

of these commissions may be used to obtain soft dollar benefits (*i.e.*, research and other services as permitted by section 28(e) of the Securities Exchange Act of 1934) that may benefit the manager. The limited transparency of soft dollar commissions may provide incentives for managers to misuse soft dollar services.

B. Quantify All Transaction Costs

Some commentators have suggested that mutual funds be required to quantify and disclose all of the transaction costs that they incur.²⁶ This alternative would provide the advantages associated with the previous alternative (including commissions in the expense ratio) while eliminating any disadvantages associated with quantifying some, but not all transaction costs.²⁷

This alternative raises the issue of the difficulty of quantifying spreads, market impacts, and opportunity costs. Consultants and academics derive transaction cost estimates that include spreads and market impact costs by using a variety of algorithms to compare the actual price that was paid in each transaction with the market price that prevailed at some time before²⁸ or after²⁹ the transaction was completed. Perhaps the most all-inclusive way to

of soft dollar executions was 6 cents per share. See Office of Compliance Inspections and Examination, SEC, Inspection Report on the Soft Dollar Practices of Broker-Dealers, Investment Advisers and Mutual Funds (Sept. 22, 1998) (available at <http://www.sec.gov/news/studies/softdollar.htm>) ("Inspection Report").

²⁶ See John C. Bogle, Founder and Former Chief Executive, Vanguard Group and President, Bogle Financial Markets Research Center, Statement Before the House Subcommittee on Capital Markets, Insurance and Government Sponsored Enterprises (Mar. 12, 2003); and Mercer Bullard, Founder and President, Fund Democracy, Inc., Statement Before the Senate Subcommittee on Financial Management, the Budget, and International Security (Nov. 3, 2003).

²⁷ "The ability to figure out trading costs is there. When these companies want internal efficiencies to reduce expenses or improve sales there's no shortage of money to do that. But as soon as someone asks them to spend money on what they are charging shareholders, they bellyache. Trading costs are paid out of shareholders' money. They should decide what they pay." See Sahoo, *supra* note 23 (quoting Max Rottersman of fundexpenses.com, a website that monitors mutual fund costs and expenses).

²⁸ A "before trade" measure compares the actual price of each trade with the price that prevailed in the market before the transaction was completed. See Andre F. Perold, *The Implementation Shortfall: Paper vs. Reality*, Journal of Portfolio Management (Spring 1988) at 8.

²⁹ In an "after trade" measure, the market price might be today's closing price, tomorrow's closing price, some other price in effect after the fund completed the trade, the average of the high and the low for the day, or a weighted average of all prices at which market participants transacted on that day. See Perold, *supra* note 28 at 7.

measure transaction cost is another method called "implementation shortfall." Implementation shortfall measures the transaction cost of each trade as the difference between the price of all trades you intend to make (trades actually made plus intended trades that fail to execute) and the price that prevailed in the market *when each decision to trade was made*.³⁰

With respect to the before trade and after trade methods, a common standard would need to be chosen from among the wide variety of estimation techniques that are used, opportunity costs would remain unaccounted for, and some measures in this category may be vulnerable to being "gamed."³¹

The advantages of the implementation shortfall method are that it includes all trading costs and is not vulnerable to being gamed. However, there is no generally accepted manner to calculate a portfolio's implementation shortfall. To monitor performance and comply with their best execution responsibilities, many fund advisers already gather a substantial amount of

³⁰ The concept of "implementation shortfall" was introduced by Treynor in 1981. See Jack L. Treynor, *What Does it Take to Win the Trading Game?*, Financial Analysts Journal (Jan.-Feb. 1981), at 55-60; see also Perold, *supra* note 28 at 8.

Implementation shortfall is defined as a measure of the degree to which execution, market impact and opportunity costs prevent the investor from taking advantage of his or her stock selection skills. See Perold, *supra* note 28 at 5-6. Implementation shortfall can be interpreted as the difference in value between an actual portfolio and a corresponding paper portfolio. A paper portfolio is an imaginary portfolio that is constructed on paper to see what would happen if certain trades were actually made. To measure transaction costs, a trader must specify a benchmark price at which he buys or sells securities for his paper portfolio. The difference in value between the actual portfolio and the corresponding paper portfolio measures the trader's cost of implementing trading decisions relative to this benchmark. Since implementation is generally accomplished at a cost, paper portfolios typically earn better returns than the corresponding actual portfolios. Harris, *supra* note 6 at 426. Leinweber illustrates the implementation shortfall concept by noting that from 1979 to 1991 stocks classified as "Group 1" by Value Line had an annualized return of 26.3% while the Value Line mutual fund that contained the same stocks returned only 16.1%. The difference between the paper return and the actual portfolio return is the cost of trading. David J. Leinweber, *Using Information from Trading in Trading and Portfolio Management*, 4 Journal of Investing, No. 1 (1995) at 40.

³¹ For example, because a before trade measure compares the actual price of each trade with the market price in effect before the transaction was completed, the market price is known in advance. A trader working on behalf of a fund could "manufacture" low transaction costs if, after each decision to trade is made, the trader would wait to take action on the order list, implement only the buy orders for which prices have fallen since the receipt of the order, implement only the sell orders for which the prices have risen, and dismiss the rest of the orders as "too expensive" to execute. See Perold, *supra* note 28 at 7-8.

data about transaction costs and execution quality.³² Of course, there may be substantial differences in the types of data that fund advisers currently gather that would require changes to their systems. However, there may be a fair amount of uniformity, at least on the general types of information (*e.g.*, trade decision time, time orders are given to brokers, trade execution time and price, *etc.*) that fund advisers maintain.

C. Quantify the Effect of Daily Decisions to Trade

Another, more inclusive alternative for measuring transaction costs would capture the combined effect of transaction costs and gains and losses from short term trading. This "trade effect" measure would reflect the annual average daily difference between the actual value of the portfolio as of the close of each trading day and the hypothetical value of the portfolio if no trades had been made that day.

Trade effect is easy to measure in practice. It is equal to the total mark-to-market profits or losses on the security purchases and sales made by the fund. For a purchase, the mark-to-market profits or losses are computed by multiplying the total quantity traded in the security times the difference between the volume-weighted average fill price and the price at the end of the period over which the profits or losses are measured. For a sale, it is the negative of this quantity.³³

³² "Virtually all the major institutions have a transaction-cost measuring system in place. They compare their actual execution costs to pre-trade benchmarks from models or peer comparisons from different firms. That puts pressure on the trading desks to control costs. So the guys who aren't doing it are being left behind." Sahoo, *supra* note 23 (quoting Ananth Madhavan). " * * [M]ore pension funds and investment managers are measuring transaction costs—either by using proprietary systems or third party services * * *. Since the wrenching bear market of 2000-'02, institutions have learned that transaction costs can be a significant drag on performance, and they have begun managing them as intently as they research stocks." Schack, *supra* note 10, at 32.

³³ For example, a mutual fund purchases 500 shares of ABC Company at a volume-weighted average fill price of \$19. The price of the security at the end of the measurement period is \$20. The mark-to-market profit or loss associated with this trade would be the difference between the fill price and the measurement price (−\$1) times the number of shares transacted (500), or −\$500. Alternatively, a mutual fund sells 500 shares of XYZ Company at a volume-weighted average fill price of \$15. The price of the security at the end of the measurement period is \$17. The mark-to-market profit or loss associated with this trade would be the negative of the difference between the fill price and the measurement price (+\$2) times the number of shares transacted (500), or \$1,000. In this example, the cost of trading—the trade effect—would be \$500 (−\$500 + \$1,000), indicating that the trading was

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