

Commissions Matter: The Trading Behavior of Institutional and Individual Active Traders

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We examine how commissions influence trading behavior by analyzing a unique data set of the equity trades of both individual and institutional active traders. Individual traders pay higher trading costs than institutional traders. As a result, they engage in more risky trading behaviors in order to cover these costs. Individual traders also trade significantly less because of their higher cost of trading. Individual traders tend to trade higher-priced stocks, hold their trades longer, and they experience much larger price swings than institutional traders. This leads individual traders to realize more dramatic gains and losses on their round-trips.

When individuals trade in financial markets, they generally incur two types of costs—the dealers' bid-ask spread, and the broker's commission. Market regulation and the modernization of online trading have significantly lowered the bid-ask spread over the last several years.¹ In fact, traders can now avoid the spread altogether by trading on alternative trading systems such as electronic communication networks (ECNs).

Because so much of financial research has focused on the implicit cost of trading (the bid-ask spread), this paper will focus on the explicit cost (broker commission). We analyze how higher explicit costs can influence trader behavior. We examine a unique data set of the trades of both institutional traders, who trade the capital of a firm and pay very little (or no) explicit costs, and individual active traders, who trade their own capital and pay standard commissions to a broker. Both groups trade with the same overall objective, yet there are significant differences in their trading behavior.

Our study is important to academics and practitioners for several reasons. First, the explicit costs of trading are often overlooked in financial research. This may be because implicit costs are publicly available, while explicit costs can only be obtained by examining brokerage firms' records.

Second, although our findings focus on active traders, we suspect that the results can be generalized to other market participants as well. All traders are faced with some cost when they execute a trade in security markets. Our study suggests that the extent of these costs may bring about more risk-seeking trading behavior on the trader's part.

Behavioral finance research finds that traders often classify their trades in terms of gains and losses, and they tend to act differently accordingly. For example, the disposition effect, the tendency of traders to realize their gains too early and hold their losses too long, is based on traders classifying trades into winners and losers (Shefrin and Statman [1985]). Both individuals (Odean [1998]) and professionals (Garvey and Murphy [2004]) who trade U.S. equities have been shown to exhibit this behavior. Differences in the level of trading costs will alter the classification of winning and losing trades, thereby influencing the way different market participants trade.

The third reason this study is important is that we compare the trades of both individual and institutional traders, the two main types of traders in the financial markets. Financial research suggests that individuals differ from institutions in their level of financial sophistication. Institutional traders are often considered better informed, while individuals may be relatively uninformed. Chakravarty [2001] highlights some of the past literature that emphasizes this point. He finds that institutional traders account for a majority of the cumulative price impact on medium-sized trades. The trades we observe here, both individual and institutional, are considered medium-sized.

Chan and Lakonishok [1995] also find that institutional traders are better informed. They find that a sequence of institutional block trades leads to a significant impact on stock prices. In this study, we do not seek to compare the performance or price impact of the two groups, however. We aim to highlight an important advantage that institutional traders have: They pay little or no explicit costs per trade. We examine how this shapes each group's behavior.

The differences in cost structure are important, because they suggest that many individuals could substantially increase their trading profits by trading for a firm, rather than for themselves. Over time, we expect to see traders drifting to the most cost-effective ways to trade.

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Our results come from a data set with over 400,000 equity trades, originating from 1,386 institutional and individual active traders over a sixty-eight-day trading period. We find that individuals trade significantly less than institutional traders, and we posit that the substantial explicit costs they incur are the main reason. Commissions severely reduce individuals' trading profits. We note that when individuals do trade, they appear to engage in more risky trading behavior, probably in an attempt to cover their higher costs of trading.

For example, the individual traders in our data set trade higher-priced stocks and hold onto their trades much longer, which leads to larger absolute price changes per round-trip. As a result, their gains and losses are more dramatic than those of the institutional traders. But if the individual traders adopted the strategy of the institutional traders, trading frequently but taking on less risk, they would not be profitable. So our results suggest that, given the different cost structures faced by individual and institutional traders, the majority of the individual traders would earn more if employed by a firm.

In the next section, we discuss the data set and the active trader market. We then report our empirical results. Lastly, we provide concluding remarks.

Data

The active trader market is responsible for a significant portion of trading volume on U.S. equity markets. A Bear Stearns company report (Goldberg [2003]) found that 30,000 of the most active traders (traders conducting more than twenty-five trades per day) account for 32% of Nasdaq/NYSE share volume. This market share has remained relatively constant over the last several years.² The market is equally split between individual and institutional traders: Each group accounted for 16% of the 2002 Nasdaq/NYSE share volume (Goldberg [2003]).

Firms that cater to active traders continue to attract new customers (McGinn [2003]), and "brokerage firms are spending feverishly to attract and retain this lucrative segment of the market" (Patel [2002]). Despite their presence, very little is known about active traders. As Barber and Odean [2001] note, this is partly because trading firms are reluctant to provide access to the trading records of their clients.

Our data come from a large U.S. direct access broker.³ Direct access brokers allow clients to choose their order-routing method via high-speed connections to financial markets. Direct access brokers are relatively popular. The Securities and Exchange Commission (SEC) [2000] identifies 133 in the U.S., and a Keefe, Bruyette, Woods [2001] report estimates there are 75,000 or so system users.

Direct access brokers are more appealing to active traders than to long-term investors. The average account we study involves 298 trades over the sixty-eight trading days in our sample. The principal characteristic that distinguishes an active trader from a long-term investor is mind-set. Many active traders hold stocks for minutes or hours, seldom overnight, closing out positions for small profits. In fact, the direct access brokerage firm used in this study markets their trading system and provides training courses to day traders (traders who open and close all their positions within the same day). In our data set, most traders adhere to this trading strategy.

Our data set covers March 8 through June 13, 2000, during which time there were sixty-eight trading days and two market holidays. In total, the data consist of 1,386 accounts involving 413,399 equity trades over our sample period. A small percentage of trades (8,253, or less than 2% of all transactions) were executed on options, and we exclude these from our analysis.

The data are in the form of a transaction database, and list the following information for each trade:

- Trader identification.
- Time the order was filled on the relevant exchange.
- Order type (limit order, market order, stop limit order, etc.).
- Action taken (buy, sell, short, or cover).
- Volume.
- Price.
- Trade location (ECN, NYSE, Nasdaq, etc.).
- Contra-party on the trade.
- Number of parties on the other side of the trade.
- Whether margin was used.
- Location of the account in the U.S. (branch office or remote location) or abroad.
- Whether the account was institutional or individual, which is of course most relevant for our study.

There are forty-nine institutional accounts and 1,337 individual accounts.

We also obtained the commission paid on all 303,206 individual trades. In contrast, only 4,433 of the 110,193 institutional trades are labeled with a designated commission. Most institutional traders have variable commission plans in which their commissions are based on the number of trades conducted over a given time period (so their accounts are billed at the end of the month). The exact commissions are not available for each of these institutional trades. The individual traders paid set commission fees per trade, which are in the data set. The commissions highlighted are the sum of all explicit costs incurred on each trade. This includes the charge levied by the broker and any other additional costs, such as fees charged by ECNs. The individual traders, on average, pay \$26 per trade.

In our data set, over 87% of the institutional trades originated from fifteen proprietary traders who traded the capital of the trading firm from which we obtained

the data. The trading manager⁴ stated that the traders did not pay straight commissions, but were charged a small fee per trade to cover execution costs and costs associated with running a proprietary trading desk (clearing fees, technology fees, etc.). This fee typically ranged from \$1.50 to \$3 per trade.⁵ The traders received 50% of their trading profits and the firm received the other half.⁶

The trading manager in our direct access firm also confirmed that traders employed by the firm were largely allowed to trade as they wished. Of course, their trading activities are monitored and, as noted above, their compensation is tied directly to their performance, just as it is for individual traders. They are hired, fired, or retained based on their performance, so unprofitable traders did not last long. We can confirm that the traders used a variety of strategies by examining differences in the stocks they traded, frequency of trading, trade size, holding time, order routing method, etc. As a group, their trading strategies were very different from those of the individual traders.

We did not have the profit or loss on each round-trip transaction in our data set. So in order to determine it, we matched the opening trade for each stock in each trader's account with the subsequent trade of the opposite sign each day. Traders do not always open and close positions with two trades, however. A trader can lay off part of an open position or combine a closing transaction with an opening transaction. Regardless of whether the traders opened, closed, or simultaneously opened and closed a position, we search forward in time each day until the opening position is closed out, keeping track of accumulated inventory and the corresponding prices paid or received.

We match the majority of trades using this matching algorithm. Over 80% were part of a simple sequence of trades where the trader's inventory was set to zero. For example, a trader buys 1,000 shares of Dell, and then sells 1,000 shares of Dell. These two trades would comprise a sequence of trades resulting in one round-trip trade (one opening trade and one closing or round-trip trade).

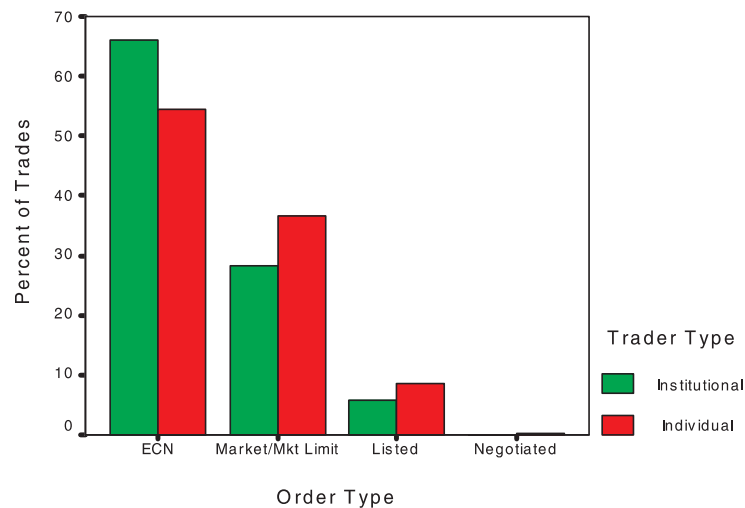
Another 7% of trades were part of a sequence of trades where the inventory was not set to zero at the end of the day, although one or more round-trip(s) had occurred. For example, suppose a trader makes three trades during the day. First, the trader buys 500 shares of Dell. Second, he buys 200 shares of Dell. Lastly, he sells 600 shares of Dell. The third trade would be the actual round-trip trade. However, 100 shares of inventory (from the second trade) is unaccounted for and not factored into our profitability calculations. Of course, these 100 shares may be sold the following trading day. Thirteen percent of trades were unmatched over the full sixty-eight-day trading period, and are most likely long-term investments.

Empirical Results

The institutional trades are executed in larger dollar amounts than the individual trades. The average institutional trade is for \$50,048, while the average individual trade is for \$36,582. This is not surprising because institutional traders presumably have access to more capital.

Figure 1 shows that a majority of both individual and institutional trading occurs on Nasdaq stocks over

FIGURE 1
Executed Orders



Note: The 303,206 individual and 110,193 institutional trades are segregated according to where they are executed. Listed refers to orders executed on either the NYSE or AMEX exchanges. All remaining orders were executed on Nasdaq stocks through electronic communication networks against Nasdaq dealer quotes (market or marketable limit order), or negotiated with Nasdaq dealers (negotiated).

ECNs. Nasdaq stocks are often preferred by active traders because of their volatility (technology stocks represent many of Nasdaq's listings), and for the hybrid market structure of the exchange, which allows traders to compete for order flow with market makers. This differs from the auction market model used on the NYSE and on the AMEX.

ECNs provide several trading advantages over trading directly with Nasdaq market makers at their posted quotes. First, ECNs allow traders to avoid paying the spread. In addition, traders trade anonymously on ECNs without revealing their information content. Traders also prefer ECNs because they often pay for liquidity. Thus, a highly active trader can generate substantial revenue by placing quotes on ECNs as opposed to consuming liquidity from Nasdaq dealers.

The active institutional and individual traders in our data set trade with the same overall objective—to generate trading profits during the intraday. However, despite their common goal, there are significant differences in how they seek to earn their respective trading profits. Table 1 highlights some of these distinctions.

Although both groups of traders concentrate nearly all their trading on Nasdaq, the institutional traders trade lower-priced stocks, which tend to experience smaller price fluctuations. The average price of the

stocks traded by the institutional traders is \$46; for the individual traders it is \$85.⁷ Both the mean and median price differences are highly significant, because larger absolute price changes bring about more opportunities for large gains and losses. The average gain, before commissions, is \$512 for the individual traders, and \$110 for the institutional traders. The average loss, before commissions, is −\$550 for the individual traders and −\$125 for the institutional traders.

Although institutional traders trade lower-priced stocks, they trade in larger share sizes. The average size of the institutional trades is 978 shares, while the average size of the individual trades is 540 shares. Both the mean and median size differences are also highly significant. It is no surprise that institutional traders trade in larger trade sizes, although it is a little surprising they do not trade in even larger sizes. However, the stealth trading hypothesis (Barclay and Warner [1993]) suggests that informed traders may trade in medium trade sizes (like the average size we observe) so as not to reveal their information. Chakravarty [2001] finds evidence of this with institutional trades by using NYSE audit trail data.

A startling difference between the two groups of traders is the holding time per round-trip. Individual traders hold onto their trades for about forty-four minutes (2,647 seconds), while institutional traders hold

Table 1. *Differences in Trading Style*

	Mean	Median	25th Percentile	75th Percentile
Stock Price				
Individual	\$84.99	\$71.37	\$40.90	\$117.73
Institutional	\$46.44	\$43.43	\$33.50	\$54.09
Difference	\$38.55*	\$27.94*		
Trade Size				
Individual	540	500	200	800
Institutional	978	1,000	500	1,000
Difference	−437*	−500*		
Holding Time (Seconds)				
Individual	2,647	875	304	2,744
Institutional	381	80	34	189
Difference	2,266*	795*		
Absolute Price Change				
Individual	\$1.20	\$0.56	\$0.25	\$1.31
Institutional	\$0.15	\$0.06	\$0.03	\$0.12
Difference	\$1.05*	\$0.50*		
Round-Trip Trading Profits, Before Commission				
Individual	\$71.26	\$57.00	−\$130.00	\$288.00
Institutional	\$30.93	\$18.00	−\$12.00	\$62.00
Difference	\$40.33*	\$39.00*		
Profit Per Share				
Individual	\$0.18	\$0.13	−\$0.34	\$0.75
Institutional	\$0.05	\$0.04	−\$0.02	\$0.07
Difference	\$0.13*	\$0.09*		

Note: *Significantly different from zero at the 1% level. Summary statistics for price, trade size, holding time (seconds), absolute price change, trading profits, and profit per share on round-trip trades for both individual and institutional traders. The results are based on the trading records of 303,206 retail trades and 110,193 institutional trades that occurred at a large U.S. direct access broker from March 8–June 13, 2000 (sixty-eight trading days). Trading profits are calculated before commissions on intraday round-trip transactions. The 1,342 retail accounts conducted 127,440 round-trips, and the forty-nine institutional accounts conducted 62,910 round-trips. A t-statistic tests the null hypothesis that the difference in means is equal to zero. The Wilcoxon rank-sum test tests the equality of the medians.

their trades for about six and a half minutes (381 seconds). The median holding time for the individual traders is about ten times larger than the median holding time for the institutional traders. The difference in holding times is also highly significant, and both groups exhibit the disposition effect.

The individual traders hold their winning trades for 2,543 seconds and their unprofitable trades, before commissions, for 2,861 seconds. The institutional traders hold their winning trades for 348 seconds and their losing trades for 513 seconds. This is consistent with the findings of Odean [1998] and Garvey and Murphy [2004], *inter alia*. We know that both groups of traders intend to close out their positions by the end of the trading day, so why do we find such large differences in round-trip durations?

We suggest that differences in the cost of trading are the prime reason. Since individual traders pay much higher commissions, they hold trades longer to (hopefully) experience larger price swings per round-trip and offset their higher costs. In doing so, they are of course taking on more risk. The individual traders experience an absolute price change per round-trip that is eight times larger than that of the institutional traders. However, when trading costs are factored in, they just cover the cost of their trading.

To check the robustness of our results, we segregate the 1,342 individual traders by how actively they trade (Table 2). One could argue that the comparison may not be meaningful, however, as some of the individual accounts are not very active. Over the sixty-eight trading days there were seventy-two individual traders who made more than 999 trades, ninety-five traders who made between 500 and 999 trades, 167 who made between 250 and 499 trades, 277 who made between 100 and 249 trades, and 731 who made less than 100 trades. Despite the differences in trading activity, the results

for price, trade size, holding time, trading profits, and price change are consistent across all groups of individual traders.

Table 3 summarizes the intraday trading profits of the individual traders. The individual traders generated \$9,080,959 in intraday round-trip trading profits over our sample period, but it cost \$6,453,531 to achieve those profits. In addition, they paid another \$1,438,088 in commissions on their long-term trades (those held overnight). These commission costs severely decreased their overall profitability.

The higher trading costs associated with trading one's own capital will probably force many individual traders to stop trading for themselves eventually. For example, 66% of the individual accounts and 57% of their trades are profitable before commissions. After commissions, the profitability figures drop to 49% of the individual accounts and 52% of their trades. These profitability figures may actually be a bit high, because they do not take into account the costs of holding inventory overnight. Unfortunately, we have no inventory data. However, the more active traders close out of nearly all their open positions by the end of the day.

In Table 4, we break up our sample data set and examine the fifteen most active individual accounts (in terms of trades) and compare their trading behavior to that of the fifteen most active institutional traders at the firm where we obtained the data. The latter group of traders is less concerned with the amount of trading they do because they incur little costs when they do trade. The price, trade size, holding time, and absolute price change are all consistent with the overall results previously observed for both groups. In addition, the individual traders experience much larger gains and losses than the institutional traders, as was also the case previously.

Table 2. *Individual Traders: Summary Statistics by Trading Activity*

Number of Trades	Round-Trips	Price	Profit	Holding Time	Trade Size	Price Change
Mean						
More than 999	51,294	\$81.99*	\$77.72*	2,078*	604*	\$1.05*
500–999	27,743	\$90.60*	\$68.18*	2,860*	537*	\$1.37*
250–499	24,516	\$88.60*	\$68.83*	2,863*	485*	\$1.25*
100–249	17,285	\$82.01*	\$58.72*	3,290*	465*	\$1.25*
Less than 100	6,602	\$79.09*	\$75.82*	3,670*	451*	\$1.31*
Median						
More than 999	51,294	\$65.87*	\$35.00*	709*	500*	\$0.50*
500–999	27,743	\$77.56*	\$75.00*	1,005*	500*	\$0.68*
250–499	24,516	\$76.06*	\$55.00*	876*	400*	\$0.62*
100–249	17,285	\$69.12*	\$60.00*	1,175*	400*	\$0.63*
Less than 100	6,602	\$68.06*	\$65.00*	1,245*	300*	\$0.62*

Note: *Indicates the mean or median is significantly different at the 1% level from the corresponding figures for institutional traders in Table 1. Summary statistics for price, trading profit excluding commissions, holding time, trade size, and absolute price change on round-trip trades for individual traders. The statistics are segregated by trading activity. During the sample period, there were seventy-two traders who made more than 999 trades, ninety-five who made between 500 and 999 trades, 167 who made between 250 and 499 trades, 277 who made between 100 and 249 trades, and 731 who made less than 100 trades.

Table 3. *Individual Trader Profitability*

Round-trip trading profits before commissions	\$9,080,959
Commissions on round-trips	\$6,453,531
Other commissions on long-term trades	\$1,438,088
Round-trip trading profits after all commissions	\$1,189,340
Mean round-trip profit after commissions	\$20.62*
Median round-trip profit after commissions	\$10.00*
Mean profit per share after commissions	\$0.04*
Median profit per share after commissions	\$0.02*
Percentage of profitable accounts	
After paying commissions	49%
Before paying commissions	66%
Percentage of profitable round-trip trades	
After paying commissions	52%
Before paying commissions	57%

Note: * Significantly different from zero at the 1% level.

Note that both groups of traders generate approximately the same amount of trading profits, excluding commissions, yet the institutional traders trade three times as much to earn their profits. The individual traders earn \$1,413,083 through 37,585 trades, and the institutional traders earn \$1,431,626 through 96,323 trades. Of course, the actual “take-home” earnings of these traders differ. The individual traders pay high commissions per trade, while the institutional traders pay a high share of their trading profits for trading the capital of the firm.

However, trading for a firm appears to be more beneficial. The individual traders pay \$1,014,229 in commissions, thus their take-home earnings are \$398,854. The institutional traders pay at most \$3 per trade, and then split their profits in half with the firm. Thus, their take-home earnings are at least \$571,329.

Table 5 presents the trading costs of each of the thirty traders in Table 4. Eleven of the individual traders pay more in commissions to the firm than they actually earn. Three of the institutional traders cannot cover the minimal estimated costs associated with their trading. If the fifteen individual traders adopted the trading strategy of the institutional traders, they would clearly not be profitable because they pay commissions of \$26 on average per trade. If the institutional traders had to pay this level of commission, they would not be profitable either (assuming, of course, they did not change their trading behavior).

The compensation structure for the two types of traders suggests that eleven of the most active fifteen individual traders would be better off trading for the firm than for themselves. Assuming barriers to entry remain low, we would expect many of the individual traders to switch to trading for a firm. Interestingly, the firm is caught in a dilemma. It earns nearly twice as much in commission revenue from the fifteen individual traders than it does from the profits generated by the fifteen institutional traders.

Table 4. *Comparison of the Performance of the Most Active Fifteen Individual and Fifteen Institutional Traders*

	Institutional Traders	Individual Traders
Total Profitability		
Number of trades	96,323	37,585
Intraday trading profits before commissions	\$1,431,626	\$1,413,083
Commissions	\$288,969*	\$1,014,229
Trading profits after commissions	\$1,142,657*	\$398,854
Trader's “take-home” trading profits	\$571,329*	\$398,854
Trading Profits Before Commissions		
Average profit per share	\$0.03	\$0.19
Average profit per round-trip	\$24.33	\$79.53
Average profit per winning round-trip	\$85.43	\$507.20
Average loss per losing round-trip	-\$100.46	-\$417.53
Frequency of winning round-trips	62%	52%
Number of profitable accounts	15	14
Round-Trip Trading Strategies		
Average trade price	\$42.43	\$81.49
Average trade size (number of shares)	1,010	669
Average holding time (seconds)	197	1,563
Average absolute price change	\$0.08	\$0.93

Note: *Using a commission figure of \$3 per trade, the upper bound figure suggested by the trading manager of the direct access brokerage firm. Trading statistics for the fifteen most active individual and institutional traders. The fifteen institutional traders trade the capital of the direct access brokerage firm. An interview with the trading manager of the firm reveals that these traders pay no more than \$3 in commissions per trade to cover the cost of running the proprietary trading desk. They are then paid half of their trading profits. The results are based on the sixty-eight trading days, March 8-June 13, 2000. Trading profits are calculated on intraday round-trip transactions excluding commissions.

Table 5. *Profitability by Trader of the Most Active Fifteen Individual and Fifteen Institutional Traders*

15 Most Active Individual Traders—By Trader			15 Most Active Institutional Traders—By Trader		
Number of Trades	Total Commissions	Profits After Commissions	Number of Trades	Estimated Upper Bound for Total Commissions*	Estimated Lower Bound for Profits After Commissions*
3,577+	\$95,710.04	\$23,166.04	14,304	\$42,912	\$263,470.50
3,494+	\$88,973.48	\$51,030.04	13,039	\$39,117	\$190,225.30
2,799	\$71,235.21	\$123,367.10	11,528	\$34,584	\$80,983.22
2,665	\$72,178.50	\$85,600.57	10,012	\$30,036	\$203,399.30
2,513	\$58,419.00	\$101,942.80	9,211	\$27,633	\$128,108.50
2,499+	\$54,726.50	−\$51,283.70	7,849	\$23,547	\$93,286.21
2,337+	\$64,439.00	−\$68,729.20	6,511	\$19,533	\$83,928.06
2,283+	\$66,772.77	\$13,925.43	5,265	\$15,795	\$14,955.41
2,239+	\$61,257.50	−\$45,196.10	4,558	\$13,674	−\$2,900.70
2,229+	\$72,627.81	\$41,070.73	4,538	\$13,614	\$45,254.76
2,220+	\$59,934.94	−\$28,046.20	3,024	\$9,072	−\$2,490.18
2,216	\$54,391.58	\$118,860.10	2,271	\$6,813	−\$4,203.02
2,197+	\$69,587.50	\$26,519.50	1,927	\$5,781	\$25,397.82
2,177+	\$59,778.00	−\$38,470.60	1,227	\$3,681	\$22,080.84
2,140+	\$64,197.52	\$45,097.33	1,059	\$3,177	\$1,161.36
<i>Totals</i>					
37,585	\$1,014,229.35	\$398,853.81	96,323	\$288,969	\$1,142,657.46

Note: *Based on \$3 per trade commission figure. *Indicates the individual trader would be better off working for the direct access brokerage firm than trading for themselves. Trading statistics for the fifteen most active individual and institutional traders. The fifteen institutional traders trade the capital of the direct access brokerage firm. An interview with the trading manager of the firm reveals that these traders pay no more than \$3 in commissions per trade to cover the cost of running the proprietary trading desk. They are then paid half of their trading profits. The results are based on the sixty-eight trading days, March 8–June 13, 2000. Trading profits are calculated on intraday round-trip transactions excluding commissions.

Conclusion

Using a unique data set, we examine how higher trading costs affect trading behavior by examining the trading accounts of both individual and institutional active traders. Institutional traders, who pay little or no commissions, share their trading profits with trading firms. Individual traders pay much higher commissions, yet they retain all of their profits and losses. These differences in trading costs and compensation schemes are reflected in differences in the trading behavior of the two groups.

Both individual and institutional traders trade to generate intraday trading profits. Since individual traders pay much higher commissions, they tend to trade less and also to take on more risk. The institutional traders pay minimal trading costs and trade more often, but take on less risk.

For example, the individual traders trade stocks priced nearly twice as high, they hold their open positions nearly seven times longer, and they experience an absolute price change eight times larger. The average gain, excluding commissions, is \$512 for the individual traders and \$110 for the institutional traders. The average loss, excluding commissions, is −\$550 for the individual traders and −\$125 for the institutional traders.

Our findings suggest that if the individual traders traded the same way the institutional traders do, they would be highly unprofitable because of the substantial commission costs they incur. However, if the majority of

the individual traders switched to working for a firm, rather than for themselves, they would be better off.

Notes

1. For example, Barclay et al. [1999] find a reduction in spreads subsequent to the SEC order handling rules, which reduced the minimum tick size (bid-ask spread) from 1/8 to 1/16. Bessembinder [2003] finds a reduction in spreads after stocks were switched over to decimal pricing. The minimum tick size was reduced from 1/16 to \$0.01.
2. For instance, in 1999, 2000, and 2001, these traders accounted for 35%, 35%, and 32%, respectively, of Nasdaq/NYSE share volume (Butte [2002]).
3. The firm has a customer base throughout the U.S., although a few clients traded from abroad (mainly in Canada and Israel).
4. We spent time interviewing traders and the trading manager, observing traders trade, and collecting data at the direct access brokerage firm.
5. We confirmed this estimated charge by obtaining recent proprietary data on the institutional traders in June 2003. From these data, we are able to see the exact cost per trade. From June 2002–May 2003 (1.3 million trades), the average cost per trade is \$1.25.
6. Compensation plans vary among proprietary trading firms. Some proprietary trading desks do not charge their traders per trade, although the traders receive a smaller payout of the trading profits they generate.
7. The top five most heavily traded stocks and their closing stock price on March 8, 2000, for the institutional traders are: WCOM (\$44.51), DELL (\$46.94), ORCL (\$83.12), GBLX (\$53.31), and ERICY (\$100.00). For the individual traders they are: QCOM (\$129.12), CSCO (\$132.38), JDSU (\$273.00), ORCL (\$83.12), and RMBS (\$363.00).

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