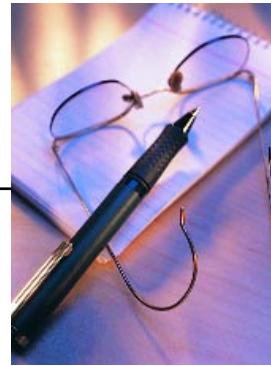


Trade Costs and Investment Performance



FIELD NOTES

BY LAWRENCE KRYZANOWSKI

Whether or not one believes that markets are efficient, trade costs are an important determinant of investment performance. They are, in fact, a significant drag on investment performance.

A measure of performance drag is the absolute value of the difference in the returns of the actual portfolio held and an identical portfolio with zero trade costs. Since this difference is transparent to clients for indexed products, passive indexers spend considerable time and effort to minimize trade costs so that the performances of their portfolios approximate that of the underlying index. While the magnitude of performance drag is less transparent to clients for actively managed investment products, it doesn't diminish the need to carefully monitor and control their trade costs. Each trade must be judged in terms of whether or not it adds economic value to the client's portfolio. Evidence that average mutual fund net performance is approximately equivalent to that of a passive benchmark suggests that the value added from exploiting "low grade" investment opportunities by active fund managers is approximately equal to performance drag.

While retail clients equate trade costs with brokerage commissions, most institutional clients know that trade costs include a number of other components, such as:

1. Liquidity costs, the magnitude of which depends upon how aggressively a trader wants to conclude a trade. Greater aggressiveness results in higher liquidity costs.
2. Price impact costs, the magnitude of which is related to the size of the trade. Larger trade sizes result in higher price impacts.
3. Execution quality costs, the magnitude of which is related to the quality of trade execution. This cost component is commonly associated with the indirect

opportunity cost associated with the delay or noncompletion of a proposed trade. It can also arise from following the letter and not the spirit of regulations that govern best price execution.

4. Bag costs, the magnitude of which depends upon the level and incidence of informed trading. This cost component is associated with the efficacy of security regulations dealing with public disclosure of material events and insider trading.

LIQUIDITY COSTS

Market liquidity is measured as the cost of effecting a transaction at a given point of time, or by the time it takes to trade at a given price. Four aspects of the cost measure of market liquidity are width (i.e., the spread for a given number of shares), depth (i.e., the number of shares that can be traded at given quotes), immediacy (i.e., how quickly trades of a given size are effected at a given cost) and resiliency (i.e., how quickly prices revert to former levels after they respond to large order flow imbalance initiated by uninformed traders).

Overall, a market is liquid if traders can quickly buy or sell large numbers of shares when they want at a low trade cost. The cost and time measures of liquidity are more relevant to market- and limit-order traders, respectively.

In an unpublished paper, Hao Zhang, associate professor of finance at The University of Victoria, and I examine trade costs for five asset classes for client (agent) and in-house (principal) trades on the Toronto Stock Exchange (TSE) based on every trade over the period, 1990-1994. We find significant differences in trade costs for various broker groupings when trades are dichotomized by security type, trade price and size, agent/principal trades and market/limit trades. To

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illustrate, we find mean relative percentage spreads for seller-initiated trades for common shares, preferred shares, warrants and units of 1.11%, 1.43%, 1.72% and 2.17%, respectively, for per-share prices of at least \$5, and of 2.23%, 4.25%, 3.23% and 2.49%, respectively, for per-share prices of at least \$1 and less than \$5. We also find significant differences in trade costs (including price continuity) for principal versus agent trades that favour principal trades.

IMPACT ON TRADER'S DECISION

When deciding on whether a trader should place a market or limit order, the trader must compare the expected losses from information events with the expected gains from liquidity events that cause limit order execution. The literature contains measures of the relative performance of limit or market orders that compare the actual or imputed execution price with the opposite-side quote at the time of order placement. The literature also finds the following relationships:

1. The probability that a trader will place a market order is negatively related to the size of the spread. In other words, traders appear willing to wait to obtain a price within the spread for stocks with larger spreads.
2. When the order imbalance increases in favour of the other side of the market, same-side traders are more likely to submit market orders.
3. Large trade size orders tend to be limit (more patient) orders.

IMPACT ON EQUITY PRICES

Research indicates that trade costs are a priced risk (i.e., they affect returns). Many of the recent multifactor models for pricing equities include trade costs, as measured by either quoted or effective spreads or their unexpected components, as a determinant of equity returns.

IMPACT OF TRADE VENUE DESIGN

Trade costs depend on trade venue design and its evolution over time. To illustrate, in ongoing work, Hao

Zhang and I document the changes in trade price execution advantage of the TSE after the Minimum Quotation Increment Reductions (or tick size) by the TSE, NYSE, AMEX and NASDAQ for TSE shares cross-listed in U.S. trade venues. We also find evidence that suggests that price differentials are reduced with greater trade venue (or market) concentration. This implies that the change in market-making costs is less than the change in the opposite direction in market-making rents so that trade price differentials narrow as the level of market concentration increases. This finding has implications for the alleged benefits of alternate trade mechanisms.

IMPACT OF TRADE PRACTICES

Trade costs also depend on the many order flow arrangements that influence the customer order routing practices of the originating broker. One such practice, known as "payment for order flow," results in order-flow purchasers rebating cash back to the order-flow-selling brokerage firms. Under a similar arrangement, known as internalization, brokers provide in-house order fills at the best inside spread. While both practices satisfy the "best execution" regulatory requirement, they are not always in the best interest of the client since a fill may have been obtained within the spread. In the case of bonds, internalization may not even be executed at the best inside spread since many brokers do not appear to check for better inside spreads, especially for smaller retail clients.

PRESCRIPTION

Money managers should pay more attention to the overall management of trade costs. To do so, the microstructure data provided by the stock exchanges needs to become more transparent and richer, and similar data needs to become available for bond trades. Security regulators should become proactive in ensuring that such data becomes readily available at a reasonable cost in order to enhance the operational efficiency of Canadian capital markets. ❖