

The Performance of Short-Term Institutional Trades

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Internet Appendix

This appendix contains the following technical details and robustness checks related to the main paper:

Section A.1 Matching Ancerno trade records to CRSP data

Section A.2 Identifying Round-Trip Trades using FIFO versus LIFO methodology

Section A.3 Differences from Puckett and Yan (2011) Methodology

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A.1 Matching Ancerno Trade Records to CRSP Data

Although the Ancerno data include identifiers for each stock, the variables named “ticker” and “cusip” are not the same as those used in databases such as CRSP, and different Ancerno clients report different tickers and cusips for the same stock. Ancerno provides a unique identifier for each stock – the *stockkey* – but this identifier is not present in CRSP. Because there is no linking variable that joins the CRSP and Ancerno data, we use a multi-step process to match firms in the Ancerno database to firms in the CRSP database. For every date, ticker, cusip, and stockkey combination in Ancerno, we match the Ancerno ticker to the CRSP permno using the ticker and cusip. For stockkey assignments that match multiple tickers, we generate a list of all the variations of the ticker symbol in Ancerno and match it to the most likely valid ticker from CRSP. For example, for the ticker AAPL in CRSP, Ancerno has AAPL, AAPL.OQ, AAPL

US, AAPL.O, AAPL.NC, and several others. For all non-strict matches (in this example, AAPL.OQ, AAPL US, AAPL.O, and AAPL.NC), we compare the prices of the ticker AAPL to these other ticker symbol variations. If they exactly match in price on the same date, we assume that these are the same security – AAPL. Using this logic, we create a master file that produces a one-to-one match between each Ancerno stockkey and CRSP permno. We use this linking master file to merge the Ancerno records on daily institutional transactions to CRSP data.

A.2 Identifying Round-Trip Trades Using FIFO versus LIFO Methodology

To identify the FIFO-based (LIFO-based) round-trip trades, we assemble the transaction information for each *symbol-clientcode-clientmgrcode* combination chronologically into a queue, and when a transaction in the opposite direction enters the queue, we match it with the earliest (most recent) existing transaction in the queue. The number of trading days between the buy transaction and the sell transaction is the holding period of the round-trip trade, and the number of shares bought and sold (which are equal under the definition of a round-trip trade) is the round-trip trade quantity. Below we provide examples of our FIFO and LIFO trade matching procedures.

Exhibit A.1 shows that *clientmgrcode* (fund) 131 of *clientcode* (institution) 515 made ten purchases (and no sales) of the stock Amgen Inc. (symbol = AMGN) over the period March 19, 1998 through December 16, 1998, at prices ranging from a low of \$56.56 to a high of \$86.22. Then on March 25, 1999, this fund made two sales of AMGN, one at \$75.27 for 500 shares and the other at \$75.14 for 2400 shares.

Exhibit A.1: Buy and sell transactions

Symbol	tradedate	clientcode	clientmgrcode	side	volume	price
AMGN	1998-03-19	515	131	1	800	60.96
AMGN	1998-04-07	515	131	1	700	57.62
AMGN	1998-04-17	515	131	1	700	57.11
AMGN	1998-04-22	515	131	1	700	57.63
AMGN	1998-04-27	515	131	1	700	56.56
AMGN	1998-05-04	515	131	1	700	58.33
AMGN	1998-05-11	515	131	1	600	59.47
AMGN	1998-12-15	515	131	1	400	81.72
AMGN	1998-12-15	515	131	1	600	82.90
AMGN	1998-12-16	515	131	1	800	86.22
AMGN	1999-03-25	515	131	-1	500	75.27
AMGN	1999-03-25	515	131	-1	2400	75.14

Exhibit A.2 presents the round-trip trades arising from the buy and sell transactions in Exhibit A.1 using FIFO matching. From March 19 through December 16, 1998, all the buy transactions enter our transaction queue. Since there are no sell transactions for this *symbol-clientcode-clientmgrcode* combination in 1998, there are no round-trip trades in 1998. We match the first sell transaction for 500 shares on March 25, 1999 (*tradedate*) to the first buy transaction in our queue, which occurred on March 19, 1998 (*matchtradedate*), to generate the first round-trip trade of 500 shares. The holding period (*rtdays*) for this round-trip trade is 257 trading days, the buy price (*bp*) is \$60.96, and the sell price (*sp*) is \$75.27. The next sale of 2400 shares is matched to the 300 shares left over from the trade on March 19, 1998, and three transactions of 700 shares each, on April 7, April 17, and April 22, 1998. There are 3,800 shares left in the queue, ready to be matched against incoming sell transactions.

Exhibit A.2: FIFO-matched round-trip trades

Symbol	client_mgr	tradedate	matchtradedate	volume	rtdays	bp	sp
AMGN	515_131	1999-03-25	1998-03-19	500	257	60.96	75.27
AMGN	515_131	1999-03-25	1998-03-19	300	257	60.96	75.14
AMGN	515_131	1999-03-25	1998-04-07	700	244	57.62	75.14
AMGN	515_131	1999-03-25	1998-04-17	700	237	57.11	75.14
AMGN	515_131	1999-03-25	1998-04-22	700	234	57.63	75.14

Exhibit A.3 presents the round-trip trades arising from the buy and sell transactions in Exhibit A.1 using LIFO matching. The difference from the FIFO matching procedure is that under LIFO, when a transaction in the opposite direction enters the queue, we match it with the most recent (rather than the earliest) existing transaction in the queue.

Exhibit A.3: LIFO-matched round-trip trades

Symbol	client_mgr	tradedate	matchtradedate	volume	rtdays	bp	sp
AMGN	515_131	1999-03-25	1998-12-16	500	68	86.22	75.27
AMGN	515_131	1999-03-25	1998-12-16	300	68	86.22	75.14
AMGN	515_131	1999-03-25	1998-12-15	600	69	82.90	75.14
AMGN	515_131	1999-03-25	1998-12-15	400	69	81.72	75.14
AMGN	515_131	1999-03-25	1998-05-11	600	221	59.47	75.14
AMGN	515_131	1999-03-25	1998-05-11	500	226	58.33	75.14

As in this example, the FIFO and LIFO methodologies generally lead to different round-trip trade matching.¹ We conduct all of our analyses on both sets of round-trip trades, and where the results for FIFO- and LIFO-based round-trip trades differ materially we present and discuss both.

A.3 Differences from Puckett and Yan (2011) Methodology

Exhibit A.4 presents a stylized example to highlight the differences in how intra-quarter round-trip trades are identified under the Puckett and Yan (PY) methodology versus our two methods (Our FIFO and Our LIFO). We examine a hypothetical fund's series of buys and sells in one stock in the second quarter of 2000, to show how different patterns of trading prior to the quarter of interest can lead to different intra-quarter trade identifications under the three methods. To illustrate the differences we assume the fund had no transactions in the stock prior to Feb. 2000, and we change only the transaction that occurred in Mar. 2000, one month before the

¹ The two methods would yield identical sets of round-trip trades only if a fund executes either only one buy and one sell transaction in a stock or alternating buy and sell transactions of identical size for the entire period, which rarely occurs in practice.

quarter of interest. The brackets indicate which buy is matched to which sell under each method, and “yes” indicates that the resulting trade is an intra-quarter trade, “no” that it is not.

EXHIBIT A.4				
Comparison of Round-trip Trade Matching Under Puckett and Yan (PY) versus Current Paper (CMT)				
		Is there an Intra-quarter round-trip trade in Q2 2000?		
Date	Shares (+ Buy, -Sell)	PY	Our FIFO	Our LIFO
<i>Panel A. Case 1</i>				
Jan-00				
Feb-00	100			
Mar-00	-100			
Apr-00	100	] yes	] yes	] yes
May-00	-100			
Jun-00				
<i>Panel B. Case 2</i>				
Jan-00				
Feb-00	100		] no	
Mar-00	100			
Apr-00	100	] yes	] no	] yes
May-00	-100			
Jun-00				
<i>Panel C. Case 3</i>				
Jan-00				
Feb-00	100]]]]
Mar-00	-200			
Apr-00	100	] yes	no	no
May-00	-100			
Jun-00				

In Case 1, the three methods produce the same round-trip trades in the second quarter. The round-trip trades are of the same length and size under all three methods. In the remaining two cases, the PY method produces the same intra-quarter trade in the second quarter, because it

considers only transactions within the quarter, while the changing pattern of transactions before the second quarter can lead to different round-trip trade matching under our methods.

In Case 2, our LIFO method produces the same round-trip trade as PY, with the 100 shares sold in May matched to the 100 shares bought in April, but the FIFO method links the sell in May to the first buy in the queue, from Feb. 2000, so the round-trip trade is not intra-quarter. The trades are also unlikely to have the same returns unless the February price is the same as the April price.

In Case 3, neither our FIFO nor our LIFO method identifies an intra-quarter round-trip trade in the second quarter. Instead, the 100-share purchase in April is linked to the 200 shares sold in March (the prior quarter), which can be either a short sale or a sale from a baseline portfolio position where the manager has made marginal trades.

A.4 Implementation of double-clustered standard errors

Short-duration round-trip trade returns may be correlated over time and/or across funds or stocks, so using standard t -statistics may overstate significance. To account for dependencies both in the cross section and over time, all of the t -statistics reported in our analyses are based on standard errors that are clustered on both time and fund (or stock), following Thompson (2011). In this section we outline how we implement the double-clustered standard errors for trades or funds within a single quintile and then for tests of the differences between trades or funds in the top versus bottom quintile. We illustrate the methodology using the example of the return persistence analysis in Table 5, which includes both individual quintile and quintile difference tests.²

² Code for calculating the standard errors can be derived from Thompson (2011) or is available on request from the authors, who thank Andy Puckett for sharing his code with them as well.

Individual quintile. For the funds in each quintile, we run the following regression:

$$Return_{f,t} = \alpha + \varepsilon_{f,t} , \quad (1)$$

where $Return_{f,t}$ is the average return for short-duration trades in fund f in semiannual period t ; α is a constant, and $\varepsilon_{f,t}$ is the error term. The estimated α is the average value, and its t -statistic is computed using the double-clustered standard error methodology of Thompson (2011), clustering on fund (f) and semiannual period (t).

Difference between quintiles. We first stack all of the $Return_{f,t}$ observations for Quintile 1 and Quintile 5 into one panel, adding a new variable $Top_{f,t}$ which is equal to 1 for observations from Quintile 5, else zero. We then run the following regression:

$$Return_{f,t} = \alpha + \beta Top_{f,t} + \varepsilon_{f,t} . \quad (2)$$

The estimated coefficient β is the average difference, and the t -statistic for β is computed using the double-clustered standard error methodology of Thompson (2011), clustering on fund (f) and semiannual period (t).

REFERENCES

- Puckett, A., and X. Yan. “The Interim Trading Skills of Institutional Investors.” *Journal of Finance*, 66 (2011), 601—633.
- Thompson, S. “Simple Formulas for Standard Errors that Cluster by Both Firm and Time.” *Journal of Financial Economics*, 99 (2011), 1—10.