Executive summary. Exchange-traded fund (ETF) shares provide an alternative structure for investing in index mutual funds. In the last several years, hundreds of new ETFs, most of them tied to a unique index or strategy, have been brought to market. As a result, millions of investors can now decide to invest in index funds through either ETFs or conventional fund shares. This paper briefly frames that decision for investors.

We presume, first, that investors are choosing between two fund structures linked to the same index, as opposed to choosing between an ETF or index fund, each of which is allied with a different index or strategy. Also, given this presumption, the “index or active fund” debate does not come into play here. Within our stated framework, the decision between the two investment structures revolves around a few simple qualitative and quantitative considerations.

- The qualitative considerations center on the investor’s desired level of investment flexibility—for example, the value the investor places on asset integration, trading, and portfolio management.

- The key quantitative consideration is cost. An investor’s prospective dollar cost in either ETFs or conventional shares depends on the relative cost differential between index fund choices, the size of the initial investment, the investor’s plans for subsequent investments, and the investor’s time horizon.
These considerations lead to the following very general investor profiles.

Typically, an ETF investor:

- Wants to retain his or her existing relationship with a financial advisor or company that does not offer conventional index fund shares.
- Wants to invest in a low-cost index fund, but is unable to obtain a conventional index fund for the desired market exposure through his or her existing financial services provider.
- Prefers some degree of trading and portfolio-management flexibility as well as intraday trade execution.

Typically, an investor in conventional shares:

- Has access to conventional index funds that are competitively priced relative to comparable ETFs.
- Makes periodic investments or redemptions.
- Is not actively seeking the investment flexibility available with ETFs.

Notes on risk: All funds are subject to market risk, and there is no assurance that a fund will achieve its stated objective. All ETF products are subject to market risk, which may result in the loss of principal. Prices of mid- and small-cap ETFs often fluctuate more than those of large-cap ETFs. International ETFs involve additional risks, including currency fluctuations and the potential for adverse developments in specific countries or regions. ETFs that invest in emerging markets are generally more risky than those that invest in developed countries. Sector ETFs are subject to sector risks and nondiversification risks, which may result in performance fluctuations that are more extreme than fluctuations in the overall stock market. In addition, sector ETFs that sample their target indexes to comply with tax diversification rules may experience a greater degree of tracking error than other ETFs. Bond ETFs are subject to interest rate, credit, and inflation risk. Foreign investing involves additional risks including currency fluctuations and political uncertainty. Sector investments are subject to sector risks and nondiversification risks, which may result in performance fluctuations that are more extreme than fluctuations in the overall stock market.

ETFs are not redeemable with an Applicant Fund other than in Creation Unit aggregations. Instead, investors must buy or sell ETF shares in the secondary market with the assistance of a stockbroker. In so doing, the investor will incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.
Introduction

In 1976, Vanguard opened the first conventional index fund available to retail investors.1 It was named the First Index Investment Trust (now Vanguard® 500 Index Fund) and was based on the Standard & Poor’s 500 Index. Nearly 20 years later, in 1993, State Street Global Advisors, in partnership with the American Stock Exchange, rolled out the first exchange-traded index fund—the Standard & Poor’s Depository Receipt, or “SPDR”—also based on the S&P 500 Index. This ETF was not constructed in exactly the same way as the Vanguard fund, but for the first time any investor with a brokerage account had access to an index mutual fund. Since 1993, although cost improvements have occurred for investors—such as the lowering of expense ratios as well as of brokerage commissions and bid-asked spreads—these improvements have tended to narrow the relative cost differences and make the decision between ETFs and conventional index fund shares even more challenging.

ETFs versus conventional index shares: Alike, but different

Before reviewing the two structures’ differences, we should first mention an important way in which they are alike. Conventional index mutual fund shares and ETFs generally represent interests in the same underlying portfolio (again, assuming identically constructed underlying indexes). In other words, whether you buy an ETF or a conventional index fund, you can expect that the characteristics of your investment—risk and return attributes, holdings, and portfolio turnover—will be the same.

Now to the differences. ETFs and conventional shares diverge primarily in their trading features, which, along with other qualitative aspects, are a key factor in their flexibility. To an extent, ETFs and conventional shares also differ in quantitative aspects—that is, principally, in costs (see Table 1, on page 4, for a snapshot of each structure’s

Defining terms

Bid-asked spread. The difference between the price a dealer will pay for a security and the somewhat higher price at which the dealer will sell the same security. Because secondary-market transactions occur at market prices, you may pay more than NAV when you buy ETF shares, and receive less than NAV when you sell those shares.

Stop order. An order to buy (or sell) a security once the price of the security has climbed above (or dropped below) a specified price, called the stop price.

Limit order. An order to buy a security at no more (or sell at no less) than a specific price. This gives the customer some control over the price at which the trade is executed, but may prevent the order from being executed.

Open order. An order to buy or sell a security that has not yet been filled or canceled.

Short selling. The practice of selling securities the seller does not then own, in the hope of repurchasing them later at a lower price. This is done in an attempt to profit from an expected decline in the price of a security. In a short sale involving stock, a broker loans securities to an investor at a certain price; the investor then buys the securities back if the market price drops, thus claiming a profit. Note: A short-selling strategy may not meet its objective, and an investor can theoretically lose an arbitrarily large amount of money if a stock continues to rise.

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1 A few years earlier, Wells Fargo Bank and American National Bank had created index funds based on the Standard & Poor’s Composite Index and made them available to some of their institutional clients.
characteristics). This paper addresses these and other qualitative and quantitative differences, to help investors determine which share class may be more appropriate for their portfolios. We start with the qualitative aspects, which, for many investors, have more of a bearing on the decision.

**Qualitative considerations**

For many investors, the most significant factor in the decision between ETFs and conventional shares is that of investment flexibility—for example, in terms of asset integration, trading, and portfolio management. The key aspect of flexibility favoring ETFs is that they are exchange-traded, which thus makes these index fund structures readily available to investors with brokerage accounts and investment relationships anywhere.

**Asset integration**

Many investors, in an effort to simplify their financial lives, would like the opportunity to consolidate their assets with a primary advisor. Since the advent of ETFs, investors no longer have to disperse their assets in several places—for instance, with index assets at one company, other assets with a separate broker or advisor—to obtain the benefits and expertise of index-centric investment firms.

**Trading**

Because they trade like common stocks, ETFs offer many trading features not available with conventional mutual fund shares. ETFs provide intraday pricing and execution, so investors can be relatively certain of their trade price. This is not possible with conventional shares, which are priced once a day, generally at 4 p.m., Eastern time. Intraday pricing and trade execution can be used to help investors implement a number of strategies:

- Investors can use ETFs to establish a position in a market segment or sector, or in a country, at any point during the trading day.
- Investors can sell short—on an up- or zero tick—and can place stop and limit orders at prices they designate. The ability to sell short or to place stop orders can be a powerful advantage for investors hedging against declines in a long portfolio position. Stop and limit orders can also be kept open for up to 30 days or more (after which they expire if not executed).
- Because ETFs are immediately marginable, investors can use them as a source of capital for investment or unexpected liquidity needs.

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2 Based on data from Lipper, Inc. as of December 31, 2007, Vanguard calculated that 99.5% of ETFs (589 of 593) reported expense ratios below the 1.26% median expense ratio for the 21,970 open-end funds in Lipper’s database. The median expense ratio for the 593 ETFs was 0.58% and only 5% of ETFs reported expense ratios in excess of 0.95%.

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Table 1. Snapshot of conventional index fund shares versus ETFs

<table>
<thead>
<tr>
<th>Conventional shares</th>
<th>ETF shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased and redeemed directly from fund company.</td>
<td>Purchased and sold on secondary market through brokers.</td>
</tr>
<tr>
<td>Priced once a day (4 p.m., Eastern time) at net asset value.</td>
<td>Priced by market throughout the day; market price can differ moderately from net asset value.</td>
</tr>
<tr>
<td>No brokerage fees, but possibly sales loads; traditionally low expense ratios.</td>
<td>Brokerage fees for every transaction; the vast majority of ETF shares have expense ratios lower than those for most mutual funds. 2</td>
</tr>
<tr>
<td>Trading restrictions in order to curtail frequent trading.</td>
<td>No restrictions on frequent trading.</td>
</tr>
<tr>
<td>Cannot be sold short; no margin trading; no stop, limit, or open orders.</td>
<td>Can be sold short; margin trading possible; stop, limit, or open orders possible.</td>
</tr>
</tbody>
</table>

Both conventional and ETF shares: Entitled to fund distributions of income and capital gains.
Portfolio management
Some investors may value the advantages of an index-oriented strategy, but they may also want the flexibility to modify their portfolio’s exposure to particular market segments or sectors, or country weightings. Although some investors may decide to incorporate these preferences into their long-term strategic portfolio (using a domestic-only approach, for example), others may choose a more active (or tactical) approach in an attempt to capitalize on shorter-term expectations.

Unlike conventional shares, ETFs carry no frequent-trading restrictions. Investors who want to implement tactical portfolio strategies using index funds may need to use ETFs rather than conventional shares to gain sufficient flexibility.

Quantitative considerations
Cost, the primary quantitative factor influencing the choice between ETFs and conventional shares, is not always easy to evaluate. Some costs—such as expense ratios—are explicit, but others are much less so. The predictability of the amount of total return lost to capital gains distributions, trading costs, and frictional costs can vary by the individual ETF and market conditions, as well as by the habits of investors themselves.

The costs associated with ETFs can differ from those for conventional index fund shares in terms of expense ratios, trading aspects, capital gains distributions, frequency of an investor’s transactions, and miscellaneous factors.

Expense ratios
A mutual fund’s expense ratio represents the fund’s operating costs, which include paying for portfolio management, administrative services, shareholder reports, and more. As such, the expense ratios will vary by fund provider as well as by asset class and sub-asset class. In addition, fund providers frequently offer lower-expense-ratio share classes of the same index fund to qualified or higher-minimum-balance investors.

A reasonably wide expense-ratio differential often exists between comparable ETFs, as well as between ETFs and comparable conventional index fund shares. As a result, an investor should not presume, for example, that the ETF structure alone automatically results in a lower expense ratio than that of conventional shares.

Time horizon and cost
Keep in mind that an investor’s time horizon is a significant factor in the cost analysis. This consideration is most relevant for those who establish a position for the long run and don’t intend to make periodic investments. With ETFs, for example, such investors will incur brokerage costs once, at the initial purchase of shares, but their expense-ratio savings should continue year after year. ETFs’ higher transaction costs may initially make them the more costly choice for smaller investments. However, when the ETF is the lowest expense-ratio structure available, the expense-ratio advantage can make an ETF the lower-cost option over time; also, the cumulative savings tend to be more significant for smaller initial investments.
Trading costs
Every ETF trade entails transaction costs—typically, brokerage commissions and bid-asked spreads and, occasionally, a premium or discount to the ETF’s net asset value—so frequent trades can rapidly negate an expense-ratio advantage. This makes ETFs a generally unsuitable vehicle for automatic investment plans or regular 401(k) contributions, for example. Investors should make sure that all relevant investment costs are captured in the cost analysis.

Just as every ETF trade incurs a brokerage commission, the trade is also subject to the bid-asked spread. The number of shares transacted generally determines these costs: Larger dollar-value transactions or lower-priced ETFs can increase trading costs. These fees don’t apply to conventional shares, although some funds may assess purchase, redemption, or other fees.

ETFs trade at market prices that are influenced by supply and demand. Depending on these forces, the market price may be above net asset value (NAV)—that is, at a premium—or below NAV—at a discount. The daily price of conventional shares, by contrast, depends only on the value of the fund’s underlying investments at the market’s close. Under normal conditions, the ETF’s market price should approximate the portfolio’s NAV, but at times it may not. If an investor buys ETFs at a premium to NAV and sells them at a discount, the investor may earn less than the return of a conventional fund that tracks the same underlying index (without regard to expense-ratio differentials).

Capital gains distributions
Evaluating portfolio structures in terms of tax-efficient investing is beyond the scope of this paper, but Donaldson and Kinniry (2007) have provided useful detail. As with the possibility for lower expense ratios, the potential for greater tax efficiency is a feature more commonly associated with indexing than with active portfolio management. Conventional index funds, relative to actively managed funds of comparable investment characteristics, tend to distribute very modest capital gains payments over time due to their generally more stable portfolio constituents. This structural characteristic is also an important factor in assessing the potential for capital gains tax distributions among index funds in general, whether conventional fund or ETF. All else being equal, the more broadly diversified the fund’s underlying index, the lower the expected constituent turnover and the lower the expectations for meaningful capital gains distributions. This observation would suggest, too, that index benchmarks based on market-capitalization-weighted construction methods (which tend to minimize constituent turnover relative to alternative weighting methods) would be expected to make lower capital gains tax distributions.

Another factor that is frequently mentioned as a tax-efficient tool for ETFs, but is less often associated with conventional index funds, is the ability to redeem ETF shares “in-kind” when necessary (Sauter, 2003). This flexibility is a valuable tool for fund managers of either structure, since it permits the manager to deliver securities, rather than cash, to meet certain redemptions, and avoids realization by the fund of capital gains on these transactions.

3 Readers should consider consulting a tax advisor for information about their specific tax situations.
In the end, with similar portfolio-management strategies at their disposal, the relative tax efficiency of index fund structures tends to be most meaningfully influenced by their benchmark selection (that is, whether an index is broad or narrowly defined, or subject to a size or style bias) and the constituent weighting method.

**Periodic investments**

Another important variable in the cost analysis is the frequency of an investor’s transactions. Investors who make systematic investments generally incur lower overall costs with conventional shares. Frequent transactions increase trading costs, and for smaller investments (e.g., dividend/capital gains reinvestment), these costs can represent a sizable proportion of the investment.

Trading costs tend to make ETFs less suitable as investments for company-sponsored retirement plan accounts, because plan participants typically make frequent contributions. Unless the ETF’s expense ratio advantage is substantial, transaction-oriented costs can quickly overwhelm the benefit of a lower expense ratio. ETFs, however, can be a more cost-effective investment—even for systematic investments—when the expense ratio differential between the two fund structures is large, rather than when it is small.

**Miscellaneous costs**

Miscellaneous costs, such as brokerage-account-maintenance fees, bear mentioning here, too. These can offset ETFs’ expense ratio savings, resulting in a cost advantage for conventional shares, even over time.

**Conclusion**

Investors should consider various qualitative and quantitative factors in determining whether to invest in index funds using an ETF or conventional fund. Because the cost differences are often not large for longer-term investors, the qualitative factors should be addressed first. For many investors, the sense of control offered by ETFs’ trading features may make ETFs the more attractive option, unless conventional shares are considerably less costly.

When deciding which fund structure may be right for a portfolio, investors should carefully consider not only the potential long-run cost of a fund but also their own expected investment strategy. Cost analysis can suggest the most cost-effective share class, but for most investors the final decision should be driven primarily by the value they assign to an ETF’s additional investment flexibility. For certain investors, ETFs’ extra flexibility may make them the higher value proposition, even if they cost a little more than conventional shares over time.

**References**


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