)	-0.00 (-0.31)
	Buys Constrained (Sale in Past 6 Months)	32.23 (77.39) ***	34.44 (53.80) ***
	Both Constrained (Buy and Sale in Past 6 Months)	-3.17 (-2.41) **	-3.97 (-2.60) **
	R ²	0.254	0.257
	<hr/>		
B. Implied Sale	Sales Constrained (Buy in Past 6 Months)	1.41 (15.6) ***	3.66 (20.9) ***
	Buys Constrained (Sale in Past 6 Months)	1.18 (30.58) ***	1.04 (20.38) ***
	Both Constrained (Buy and Sale in Past 6 Months)	1.56 (3.08) ***	2.39 (3.19) ***
	Sample	Full	SW
	Observations	651,007	270,750
	Firms	3,650	1,985
	Insiders	7,377	2,990
	R ²	0.007	0.019
	Year and Month FE	X	X

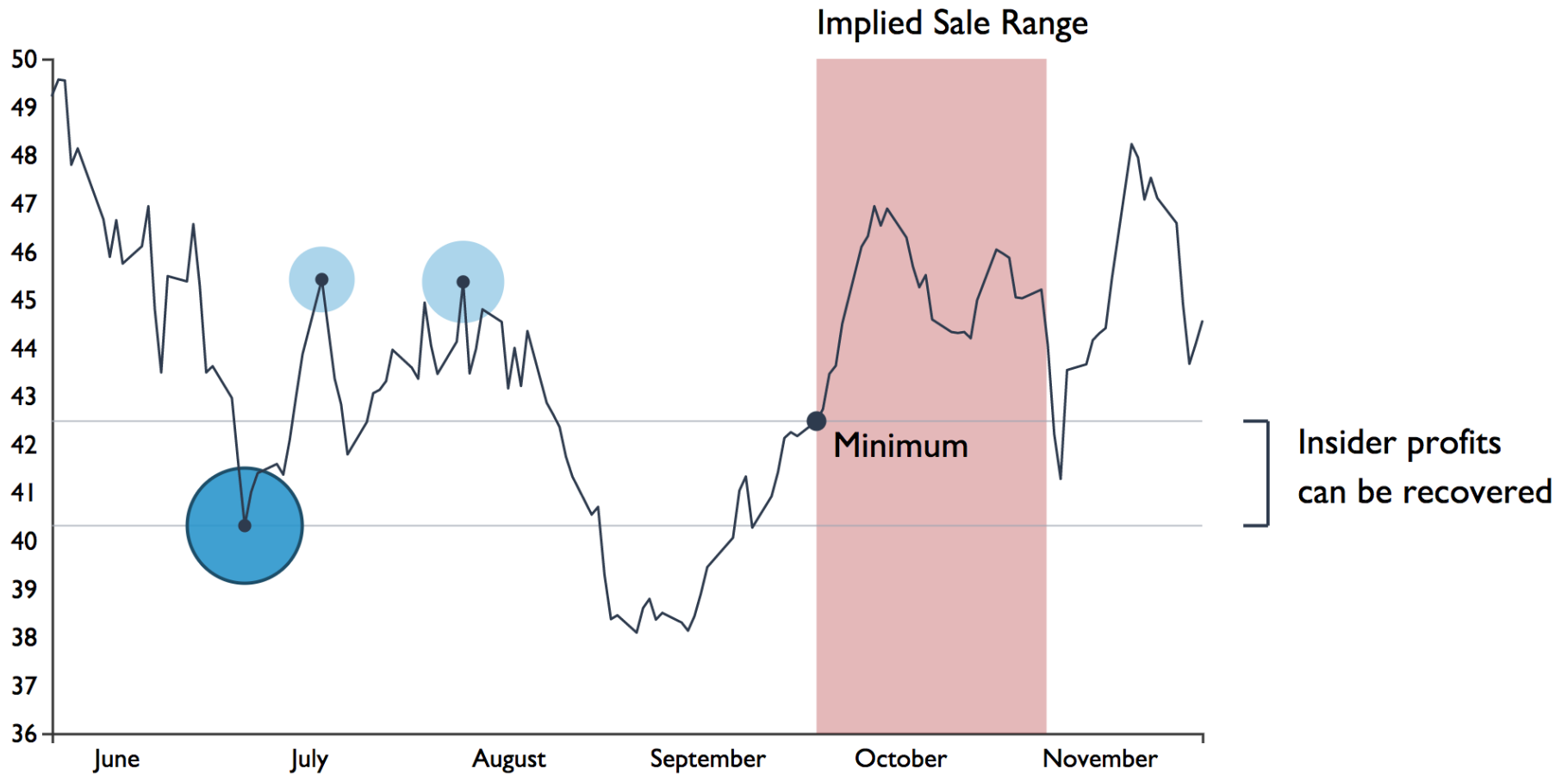
Results: Acquisitions

		(1)	(2)
A. Reported Buy	Sales Constrained (Buy in Past 6 Months)	32.17	35.27
		(23.63) ***	(19.08) ***
	Buy Constrained (Sale in Past 6 Months)	-0.05	-0.06
		(-4.03) ***	(-2.53) **
	Both Constrained (Buy and Sale in Past 6 Months)	-2.51	-4.26
	(-2.15) **	(-2.93) ***	
	R ²	0.297	0.319
<hr/>			
B. Award	Sales Constrained (Buy in Past 6 Months)	-2.78	-1.78
		(-7.46) ***	(-4.09) ***
	Buy Constrained (Sale in Past 6 Months)	-0.92	0.26
		(-3.51) ***	(0.96)
	Both Constrained (Buy and Sale in Past 6 Months)	0.86	0.41
	(1.58)	(0.64)	
	R ²	0.015	0.014
<hr/>			
C. Implied Buy	Sales Constrained (Buy in Past 6 Months)	1.14	.78
		(18.96) ***	(10.62) ***
	Buy Constrained (Sale in Past 6 Months)	1.71	4.11
		(28.50) ***	(41.80) ***
	Both Constrained (Buy and Sale in Past 6 Months)	-0.19	-0.36
	(-0.54)	(-0.65)	
	R ²	0.009	0.025
	Sample	Full	SW

Short Swing Profit Recovery



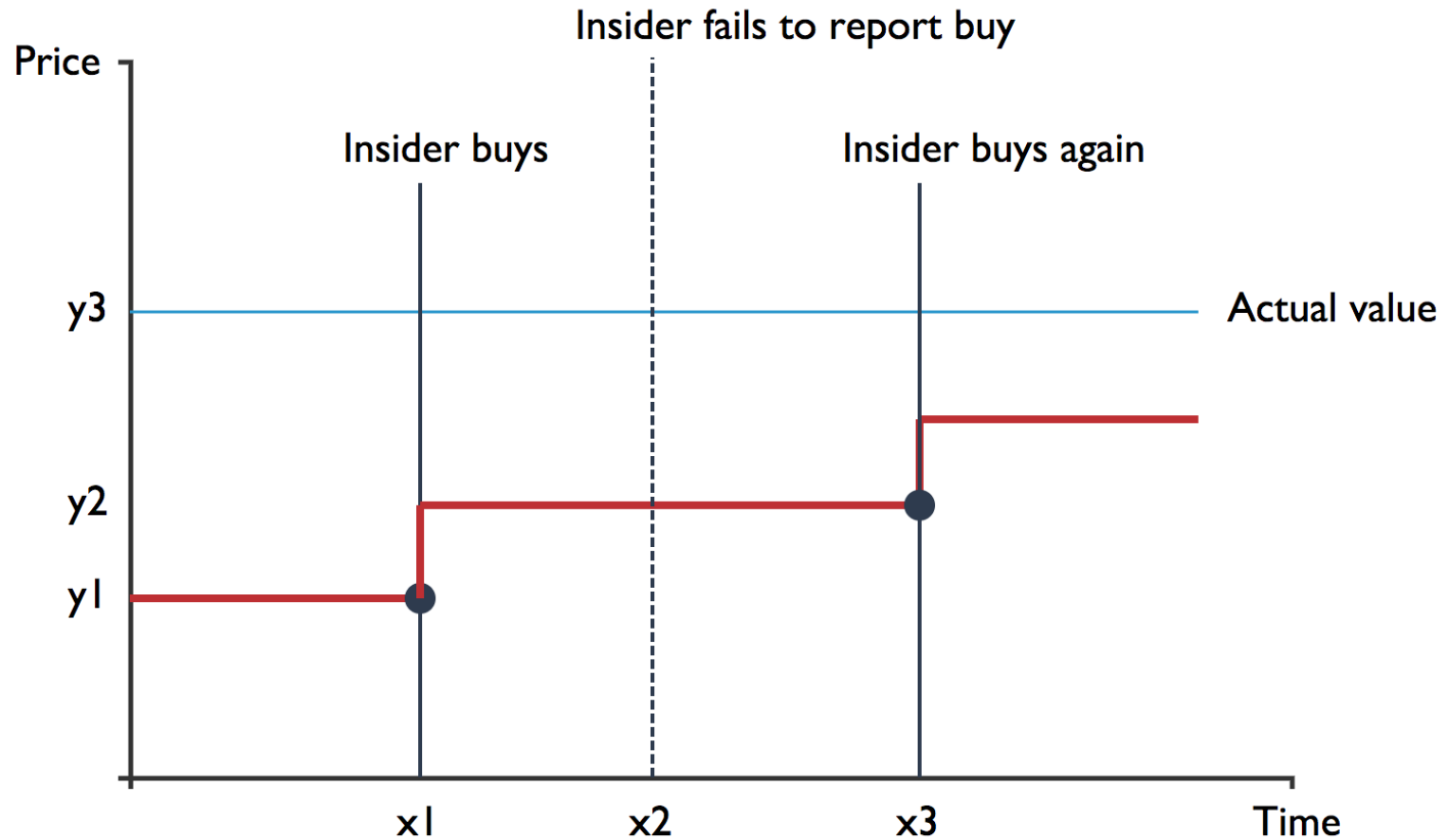
Short Swing Profit Recovery



When the Short Swing Constraints Bind

A. Implied Sale	Sales Constrained	4.14
		(21.14) ***
	Buys Constrained	1.03
		(20.35) ***
	Both Constrained	2.37
		(3.18) ***
	Sales Constrained * (Month Low > Min Buy)	-1.75
	(-5.62) ***	
	R ²	0.020
<hr/>		
B. Implied Buy	Sales Constrained	0.77
		(10.59) ***
	Buys Constrained	4.68
		(38.85) ***
	Both Constrained	-0.52
		(-0.94)
	Buys Constrained * (Max Sell > Month High)	-1.92
	(-10.59) ***	
	R ²	0.027

Price Impact



Results: Acquisitions

Implied Buy

	(1)	(2)	(3)	(4)	(5)
Buy in Trailing 6 Months	-0.19 (-3.38) ***	-0.71 (-8.09) ***	0.22 (3.33) ***		
Buy in Next 6 Months	0.82 (12.06) ***	-0.06 (-0.66)	1.53 (17.20) ***		
Buy in Trailing 2 Months				0.22 (1.71) *	-0.12 (-0.996)
Buy in Next 2 Months				3.29 (16.87) ***	1.89 (8.96) ***
Buy Sequence * Buy in Next 2 Months					2.72 (6.95) ***
Sample	Full	SW	No SW	No SW	No SW
Observations	651,007	270,750	380,257	380,257	380,257
Firms	3,650	1,985	2,646	2,646	2,646
Insiders	7,377	2,990	4,459	4,459	4,459
R ²	0.003	0.005	0.006	0.011	0.012
Year and Month FE	X	X	X	X	X

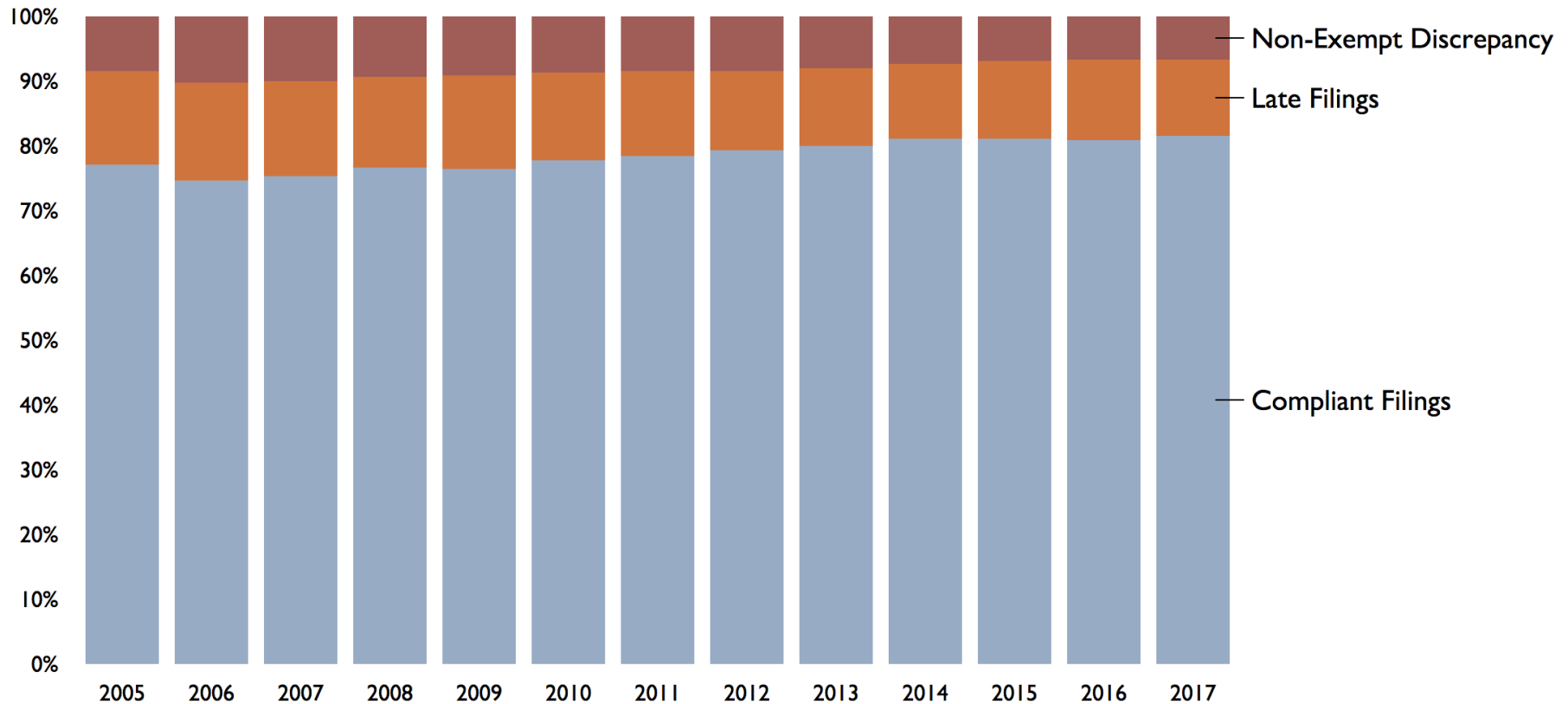
Results: Dispositions

Implied Sale

	(1)	(2)	(3)	(4)	(5)
Sale in Trailing 6 Months	-0.12 (-3.54) ***	-0.22 (-4.08) ***	-0.04 (-0.95)		
Sale in Next 6 Months	1.17 (27.80) ***	0.69 (11.24) ***	1.57 (28.50) ***		
Sale in Trailing 2 Months				-0.07 (-0.96)	-0.28 (-4.18) ***
Sale in Next 2 Months				3.24 (31.62) ***	2.21 (17.28) ***
Sale Sequence * Sell in Next 2 Months					1.78 (10.44) ***
Sample	Full	SW	No SW	No SW	No SW
Observations	651,007	270,750	380,257	380,257	380,257
Firms	3,650	1,985	2,646	2,646	2,646
Insiders	7,377	2,990	4,459	4,459	4,459
R ²	0.005	0.003	0.007	0.015	0.016
Year and Month FE	X	X	X	X	X

Section 16(a) Violations

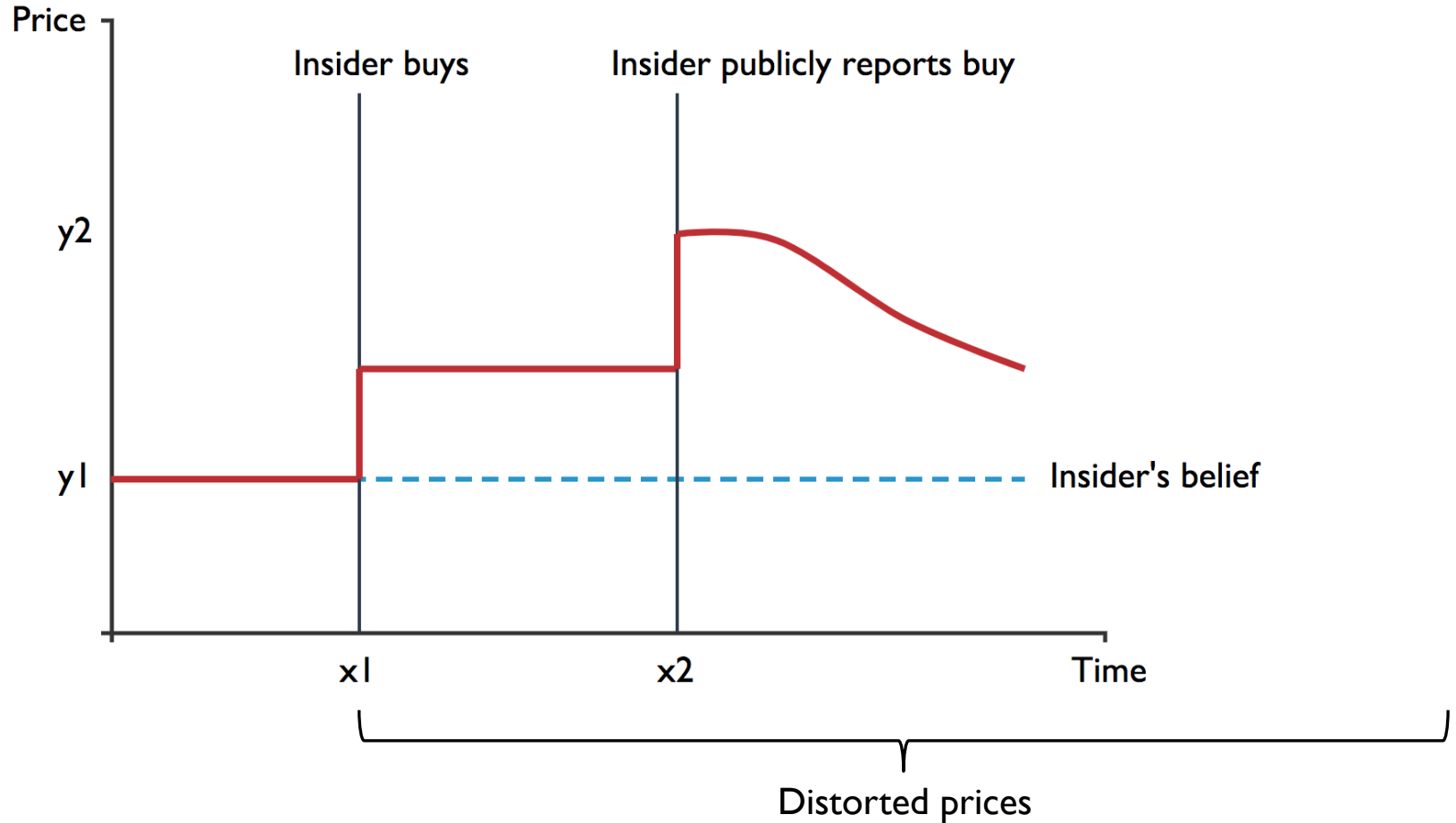
Corporate insiders with at least one delinquent filing: 59.4%



SEC Enforcement

1990s	SEC issues around 5 cease and desist orders a year
July 2002	SOX. Cease and desist orders drop to 0
October 2013	SEC announces "Operation Broken Windows"
September 2014	SEC announces enforcement actions against 18 insiders 9-70 late filings cited per insider (average 30) Filings were 6 months to 4 years late Late trades had market values from \$1M to \$182M Average penalty: \$72,000
October 2017	SEC announces end of "broken windows" strategy

Trading to Send a Signal



Cumulative Abnormal Returns

$$R_{t,k}^{(h,H)} = \gamma_S + \gamma_{B-S} d_{t,k}^{Buy} + \gamma_S^{Strategic} d_{t,k}^{Strategic} + \gamma_{B-S}^{Strategic} d_{t,k}^{Buy} d_{t,k}^{Strategic} + \lambda X_{t,k} + \epsilon_{t,k}$$



Measures return to reported buys
relative to sales for compliant reports



Measures differential reaction for
strategic relative to compliant reports

Baseline Results

	Immediate		Delayed		Long-term
	R(0, 2)	R(0, 9)	R(10, 30)	R(10, 75)	R(10, 365)
Constant	-0.07 (-6.15) ***	-0.15 (-7.45) ***	-0.08 (-2.62) ***	-0.44 (-7.76) ***	-0.23 (-1.75) *
Buy	1.06 (25.75) ***	1.71 (25.10) ***	0.54 (7.00) ***	1.52 (7.85) ***	5.85 (9.43) ***
Strategic	0.00 (0.02)	0.05 (2.14) *	0.13 (3.83) ***	0.32 (5.17) ***	1.36 (8.47) ***
Buy * Strategic	0.00 (0.00)	0.06 (0.82)	0.04 (0.44)	-0.57 (-3.38) ***	-2.20 (4.18) ***
Observations	421,991	421,991	421,991	421,991	421,991
Firms	7,580	7,580	7,580	7,580	7,580
R ²	0.010	0.009	0.001	0.001	0.001
(Buy * Strategic) / Buy	0.0%	3.5%	7.4%	-37.5%	-37.6%

Filer Delinquency

	Immediate		Delayed		Delayed Long-term	
	R(0, 9)	R(0, 9)	R(10, 75)	R(10, 75)	R(10, 365)	R(10, 365)
Constant	-0.13 (-6.51) ***	-0.33 (-6.36) ***	-0.40 (-6.92) ***	-0.90 (-6.27) ***	-0.07 (-0.51)	-1.92 (-5.35) ***
Buy	1.72 (24.54) ***	1.73 (15.18) ***	1.49 (7.70) ***	1.89 (6.08) ***	5.51 (9.72) ***	8.48 (4.57) ***
Strategic	0.05 (2.18) **	0.05 (0.60)	0.32 (4.86) ***	0.45 (2.15) **	1.42 (8.32) ***	1.12 (2.06) **
Buy * Strategic	0.05 (0.61)	0.13 (0.73)	-0.47 (-2.60) ***	-1.09 (-2.47) **	-1.07 (-2.01) **	-7.24 (-3.67) ***
Sample	Seldom Late	Routinely Late	Seldom Late	Routinely Late	Seldom Late	Routinely Late
Observations	375,151	46,836	375,151	46,836	375,151	46,836
Firms	7,272	4,793	7,272	4,793	7,272	4,793
R ²	0.009	0.012	0.001	0.010	0.002	0.009
(Buy * Strategic) / Buy	2.9%	7.5%	-31.5%	-57.7%	-19.4%	-85.4%

Conclusion