

Online Appendix for
Penny Wise, Dollar Foolish:
Buy-Sell Imbalances On and Around Round Numbers

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\$1/8th and \$1/16th Tick Size Eras

In this section, we use NYSE TAQ data from 1993 to 2001 to examine buy-sell imbalances in the \$1/8th and \$1/16th tick size eras.¹ We select a random sample following the selection process described in Section 4. Out of all eligible firms in 1993, we randomly select 20 firms from each of five price quintiles. We roll forward year-by-year through 2001 maintaining sample firms that are eligible, and randomly replacing ones that aren't eligible. Our final sample contains 7,347,675 trades from the \$1/8th tick size era and 15,992,073 trades from the \$1/16th tick size era.

Table A-1 repeats the analysis on a sample of trades in the 1/8th tick size era. So it is the analog of Table 2 in the 1/8th era. The construction of the sample follows the same methodology we used in constructing the sample for the 2001 to 2006 decimal era. Our quarter benchmark thresholds are .25 and .75. As can be seen in Table A-1, the results are much weaker than those in Table 2. This is to be expected because the cost of the left-digit effect and the threshold trigger effect – the cost of rounding – is higher in the 1/8th era (the difference between \$11 7/8 and \$12 is much greater than the difference between \$11.99 and \$12).

Table A-2 repeats the analysis on a sample of trades in the 1/16th tick size era. Again, this table is the analog of Table 2 in the 1/16th era. The construction of the sample follows the same methodology used in the

¹ The TAQ data starts 1/4/93. The \$1/8 tick size era ends 6/23/97 for NYSE, 5/6/97 for AMEX, and 6/1/97 for NASDAQ. The \$1/16 tick size era ends 1/28/01 for NYSE and AMEX, and 3/31/01 for NASDAQ.

decimal era. As above, our quarter benchmark thresholds are .25 and .75. Similar to the $1/8^{\text{th}}$ era, the results in Table A-2 are much weaker than those found in the decimal era (Table 2). However, the results of Table A-2 are stronger than the results of Table A-1 (the $1/8^{\text{th}}$ era). This is to be expected because the cost of rounding is higher in the $1/8^{\text{th}}$ era than in the $1/16^{\text{th}}$ era (the difference between $\$11\ 7/8$ and $\$12$ is much higher than the difference between $\$11\ 15/16$ and $\$12$).

Table A-3 tests hypotheses H2 during the $\$1/8^{\text{th}}$ tick size era in a multivariate setting. So it is the analog of Table 3 in the $\$1/8^{\text{th}}$ era. The coefficients for the reach cases are much larger than the crossing cases in regressions (2) and (3). The results confirm hypothesis H2A Reach Only in the $\$1/8^{\text{th}}$ tick size era.

Table A-4 tests hypotheses H2 during the $\$1/16^{\text{th}}$ tick size era in a multivariate setting. So it is the analog of Table 3 in the $1/16^{\text{th}}$ era. The coefficients for the reach cases are much larger than the crossing cases in regressions (2) and (3). The results confirm hypothesis H2A Reach Only in the $\$1/16^{\text{th}}$ tick size era.

Breakouts By Price, Institutional Ownership, and Share Volume

In this section, we restrict our analysis to just the four price paths: “ask falls below integer”, the “ask falls to integer”, the “bid rises to integer” and the “bid rises above integer”. There are three reasons for doing this. First, these are the only samples where our prices cross or touch an integer threshold, which makes these our primary tests. Second, the evidence above indicate that the “ask rises while staying below integer” and the “bid falls while staying above integer” price paths yield very weak results. Finally, as these computations are intensive and take months to run, we just focus on our primary tests.

In Tables A-5 through A-7, we examine the robustness of our results to various market, firm, and trade characteristics. Table A-5 does the analysis of the difference in median buy-sell ratios carried out in Table 2 for price level quintiles. We find that our results are very consistent across all price level quintiles. In unreported results, we computed the difference in *mean* buy-sell ratios and obtained the same qualitative results. Tables 6 and 7 do the analysis by institutional ownership terciles and by share volume terciles, respectively. In both tables, the results are similar across all classifications with rare exceptions. Again, unreported results show the same qualitative results for the difference in *mean* buy-sell ratios. Thus, we conclude that round number effects are quite robust.

Median 24-Hour Returns to Buying and Returns to Selling

Table A-8 reports the four return categories regressed on dummy variables for the price points that are immediately surround the major round number thresholds: integers, half-dollars, quarters, dimes, and nickels. For example, .99 is immediately below integers and .01 is immediately above integers. In the column for 24-hour trade price return to buying, we find that .99 has negative coefficient (a lower return than the other price points) and .01 has positive coefficient (a higher return than the other price points). Similarly, .49 is negative and .51 is positive. In all cases, the price point below the threshold has a negative (or much lower) coefficient and the price point above the threshold has a positive coefficient. The same pattern is mostly true, but with diminished magnitude, for the 24-hour midpoint return to buying. Short selling is the opposite bet from buying and thus we would expect the opposite sign. For 24-hour trade price return to selling, the price point below the threshold has a positive coefficient and the price point above the threshold has a negative coefficient. The same pattern is mostly true, but with diminished magnitude, for the 24-hour midpoint return to selling. Overall, there is a clear pattern that liquidity demanders who buy (sell) below the threshold have lower (higher) returns, and liquidity demanders who sell (buy) above the threshold have lower (higher) returns.

Table A-1 The Difference in Median (Mean) Buy-Sell Ratios During the \$1/8 Tick Size Era

During the \$1/8th tick size era, the difference in median (mean) buy-sell ratios is for trades after crossing integer thresholds compared to trades after crossing \$1/8 thresholds. Four definitions of crossing a threshold are provided: when the ask drops below the threshold, when the ask drops to the threshold, when the bid rises to the threshold, and when the bid rises above the threshold. Three definitions of the buy-sell ratio are provided: the number of buys/number of sells, the number of shares bought/shares sold and the number of dollars bought/dollars sold. The TAQ data starts 1/4/93 and the \$1/8 tick size era ends 6/23/97 for NYSE, 5/6/97 for AMEX, and 6/1/97 for NASDAQ. P-values are based on the Wilcoxon test for medians and the T-Test for means. * means statistically significant at the 1% level.

	Number of Buys / Number of Sells		Shares Bought / Shares Sold		Dollars Bought / Dollars Sold	
		P-value		P-value		P-value
Panel A: Ask Falls Below Integer vs. Ask Falls Below Quarter ¹						
Difference in Median Buy-Sell Ratios	6%	0.0317	7%*	0.0024	7%*	0.0029
Difference in Mean Buy-Sell Ratios	7%	0.1166	28%	0.5183	30%	0.4840
Panel B: Ask Falls To Integer vs. Ask Falls To Quarter ²						
Difference in Median Buy-Sell Ratios	19%*	<.0001	30%*	<.0001	32%*	<.0001
Difference in Mean Buy-Sell Ratios	25%*	<.0001	39%*	<.0001	39%*	<.0001
Panel C: Bid Rises to Integer vs. Bid Rises to Quarter ³						
Difference in Median Buy-Sell Ratios	-24%*	<.0001	-28%*	<.0001	-30%*	<.0001
Difference in Mean Buy-Sell Ratios	-23%*	<.0001	-49%	0.0192	-52%	0.0176
Panel D: Bid Rises Above Integer vs. Bid Rises Above Quarter ⁴						
Difference in Median Buy-Sell Ratios	-23%	0.0914	-12%	0.5015	-10%	0.5490
Difference in Mean Buy-Sell Ratios	14%	0.5221	72%	0.4418	58%	0.4479

1. Ask Falls Below Integer is all trades after ask drops from [.01, .125] to below the integer threshold til ask leaves [.875, .99]. Ask Falls Below Quarter is all trades after the ask drops from [Q+.01, Q+.125] to below the quarter threshold Q until the ask leaves [Q-.125, Q-.01].
2. Ask Falls To Integer is all trades after the ask drops from [.01, .125] to the integer threshold until the ask leaves [.00]. Ask Falls To Quarter is all trades after ask drops from [Q+.01, Q+.125] to the quarter threshold Q until ask leaves [Q].
3. Bid Rises To Integer is all trades after the bid rises from [.875, .99] to the integer threshold until the bid leaves [.00]. Bid Rises To Quarter is all trades after the bid rises from [Q-.125, Q-.01] to the quarter threshold Q until the bid leaves [Q].
4. Bid Rises Above Integer is all trades after bid rises from [.875, .99] above the integer threshold until bid leaves [.01, .125]. Bid Rises Above Quarter is all trades after the bid rises from [Q-.125, Q-.01] above the quarter threshold Q until the bid leaves [Q+.01, Q+.125].

Table A-2 The Difference in Median (Mean) Buy-Sell Ratios During the \$1/16 Tick Size Era

During the \$1/16th tick size era, the difference in median (mean) buy-sell ratios is for trades after crossing integer thresholds compared to trades after crossing \$1/8 thresholds. Four definitions of crossing a threshold are provided: when the ask drops below the threshold, when the ask rises to the threshold, when the bid rises to the threshold, and when the bid rises above the threshold. Three definitions of the buy-sell ratio are provided: the number of buys/number of sells, the number of shares bought/shares sold and the number of dollars bought/dollars sold. The \$1/16 tick size era spans 6/24/97 - 1/28/01 for NYSE, 5/7/97 - 1/28/01 for AMEX, and 6/2/97 - 3/31/01 for NASDAQ. P-values are based on the Wilcoxon test for medians and the T-Test for means. * means statistically significant at the 1% level.

	Number of Buys / Number of Sells	P-value	Shares Bought / Shares Sold	P-value	Dollars Bought / Dollars Sold	P-value
Panel A: Ask Falls Below Integer vs. Ask Falls Below Quarter ¹						
Difference in Median Buy-Sell Ratios	7%*	0.0036	7%	0.0150	8%	0.0217
Difference in Mean Buy-Sell Ratios	8%*	0.0061	16%	0.0257	15%	0.0327
Panel B: Ask Falls To Integer vs. Ask Falls To Quarter ²						
Difference in Median Buy-Sell Ratios	23%*	<.0001	38%*	<.0001	39%*	<.0001
Difference in Mean Buy-Sell Ratios	22%*	<.0001	1%	0.9681	6%	0.8438
Panel C: Bid Rises to Integer vs. Bid Rises to Quarter ³						
Difference in Median Buy-Sell Ratios	-25%*	<.0001	-35%*	<.0001	-35%*	<.0001
Difference in Mean Buy-Sell Ratios	-28%*	<.0001	-31%*	0.0005	-35%*	0.0003
Panel D: Bid Rises Above Integer vs. Bid Rises Above Quarter ⁴						
Difference in Median Buy-Sell Ratios	-5%	0.6958	-1%	0.9282	-3%	0.7636
Difference in Mean Buy-Sell Ratios	11%	0.0921	1%	0.9848	-3%	0.9451

1. Ask Falls Below Integer is all trades after ask drops from [.01, .125] to below the integer threshold til ask leaves [.875, .99]. Ask Falls Below Quarter is all trades after the ask drops from [Q+.01, Q+.125] to below the quarter threshold Q until the ask leaves [Q-.125, Q-.01].
2. Ask Falls To Integer is all trades after the ask drops from [.01, .125] to the integer threshold until the ask leaves [.00]. Ask Falls To Quarter is all trades after ask drops from [Q+.01, Q+.125] to the quarter threshold Q until ask leaves [Q].
3. Bid Rises To Integer is all trades after the bid rises from [.875, .99] to the integer threshold until the bid leaves [.00]. Bid Rises To Quarter is all trades after the bid rises from [Q-.125, Q-.01] to the quarter threshold Q until the bid leaves [Q].
4. Bid Rises Above Integer is all trades after bid rises from [.875, .99] above the integer threshold until bid leaves [.01, .125]. Bid Rises Above Quarter is all trades after the bid rises from [Q-.125, Q-.01] above the quarter threshold Q until the bid leaves [Q+.01, Q+.125].

Table A-3 Multivariate Regressions During the \$1/8 Tick Size Era: Integer vs. Quarter Thresholds

This table reports regression results for the \$1/8 tick size era. Column 1 is a logistic regression in which the dependent variable takes a value of 1 if the trade is a buy or a 0 if it is a sell. Column 2 is an OLS regression where the dependent variable is +shares bought for a buy or -shares sold for a sell. Column 3 is an OLS regression where the dependent variable is +dollars bought for a buy or -dollars sold for a sell. Controls for trade size, price, firm size, institutional holdings, volume, exchange, and year are included in each regression. The TAQ data starts 1/4/93 and the \$1/8 tick size era ends 6/23/97 for NYSE, 5/6/97 for AMEX, and 6/1/97 for NASDAQ. * means statistically significant at the 1% level.

	(1)		(2)		(3)	
	Logistic:		OLS:		OLS:	
	Probability		+Shares Bought		+Dollars Bought	
	of a Buy		for a buy		for a buy	
	Trade		or -Shares Sold		or -Dollars Sold	
	Trade	P-value	for a sell	P-value	for a sell	P-value
Ask Falls Below Integer - Ask Falls Below Quarter	0.104*	<.0001	113.43*	<.0001	3773.60*	<.0001
Ask Falls to Integer - Ask Falls to Quarter	0.191*	<.0001	238.00*	<.0001	7802.19*	<.0001
Bid Rises to Integer - Bid Rises to Quarter	-0.206*	<.0001	-216.06*	<.0001	-7630.48*	<.0001
Bid Rises Above Integer - Bid Rises Above Quarter	-0.194*	<.0001	-104.23	0.3648	-2,105.00	0.5988
Trade Size Dummies	YES		YES		YES	
Price Level Dummies	YES		YES		YES	
Firm Size Dummies	YES		YES		YES	
Institutional Ownership Level Dummies	YES		YES		YES	
Share Volume Level Dummies	YES		YES		YES	
Exchange Dummies	YES		YES		YES	
Year Dummies	YES		YES		YES	
N	3,886,626		3,886,626		3,886,626	

Table A-4 Multivariate Regressions During the \$1/16 Tick Size Era: Integer vs. Quarter Thresholds

This table reports regression results for the \$1/16 tick size era. Column 1 is a logistic regression in which the dependent variable takes a value of 1 if the trade is a buy or a 0 if it is a sell. Column 2 is an OLS regression where the dependent variable is +shares bought for a buy or -shares sold for a sell. Column 3 is an OLS regression where the dependent variable is +dollars bought for a buy or -dollars sold for a sell. Controls for trade size, price, firm size, institutional holdings, volume, exchange, and year are included in each regression. The \$1/16 tick size era spans 6/24/97 - 1/28/01 for NYSE, 5/7/97 - 1/28/01 for AMEX, and 6/2/97 - 3/31/01 for NASDAQ. * means statistically significant at the 1% level.

	(1)		(2)		(3)	
	Logistic: Probability of a Buy		OLS: +Shares Bought for a buy or -Shares Sold for a sell		OLS: +Dollars Bought for a buy or -Dollars Sold for a sell	
	Trade	P-value		P-value		P-value
Ask Falls Below Integer - Ask Falls Below Quarter	0.117*	<.0001	63.38*	<.0001	1417.66*	<.0001
Ask Falls to Integer - Ask Falls to Quarter	0.270*	<.0001	248.59*	<.0001	6882.24*	<.0001
Bid Rises to Integer - Bid Rises to Quarter	-0.227*	<.0001	-243.21*	<.0001	-7780.84*	<.0001
Bid Rises Above Integer - Bid Rises Above Quarter	-0.060*	<.0001	-60.88	0.0303	-3052.56*	0.0003
Trade Size Dummies	YES		YES		YES	
Price Level Dummies	YES		YES		YES	
Firm Size Dummies	YES		YES		YES	
Institutional Ownership Level Dummies	YES		YES		YES	
Share Volume Level Dummies	YES		YES		YES	
Exchange Dummies	YES		YES		YES	
Year Dummies	YES		YES		YES	
N	6,127,584		6,127,584		6,127,584	

Table A-5 The Difference in Median Buy-Sell Ratios by Price Level

The difference in median buy-sell ratios is for trades after reaching or crossing integer thresholds compared to trades after reaching or crossing nickel thresholds. The sample is broken out by price level. Four definitions of reaching or crossing a threshold are provided: when the ask drops below the threshold, when the ask drops to the threshold, when the bid rises to the threshold, and when the bid rises above the threshold. Three definitions of the buy-sell ratio are provided: the number of buys/number of sells, the number of shares bought/shares sold and the number of dollars bought/dollars sold. P-values are based on the Wilcoxon test. * means statistically significant at the 1% level.

	Number of Buys / Number of Sells		Shares Bought / Shares Sold		Dollars Bought / Dollars Sold	
		P-value		P-value		P-value
Panel A: Ask Falls Below Integer vs. Ask Falls Below Nickel ¹						
Price Level Q1: Lowest Price	4%	0.9343	6%	0.2073	7%	0.2109
Price Level Q2	9%*	<.0001	16%*	<.0001	15%*	<.0001
Price Level Q3	5%	0.0104	11%*	0.0023	11%*	0.0016
Price Level Q4	8%*	0.0068	9%*	0.0002	9%*	0.0001
Price Level Q5: Highest Price	3%	0.3224	6%	0.0195	6%	0.0186
Panel B: Ask Falls To Integer vs. Ask Falls To Nickel ²						
Price Level Q1: Lowest Price	34%*	<.0001	81%*	<.0001	81%*	<.0001
Price Level Q2	36%*	<.0001	86%*	<.0001	87%*	<.0001
Price Level Q3	24%*	<.0001	73%*	<.0001	72%*	<.0001
Price Level Q4	29%*	<.0001	69%*	<.0001	68%*	<.0001
Price Level Q5: Highest Price	21%*	<.0001	56%*	<.0001	59%*	<.0001
Panel C: Bid Rises To Integer vs. Bid Rises To Nickel ³						
Price Level Q1: Lowest Price	-20%*	<.0001	-31%*	<.0001	-33%*	<.0001
Price Level Q2	-24%	<.0001	-39%*	<.0001	-40%*	<.0001
Price Level Q3	-19%*	<.0001	-32%*	<.0001	-33%*	<.0001
Price Level Q4	-22%*	<.0001	-37%*	<.0001	-38%*	<.0001
Price Level Q5: Highest Price	-21%*	<.0001	-39%*	<.0001	-41%*	<.0001
Panel D: Bid Rises Above Integer vs. Bid Rises Above Nickel ⁴						
Price Level Q1: Lowest Price	-8%	0.4740	-18%	0.0130	-15%	0.0181
Price Level Q2	-9%*	0.0009	-13%*	0.0052	-13%*	0.0043
Price Level Q3	-5%	0.2495	-13%*	0.0010	-14%*	0.0012
Price Level Q4	-5%*	0.0065	-19%*	<.0001	-19%*	<.0001
Price Level Q5: Highest Price	-5%	0.0285	-11%*	0.0030	-10%*	0.0027

1. Ask Falls Below Integer is all trades after the ask drops from [.00, .10] to below the integer until the ask leaves [.90, .99]. Ask Falls Below Nickel is all trades after ask drops from [N, N+.10] to below nickel threshold N til leaving [N-.10, N-.01].
2. Ask Falls To Integer is all trades after the ask drops from [.01, .10] to [.00] until the ask leaves [.00]. Ask Falls To Nickel is all trades after ask drops from [N+.01, N+.10] to the nickel threshold [N] until ask leaves [N].
3. Bid Rises To Integer is all trades after the bid rises from [.90, .99] to [.00] until the bid leaves [.00]. Bid Rises To Nickel is all trades after the bid rises from [N-.10, N-.01] to the nickel threshold N until the bid leaves [N].
4. Bid Rises Above Integer is all trades after bid rises from [.90, .99] to above the integer threshold til bid leaves [.01, .10]. Bid Rises Above Nickel is all trades after the bid rises from [N-.10, N-.01] to above the nickel threshold N until the bid leaves [N+.01, N+.10].

Table A-6 The Difference in Median Buy-Sell Ratios By Institutional Ownership Level

The difference in median buy-sell ratios is for trades after reaching or crossing integer thresholds compared to trades after crossing nickel thresholds. The sample is broken out by institutional ownership level. Four definitions of reaching or crossing a threshold are provided: when the ask drops below the threshold, when the ask drops to the threshold, when the bid rises to the threshold, and when the bid rises above the threshold. Three definitions of the buy-sell ratio are provided: the number of buys/number of sells, the number of shares bought/shares sold and the number of dollars bought/dollars sold. P-values are based on the Wilcoxon test. * means statistically significant at the 1% level.

	Number of Buys / Number of Sells		Shares Bought / Shares Sold		Dollars Bought / Dollars Sold	
		P-value		P-value		P-value
Panel A: Ask Falls Below Integer vs. Ask Falls Below Nickel ¹						
Low Institutional Ownership	8%	0.0129	6%*	0.0033	6%*	0.0017
Medium Institutional Ownership	4%	0.0108	13%*	<.0001	12%*	<.0001
High Institutional Ownership	6%*	0.0040	11%*	<.0001	11%*	<.0001
Panel B: Ask Falls To Integer vs. Ask Falls To Nickel ²						
Low Institutional Ownership	39%*	<.0001	52%*	<.0001	61%*	<.0001
Medium Institutional Ownership	25%*	<.0001	76%*	<.0001	75%*	<.0001
High Institutional Ownership	24%*	<.0001	79%*	<.0001	77%*	<.0001
Panel C: Bid Rises To Integer vs. Bid Rises To Nickel ³						
Low Institutional Ownership	-21%*	<.0001	-29%*	<.0001	-29%*	<.0001
Medium Institutional Ownership	-21%*	<.0001	-36%*	<.0001	-37%*	<.0001
High Institutional Ownership	-23%*	<.0001	-40%*	<.0001	-38%*	<.0001
Panel D: Bid Rises Above Integer vs. Bid Rises Above Nickel ⁴						
Low Institutional Ownership	-6%	0.0802	-16%	0.0647	-14%	0.0643
Medium Institutional Ownership	-6%*	0.0041	-18%*	<.0001	-19%*	<.0001
High Institutional Ownership	-6%*	0.0041	-12%*	<.0001	-11%*	<.0001

1. Ask Falls Below Integer is all trades after the ask drops from [.00, .10] to below the integer until the ask leaves [.90, .99]. Ask Falls Below Nickel is all trades after ask drops from [N, N+.10] to below nickel threshold N til leaving [N-.10, N-.01].
2. Ask Falls To Integer is all trades after the ask drops from [.01, .10] to [.00] until the ask leaves [.00]. Ask Falls To Nickel is all trades after ask drops from [N+.01, N+.10] to the nickel threshold [N] until ask leaves [N].
3. Bid Rises To Integer is all trades after the bid rises from [.90, .99] to [.00] until the bid leaves [.00]. Bid Rises To Nickel is all trades after the bid rises from [N-.10, N-.01] to the nickel threshold N until the bid leaves [N].
4. Bid Rises Above Integer is all trades after bid rises from [.90, .99] to above the integer threshold til bid leaves [.01, .10]. Bid Rises Above Nickel is all trades after the bid rises from [N-.10, N-.01] to above the nickel threshold N until the bid leaves [N+.01, N+.10].

Table A-7 The Difference in Median Buy-Sell Ratios by Share Volume Level

The difference in median buy-sell ratios is for trades after reaching or crossing integer thresholds compared to trades after reaching or crossing nickel thresholds. The sample is broken out by share volume level. Three definitions of reaching or crossing a threshold are provided: when the ask drops below the threshold, when the ask drops to the threshold, when the bid rises to the threshold, and when the bid rises above the threshold. Three definitions of the buy-sell ratio are provided: the number of buys/number of sells, the number of shares bought/shares sold and the number of dollars bought/dollars sold. P-values are based on the Wilcoxon test. * means statistically significant at the 1% level.

	Number of Buys / Number of Sells		Shares Bought / Shares Sold		Dollars Bought / Dollars Sold	
		P-value		P-value		P-value
Panel A: Ask Falls Below Integer vs. Ask Falls Below Nickel ¹						
Low Institutional Ownership	7%	0.0209	7%*	0.0038	7%*	0.0027
Medium Institutional Ownership	5%*	0.0062	10%*	<.0001	10%*	<.0001
High Institutional Ownership	5%*	0.0063	11%*	<.0001	12%*	<.0001
Panel B: Ask Falls To Integer vs. Ask Falls To Nickel ²						
Low Institutional Ownership	45%*	<.0001	67%*	<.0001	76%*	<.0001
Medium Institutional Ownership	32%*	<.0001	73%*	<.0001	73%*	<.0001
High Institutional Ownership	17%*	<.0001	71%*	<.0001	70%*	<.0001
Panel C: Bid Rises To Integer vs. Bid Rises To Nickel ³						
Low Institutional Ownership	-18%*	<.0001	-39%*	<.0001	-40%*	<.0001
Medium Institutional Ownership	-21%*	<.0001	-32%*	<.0001	-31%*	<.0001
High Institutional Ownership	-18%*	<.0001	-40%*	<.0001	-39%*	<.0001
Panel D: Bid Rises Above Integer vs. Bid Rises Above Nickel ⁴						
Low Volume	-8%	0.1452	-17%	0.1218	-14%	0.1574
Medium Volume	-5%*	0.0009	-16%*	<.0001	-17%*	<.0001
High Volume	-5%*	0.0030	-11%*	<.0001	-12%*	<.0001

1. Ask Falls Below Integer is all trades after the ask drops from [.00, .10] to below the integer until the ask leaves [.90, .99]. Ask Falls Below Nickel is all trades after ask drops from [N, N+.10] to below nickel threshold N til leaving [N-.10, N-.01].
2. Ask Falls To Integer is all trades after the ask drops from [.01, .10] to [.00] until the ask leaves [.00]. Ask Falls To Nickel is all trades after ask drops from [N+.01, N+.10] to the nickel threshold [N] until ask leaves [N].
3. Bid Rises To Integer is all trades after the bid rises from [.90, .99] to [.00] until the bid leaves [.00]. Bid Rises To Nickel is all trades after the bid rises from [N-.10, N-.01] to the nickel threshold N until the bid leaves [N].
4. Bid Rises Above Integer is all trades after bid rises from [.90, .99] to above the integer threshold til bid leaves [.01, .10]. Bid Rises Above Nickel is all trades after the bid rises from [N-.10, N-.01] to above the nickel threshold N until the bid leaves [N+.01, N+.10].

Table A-8 Median 24-Hour Returns Regressed on Price Point Dummy Variables

This table reports regression results for the decimal era. The 24-hour trade price (midpoint) returns to buying are the returns that result from buying when a buy trade is observed at a given price point and closing the position 24-hours later at the bid (midpoint) price. The 24-hour trade price (midpoint) returns to selling are the returns that result from selling when a sell trade is observed at a given price point and closing the position 24-hours later at the ask (midpoint) price. The median is taken over all firm-years. * means statistically significant at the 5% level.

	Median 24-Hour Trade Price Return to Buying P-value		Median 24-Hour Midpoint Return to Buying P-value		Median 24-Hour Trade Price Return to Selling P-value		Median 24-Hour Midpoint Return to Selling P-value	
Intercept	-0.382%*	<.0001	0.260%*	<.0001	-0.509%*	<.0001	0.134%*	<.0001
Below Integers (.99)	-0.125%*	0.0325	-0.102%*	0.0451	0.206%*	0.0063	0.065%	0.1806
Above Integers (.01)	0.157%*	0.0082	0.018%	0.7216	-0.106%	0.1509	-0.031%	0.5066
Below Half-Dollars (.49)	-0.059%	0.3177	-0.006%	0.91	0.169%*	0.0262	0.095%*	0.0498
Above Half-Dollars (.51)	0.089%	0.1352	0.015%	0.7776	-0.255%*	0.0005	-0.077%	0.0994
Below Quarters (.24, .74)	-0.020%	0.6327	-0.005%	0.899	0.164%*	0.0024	0.064%	0.0659
Above Quarters (.26, .76)	0.084%*	0.0484	0.044%	0.2398	-0.066%	0.2136	0.042%	0.2165
Below Dimes (.09, .19, .29, .39, .59, .69, .79, .89)	-0.047%*	0.0329	-0.049%*	0.011	0.142%*	<.0001	0.050%*	0.0061
Above Dimes (.11, .21, .31, .41, .61, .71, .81, .91)	0.075%*	0.0008	0.020%	0.3006	-0.014%	0.6079	-0.006%	0.7418
Below Nickels (.04, .14, .34, .44, .54, .64, .84, .94)	0.019%	0.4042	-0.020%	0.31	0.068%*	0.0157	0.006%	0.7244
Above Nickels (.06, .16, .36, .46, .56, .66, .86, .96)	0.078%*	0.0005	0.001%	0.9622	-0.097%*	0.0005	-0.040%*	0.0261
N	57,239		57,239		57,214		57,214	