Internet Appendix to "The Interim Trading Skills of Institutional Investors"

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This document contains supplementary material for the paper titled "The Interim Trading Skills of Institutional Investors." It contains three sections. Section IA.I addresses concerns about possible sample selection biases related to the *ANcerno* institutional trading data. Section IA.II contains several additional empirical analyses that relate to round-trip trading performance and interim trading performance. Lastly, Section IA.III contains empirical results and detailed explanations for all robustness tests summarized in Section III.E of the paper.

IA.I. Possible Selection Biases in the ANcerno Institutional Trading Data

We address two forms of potential selection bias in Section I.B *Database Integrity* of the paper. First, institutions choosing to become *ANcerno* clients might differ systematically from the typical institution; and second, that *ANcerno* client institutions might submit a non-random selection of their trades to *ANcerno*. In this Internet Appendix, we present more detailed analyses for both of these issues.

A. Comparison of ANcerno Institutions with 13F Institutions and CRSP Mutual Funds

The first form of potential selection bias that we investigate is that institutions that choose to become *ANcerno* clients might differ systematically from the typical institution. Our discussions with *ANcerno* reveal that there are no explicit requirements (e.g., dollar size of funds

managed, number of trades executed, type of institution, etc.) for an institution to become an *ANcerno* client. However, we recognize an implicit selection bias in that *ANcerno* clients include only those institutions that care enough about execution quality to pay a third-party consultant. What is less clear is whether these client institutions are systematically different from the universe of institutional investors.

Since the *ANcerno* database provides neither the actual names of client institutions nor the portfolio holdings of these institutions, a full sample comparison of all institutions in the *ANcerno* database to the *Thompson* 13F or *CRSP* mutual fund databases is not possible. However, in an effort to provide some meaningful statistics on the similarity between *ANcerno* institutions and the institution universe, we contacted *ANcerno* and obtained a list of 68 institutions in the database. We successfully match 64 institution names provided by *ANcerno* to the *Thomson* 13F and *CRSP* mutual fund databases.

In Panel A of Table IA.I, we compare the size and characteristics of stock holdings for this subsample of *ANcerno* institutions to all institutions in the *Thompson* 13F database. For each institution, we assign stock holdings to size, book-to-market, lagged return, turnover, idiosyncratic volatility, and illiquidity deciles based on NYSE breakpoints. The average decile rank for each of these stock characteristics is not significantly different between *ANcerno* institutions and all 13F institutions. Our institution size comparison shows that institutions in the *ANcerno* database, on average, are much larger than the average 13F filer ($22.04 billion vs. $4.34 billion) and hold more than twice the number of different stocks in their portfolio (603 vs. 264). We also use quarterly holdings data for each institution to compute average holdings returns during the quarter following holdings disclosure. On average, institutions in the *ANcerno* database have nearly identical holdings returns when compared to the average institution in the

13F universe. Average monthly holdings returns are 0.581% for the typical *ANcerno* institution and are 0.578% for the average 13F filer. The difference in holdings returns between the two samples is both economically and statistically insignificant (*t*-statistic=0.04).

Panel B of Table IA.I compares fund characteristics between this subsample of *ANcerno* mutual funds and the *CRSP* equity mutual fund universe. For both samples, we calculate fund averages for total net assets, expense ratio, 12b-1 fee, front load, turnover, and average monthly return. We find that *ANcerno* mutual funds on average are more than 40% larger than *CRSP* reporting mutual funds. However, all other fund characteristics including expense ratio and fund returns, are similar across the two samples. In particular, *ANcerno* mutual funds have average monthly returns of 0.43% compared to 0.42% for the *CRSP* mutual fund universe (*t*-stat=0.13 for difference).

The final comparison that we make between *ANcerno* institutions and the institution universe does not require the 64 institution names provided by *ANcerno*. We compare the implied quarterly trades for all *ANcerno* institutions to the quarterly changes in portfolio holdings for all 13F institutions. For *ANcerno* institutions we aggregate all trades within a quarter and calculate net trading positions for each stock, and for 13F filers we calculate net changes in quarterly ownership. Results of this comparison are presented in Panel C of Table IA.I. We find, on average, that institutions in the *ANcerno* database trade about 50% more (in dollar value) than the average 13F institution. Similar to our results presented in Panel A, the stocks traded are remarkably similar across *ANcerno* and 13F institutions. We also calculate the DGTW equal- and value-weighted abnormal trading performance of buys and sells separately over the subsequent quarter and compute the difference between buys and sells. Our methodology is identical to the implied quarterly trading performance methodology presented in

Section III.C of the paper. "Implied" quarterly trading performance is very similar between *ANcerno* institutions and the universe of 13F filers. The equal- (value-) weighted implied quarterly trading performance is -0.28% (-0.24%) for *ANcerno* institutions and -0.24% (-0.17%) for the universe of 13F institutions.[1] The difference between the two samples is both economically and statistically insignificant (*t*-statistic=0.26 for the EW measure and 0.46 for the VW measure).

Our evidence suggests that, on average, *ANcerno* institutions/funds are larger than the average institution/fund in the 13F or *CRSP* mutual fund universe, but hold and trade stocks with similar characteristics. Thus, the primary selection bias issue that we are concerned with is related to institution/fund size. Specifically, if fund size is positively correlated with investment skill, then our ability to extrapolate our results to the institutional investor universe is limited. To address this issue, we empirically test whether fund size and interim trading performance are correlated.

We calculate interim trading performance (as in Table III of the paper) separately for large and small funds in the *ANcerno* database. Since neither fund size nor fund holdings are available to us, we proxy for fund size in two ways. First, we estimate fund holdings by *cumulating* the total dollar value of trading and separate funds into large (above median) and small (below median) groups based on the total dollar value of their estimated holdings. Results for the equal- and principal-weighted interim trading performance of large and small funds are presented in Panel A of Table IA.II. Our results show that the equal-weighted interim trading performance is 0.69% for large funds and 0.75% for small funds, while the principal-weighted interim trading performance is identical (0.56%) for large and small funds.

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[1] The implied quarterly trading results presented in Panel C differ slightly from those reported in Table V of the paper. The reason for this discrepancy is that results in Panel C are constructed at the institution level to facilitate comparisons to 13F institutions, whereas results in Table V of the paper are constructed at the fund level.

Our second proxy for fund size is the fund's average trade size. We calculate the average dollar trade size for each fund over the prior 12 months and again separate funds by the median trade size level into large and small groups. Our methodology is consistent with Edelen, Evans, and Kadlec (2009), who find that larger funds have larger relative trade sizes. Interim trading performance results for both large and small funds are presented in Panel B of Table IA.II. The equal- (principal-) weighted interim trading performance is 0.56% (0.50%) for large funds and 0.88% (0.61%) for small funds. Again, the interim trading performance is higher for smaller funds.

B. Do Institutions Submit All of their Trades to ANcerno?

We conduct an empirical test to help alleviate concerns that *ANcerno* clients might submit a non-random selection of their trades to *ANcerno*. Our test matches *ANcerno* trades to their respective 13F filings for a subsample of *ANcerno* clients whose names are provided to us by *ANcerno*. Since the *ANcerno* database contains only trades (and not portfolio holdings) for institutions in our sample, and the 13F database contains only quarterly portfolio holdings (and not trades), our attempted matching procedure can be conducted only along one dimension: changes in quarterly portfolio holdings. Specifically, we compare the cumulative quarterly trades for *ANcerno* institutions to the quarterly changes in portfolio holdings for the 13F filings of 64 institution names that we received from *ANcerno*.

In an ideal setting, where both the *ANcerno* database and 13F database contain all transactions and portfolio holdings for the same respective "institution", we would expect the match to be perfect. However, the environment that we are operating in is far from ideal, and there are at least four reasons why we would expect the results to be far from perfect. First, the definition of an "institution" is surprisingly noisy and is not necessarily consistent across both

13F filing "institutions" and "institutions" in the *ANcerno* database. Second, the presence of short sales adds significant noise to the matching procedure since it is possible for *ANcerno* institutions to be shorting a stock, yet institutions that file 13F disclosures are (1) not required to report short positions in 13F reportable securities, and (2) in situations where the institution has both long and short positions in a 13F reportable security, the institution is required to report the long only position rather than the net long position (see SEC Comment Letter No. 265-25 – Fairfax Financial Holdings Ltd.). Third, institutions are allowed to omit disclosing certain positions for up to one year by seeking confidential treatment through amendments to their original 13F filings. Finally, institutions that are required to submit quarterly 13F filings do not have to disclose positions where the size is less than 10,000 shares and the fair market value is less than $200,000. The *ANcerno* database, on the other hand, does not impose similar requirements and captures both small and large trades.

Given the above-listed complications, we do not expect a perfect match between the *ANcerno* and 13F databases, even when the *ANcerno* database contains all of the trades from client institutions. To compare the *ANcerno* database to the 13F database, we proceed as follows: We identify 13F filings for 64 client names that we received from *ANcerno*. We retain only common stocks (sharecode=10 or 11) since many securities with sharecodes not equal to 10 or 11 are not included in the list of 13F reportable securities. We also exclude stocks from a quarter where there is a stock split or stock dividend, stocks that are in their first or last quarter in *CRSP*, and stocks with a beginning-quarter price that is less than $5.

For *ANcerno* institutions we aggregate all trades for each stock within a quarter and calculate net quarterly trading positions. We then apply the same filters as those applied to the

13F database (listed above). We also exclude the first and last trading quarter for any *ANcerno* institution, since it might represent only a partial quarter of trading.

We match the 64 13F institutions to all possible *ANcerno* institutions by computing three separate match scores. **MATCH1** is the percentage of quarterly trading observations for a 13F filer that match the net quarterly trading positions of an *ANcerno* institution with respect to stock traded (e.g., permno) and trading direction (buy or sell). For example, assume that a 13F institution buys 10,090 shares of IBM and sells 9,850 shares of AAPL over a particular quarter. We match these trading observations to all *ANcerno* institutions. An *ANcerno* institution that buys IBM and sells AAPL during the same quarter will receive a MATCH1 score of 100%, whereas an *ANcerno* institution that buys IBM and does not trade (or buys) AAPL will receive a MATCH1 score of 50%. **MATCH2** is the percentage of quarterly trading observations for a 13F filer that match the net quarterly trading positions of an *ANcerno* institution with respect to stock traded, trading direction, and trading quantity (within 10% of the trading quantity reported by the 13F filer). Building on the previous example, an *ANcerno* institution that buys 9,500 shares of IBM (which is within 10% of 10,090 shares) and sells 9,850 shares of AAPL will receive a MATCH2 score of 100%, whereas an *ANcerno* institution that buys 8,000 shares of IBM and sells 8,000 shares of AAPL will receive a MATCH2 score of 0%. **MATCH3** is the percentage of quarterly trading observations for a 13F filer that match the net quarterly trading positions of an *ANcerno* institution with respect to stock traded, trading direction, and trading quantity (where the quantity traded matches exactly). Again referring to the previous example, an *ANcerno* institution would have to buy exactly 10,090 shares of IBM and sell exactly 9,850 shares of AAPL to receive a MATCH3 score of 100%.

For each of the 64 13F institutions, we then select the corresponding *ANcerno* institution that has the highest MATCH2 score. We exclude a few potential matches where the best and second best MATCH2 scores differ only slightly (i.e., we are unable to provide a unique match between the 13F institution and the *ANcerno* institution). All matching statistics are presented in Table IA.III. The average MATCH1, MATCH2, and MATCH3 scores are 83.71%, 40.46%, and 17.00% respectively. The average MATCH1 score suggests that the vast majority of quarterly trades from the 13F and *ANcerno* databases match with respect to both stock traded and trading direction. Additionally, MATCH2 scores suggest that more than 40% of quarterly trades can be matched within 10% of the implied quarterly trading volume, and MATCH3 scores suggest that almost 20% of quarterly trades match exactly.

The primary question that we are concerned with is whether these matching statistics alleviate concerns that *ANcerno* institutions might submit a non-random selection of trades to *ANcerno*. While far from perfect, we believe that they do. However, we also recognize that interpreting the "goodness" of our match is inherently subjective. Given our prior matching concerns involving "institution" definitions, short sales, confidential 13F filings, and small trades, we are pleasantly surprised by the magnitude of MATCH1, MATCH2, and MATCH3 numbers. If *ANcerno* institutions submitted a non-random sample of, for example, difficult to execute trades, we might expect that this would result in a systematic bias in the type of stocks (i.e., smaller or more illiquid stocks) that we observe in the *ANcerno* trading database. Although we cannot completely rule out the possibility that institutions send only a subset of their trades to *ANcerno*, the magnitude of MATCH1 scores (83.71%) suggests that it is unlikely that institutions are submitting a non-random selection of trades to *ANcerno*.

IA.II. Additional Empirical Results

A. *Round-Trip Trading Performance and Contemporaneous Stock Volatility*

In Section III.A of the paper, we conjecture that round-trip trades might result from rebalancing requirements that are unrelated to investment skill. Since mechanical rebalancing is most likely to occur in stocks with high intra-quarter price volatility, we investigate the relationship between round-trip performance and stock volatility. We separate each round-trip trade into volatility groups based on whether the contemporaneous-quarter stock volatility is above or below the median level. We then repeat the methodology used in Panel A of Table II in the paper and report round-trip trading performance for both volatility groups in Table IA.IV. We find significant abnormal round-trip trading performance in both low- (1.38%) and high- (2.90%) volatility groups, suggesting that full-sample results are unlikely driven solely by rebalancing requirements.

B. *Extended-Period Trading Performance*

We construct an additional trading performance measure where we calculate the DGTW abnormal performance for each trade from the execution date until the end of the next quarter (the end of Q+1) (Daniel, Grinblatt, Titman, and Wermers (1997)). In this way, the end of the performance evaluation period is identical to that which is used by Chen, Jegadeesh, and Wermers (2000). We then compute the equal- and principal-weighted abnormal performance of buys and sells separately for each fund and calculate the difference between DGTW adjusted returns for buys and sells. We report our results for this extended performance period in the Table IA.V, where we find equal- (principal-) weighted average abnormal performance of 0.40% (0.31%). Comparing these results to both our interim and implied quarterly trading results, we

conclude that all of the positive abnormal trading performance can be attributed to interim trading performance within quarter Q+0.

C. *Interim Trading Performance: Quarterly Returns*

We construct a measure of interim trading performance that standardizes the return horizon to a quarter. The methodology that we use to construct the new "quarterized" interim trading performance results is as follows: Similar to our original construction of interim trading performance, we calculate the raw holding-period return for each trade using the execution price and the *CRSP* reported closing price on the last day of the quarter. Our return calculations account for both stock splits and dividend distributions. We subtract the DGTW benchmark portfolio return from each trading position raw return over the same holding period to compute abnormal returns. We then "quarterize" each abnormal holding-period return by multiplying it by the number of trading days in the quarter divided by the number of trading days between the transaction and the last day of the quarter. Finally, we compute the equal- and principal-weighted "quarterized" abnormal performance of buys and sells separately for each fund and calculate the difference between buys and sells.

Since holding-period returns in our study are, by definition, measured over a shorter time horizon than a quarter, our quarterized results are larger than the holding-period returns reported in the paper. Thus while quarterization allows us to standardize returns over a defined time period, we believe that the magnitude of this measure potentially overstates the economic significance of our interim trading skill findings. Table IA.VI presents quarterized interim trading performance results. Quarterized equal- (principal-) weighted abnormal returns are 2.98% (2.08%) compared to holding period returns reported in Table III in the paper of 0.74% (0.57%). Additionally, we find that the quarterized principal-weighted abnormal interim trading

performance is slightly higher for money manager funds (2.29%) when compared to pension funds (2.07%).

IA.III. Robustness Tests

In this section, we present detailed explanations and results for all robustness tests discussed in Section III.E of the paper.

A. Round-Trip Trading Performance: Trade Duration

The duration of trades is an interesting component of trading skill. Since trade duration is unobserved unless there is a subsequent offsetting buy or sell trade, the most appropriate setting to investigate trading duration is by looking at round-trip trades. We assign all round-trip trades in our sample to one of four mutually exclusive categories: holding period less than or equal to one week, holding period between one week and one month, holding period between one month and two months, and holding period greater than two months. We then repeat the methodology used in Panel A of Table II in the paper, and report the round-trip trading performance for each trading duration category in Table IA.VII.

Our findings suggest that raw holding-period returns generally increase with the length of the holding period. However, abnormal holding-period returns are roughly equivalent for the first three trading duration categories, and slightly lower for round-trip trades held more than two months. For round-trip trades held for less than one week, the DGTW abnormal performance (after commissions) is 1.86%, compared to 1.43% for round-trip trades held for more than two months. These results support the idea that the holing period is endogenous. Specifically, the length of the holding period and the holding-period return are likely to be jointly determined.

B. Round-Trip Trading Performance: FIFO and LIFO

There are several alternate ways to measure intra-quarter round-trip trading performance, and the conclusions might depend on the method employed. In our primary test (in Table II of the paper) we use the volume-weighted execution price of buys or sells when a fund executes multiple buy or sell trades (as part of a round-trip transaction). In this way, we assume neither LIFO nor FIFO methods in constructing round-trip trading returns. To check the robustness of our results to alternative methods, we reconstruct our round-trip trading results using the intra-quarter first-in first-out (FIFO) and last-in first-out (LIFO) methods. Results presented in Table IA.VIII show that after-commission abnormal round-trip trading performance is 1.76% (*t*-statistic=3.38) using FIFO and 1.92% (*t*-statistic=3.12) using LIFO. Both methods produce very similar results to those reported in the paper.

C. Interim Trading Performance: Sub-Period Analysis

Our sample of institutional trades spans an interesting time period of both economic expansion and contraction. We investigate whether interim trading performance differs across different market environments by splitting the sample into bubble (1999-2000) and post-bubble (2001-2005) periods. Several recent studies document that mutual funds perform significantly better during economic contractions than during economic expansions (Kacperczyk, Van Nieuwerburg, and Veldkamp (2009), Kosowski (2006), Lynch and Wachter (2007), Moskowitz (2000), and Glode (2010)), which suggests that we should expect higher trading performance during the post-bubble period. On the other hand, we might expect funds to deliver greater abnormal trading profits during the bubble period, which is characterized by elevated volatility and trading volumes, large stock mispricing (ex post), and greater market participation by individual investors. In addition, changes in both the regulatory and competitive environments

might have also reduced institutional investors' ability to trade profitably within the quarter. Regulation FD in August of 2000 all but eliminated the flow of private information between companies and institutional investors (Agrawal, Chadha, and Chen (2006)), and the proliferation of hedge funds likely resulted in a more competitive environment for exploiting temporary market inefficiencies. Additionally, decimalization in 2001 reduced the minimum mandatory tick size and resulted in an improved environment of liquidity (Chordia, Roll, and Subrahmanyam (2009)), which might also have had an impact on institutions' interim trading performance.

We calculate interim trading performance across all stocks and separately for stocks sorted by the stock characteristics listed in Section III.D of the paper in both bubble and non-bubble periods. Our results for the 1999 to 2000 bubble period are presented in Panel A of Table IA.IX, and results for the 2001 to 2005 post-bubble period are presented in Panel B of Table IA.IX. The magnitude and significance of interim trading performance during both bubble and post-bubble sample periods (0.55% and 0.58%) are similar to full sample results. However, the excess interim trading performance for high idiosyncratic volatility and low-liquidity stocks declines significantly from the bubble (1999-2000) to the post-bubble (2001-2005) period. For example, excess performance for high idiosyncratic volatility stocks declines from 0.72% to 0.30%, while excess performance for high quoted spreads stocks declines from 1.46% to 0.21%.[2] Although aggregate interim trading performance statistics do not differ between these sample periods, our results provide some evidence that improvements in liquidity, reductions in

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[2] We note that for some stock characteristic categories, the interim trading performance results for stocks above and below the median value are both higher than the full sample results. There are several reasons for this apparent discrepancy. First, a fund must have at least one buy trade and one sell trade in a stock-characteristic subsample during the same quarter to be included in our analysis. Some funds may only show up in one subsample (e.g. funds that exclusively trade in large stocks). Second, our interim performance measure is principal-weighted rather than a simple average.

volatility, and increased competition decrease the profitability of trades in high idiosyncratic volatility and low liquidity stocks.

Several results in our sub-period analysis display differences from the full sample and thus merit discussion. We observe that in the bubble period, both buy and sell trades have positive DGTW abnormal performance: 1.07% and 0.53% respectively. The positive abnormal performance of both buy and sell trades suggests that institutions traded more heavily during this period in stocks that outperformed their benchmarks. We attribute much of this to a higher concentration of trading (both buys and sells) in technology stocks during the bubble period. Because technology stocks outperformed DGTW benchmarks during the bubble period, institutions that actively traded these stocks exhibit positive abnormal performance for both their buys and sells. Alternatively, we find that sell trades significantly underperform DGTW benchmarks during the post-bubble period.

D. Interim Trading Performance: Money Manager Funds vs. Pension Funds

Since money manager funds trade more actively than pension funds, we might expect to observe differences in the sources of interim trading performance between these two groups. We examine the interim trading performance across all stock-characteristic categories (listed in Table VI of the paper) separately for pension funds and money manager funds. Our results are presented in Table IA.X and suggest that both fund types have significant interim trading skill. Both pension funds and money manager funds have higher interim trading performance in small, high idiosyncratic volatility, and illiquid stocks. There appear to be some differences between the two fund types; in particular, money manager funds are more skilled in their sell trades.

E. Interim Trading Performance: Institution-Level Evidence

It is possible that private information used to generate interim trading performance is common to all funds within a particular institution (e.g., Fidelity). To investigate this possibility, we replicate our analysis of performance persistence at the institution level (rather than fund level). Our results are presented in Table IA.XI. We find that the interim trading performance difference between quintile 5 and quintile 1 is 1.10% (*t*-statistic=3.81) in the quarter following portfolio formation. Our results suggest that at least a portion of the interim trading performance we document is attributable to institution-level factors.

F. Does Interim Trading Performance Predict Fund Returns?

If superior interim trading performance benefits fund investors, then there should be a positive relationship between interim trading skill and fund returns. We address the link between interim trading skill and subsequent fund performance in two ways. First, we construct a proxy of fund returns using information contained only in the *ANcerno* database. Specifically, for each fund we cumulate all trades over a 12-month period to construct a "beginning" stock holdings portfolio. After the initial 12-month period, we compute our fund return proxy by calculating the performance of fund holdings while also taking into account the performance of all interim trades. This methodology has one primary benefit, in that it allows us to calculate monthly fund returns for any fund in the *ANcerno* database that exists for more than 12 months. However, the primary pitfall of this measure is, of course, that our fund return proxy is a noisy measure of actual fund returns since the "beginning" stock portfolio is clearly measured with noise and our returns do not account for management fees.

Each quarter we sort all funds into interim trading performance terciles and report the average monthly CAPM, Fama-French, and Carhart fund alphas (based on our fund return

proxy) during the subsequent quarter. Results presented in Table IA.XII show that monthly fund alphas are uniformly higher for high interim trading skill funds when compared to low interim trading skill funds. The difference in monthly fund alphas ranges from 0.208% to 0.232%, which are both statistically and economically significant (*t*-statistics range from 1.70 to 2.24). Our results are consistent with Kacperczyk, Sialm, and Zheng (2008) and suggest that interim trading skill predicts future fund performance.

The second methodology that we use matches the 64 client names that *ANcerno* provided to us to the *CRSP* mutual fund database that contain actual fund returns. The benefit of this alternate approach is that we capture actual fund returns (alphas). However, there are at least two caveats. First, matching to the *CRSP* mutual fund database is inexact and contains significant noise; and second, our matching procedure is limited to only a subset of funds in the *ANcerno* database. We proceed as follows: We match the 64 client names that we were provided by *ANcerno* to their corresponding fund family names in the *Thompson* mutual fund holdings database. We calculate quarterly changes in portfolio holdings for each fund that we identify in the *Thompson* database and quarterly changes in portfolio holdings for all funds in the *ANcerno* database. For each of the *Thompson* funds, we select the corresponding *ANcerno* fund that has the highest MATCH2 score (a detailed description of MATCH2 is provided on pp. 7-8 of this Internet Appendix). We then retrieve fund returns for all *Thompson-ANcerno* matched funds from the *CRSP* mutual fund database. The link (MFLINK) between the *CRSP* mutual fund database and the Thomson mutual fund holdings database is obtained from WRDS.

We divide all *Thompson-ANcerno* matched funds each quarter into terciles based on their interim trading performance. We then compute the equal-weighted monthly CAPM, Fama-French, and Carhart alpha for all funds in each tercile during the subsequent quarter. We report

the average fund alpha for each interim trading skill tercile in Panel A of Table IA.XIII. Our findings indicate that there is a positive correlation between interim trading performance and subsequent quarter fund alphas. Specifically, funds with high interim trading performance have a monthly alpha that is 0.12% to 0.276% higher during the subsequent quarter than funds with low interim trading performance. Our results are economically significant, as they suggest that funds with high interim trading performance have annual alphas that are approximately 1.4% to 3.3% higher than funds with low interim trading performance. However, due to the small number of observations, and the noise in the matching process, we are limited in our ability to find statistical significance (*t*-statistics range from 0.68 to 1.48).

We also evaluate whether interim trading skills can predict future fund performance for subsets of funds sorted on fund characteristics. We report our results in Panel B of Table IA.XIII. Specifically, Panel B reports the difference between monthly fund alphas (and associated *t*-statistics) between the high and low interim trading performance fund terciles along the following fund characteristics: number of stock holdings, fund size, expense ratio, fund turnover, fund load, and fund investment objective category. Our results show that high interim trading performance funds typically have higher monthly fund alphas than low interim trading performance funds across all fund characteristics (the exception being growth and income funds).

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Table IA.I - Comparison of ANcerno Institutions to Other Institutional Databases

Panel A statistics are based on a comparison of average characteristics for selected institutions in the ANcerno database and for all institutions in the Thompson 13F database. Statistics for the ANcerno database are obtained by matching a subset of 64 ANcerno institutions (by institution name) to their respective 13F filing data. The sample period is from 1999 to 2005. For each institution, we assign stock holdings to size, book-to-market, lagged return, turnover, idiosyncratic volatility, and illiquidity deciles based on NYSE breakpoints. The decile portfolio with the smallest value of the sorting variable is assigned to decile 1. The decile portfolio with the largest value of the sorting variable is assigned to decile 10. We then calculate an average decile-rank value for each institution in each stock characteristic category and present the average decile-rank value for each sample of institutions. Holdings returns are computed using quarterly holdings data for each institution to compute average monthly holdings returns during the quarter following holdings disclosure. We calculate the average holdings return for each institution and present the average monthly holdings return for each sample of institutions. Panel B presents a similar match for a subsample of ANcerno funds and all equity funds in the CRSP mutual fund database. Statistics for the ANcerno database are obtained by matching a subset of ANcerno institutions (by institution name) to their respective fund family name in the CRSP mutual fund database. We report average statistics across all funds in each sample for total net assets (TNA), expense ratio, 12b-1 fee, front load, turnover and average monthly returns. Average monthly returns are calculated as the average monthly fund return within each sample of funds. Panel C presents average characteristics of quarterly trading for ANcerno and 13F institutions. Quarterly trading by 13F institutions is calculated as the change in quarterly holdings, and data are obtained from the Thomson 13F quarterly institutional holdings database. Quarterly trading for ANcerno institutions are the aggregate net trading position of all trades within the quarter. Stock characteristic decile ranks are assigned as in Panel A. We then calculate an average decile-rank value for each institution in each stock characteristic category and present the average decile-rank value for each sample of institutions. Implied quarterly trading performance is calculated as follows: We calculate the DGTW equal- and principal-weighted abnormal performance for buys (positive change in quarterly holdings) and sells (negative change in quarterly holdings) over the subsequent quarter. We then take the difference in DGTW adjusted returns between buys and sells. We report an equal- and value-weighted average interim trading performance measure across all institutions and quarters for each sample of institutions.

Panel A: Comparison of ANcerno Subsample to 13F Institutions

	ANcerno Institutions	13F Institutions
Number of Stock Holdings	603	264
Total Dollar Stock Holdings ($ billion)	22.04	4.34
Size Decile	8.27	8.23
Book-to-Market Decile	3.66	3.46
Lagged Return Decile	5.91	5.92
Turnover Decile	6.31	6.15
Idiosyncratic Volatility Decile	4.87	4.87
Illiquidity Decile	2.59	2.65
Holdings Return (per month)	0.581%	0.578%

Panel B: Comparison of ANcerno Subsample to CRSP Equity Mutual Funds

	ANcerno Equity Funds	CRSP Equity Funds
TNA ($ million)	684.53	473.18
Expense ratio (%)	1.41	1.45
12b_1 fee (%)	0.44	0.39
Front load (%)	1.33	1.20
Turnover (%)	82.23	88.78
Average Monthly Return (%)	0.43	0.42

Panel C: Comparison of Changes in Quarterly Holdings

	ANcerno Database	13F Database
Total Quarterly Stock Trading ($ million)	1,285.83	842.83
Size Decile	8.12	8.07
Book-to-Market Decile	3.61	3.59
Lagged Return Decile	5.79	5.81
Turnover Decile	6.97	6.55
Idiosyncratic Volatility Decile	5.44	5.22
Illiquidity Decile	2.64	2.75
Implied Qtrly Trading Performance (EW)	-0.28%	-0.24%
Implied Qtrly Trading Performance (VW)	-0.24%	-0.17%

Table IA.II – Interim Trading Performance and Fund Size

Institutional trading data are obtained from ANcerno Ltd. and trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). For each trade, we calculate the raw cumulative stock return from the execution price until the end of the quarter. We adjust the raw cumulative return by the DGTW benchmark return over the same period. For each fund in each quarter, we then compute the equal-weighted or principal-weighted DGTW adjusted returns separately for buys and sells. We take the difference in DGTW adjusted returns between buys and sells. We report a simple average across all large and small funds and quarters. Panel A presents results where fund size is proxied for by cumulating the total dollar value of trading, and funds are separated into large (above median) and small (below median) groups based on the total dollar value of their estimated holdings. Panel B presents results where fund size is proxied for by the average dollar trade size over the prior 12 months, and funds are separated by the median trade size level into large and small groups. All returns are expressed in percent. Numbers in parentheses are *t*-statistics, which are computed based on two-way clustered standard errors.

Panel A: Fund Size Proxied by Cumulative Trades

	Equal-Weighted DGTW Returns		Principal-Weighted DGTW Returns	
	Large Funds	Small Funds	Large Funds	Small Funds
Buy	0.75	0.63	0.57	0.49
	(4.50)	(3.12)	(3.68)	(2.75)
Sell	0.05	-0.12	0.01	-0.07
	(0.32)	(-0.72)	(0.06)	(-0.39)
Buy-Sell	0.69	0.75	0.56	0.56
	(5.73)	(5.71)	(4.97)	(4.25)

Panel B: Fund Size Proxied by Trade Size

	Equal-Weighted DGTW Returns		Principal-Weighted DGTW Returns	
	Large Funds	Small Funds	Large Funds	Small Funds
Buy	0.51	0.82	0.39	0.64
	(3.09)	(4.33)	(3.68)	(3.61)
Sell	-0.05	-0.06	-0.11	0.04
	(-0.37)	(-0.37)	(-0.76)	(0.21)
Buy-Sell	0.56	0.88	0.50	0.61
	(4.81)	(7.64)	(4.54)	(4.69)

Table IA.III – Match Scores for ANcerno-13F Pairings

We match 64 13F institutions—using the names of 64 institutional clients that were provided by ANcerno—to all possible ANcerno institutions by computing three separate match scores. **MATCH1** is the percentage of quarterly trading observations for a 13F filer that match the net quarterly trading positions of an ANcerno institution with respect to stock traded (e.g., permno) and trading direction (buy or sell). **MATCH2** is the percentage of quarterly trading observations for a 13F filer that match the net quarterly trading positions of an ANcerno institution with respect to stock traded, trading direction, and trading quantity (within 10% of the trading quantity reported by the 13F filer). **MATCH3** is the percentage of quarterly trading observations for a 13F filer that match the net quarterly trading positions of an ANcerno institution with respect to stock traded, trading direction, and trading quantity (where the quantity traded matches exactly). For each of the 64 13F institutions, we select the corresponding ANcerno institution that has the highest MATCH2 score. We exclude a few potential matches where the best and second best MATCH2 scores differ only slightly (i.e., we are unable to provide a unique match between the 13F institution and the ANcerno institution). We report the average and median match scores for the best matches.

	Mean	Median
MATCH1	83.71%	89.09%
MATCH2	40.46%	41.00%
MATCH3	17.00%	10.23%

Table IA.IV –Performance of Intra-Quarter Round-Trip Trades:
By Contemporaneous Quarterly Stock Volatility

Institutional trading data are obtained from ANcerno Ltd. and the trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). We estimate the stock volatility for each stock in each quarter as the standard deviation of the daily stock returns. We then divide all stocks into two groups based on contemporaneous-quarter stock volatility: those below the median and those above the median. We calculate the holding-period return for each round-trip trade as the percentage difference between sell price and buy price. The DGTW-adjusted return is raw holding-period return less DGTW benchmark return over the identical holding period. We calculate principal-weighted average returns across all intra-quarter round-trip trades for each fund, in each volatility group, and in each quarter. We then take a simple average across all funds and quarters for each volatility group. All returns are expressed in percent. Numbers in parentheses are *t*-statistics, which are computed based on two-way clustered standard errors.

	Raw Return	DGTW adj. Return
Low Contemporaneous Stock Volatility	2.44	1.38
	(8.03)	(2.76)
High Contemporaneous Stock Volatility	3.65	2.90
	(3.18)	(3.72)

Table IA.V –Extended-Period Trading Performance of Institutional Investors

Institutional trading data are obtained from ANcerno Ltd. and the trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). For each trade, we calculate the raw cumulative stock return from the execution price until the end of the next quarter (the end of Q+1). We adjust this raw cumulative return by the DGTW benchmark return over the same period. For each fund in each quarter, we then compute the equal-weighted or principal-weighted DGTW adjusted returns separately for buys and sells. Finally, we take the difference in DGTW adjusted holding-period returns between buys and sells. We report a simple average across all funds and quarters. We present both equal-weighted DGTW adjusted returns and principal-weighted DGTW adjusted returns. All returns are expressed in percent. Numbers in parentheses are t-statistics, which are computed based on two-way clustered standard errors.

	All	Pension Funds	Money Manager Funds
Equal-weighted DGTW adj. Return			
Buy	0.63	0.63	0.64
	(1.68)	(1.65)	(2.12)
Sell	0.24	0.24	0.13
	(0.68)	(0.69)	(0.34)
Buy-Sell	0.40	0.39	0.52
	(2.86)	(2.72)	(2.46)
Principal-weighted DGTW adj. Return			
Buy	0.49	0.50	0.29
	(1.41)	(1.41)	(1.10)
Sell	0.18	0.20	-0.18
	(0.58)	(0.64)	(-0.54)
Buy-Sell	0.31	0.30	0.47
	(2.38)	(2.25)	(2.22)

Table IA.VI – Interim Trading Performance: Quarterized Results

The trades in the sample are placed by 3,816 funds in the ANcerno database during the time period from January 1, 1999 to December 31, 2005. 227 of these funds are money manager funds and 3,589 are pension funds. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). For each trade, we calculate the raw cumulative stock return from the execution price until the end of the quarter. We adjust this raw cumulative return by the DGTW benchmark return over the same period. We then quarterize each abnormal holding-period return by multiplying it by the number of trading days in the quarter divided by the number of trading days between the transaction and the last day of the quarter. For each fund in each quarter, we then compute the equal-weighted or principal-weighted DGTW adjusted quarterized returns separately for buys and sells. Finally, we take the difference in DGTW adjusted quarterized returns between buys and sells. We report a simple average across all funds and quarters. Panel A presents equal-weighted DGTW adjusted quarterized returns, and Panel B presents principal-weighted DGTW adjusted quarterized returns. All returns are expressed in percent. Numbers in parentheses are t-statistics, which are computed based on two-way clustered standard errors.

	All	Pension Funds	Money Manager Funds
Panel A: Equal-weighted DGTW adj. Return			
Buy	1.98	2.01	1.55
	(4.99)	(4.85)	(5.89)
Sell	-1.00	-1.02	-0.59
	(-2.29)	(-2.28)	(-1.81)
Buy-Sell	2.98	3.03	2.14
	(9.67)	(9.61)	(6.29)
Buy-Sell	2.58	2.62	1.78
(*after commissions*)	(8.58)	(8.53)	(5.40)
Panel B: Principal-weighted DGTW adj. Return			
Buy	1.47	1.46	1.62
	(3.69)	(3.53)	(5.27)
Sell	-0.61	-0.60	-0.66
	(-1.48)	(-1.44)	(-1.54)
Buy-Sell	2.08	2.07	2.29
	(7.08)	(7.08)	(4.22)
Buy-Sell	1.77	1.76	1.97
(*after commissions*)	(6.13)	(6.11)	(3.68)

Table IA.VII – Performance of Round-Trip Trades: By Holding Periods

Institutional trading data are obtained from ANcerno Ltd. and the trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). We calculate the holding-period return for each round-trip trade as the percentage difference between sell price and buy price. The DGTW-adjusted return is the raw holding-period return less the DGTW benchmark return over the identical holding period. We place each round-trip trade into one of four mutually exclusive holding-period categories: less than 1 week, between 1 week and 1 month, between 1 month and 2 months, and greater than 2 months. We calculate principal-weighted average returns for each fund, quarter, and holding-period category. We then report the average across all funds and quarters for each holding-period category. All returns are expressed in percent. Numbers in parentheses are *t*-statistics, which are computed based on two-way clustered standard errors.

	Raw Return	DGTW adj. Return
Holding Period <= 1 week	2.02	1.86
	(5.14)	(2.62)
1 week < Holding Period <= 1 month	2.63	2.11
	(7.06)	(3.13)
1 month < Holding Period <= 2 months	3.17	2.06
	(4.99)	(3.50)
Holding Period > 2 months	2.95	1.43
	(2.28)	(3.16)

Table IA.VIII – Performance of Round-Trip Trades: FIFO and LIFO

Institutional trading data are obtained from ANcerno Ltd. and the trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). We calculate the holding-period return for each round-trip trade as the percentage difference between sell price and buy price. DGTW-adjusted return is the raw holding-period return less DGTW benchmark return over the identical holding period. We calculate the principal-weighted average returns across all intra-quarter round-trip trades for each fund and each quarter. We then take a simple average across all funds and quarters and report results using the intra-quarter first-in first-out (FIFO) method in Panel A. We present results using the intra-quarter last-in-first-out (LIFO) method in Panel B. All returns are expressed in percent. Numbers in parentheses are *t*-statistics, which are computed based on two-way clustered standard errors.

Panel A: FIFO		
	Before Commission	*After Commission*
Raw Return	3.01	2.72
	(4.85)	(4.37)
DGTW adj. Return	2.04	1.76
	(3.94)	(3.38)

Panel B: LIFO		
	Before Commission	*After Commission*
Raw Return	3.04	2.75
	(5.04)	(4.53)
DGTW adj. Return	2.21	1.92
	(3.59)	(3.12)

Table IA.IX - Interim Trading Performance by Stock Characteristics: Sub-Periods

Institutional trading data are obtained from ANcerno Ltd., and the trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). For each stock characteristic—size, book-to-market, lagged return, turnover, idiosyncratic volatility, illiquidity, and quoted spread—we group each trade into one of two categories, those below the NYSE median and those above the NYSE median. For each fund and stock characteristic category, we calculate the principal-weighted DGTW adjusted return for buys and sells separately, and take the difference in DGTW adjusted returns between buys and sells. In Panel A, we report a simple average abnormal trading performance measure for each category across all funds for quarters during the 1999 to 2000 period. In Panel B, we report a simple average abnormal trading performance measure for each category across all funds for quarters during the 2001 to 2005 period. All returns are expressed in percent. Numbers in parentheses are t-statistics, which are computed based on two-way clustered standard errors.

Panel A: 1999-2000		Buy	Sell	Buy - Sell
All Stocks		1.07 (3.51)	0.53 (2.08)	0.55 (2.91)
Small Stocks		2.43 (3.83)	1.33 (1.88)	1.10 (2.72)
Large Stocks		0.68 (1.92)	0.14 (0.41)	0.54 (2.31)
	Small-Large			*0.56 (1.09)*
Growth Stocks		0.99 (2.79)	0.47 (1.34)	0.51 (3.57)
Value Stocks		2.11 (2.17)	1.29 (1.58)	0.83 (2.04)
	Growth-Value			*-0.31 (-0.74)*
Past Losers		0.37 (0.87)	-0.09 (-0.17)	0.45 (1.06)
Past Winners		1.20 (3.10)	0.52 (1.18)	0.68 (3.28)
	Losers-Winners			*-0.23 (-0.42)*
Low Turnover Stocks		0.63 (0.67)	0.01 (0.01)	0.63 (2.11)
High Turnover Stocks		1.31 (2.21)	0.72 (1.48)	0.59 (2.36)
	Low-High			*0.04 (0.10)*
Low IVOL Stocks		0.50 (0.73)	0.30 (0.46)	0.20 (1.40)
High IVOL Stocks		1.81 (2.40)	0.89 (1.16)	0.92 (3.56)
	Low-High			*-0.72 (-2.57)*
Low Illiquidity Stocks		0.78 (3.02)	0.28 (1.01)	0.50 (2.84)
High Illiquidity Stocks		4.28 (5.61)	1.96 (3.35)	2.33 (3.04)
	Low-High			*-1.82 (-2.18)*
Low Quoted Spread Stocks		0.78 (3.24)	0.36 (1.23)	0.42 (2.56)
High Quoted Spread Stocks		4.28 (6.27)	2.41 (3.41)	1.88 (2.92)
	Low-High			*-1.46 (-2.63)*

Panel B: 2001-2005				
		Buy	Sell	Buy - Sell
All Stocks		0.31 (2.14)	-0.27 (-2.05)	0.58 (5.04)
Small Stocks		0.65 (1.88)	-0.05 (-0.16)	0.70 (4.63)
Large Stocks		0.19 (1.04)	-0.42 (-2.82)	0.61 (5.21)
	Small-Large			*0.09 (0.59)*
Growth Stocks		0.18 (1.11)	-0.42 (-3.67)	0.60 (4.93)
Value Stocks		1.04 (2.87)	0.20 (0.60)	0.84 (4.82)
	Growth-Value			*-0.24 (-1.17)*
Past Losers		0.34 (1.40)	-0.18 (-0.66)	0.52 (3.51)
Past Winners		0.33 (2.35)	-0.39 (-2.65)	0.73 (6.35)
	Losers-Winners			*-0.21 (-1.18)*
Low Turnover Stocks		0.87 (4.01)	0.08 (0.39)	0.79 (9.19)
High Turnover Stocks		0.21 (0.87)	-0.44 (-2.01)	0.65 (4.50)
	Low-High			*0.14 (0.85)*
Low IVOL Stocks		0.59 (3.23)	0.03 (0.14)	0.56 (6.31)
High IVOL Stocks		0.33 (0.90)	-0.53 (-1.32)	0.86 (4.38)
	Low-High			*-0.30 (-1.45)*
Low Illiquidity Stocks		0.15 (0.92)	-0.34 (-2.38)	0.49 (3.75)
High Illiquidity Stocks		0.90 (5.02)	-0.00 (-0.02)	0.91 (3.44)
	Low-High			*-0.42 (-1.37)*
Low Quoted Spread Stocks		0.17 (1.02)	-0.46 (-2.78)	0.63 (4.69)
High Quoted Spread Stocks		0.91 (5.64)	0.07 (0.39)	0.84 (7.33)
	Low-High			*-0.21 (-1.42)*

Table IA.X – Interim Trading Performance by Stock Characteristics: Pension Funds and Money Manager Funds

Institutional trading data are obtained from ANcerno Ltd. and the trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. 227 of these funds are money manager funds and 3,589 are pension funds. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). For each trade, we calculate the raw cumulative stock return from the execution price until the end of the quarter. We adjust this raw cumulative return by the DGTW benchmark return over the same period. We then assign stocks to size, book-to-market, lagged return, turnover, idiosyncratic volatility, illiquidity, and quoted spread categories. There are two categories for each stock characteristic, those above the NYSE median and those below the NYSE median. Lagged return, turnover, idiosyncratic volatility, Amihud's illiquidity and quoted spread are calculated using 12 months of data ending at the previous quarter's end. For each fund in each quarter, we then compute the principal-weighted DGTW adjusted returns separately for buys and sells for each stock characteristic category. Finally, we take the difference in DGTW adjusted holding-period returns between buys and sells. In Panel A, we report the average abnormal returns for pension funds for each stock characteristic category. In Panel B, we report the average abnormal returns for money manager funds for each stock characteristic category. All returns are expressed in percent. Numbers in parentheses are *t*-statistics, which are computed based on two-way clustered standard errors.

Panel A: Pension Funds	Buy	Sell	Buy - Sell
Small Stocks	1.04 (3.74)	0.25 (0.96)	0.79 (2.84)
Large Stocks	0.44 (2.50)	-0.13 (-0.92)	0.57 (4.93)
Small-Large			*0.22 (0.74)*
Growth Stocks	0.43 (2.48)	-0.14 (-0.86)	0.57 (5.74)
Value Stocks	1.37 (3.51)	0.52 (1.52)	0.85 (4.75)
Growth-Value			*-0.28 (-1.44)*
Past Losers	0.35 (1.62)	-0.15 (-0.61)	0.49 (2.98)
Past Winners	0.62 (3.54)	-0.09 (-0.49)	0.71 (6.81)
Losers-Winners			*-0.22 (-1.09)*
Low Turnover Stocks	0.80 (2.50)	0.06 (0.21)	0.74 (6.68)
High Turnover Stocks	0.56 (2.05)	-0.07 (-0.29)	0.63 (4.86)
Low-High			*0.11 (0.66)*
Low IVOL Stocks	0.58 (2.40)	0.12 (0.51)	0.45 (5.45)
High IVOL Stocks	0.80 (2.13)	-0.08 (-0.20)	0.88 (5.46)
Low-High			*-0.43 (-2.49)*
Low Illiquidity Stocks	0.35 (2.24)	-0.13 (-0.94)	0.48 (4.40)
High Illiquidity Stocks	1.90 (4.92)	0.57 (1.88)	1.33 (4.05)
Low-High			*-0.85 (-2.37)*
Low Quoted Spread Stocks	0.36 (2.40)	-0.19 (-1.15)	0.55 (5.05)
High Quoted Spread Stocks	1.62 (5.32)	0.54 (2.06)	1.08 (6.03)
Low-High			*-0.53 (-3.01)*

Panel B: Money Manager Funds

	Buy	Sell	Buy - Sell
Small Stocks	0.86 (3.66)	-0.01 (-0.06)	0.87 (3.69)
Large Stocks	0.30 (2.57)	-0.38 (-2.39)	0.67 (3.87)
Small-Large			*0.20 (0.84)*
Growth Stocks	0.32 (2.04)	-0.39 (-2.67)	0.72 (4.07)
Value Stocks	0.96 (3.92)	0.29 (0.89)	0.67 (3.71)
Growth-Value			*0.04 (0.24)*
Past Losers	0.43 (2.40)	-0.24 (-1.03)	0.67 (3.84)
Past Winners	0.39 (2.50)	-0.32 (-1.80)	0.70 (4.24)
Losers-Winners			*-0.03 (-0.15)*
Low Turnover Stocks	0.69 (3.66)	-0.06 (-0.33)	0.75 (5.19)
High Turnover Stocks	0.41 (2.33)	-0.28 (-1.31)	0.69 (4.27)
Low-High			*0.06 (0.40)*
Low IVOL Stocks	0.38 (2.35)	-0.14 (-0.92)	0.52 (3.07)
High IVOL Stocks	0.58 (2.22)	-0.31 (-0.94)	0.89 (4.50)
Low-High			*-0.37 (-1.99)*
Low Illiquidity Stocks	0.33 (2.86)	-0.37 (-2.42)	0.70 (4.10)
High Illiquidity Stocks	1.18 (4.55)	0.18 (0.67)	1.00 (4.06)
Low-High			*-0.30 (-1.09)*
Low Quoted Spread Stocks	0.28 (2.41)	-0.49 (-2.81)	0.77 (4.77)
High Quoted Spread Stocks	1.21 (5.41)	0.67 (2.83)	0.54 (3.22)
Low-High			*0.23 (1.14)*

Table IA.XI – Persistence of Interim Trading Performance: Institution-Level Evidence

Institutional trading data are obtained from ANcerno Ltd. and the trades in the sample are placed by 840 institutions during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). For each trade, we calculate the raw cumulative stock return from the execution price until the end of the quarter. We adjust this cumulative return by the DGTW benchmark return over the same period. For each institution in each quarter, we then compute the principal-weighted DGTW adjusted returns separately for buys and sells. We take the difference in DGTW adjusted holding-period returns between buys and sells. At the end of the each quarter, we divide all institutions into five quintiles based on the principal-weighted DGTW adjusted returns for buys minus sells. We then report the average DGTW adjusted returns for these quintiles during the quarter of portfolio formation and the subsequent quarter. All returns are expressed in percent. Numbers in parentheses are *t*-statistics, which are computed based on two-way clustered standard errors.

Current Quarter Performance Quintiles		Quarters	
		Q+0	Q+1
q1 (low)	buy	-1.81 (-9.96)	0.16 (1.29)
	sell	2.32 (7.51)	0.10 (0.57)
	buy – sell	*-4.13 (-11.41)*	*0.06 (0.29)*
q2	buy	-0.26 (-2.75)	0.34 (3.00)
	sell	0.49 (3.51)	-0.09 (-0.67)
	buy – sell	*-0.75 (-6.18)*	*0.43 (4.88)*
q3	buy	0.35 (4.14)	0.37 (3.35)
	sell	-0.24 (-2.46)	-0.15 (-1.18)
	buy – sell	*0.58 (10.22)*	*0.51 (4.96)*
q4	buy	1.10 (8.40)	0.60 (4.21)
	sell	-0.84 (-6.51)	-0.20 (-1.29)
	buy – sell	*1.94 (20.92)*	*0.80 (9.29)*
q5 (high)	buy	2.82 (11.79)	0.71 (3.74)
	sell	-2.39 (-11.36)	-0.45 (-1.78)
	buy – sell	*5.22 (19.40)*	*1.16 (5.40)*
q5–q1	buy	4.63 (14.70)	0.55 (2.76)
	sell	-4.72 (-14.36)	-0.55 (-2.91)
	buy – sell	*9.35 (15.83)*	*1.10 (3.81)*

Table IA.XII – Interim Trading Performance and Subsequent Fund Returns: A Proxy

Institutional trading data are obtained from ANcerno Ltd. and trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). Each quarter we sort funds into terciles based on their principal-weighted interim trading performance. We then report the average CAPM, Fama-French, and Carhart monthly alpha for each tercile of funds during the subsequent quarter. Alpha estimates are obtained using a proxy of fund returns, which are constructed as follows: For each fund we cumulate all trades over a 12-month period to construct a 'beginning' stock holdings portfolio. After the initial 12-month period, subsequent monthly fund returns are obtained by calculating the performance of fund holdings while also taking into account the performance of all interim trades. All returns are expressed in percent. Numbers in parentheses are *t*-statistics.

Interim Trading Skill Portfolios	CAPM α (% per month)	FF 3-factor α (% per month)	Carhart 4-factor α (% per month)
Low	0.347	-0.036	-0.040
Medium	0.449	0.130	0.131
High	0.578	0.172	0.172
High-Low	0.232	0.208	0.212
	(1.70)	(2.06)	(2.24)

Table IA.XIII – Interim Trading Performance and Subsequent Fund Performance

Institutional trading data are obtained from ANcerno Ltd. and trades in the sample are placed by 3,816 funds during the time period from January 1, 1999 to December 31, 2005. The sample includes only common stocks (those with a sharecode of 10 or 11 in the CRSP database). We match a subsample of ANcerno funds to the CRSP and Thompson mutual fund databases. CRSP/Thompson-ANcerno matches are determined by the highest MATCH2 score, based on matched changes in quarterly holdings. Each quarter we sort funds into terciles based on their principal-weighted interim trading performance. In Panel A, we report the average CAPM, Fama-French, and Carhart monthly alpha during the subsequent quarter for each tercile of funds. In Panel B, we assign each matched fund to a group based on the number of stock holdings, fund size, expense ratio, turnover, load, and fund investment objective category. Groups are determined by the median level of each fund characteristic, except for investment objective groups. Investment objective groups are formed according to each fund's stated style objective and fund are assigned to three groups: AGG – aggressive growth, GRO – growth, and GRI – growth and income. We then report the difference in subsequent quarter monthly fund alphas between the high and low interim trading performance tercile for each fund category group. All returns are expressed in percent. Numbers in parentheses are *t*-statistics.

Panel A: Subsequent Quarter Fund Performance

Interim Trading Skill Portfolios	CAPM α (% per month)	FF 3-factor α (% per month)	Carhart 4-factor α (% per month)
Low	0.015	-0.231	-0.241
Medium	-0.040	-0.110	-0.115
High	0.135	0.044	0.021
High-Low	0.120	0.276	0.262
	(0.68)	(1.48)	(1.39)

Panel B: Subsequent Quarter Fund Performance by Fund Characteristics

	Difference Between High and Low Interim Trading Skill		
Fund Characteristics	CAPM α (% per month)	FF 3-factor α (% per month)	Carhart 4-factor α (% per month)
Small number of holdings	0.168 (0.92)	0.273 (1.44)	0.212 (1.10)
Large number of holdings	0.137 (1.34)	0.189 (1.76)	0.174 (1.63)
Small Fund Size	0.264 (1.06)	0.338 (1.81)	0.420 (1.54)
Large Fund Size	0.119 (0.72)	0.273 (1.56)	0.248 (1.42)
Low expense ratio	0.109 (0.61)	0.284 (1.51)	0.256 (1.37)
High expense ratio	0.318 (1.85)	0.457 (2.68)	0.380 (2.39)
Low turnover	0.145 (0.86)	0.359 (2.11)	0.316 (1.92)
High turnover	0.280 (1.66)	0.350 (2.10)	0.284 (1.79)
No load funds	0.200 (0.81)	0.389 (1.49)	0.390 (1.48)
Load funds	0.152 (1.39)	0.150 (1.29)	0.146 (1.26)
AGG	0.025 (0.07)	0.306 (0.76)	0.311 (0.76)
GRO	0.099 (1.01)	0.093 (0.92)	0.068 (0.69)
GRI	-0.082 (-0.59)	-0.000 (-0.01)	0.018 (0.12)