BrightScope's Transaction Cost Algorithm:

Helping Fiduciaries Understand and Discharge Their Fiduciary Duties

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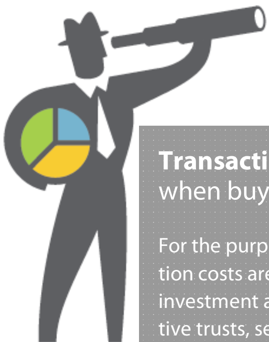

Transaction Cost: a cost incurred when buying or selling a security.

For the purpose of this white paper, transaction costs are limited to costs incurred within investment alternatives (mutual funds, collective trusts, separate accounts etc.). These costs are often referred to as "trading costs", "turnover costs" or "implicit costs."

ERISA Fiduciary Responsibilities

The federal statute governing pension plans, the Employee Retirement Income Security Act of 1974 (ERISA), was enacted to protect retirement assets from misuse and ensure plan participants obtain the retirement outcomes they expect. One of the primary goals of ERISA was to establish standards of conduct for plan fiduciaries. ERISA fiduciaries are required to act with the same care, skill, prudence and diligence under the prevailing circumstances that a prudent person acting in like capacity and familiar with such matters would use in similar circumstances[i]. In addition, ERISA fiduciaries are required to discharge their duties for the exclusive purpose of providing benefits to participants and their beneficiaries and defraying reasonable expenses of administering the plan[ii].

As it pertains to investment expenses, the U.S. Department of Labor (DOL), which has interpretive and enforcement authority over the fiduciary responsibility provisions of ERISA, has interpreted the provi-sions as imposing a duty on a fiduciary with respect to a plan subject to ERISA to identify all costs which are "return-reducing" and ensure these costs are reasonable and fully disclosed to participants:

> *"(T)he participant must be provided directly or upon request with a description of the annual operating expenses of each designated investment alternative which reduces the rate of return of the alternative, such as investment management fees, administrative fees and transaction costs, and copies of any prospectuses, financial statements and reports, and of any other materials relating to investment alternatives available under the plan."* [iii]

A fiduciary charged with identifying all fees that are "return-reducing" would have to make a determination of how transaction costs impact their participants, and consider transaction costs when selecting and monitoring investment options. According to independent fiduciary and Congressional 401(k) expert Matthew Hutcheson[iv]:

> *"Fiduciaries play the most important role in retirement plan operation and outcomes because they have the power to exercise significant control over variable economic aspects of a plan, such as costs. One type of economic cost (transaction costs) is particularly important because transaction costs can be large, yet most often overlooked. Efforts exerted by fiduciaries to identify and monitor transactions costs and the associated savings immediately accrue to participants and beneficiaries, and further provide fiduciaries with valuable insight critical to making sound and prudent decisions."*

However, it is acknowledged within the investment industry that transaction cost information is not properly disclosed to investors and is difficult to calculate independently. Due to these and other factors, many plan sponsors ignore transaction costs in their internal "All-In" fee calculations. However, difficulty in finding or calculating these fees does not absolve the fiduciary of their obligations under ERISA. According to Greg Kasten, CEO of Unified Trust:

> *"The fact that turnover costs are 'hard to find' does not give the plan fiduciary the leisure of deciding not to monitor them. Plan fiduciaries should therefore be 'ahead of the curve' by understanding the magnitude of the turnover costs issues and institute fiduciary best practices as part of their duty to monitor and reduce the adverse impact of these costs."* [v]

In order to help ERISA fiduciaries fulfill their obligations, BrightScope has developed an algorithm that quantifies transaction costs for mutual funds, collective trusts and separate accounts. This data is intended to aid plan sponsors in their "All-In" Total Plan Cost calculations and is an important data point that fiduciaries should consider in their analysis of which funds to include in a defined contribution plan investment menu.

Transaction Costs Defined

The Securities and Exchange Commission has identified four major types of transactions costs:

Commissions: Charges that a broker collects to act as agent for a customer in the process of executing and clearing a trade.

Spread Costs: Costs incurred when a fund buys a security from a dealer at the "asked" price (slightly above current value) or sells a security to a dealer at the "bid" prices (slightly below market value). The difference between the bid price and the asked price is known as the "spread."

Market Impact Costs: Costs incurred when the price of a security changes as a result of the effort to purchase or sell the security.

Opportunity Costs: Costs related to missed or incomplete trades.

Of these four types of transaction costs only commissions are directly measured and disclosed by investment funds subject to the Investment Company Act of 1940. The remaining three costs are difficult to measure and remain undisclosed.

The Magnitude of Transaction Costs

In published documents, regulators and fund management companies recognize that transactions costs are significant and relevant to investors, and most estimate that these cost can be equal to or larger than a fund's expense ratio. In fact, Plexus Group Inc., a leader in the Transaction Cost Analysis (TCA) industry calls transactions cost "one of the largest erosions of investment value that investors face." The Securities and Exchange Commission (SEC) notes that transactions costs "can greatly exceed the explicit costs."

There have been numerous studies that have aimed to quantify explicit and implicit transaction costs within investment alternatives. These studies all indicate that transaction costs are on the order of 1-2% of net assets of a fund and as such are often as large, or larger, than fund expense ratios. While there is a consensus that transactions costs are large and relevant to retirement outcomes, many ERISA fiduciaries have not implemented best practices when it comes to calculating how transaction costs affect their participants and incorporating these costs into determining the reasonableness of investment fees. BrightScope designed its Transaction Cost algorithm to aid ERISA fiduciaries with these obligations.

BrightScope's Transaction Cost Calculations

In order to construct its Transaction Cost Algorithm, BrightScope relied on guidance from the securities regulators and the fund management industry. In 2003 the Securities and Exchange Commission (SEC) asked for public comment on whether or not it is feasible to quantify all transaction-related costs incurred by funds and requiring funds to disclose such a measure. While most commenters agreed with the SEC that these costs are important and relevant, the most oft-cited reason for not disclosing this information was the fact that there is no single agreed-upon measure that has been developed to capture all of the necessary data from a fund and generate the objective and consistent measurements. In the absence of a consensus on this matter and full disclosure of transaction costs by funds, guidance from the SEC and the mutual fund industry suggests that investors, and fiduciaries, should use a fund's turnover ratio to estimate the impact of Transaction Costs.

SEC: "The requirement to disclose portfolio turnover rate is premised on the observation that a fund's transaction costs tend to be highly correlated with its turnover rate, other factors held equal. Thus, by comparing

	Commissions	Spread Costs	Market Impact/ Opportunity Costs	Total
SEC[vi]	0.30%	0.45%	0.18-1%	**0.93-1.75%**
Elkins McSherry /Plexus / Abel Noser[vii]	0.15%		1.05%	**1.20%**
Karceski/Livingston[viii]	0.15%	0.24%		
Sharkansky[ix]				**1.24%**

The studies above reference transaction costs for equity mutual funds. Transaction costs for money market funds, fixed income funds and other non-equity funds are typically much lower, though they remain significant.

turnover rates, investors can obtain an indication of how transaction costs are likely to vary among different funds."[x]

Investment Company Institute: "While portfolio turnover rate is not a perfect proxy for fund trading costs, it is generally viewed as being highly correlated with transaction costs. In addition, it can be easily calculated by funds, and is easily understood by investors and readily comparable among funds. We believe that these advantages outweigh any imprecision of a portfolio turnover rate's correlation to trading costs."[xi]

Fidelity: "The turnover rate is a useful number for investors. While it is limited, it is also simple, objective, and relatively well understood. Turnover rates can be augmented by associating them with commissions paid as a percent of assets. Those two figures are probably the best available proxies for transaction costs at this time."[xii]

Vanguard: "We believe that increasing the visibility of a fund's turnover rate is crucial. It is easily quantifiable, generally understood by investors, and most important it is a critical factor in determining transaction costs. Turnover rate is a good indicator of total transaction costs not only for stock funds, but also for balanced and bond funds."[xiii]

The SEC and the investment management industry have provided investors with the turnover ratio as a way to help understand the impact of transaction costs on fund performance. While it is an imperfect metric, it is the best tool plan fiduciaries currently have for estimating the impact of transaction costs on their investment alternatives.

BrightScope believes that the turnover ratio is insufficient by itself to estimate a funds transaction costs. In addition to the turnover ratio an investor also needs to know how large the fund is and what types of assets the fund trades. In total there are 4 different factors that are used in BrightScope's calculation of a fund's Total Transaction Costs (TTC) (see chart below).

BrightScope's algorithm takes into account a fund's disclosed brokerage commissions and estimates spread costs, market impact costs and opportunity costs using the fund's turnover rate, total net assets and the asset allocation of the portfolio of underlying assets. BrightScope feels that this comprehensive method of calculating transaction costs yields a high quality estimate of the total transactions costs incurred by a fund that are undisclosed to investors.

BrightScope includes its transaction costs in the measurement of a plan's "All-In" Total Plan Costs in order to accurately reflect the true cost of plan management.

Factors Included in the Transaction Cost Algorithm

Factor	Location	Impact
Brokerage Commissions	Obtained from a fund's Statement of Additional Information (SAI).	Commissions directly lower returns.
Fund Turnover	Obtained from a fund's prospectus.	Higher turnover is correlated with higher transaction costs
Total Net Assets	Obtained from a fund's prospectus.	Larger funds typically incur larger market impact costs.
Asset Allocation	Obtained from a fund's Quarterly Holdings.	Trade costs vary across asset classes.

In order to arrive at a per fund total transaction cost estimate the BrightScope's algorithm adds the fund's brokerage commissions to estimates of the fund's spread costs and market impact/opportunity costs based upon the fund's turnover, total net assets and asset allocation. BrightScope is working closely with multiple fund families to continuously improve these estimation to ensure they fairly reflect the true costs of fund management.

References

[i] ERISA § 404(a)(1)(B).

[ii] ERISA § 404(a)(1)(A).

[iii] *See, e.g.,* Keynote Address of Assistant Secretary Ann L. Combs to the Professional Liability Underwriting to the National Conference of the Society of Professional Administrators and Recordkeepers, May 13, 2004, http://www.dol.gov/ebsa/newsroom/sp051304.html (visited on Sept. 26, 2005); Remarks of Assistant Secretary Ann L. Combs to the Washington Briefing of the Financial Women's Association, March 29, 2004; http://www.umet-vets.dol.gov/ebsa/newsroom/sp032904.html (visited on Sept. 29, 2004); Remarks of Assistant Secretary Ann L. Combs to the Washington Forum of the U.S. Institute, Mar. 8, 2004; http://www.dol.gov/ebsa/newsroom/sp030804.html (visited on October 7, 2005).

[iv] Matthew Hutcheson has testified before Congress numerous times on 401(k) fee issues and recently received an Emmy for his work on a Bloomberg TV show entitled "The Truth behind Hidden Fees in 401(k) Plans."

[v] Kasten, Gregory W., "High Transaction Costs from Portfolio Turnover Negatively Affect 401(k) Participants and Increase Plan Sponsor Fiduciary Liability", http://thefloat.typepad.com/files/kasten-on-portfolio-trading-costs-in-401k-plans-1.pdf.

[vi] http://www.sec.gov/rules/concept/33-8349.htm

[vii] http://www.iaim.ie/files/Best_Execution_3.pdf

[viii] http://www.zeroalphagroup.com/news/Execution_CostsPaper_Nov_15_2004.pdf

[ix] http://www.personalfund.com/RiskWithoutReward.pdf

[x] http://www.sec.gov/rules/concept/33-8349.htm

[xi] http://sec.gov/rules/concept/s72903/ici022304.htm

[xii] http://sec.gov/rules/concept/s72903/fidelity03022004.htm