



Trading efficiency of fund families: Impact on fund performance and investment behavior



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ABSTRACT

This study examines how the efficiency of trading desks operated by mutual fund families affects portfolio performance and investment behavior of affiliated funds. We estimate the trading efficiency of a fund family's trading desk as the difference between the gross return of the family's index fund, which incorporates trading costs, and the return of the underlying index, which does not incorporate trading costs, around index adjustment dates. By operating more efficient trading desks that help reduce trading costs, fund families improve the performance of their funds significantly and also enable their funds to trade more and hold less liquid portfolios.

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1. Introduction

Most mutual funds operate as part of fund families. Fund families make strategic decisions with far-reaching consequences for the operations and performance of their member funds. Academic research has documented some of these decisions and their impact on a fund's investment behavior and performance.¹ However, one of the most direct ways in which fund families can affect the investment behavior and performance of their member funds, which is through the operation of a trading desk, has received little attention.

The importance of a trading desk is highlighted by the fact that it is the conduit through which trading strategies formulated by the fund's research process get implemented. For example, it determines when to trade, which trading venues and/or brokers to use and to what extent, and what type of orders to use and how to split them.² Consequently, the trading desk determines how close the real return of a fund's trading strategy is to the paper return of that same strategy that would be achieved only if the fund could transact at all times (at observed prices) in unlimited quantities with no price impact and free of all commissions. This difference reflects trading costs in the form of execution costs such as commissions, bid-ask spreads, and price impact but also in the form of opportunity costs from not trading when requested by the fund's research process because the execution costs of doing so are prohibitive.³ Thus, a more efficient trading desk is expected to generate lower trading costs for its affiliated mutual funds than a less efficient one.

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¹ See, e.g., Gaspar et al. (2006), Kacperczyk and Seru (2012), and Chen et al. (2013).

² See Anand et al. (2012) for an excellent discussion of how trading desks support their portfolio managers.

³ Evidence from previous research shows that these costs are an important determinant of performance. For example Edelen et al. (2013) and Busse et al. (2016) both show that trading costs of mutual funds are typically comparable in magnitude to the funds' expense ratios.

Addressing the impact of trading desks on their affiliated mutual funds, we test two hypotheses. Our first hypothesis postulates that funds from families with more efficient trading desks outperform funds from families with less efficient trading desks simply because a more efficient trading desk allows a fund manager to trade at lower costs, i.e. she benefits from lower execution costs and fewer missed opportunities to implement research ideas. Our second hypothesis postulates that funds exploit the advantage of being affiliated with a more efficient trading desk in their trading strategy in at least one of the following ways: they (1) trade more, (2) hold less cash, and (3) hold less liquid stocks. The first aspect derives directly from the economic insight that investors respond to higher trading costs by reducing the frequency and volume of their trades (see, e.g., [Constantinides, 1986](#)). The rationale underlying the cash hypothesis is that cash is used (among other reasons) as a buffer to minimize transaction costs when investors withdraw money from the fund. Since efficient trading desks allow funds to sell stocks in a less costly way when they need to cover unexpected liquidity needs, we expect funds affiliated with more efficient trading desks to hold less cash. Efficient trading desks provide yet another benefit. At the heart of our first hypothesis described above is the argument that efficient trading desks help fund managers lower their general trading costs. However, we expect this advantage to amplify when managers trade illiquid—and, therefore, costlier-to-trade—stocks, in which case the higher trading efficiency pays off more. This allows affiliated fund managers to earn the illiquidity premium (see, e.g., [Amihud and Mendelson, 1986](#)). Therefore, we expect funds to hold more illiquid stock portfolios when affiliated with more efficient trading desks, everything else constant.

We test these hypotheses using a novel trading cost measure. Our measure exploits instances when funds from different families are known to trade the same stocks at the same time. More specifically, we analyze cases when index funds from different families trade due to index adjustments. Focusing on S&P 500 index funds, which represent the most widespread type of index funds,⁴ we estimate the efficiency of the trading desk of a given fund family as the difference between the return of its index fund gross of expenses and the return of the S&P 500 index (henceforth, return difference) around index adjustment dates.⁵ Trading costs are reflected in the gross return of an index fund but not in the return of the underlying index, making the return difference a reasonable measure of the costs associated with trades of index funds in response to changes in the composition of the underlying index. Since the number of index adjustment and the associated trading costs vary from year to year, we calculate the return difference measure for each index fund and year separately and then use it to compare index funds in the cross-section every year. We interpret cross-sectional variation in the return differences of S&P 500 index funds as indication of cross-sectional differences in the quality of the families' trading desks in a specific year.

Using a broad sample of US equity funds for the period 2000 to 2013, we find strong support for our first main hypothesis that trading efficiency of mutual fund families has a positive impact on the performance of their member mutual funds. In a matched sample approach, we find that actively managed funds belonging to families with the most efficient trading desks deliver a significantly higher performance than their counterparts from families with the least efficient trading desks. This result is also economically signif-

icant, with the performance differences between these two fund groups being more than 120 basis points per year, and is further supported by additional multivariate regression tests.

We take multiple steps to rule out alternative explanations or alleviate endogeneity concerns. First, in all our regression specifications we include multiple fund and family characteristics as well as style-by-year and family fixed effects to control for style characteristics and unobservable family characteristics. Second, we employ two placebo tests. The first one is based on a bootstrap procedure, which randomly assigns the efficiency measure of a family's trading desk to fund-year observations and estimates the relation between fund performance and trading efficiency. We repeat this procedure 10,000 times and the results rule out that the effect of trading efficiency on performance is spurious. The second placebo test constructs an alternative measure of trading efficiency based on index funds that are outsourced by the fund family. This efficiency measure should not be related to the trading efficiency of the outsourcing family and the performance of its in-house funds because the trading desk of the outsourcing family is not responsible for the implementation of trades of the outsourced index funds. This responsibility lies with the external advisors who manage the outsourced index funds. Supporting our argument, we find no positive and significant relation of this alternative trading efficiency measure with the performance of funds managed in-house.

We also find strong support for our second hypothesis. We document that funds belonging to families with more efficient trading desks trade more. The average portfolio turnover of funds from families with the most efficient trading desks is up to about 14 percentage points higher than that of funds from families with the least efficient trading desks. Furthermore, funds from families with the most efficient trading desks hold cash positions that are one third smaller and hold stocks that are less liquid (as indicated by an average relative bid-ask spread that is up to one quarter bigger).

Our paper is related to the literature that studies the importance of trading costs as a determinant of investment decisions (see, e.g., [Demsetz, 1968](#)). In particular, two major mechanisms are established for the relationship between trading costs and investment behavior. First, trading stocks entails costs and investors accommodate trading costs by reducing the frequency and volume of their trades (see, e.g., [Constantinides, 1986](#)). Second, since less liquid stocks are associated with higher average returns (see, e.g., [Amihud and Mendelson, 1986](#), [Brennan et al., 1998](#), [Brennan and Subrahmanyam, 1996](#), and [Amihud, 2002](#)) investors with lower trading costs hold less liquid assets (see, e.g., [Amihud and Mendelson, 1986](#)). We contribute to this literature by showing that mutual funds do indeed respond to lower trading costs resulting from affiliation with more efficient trading desks in a way that is consistent with the theoretical predictions of this literature.

Our paper also makes a contribution to a growing literature that looks at how decisions of mutual fund families affect the performance outcomes and investment behavior of its member funds. For instance, [Guedj and Papastaikoudi \(2004\)](#) and [Gaspar et al. \(2006\)](#) show fund families subsidize the performance of their top-performing funds. [Kacperczyk and Seru \(2012\)](#) analyze whether a family strategy to centralize decision making affects fund performance. [Chen et al. \(2013\)](#), [Kostovetsky and Warner \(2015\)](#), [Moreno et al. \(2016\)](#), [Debaere and Evans \(2015\)](#), and [Sorhage \(2015\)](#) analyze the decision of mutual fund families to outsource part of their duties and how this decision affects fund performance. Finally, [Kempf and Ruenzi \(2008\)](#) and [Simutin \(2013\)](#) show that intra-family competitive dynamics can affect certain investment decisions of the member funds. Our paper contributes to this literature by documenting that setting up an efficient trading desk is another important way through which mutual fund families can improve the performance of their member funds.

⁴ In our sample period, 83 fund families offered index funds tracking the S&P 500, but only 11 families offered index funds tracking the Russell 2000, which is the second most popular index among fund families.

⁵ [Blume and Edelen \(2004\)](#) study the performance and tracking errors of index funds that track the S&P 500 index and document large differences in these variables across these funds.

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