Prudently Selected Index Mutual Funds Are a Better Choice than ETFs for Most 401(k)s

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This article explores the benefits and costs associated with using Exchange Traded Funds (ETFs) as a low cost method of investing for 401(k) plans and provides guidance on whether or not they represent a better indexing option over traditional index mutual funds.

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Introduction

ETFs, or Exchange Traded Funds, long known as a low cost method of investing for individual investors, are receiving increasing media exposure as a potential solution to reduce 401(k) plan fees. In fact, ETFs have been touted by at least one firm as the "low cost solution for 401(k)s." The reason for the increased media exposure for ETFs is relatively straightforward: on average ETFs cost less (*i.e.*, have lower expense ratios) than actively managed mutual funds. However, comparing passively managed ETFs to actively managed mutual funds ignores the fact that there are already passive index mutual funds that are already being used in retirement plans today.

Similar to ETFs, index mutual funds are less expensive than actively managed mutual funds. Therefore, the real debate regarding the potential benefits of ETFs in 401(k)s is not whether or not ETFs create cost savings versus actively managed mutual funds, but whether or not ETFs create additional cost savings when compared to traditional index mutual funds. Unlike traditional mutual funds, though, ETFs are not "401(k)-ready" and a variety of costs must be incurred (both explicit and implicit) in order to make ETFs available in a 401(k) plan. This article will explore the benefits and costs associated with using ETFs in 401(k)s and provide guidance on whether or not ETFs represent a better indexing option over traditional index mutual funds.

An Overview of Exchange Traded Funds (ETFs)

While ETFs were first introduced in the 1990s, the ability to trade a whole stock basket in a single transaction dates further back. Major U.S. brokerage firms provided such program trading facilities as early as the late 1970s, particularly for the S&P 500 index. With the introduction of index futures contracts, program trading became more popular. As such, the interest in developing a suitable instrument that would allow index components to be negotiated in a single trade increased. This led to the introduction of the Exchange Traded Fund or ETF. The first ETF introduced was the Toronto Index Participation (TIPS) in Canada, which was followed three years later by the Standard & Poor's 500 Depositary Receipts (SPDRs) in the United States [Deville 2006].

The ETF marketplace experienced its first effective boom in March 1999 with the launch of the NASDAQ-100 Index Tracking Stock, popularly known as Cubes or Qubes (in reference to its initial

ticker, QQQ (which has since changed to QQQQ)). In its second year of trading, Cubes had an average daily volume of 70 million shares, which was approximately four percent of the trading volume of the NASDAQ at the time. Since then, ETF growth in the United States has been considerable: 27 percent in 2001, 23 percent in 2002, 48 percent in 2003, 50 percent in 2004, and 31 percent in 2005 (Source: Investment Company Institute). By the end of 2002, there were 113 ETFs in the United States with about $102.14 billion in assets under management. At the end of April 2006, the ETF marketplace consisted of four stock exchanges listing 216 ETFs with $335 billion in assets [Deville 2006].

One reason for the increased popularity of ETFs among individual investors is the increased tax efficiency of ETFs relative to traditional index funds. The ability of ETFs to utilize in-kind redemptions enables an ETF to transfer its underlying holdings with the biggest unrealized gains, thereby limiting the ETF's potential for capital gains distributions. However, tax considerations are not pertinent to qualified retirement plans (*e.g.*, a 401(k) plan), since they are tax-deferred savings vehicles [Deville 2006].

Internally, ETFs are more complex entities than mutual funds. Technically, ETFs are a class of mutual fund since they fall under the same rules as traditional mutual funds, but they have a different structure (versus traditional mutual funds), and therefore the SEC has imposed different requirements on them. Currently, there are three key legal structures for ETFs (Source: *http://www.etfguide.com/exchangetradedfunds.htm*):

1. *Open-end index fund.* This type of ETF structure reinvests dividends the date of receipt and pays them out via a quarterly cash distribution. This ETF design is also permitted to use derivatives, loan securities, and is registered under the Investment Company Act of 1940. ETFs that utilize this legal structure include iShares and the Select Sector SPDRs.
2. *Unit investment trust.* This type of ETF structure does not reinvest dividends in the fund and pays them out via a quarterly cash distribution. In order to comply with diversification rules, this ETF design will sometimes deviate from the exact composition of a benchmark index. This type of fund is registered under the Investment Company Act of 1940. The Diamonds, Cubes, and SPDRs follow this format.
3. *Grantor trust.* This type of ETF structure distributes dividends directly to shareholders and allows investors to retain their voting rights on the underlying securities within the fund. The original fund components of the index remain fixed, and this legal structure is not registered under the Investment Company Act of 1940. Merrill Lynch's HOLDRs follow this format.

Although the SEC states that an ETF is "a type of investment company whose investment objective is to achieve the same return as a particular market index," ETF strategies have been moving away from traditional indexing strategies. Originally, ETFs were based on plain vanilla index methodologies, such as the S&P 500; however, most of the new ETFs introduced today are on more specialized and esoteric investing strategies. Actively managed ETFs, something the SEC has an outstanding concept release on (IC-25258), are likely to be a growth area for the ETF marketplace in the future (Source: *http://www.sec.gov/rules/concept/ic-25258.htm#seciii*). However, there are a number of obstacles, such as arbitrage and transparency, that will need to be addressed before actively managed ETFs become widespread.

Getting ETFs in 401(k)s

Although ETFs have been around for over a decade, only recently have they been considered as potential investments for the mass 401(k) public. While ETFs have long been available through 401(k) self-directed brokerage accounts (along with other investments like individual securities), ETFs have not been available to plan participants as part of the core investment line-up. While there are a variety of reasons for this, transaction costs (the costs incurred buying and selling ETFs on the open market, such as commissions) and fractional share issues (since ETFs can only be purchased in whole share amounts) have been two of the largest obstacles.

There are two primary transaction costs associated with purchasing an ETF, since, unlike mutual funds, ETFs are purchased on the open market. The first cost is the bid/ask spread (or spread) and the second is commissions. The "bid" price is the price at which you can sell an ETF, while the "ask" (or offer) price is the price at which you can purchase an ETF. The bid price is typically lower than the ask price, which creates the spread. For example, if we assume the ask (or purchase) price of ETF ABC was $50.10 and the bid price for ETF ABC was $50.00, if an investor were to instantly purchase and sell ETF ABC, ignoring commissions and any market movement, he or

she would lose $.10, which represents the spread. While the actual bid/ask spread is going to vary by ETF, the average 30-day bid/ask spread for Vanguard's 33 ETFs (as of November 2, 2007, data obtained from Vanguard's Web site) was .08 percent (or eight bps), or four bps for each buy or sell transaction. The spread is an important consideration in ETF investing because it represents a cost that reduces long-term performance.

The second transaction cost associated with purchasing an ETF is the commission. A commission must be paid each time an ETF is bought or sold. Unlike the spread, which is typically a constant percentage of the underlying ETF (*e.g.*, four bps each way), commissions typically vary based upon the size of the transaction. Commissions are incurred each time an ETF is bought or sold, so higher levels of trading activity increase the total commissions paid. One method that minimizes the per participant cost of trading ETFs has been the introduction of pooled accounts, where buy and sell orders are submitted in blocks. By pooling ETFs into single orders, it is possible to trade less frequently and therefore pay less in commissions. While the spread still exists with pooled accounts, pooling also alleviates the issues associated with fractional shares, which will be discussed next.

A key problem with ETFs is that they cannot be purchased in fractional shares. This is especially important for 401(k)s since participants do not typically defer the exact cost of the ETF (which is especially difficult given the fact the price of an ETF is always changing). While mutual funds can be bought and sold in fractional shares (*e.g.*, 5.673 shares), ETFs can only be purchased in whole share amounts. By pooling ETFs into a common fund (or trust) it is possible to overcome this problem by allowing participants to buy units or shares of an overall pool that purchases the underlying ETFs. The two primary methods of pooling ETFs for use in 401(k) plans are at the plan level or in an aggregate account (such as a Collective Investment Fund, or CIF).

If an ETF is pooled at the plan level, the pooled account is not required to have the same type of oversight (*i.e.*, audit requirements) associated with mutual funds or CIFs (which will be discussed next). Pooling at the plan level is less costly than a CIF, and pooling at the plan level allows a plan sponsor to introduce ETFs in a relatively cost effective manner. CIFs, or Collective Investment Funds, are currently the most popular method of using ETFs in 401(k)s because they allow for greater economies of scale than pooling at the plan level. A CIF is a bank-administered trust that holds commingled assets that meet specific criteria established by 12 C.F.R. § 9.18. Unlike a mutual fund, a CIF can only be used in retirement plans (*i.e.*, not taxable accounts or IRAs). CIFs are created by banks that act as a fiduciary for the CIF and hold the legal title to the fund's assets. Participants in a CIF are the beneficial owners of the fund's assets. While each participant owns an undivided interest in the aggregate assets of a CIF, a participant does not directly own any specific asset held by a CIF [Collective Investment…].

The Costs of Pooling

There are a variety of additional expenses associated with running a pooled account, both explicit and implicit. The explicit costs of pooled accounts include the costs of unitization, audit requirements, commissions, the bid/ask spread, and other miscellaneous administrative expenses. The implicit costs of pooled accounts relate primarily to the impact of cash drag, which negatively impacts the performance of the pooled account.

The two types of transaction costs incurred by an ETF investor are the bid/ask spread and commissions. The average bid/ask spread for the Vanguard ETFs is eight bps (or four bps each buy or sell; *see* information in the previous section). This four bps "fee" will be incurred each time an ETF is bought or sold. A commission, similar to the bid/ask spread, is a cost paid each time an ETF is bought or sold, since, unlike mutual funds, ETFs cannot be redeemed at NAV and must be purchased on the open market. While trade aggregation (through pooling) decreases commissions, even a commission as low as $.02 per share will reduce the net performance of an ETF pooled account over time. Again, while these transaction costs may appear to be minor, the bid/ask spread and commissions represent a definite cost that must be considered when addressing the relative benefits of ETFs versus mutual funds for 401(k)s.

The costs associated with pooling vary between plan level pooling and aggregate pooling (*e.g.*, using a CIF). The costs associated with pooling ETFs at the plan level vary by provider; however, a reasonable current estimate would be $500 per plan ETF (*e.g.*, if a plan wanted an all-ETF investment line-up consisting of 12 ETFs, the total cost would be $6,000). While additional expenses, such as an audit, are not necessary for plan level pooling, such oversight is likely necessary to ensure that the unitization is being properly handled,

especially for larger plans. Additional administrative and operational costs beyond the basic pooling fee may also be incurred.

The costs for pooling an ETF at the aggregate, or CIF level, are also going to vary by provider. The unitization costs associated with a CIF are typically not going to be much lower than three bps and can easily exceed 10 bps based on the size of the unitized account. A CIF must be audited at least once each 12-month period (in accordance with 12 C.F.R. § 9.18(b)(6)), which will typically cost at least $5,000. However, as the assets increase, so do the fees associated with the audit since the risk of the auditor increases along with the assets. While an audit fee of $5,000 may seem insignificant, it represents a cost of 10 bps on a $5 million account, one bps on a $50 million account, and .1 bps on a $500 million account. Every basis point is important when comparing the relative benefits of ETFs and indexed mutual funds, since the overall cost differences between the strategies are already relatively small.

The implicit costs associated with pooled accounts relate primarily to cash drag. Cash drag relates to the need for any pooled account, including mutual funds, to have funds available in order to meet the cash flow (*i.e.*, redemption) needs of its investors. While cash drag is also a consideration for mutual funds, it is less so because the impact of cash drag is typically inversely related to pooled assets. The larger the account, the lower level of cash that must typically be held, and therefore the less the impact of cash drag on performance. Since mutual funds are investments that can be used in a variety of settings (*e.g.*, foundations, individual accounts, IRAs, etc.), they have a much larger potential asset base than CIFs, which can only be used in retirement plans. Also, mutual funds are established savings vehicles that are relatively easy for participants to research (should they choose to do so); since CIFs are not publicly traded, it is more difficult to obtain information on them.

As an example of the impact of cash drag, if you assume a four percent cash return and a 10 percent market return, for each one percent cash position the return of the CIF would be decreased by six bps. Therefore, a two percent cash position would lead to 12 bps of underperformance. If the market return increases to 15 percent and the cash return stays at four percent, the impact of cash drag increases to 11 bps for each one percent of cash in the account.

So what are the total costs of pooling likely to be? Well, the costs are going to vary based upon a variety of factors, but based on conservative assumptions, it's going to cost at least four bps to purchase an ETF (assuming three bps for the bid/ask spread and one bps for commissions) and 10 bps for the on-going management of an ETF (assuming five bps for the overall pooling/unitization and five bps of cash drag). While four bps and 10 bps for trading and on-going management, respectively, may seem small, the overall cost differences between index mutual funds and ETFs for a number of scenarios are actually even smaller.

ETFs vs. Mutual Funds, An Investment Comparison

There are both qualitative (*i.e.*, investment availability) and quantitative (*i.e.*, cost) issues that need to be addressed when determining whether or not to include ETFs in 401(k)s. While the primary interest in ETFs is cost-related, there are a number of popular index methodologies that are difficult (if not impossible) to obtain at a similar cost (or at all) using traditional mutual funds. As an example, if a plan sponsor wanted to use the Russell index methodology in a 401(k), it would be impossible to select mutual funds for each of the nine domestic style boxes with mutual funds. However, a number of ETFs currently exist that follow the Russell methodology (*see* Appendix I). As another example, it would also be difficult to utilize the Standard & Poor's indexing methodology through mutual funds as well. While there are a large number of S&P 500 (*i.e.*, domestic large blend) mutual funds, there are only a few mutual funds that cover the other blend categories and few, if any, for the remaining value and growth styles (*see* Appendix I).

While each index methodology has its unique advantages, the primary concern of most index investors is gaining a specific market exposure for the lowest total cost. The author likens the different index methodologies to different ways to cut a pie, where in the aggregate, each methodology does a more than adequate job of representing the return of that market exposure. While there have been noted differences in the performance of indexes [Israelsen 2006], there is no discernable optimal indexed methodology. Therefore, when selecting an ETF (or mutual fund) index tracking investment, the key selection criteria is through which methodology the market exposure can be obtained at the lowest cost, or for the lowest expense ratio.

As the reader can see from Appendix I, the Vanguard Vipers (which are based on MSCI's index methodology) are less expensive for each of the nine

domestic style boxes compared to the respective ishares ETFs (both Russell and S&P methodologies). Therefore, a 401(k) plan sponsor looking to select an ETF in order to obtain market exposure to each of these nine domestic asset categories would likely select the Vanguard ETFs, since they are the low cost option. Fortunately, unlike the Russell and S&P methodologies (both offered through ishares), Vanguard operates mutual funds with the exact same indexing methodology as the ETFs (MSCI), which allows for a relatively easy apples-to-apples comparison between mutual fund and ETF investing strategies. Exhibits 1, 2, and 3 include a comparison of the Vanguard Viper ETFs for Large Cap, Mid-Cap, and Small Cap domestic styles to their respective index mutual funds.

As the reader can see from Exhibits 1, 2, and 3, the relative cost benefit of ETFs depends on the asset size of the investment. The average investor share class Vanguard mutual fund (*i.e.*, no minimum required) costs 14 bps more than its respective ETF, with a median excess cost of 11 bps. The average excess cost of the Vanguard Signal share class mutual funds (which are replacing the admiral share classes in retirement plans) is only two bps more than its respective ETF, with a median excess cost of zero bps. The average and median of the Vanguard Institutional share class mutual funds, though, is actually two bps less expensive than its respective ETF.

Based on the differences in expense ratios, the benefits of ETFs clearly depend upon the level of plan assets. A pooled ETF arrangement would make sense for smaller plans that would have to use the Investor share classes if the total costs of pooling the ETF (both implicit and explicit) are less than 14 bps. For larger plans that could use Signal share classes, an ETF arrangement would be beneficial, if the total costs of pooling are less than two bps. If the plan is very large (assets of $200+ million) and could use the Institutional share classes, ETFs are never likely to make sense since the Institutional share classes were less expensive than their respective ETFs.

In the aggregate, since the expense ratio difference between the ETF and mutual fund strategies was so small (at most 14 bps for Investor share classes), it is unlikely that any material benefits are going to be obtained from unitizing an ETF, once considering all the costs (both explicit and implicit). In fact, it appears that once all the costs are considered in order to make ETFs 401(k)-ready, it is highly likely that any type of pooled ETF arrangement would end up costing more than a mutual fund approach, which can be had for a lot less effort.

Worth noting, though, is that if it were possible to create a pooled, unitized account that could be offered to the masses using ETFs that was cheaper than a mutual fund, mutual fund companies would likely be taking this route. Therefore, the idea that creating these large pooled ETF accounts can somehow be cheaper than a large pooled mutual fund is somewhat faulty reasoning from the start. Even though a small price discrepancy between an ETF and mutual fund may exist, there are likely reasons for this, especially when they are being offered by the same sponsoring organization. Take, for example, Vanguard, the company whose investments were used as the case study for this article. Vanguard offers both mutual funds and ETFs (Vipers) that are based on the same underlying index methodology (MSCI). The Vipers are typically less expensive than their respective Investor share class mutual funds. These differences reflect the different recordkeeping and administrative costs associated with the two strategies. While it's certainly possible that someone could do it cheaper than the 800-pound gorilla (Vanguard, with over $1 trillion of assets under management), this author would be highly skeptical of such a claim after all the costs are considered.

A Word on Revenue Share

A common criticism of mutual funds is the payments (known as revenue sharing) made to retirement plan providers. These types of payments can come in a variety of forms (12(b)-1s, sub-transfer agent fees, investment manager rebates, etc.) and exist for a variety of purposes, such as methods to pay for distribution (12(b)-1s) and recordkeeping (sub-transfer agent fees). It is important to note, though, that despite the negative press associated with revenue share, revenue share dollars are not necessarily a bad thing. From a practical perspective, if a retirement plan provider is going to charge one percent for its services, the nature of its compensation (*e.g.*, through revenue share generated from a higher expense ratio or from an explicit fee billed to clients) is not going to change the total net cost billed to the plan.

If the revenue share monies from mutual funds are returned to the plan to offset fees (based upon the Frost Model, or DOL Advisory Opinion 97-15A), revenue share can actually decrease the total net cost of the mutual fund. In some cases, this can make an index mutual fund that has a higher expense ratio than an ETF actually be less expensive than the ETF.

Exhibit 1. Large Cap Comparison

Ticker	Type*	Investment Name	Category	Minimum Investment	Net Assets	Expense Ratio	Bid/Ask Spread**	Inception Date
VUG	ETF	Vanguard Growth ETF	Large Growth	n/a	$2.57B	0.11%	0.05%	01/26/04
VIGRX	MF	Vanguard Growth Index Inv	Large Growth	n/a	$6.92B	0.22%	n/a	11/02/92
VIGSX	MF	Vanguard Growth Index Signal	Large Growth	$1,000,000	$58.23M	0.11%	n/a	06/04/07
VIGIX	MF	Vanguard Growth Index Instl	Large Growth	$5,000,000	$2.87B	0.08%	n/a	05/14/98
VV	ETF	Vanguard Large Cap ETF	Large Blend	n/a	$952.80M	0.07%	0.06%	01/27/04
VLACX	MF	Vanguard Large Cap Index Inv	Large Blend	n/a	$318.80M	0.20%	n/a	01/30/04
VMISX	MF	Vanguard Mid Capitalization Index Signal	Mid-Cap Blend	$1,000,000	$772.47M	0.13%	n/a	03/30/07
VLISX	MF	Vanguard Large Cap Index Instl	Large Blend	$5,000,000	$99.44M	0.08%	n/a	01/30/04
VTV	ETF	Vanguard Value ETF	Large Value	n/a	$2.24B	0.11%	0.06%	01/26/04
VIVAX	MF	Vanguard Value Index Inv	Large Value	n/a	$4.55B	0.21%	n/a	11/02/92
VVISX	MF	Vanguard Value Index Signal	Large Value	$1,000,000	$151.95M	0.11%	n/a	06/04/07
VIVIX	MF	Vanguard Value Index Instl	Large Value	$5,000,000	$2.91B	0.08%	n/a	07/02/98

* MF = Mutual Fund, ETF = Exchange Traded Fund
** 30-Day Average as of 11/02/07, obtained from vanguard.com.

Exhibit 2. Mid-Cap Comparison

Ticker	Type*	Investment Name	Category	Minimum Investment	Net Assets	Expense Ratio	Bid/Ask Spread**	Inception Date
VOT	ETF	Vanguard Mid-Cap Growth ETF	Mid-Cap Growth	n/a	$148.74M	0.13%	0.08%	08/17/06
VMGRX	MF	Vanguard Mid Cap Growth	Mid-Cap Growth	n/a	$1.09B	0.47%	n/a	12/31/97
VO	ETF	Vanguard Mid Cap ETF	Mid-Cap Blend	n/a	$1.19B	0.13%	0.06%	01/26/04
VIMSX	MF	Vanguard Mid Cap Index Inv	Mid-Cap Blend	n/a	$8.50B	0.22%	n/a	05/21/98
VMISX	MF	Vanguard Mid Cap Index Signal	Mid-Cap Blend	$1,000,000	$480.33M	0.13%	n/a	03/30/07
VMCIX	MF	Vanguard Mid Cap Index Ins	Mid-Cap Blend	$5,000,000	$5.83B	0.08%	n/a	05/21/98
VOE	ETF	Vanguard Mid-Cap Value ETF	Mid-Cap Value	n/a	$202.90M	0.13%	0.09%	08/17/06
VMVIX	MF	Vanguard Mid-Cap Value Index Inv	Mid-Cap Value	n/a	$201.15M	0.26%	n/a	08/24/06

* MF = Mutual Fund, ETF = Exchange Traded Fund
** 30-Day Average as of 11/02/07, obtained from vanguard.com.

Exhibit 3. Small Cap Comparison

Ticker	Type*	Investment Name	Category	Minimum Investment	Net Assets	Expense Ratio	Bid/Ask Spread**	Inception Date
VBK	ETF	Vanguard Small Cap Growth ETF	Small Growth	n/a	$778.07M	0.12%	0.09%	01/26/04
VISGX	MF	Vanguard Small Cap Growth Index Inv	Small Growth	n/a	$2.64B	0.23%	n/a	05/21/98
VSGIX	MF	Vanguard Small Cap Growth Index Instl	Small Growth	$5,000,000	$673.42M	0.08%	n/a	05/24/00
VB	ETF	Vanguard Small Cap ETF	Small Blend	n/a	$981.59M	0.10%	0.08%	01/26/04
NAESX	MF	Vanguard Small Cap Index Inv	Small Blend	n/a	$6.78B	0.23%	n/a	10/30/60
VSISX	MF	Vanguard Small Cap Index Signal	Small Blend	$1,000,000	$416.53M	0.13%	n/a	12/15/06
VSCIX	MF	Vanguard Small Cap Index Inst	Small Blend	$5,000,000	$3.55B	0.08%	n/a	07/07/97
VBR	ETF	Vanguard Small Cap Value ETF	Small Value	n/a	$770.40M	0.12%	0.08%	01/26/04
VISVX	MF	Vanguard Small Cap Value Index Inv	Small Value	n/a	$4.18B	0.23%	n/a	05/21/98
VSIIX	MF	Vanguard Small Cap Value Index Instl	Small Value	$5,000,000	$531.64M	0.08%	n/a	12/07/99

* MF = Mutual Fund, ETF = Exchange Traded Fund
** 30-Day Average as of 11/02/07, obtained from vanguard.com.

For example, say a mutual fund has an expense ratio of 15 bps and the ETF has an expense ratio of 10 bps. Ignoring the costs associated with pooling, the ETF is clearly less expensive; however, if the mutual fund offers 10 bps of revenue share that is returned to the plan to offset expenses, the net cost of the mutual fund would actually be five bps. Therefore, for this example, the mutual fund is actually net cheaper than the ETF, even though it has a higher expense ratio. While a mutual fund with a net expense ratio of five bps may seem too good to be true, the authors are aware of at least two different mutual fund organizations that have index funds available with net costs *lower* than five bps.

Beware of Back Testing

Something to be aware of with ETFs, that isn't an issue for other investments, is that ETFs can use "back-tested" or hypothetical returns. This is because ETFs are passive strategies, and the hypothetical performance represents the performance of the underlying strategy the ETF is following. Therefore, it is possible for a new ETF to show a five- or ten-year performance history in its marketing materials, despite the fact it's brand new, although noting the fact the returns are "hypothetical" somewhere in the small print. This creates the "what might have happened had you bought into this strategy 10 years ago" situation, which is also something known as hindsight bias.

As an example of the potential problems associated with ETFs using hypothetical performance, let's assume that stocks with names that begin with the letters G, W, and K dramatically outperformed all other stocks over the last 10 years. An astute analyst may contrive some reason for this to have occurred, and why it is likely to continue to occur, and then create an ETF that follows such a strategy. The marketing materials would show strong relative performance against similar indexed or active strategies despite the fact few people (if anyone) would have been likely to invest in this strategy 10 years ago.

While the previous example may seem extreme, ETF strategies are becoming increasingly esoteric. Even more practical strategies, such as the RAFI 1000 Fundamental Index (ticker: PRF), which is weighted based on fundamental factors such as price to book, price to cash flow, etc. (versus market capitalization, which is the most common index methodology), have benefited from the ability to use back-tested data when discussing the strategies' relative historical benefits to other indexing strategies. Therefore, it is important to ensure that the underlying methodology is sound when selecting an ETF, not just the hypothetical historical performance.

Living on the Wild Side

An additional appeal of ETFs is the ability to gain more specialized investment exposures, to such things as Technology and/or Energy, or to single countries (*e.g.*, China) and/or more focused (*e.g.*, high dividend funds) investing strategies. While there are mutual funds available with similar specialized investment exposures, the low costs of the ETFs coupled with a few vocal participants may entice a plan fiduciary to include these specialized ETFs, along with the plain vanilla ETFs, in a 401(k) plan investment line-up. ETFs are indexes after all, and you can't go wrong buying an index, right? Well, not exactly. Just because an investment follows a passive investing strategy doesn't mean it's a prudent investment for a 401(k) plan. The prudence requirement under ERISA § 404(a)(1)(b) states that a fiduciary:

> Shall discharge his duties with respect to a plan solely in the interest of the participants and beneficiaries with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.

When selecting investments for a 401(k) plan, a plan fiduciary must consider the nature of the workforce and whether or not participants have the education, experience, and ability to make intelligent investment decisions [Reish 2001]. Selecting an ETF because it has great recent performance (*e.g.*, Technology in the 1990s or Emerging Markets today) doesn't mean it belongs in a 401(k) and is necessarily a prudent investment. A number of studies have shown that participants are poor investors and are ill-suited to make proper investment decisions (*see*, for example, [Hancock 2006], [Kasten 2005], and [Munnell 2006]).

An example of a "specialized" investment abused by 401(k) plan participants is investment in their employer's company stock. A Hewitt Associates study of 401(k) plan participants found that more than 27 percent of the nearly 1.5 million employees surveyed who could invest in company stock had 50 percent or more of their 401(k) plan assets invested in those shares. A participant who invests more than half of his

or her account balance in his or her employer's stock is not only violating some of the basic tenants of investing, but also common sense as well (*i.e.*, don't put all your eggs in one basket).

Overall, including specialized investments in a 401(k) is a lose-lose situation for a plan fiduciary. A participant (and his or her attorney) is only likely to sue if the investment returns poorly and if the participant loses money, yet the plan fiduciary receives little benefit if things go right. While a plan fiduciary may think that ERISA § 404(c) provides a defense for imprudent investing at the participant level, § 404(c) does not provide protection with respect to the overall prudence of an investment. For those readers not familiar with § 404(c), it offers a plan sponsor and its fiduciaries a defense for losses or lack of gains realized by participants who exercise independent discretionary investment control over their individual account balances (for additional information on § 404(c) *see* "ERISA § 404(c) Best Practices: Myths versus Facts" by David J. Witz). A plan can be § 404(c) compliant, yet still have investments that are deemed imprudent under § 404(a).

Conclusion

Given current technology, the cost savings from ETFs in 401(k) plans appear to be minimal. While the expense ratios for ETFs may be less than their respective indexed mutual fund peers, this lower cost is materially eroded by the explicit and implicit costs associated with making the ETFs "401(k)-ready." In fact, it is likely that an ETF 401(k) strategy would end up being more expensive than a mutual fund strategy after all the costs are considered.

Minimizing plan expenses is an important consideration for a plan sponsor and plan fiduciaries, but it doesn't take ETFs for this to happen. Plan sponsors can select index mutual funds as low cost investment solutions for participants in an attempt to minimize overall plan fees. It's important to remember that the purpose of a retirement plan is to help employees and participants retire, not to necessarily have funds that outperform their peers. While a discussion of the benefits of active versus passive management is beyond the scope of this article, it is always important to note that index investing is a much easier strategy to defend (in court) and to monitor, than a strategy that involves trying to find next year's top active manager (and rarely succeeding). ■

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Appendix I. ETFs for the MSCI, S&P, and Russell Indexes

Ticker	Type*	Investment Name	Morningstar Category	Net Assets ($)	Expense Ratio	Inception Date	Benchmark Index
VUG	ETF	Vanguard Growth ETF	Large Growth	$2.57B	0.11%	01/26/04	MSCI US Prime Market Growth Index
IVW	MF	iShares S&P 500 Growth Index	Large Growth	$5.24B	0.18%	05/22/00	S&P 500/Citigroup Growth
IWF	MF	iShares Russell 1000 Growth Index	Large Growth	$11.53B	0.20%	05/22/00	Russell 1000 Growth Index
VV	ETF	Vanguard Large Cap ETF	Large Blend	$952.80M	0.07%	01/27/04	MSCI US Prime Market 750 Index
IVV	MF	iShares S&P 500 Index	Large Blend	$17.32B	0.09%	05/15/00	S&P 500 Index
IWB	MF	iShares Russell 1000 Index	Large Blend	$3.62B	0.15%	05/15/00	Russell 1000 Index
VTV	ETF	Vanguard Value ETF	Large Value	$2.24B	0.11%	01/26/04	MSCI US Prime Market Value Index
IVE	MF	iShares S&P 500 Value Index	Large Value	$4.39B	0.18%	05/22/00	S&P 500/Citigroup Value
IWD	MF	iShares Russell 1000 Value Index	Large Value	$9.88B	0.20%	05/22/00	Russell 1000 Value Index
VOT	ETF	Vanguard Mid-Cap Growth ETF	Mid-Cap Growth	$148.74M	0.13%	08/17/06	MSCI US Mid Cap Growth Index
IWP	MF	iShares Russell Midcap Growth Index	Mid-Cap Growth	$2.77B	0.25%	07/17/01	Russell Midcap Growth Index
IJK	MF	iShares S&P MidCap 400 Growth Index	Mid-Cap Growth	$2.05B	0.25%	07/24/00	S&P MidCap 400/Citigroup Growth Index
VO	ETF	Vanguard Mid Cap ETF	Mid-Cap Blend	$1.19B	0.13%	01/26/04	MSCI US Mid Cap 450 Index
IJH	MF	iShares S&P MidCap 400 Index	Mid-Cap Blend	$4.90B	0.20%	05/22/00	S&P MidCap 400 Index
IWR	MF	iShares Russell Midcap Index	Mid-Cap Blend	$3.79B	0.20%	07/17/01	Russell Midcap Index
VOE	ETF	Vanguard Mid-Cap Value ETF	Mid-Cap Value	$202.90M	0.13%	08/17/06	MSCI US Mid Cap Value Index
IWS	MF	iShares Russell Midcap Value Index	Mid-Cap Value	$3.65B	0.25%	07/17/01	Russell Midcap Value
IJJ	MF	iShares S&P MidCap 400 Value Index	Mid-Cap Value	$2.67B	0.25%	07/24/00	S&P MidCap 400/BARRA Value Index

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Appendix I. ***Continued***

VBK	ETF	Vanguard Small Cap Growth ETF	Small Growth	$778.07M	0.12%	01/26/04	MSCI US Small Cap Growth Index
IWO	MF	iShares Russell 2000 Growth Index	Small Growth	$2.96B	0.25%	07/24/00	Russell 2000 Growth Index
IJT	MF	iShares S&P SmallCap 600 Growth	Small Growth	$1.49B	0.25%	07/24/00	S&P SmallCap 600/Citigroup Growth Index
VB	ETF	Vanguard Small Cap ETF	Small Blend	$981.59M	0.10%	01/26/04	MSCI US Small Cap 1750 Index
IWM	MF	iShares Russell 2000 Index	Small Blend	$11.31B	0.20%	05/22/00	Russell 2000 Index
IJR	MF	iShares S&P SmallCap 600 Index	Small Blend	$4.94B	0.20%	05/22/00	S&P SmallCap 600 Index
VBR	ETF	Vanguard Small Cap Value ETF	Small Value	$770.40M	0.12%	01/26/04	MSCI US Small Cap Value Index
IWN	MF	iShares Russell 2000 Value Index	Small Value	$4.17B	0.25%	07/24/00	Russell 2000 Value Index
IJS	MF	iShares S&P SmallCap 600 Value Index	Small Value	$1.81B	0.25%	07/24/00	S&P SmallCap 600/Citigroup Value Index

* MF = Mutual Fund, ETF = Exchange Traded Fund
Data obtained from Yahoo! Finance.