



ENTREPRENEURS MAKEOVER

THE MUTUAL FUND IS OUTDATED. ONE WAY TO
BUILD A BETTER POOLED INVESTMENT PRODUCT IS TO
USE A SELF-INDEXING FUND, OVERLAID WITH A
MULTIPLE-SHARE-CLASS FUND STRUCTURE.



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ILLUSTRATIONS BY HEADS OF STATE



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JUST ABOUT EVERYONE AGREES

that it's time to reinvent the mutual fund. The late trading that New York Attorney General Eliot Spitzer revealed in September 2003 probably netted all the perpetrators—both identified and unidentified—about \$400 million before any necessary payoffs and expenses in 2001. And the performance cost of late trading to investors was probably at least twice what the bad guys took home. Spitzer also came down on market timers, most of whom operate within the law. Market timers made about \$5 billion from investors in 2001 and cost funds at least the same amount in additional expenses.

One way to reduce costs substantially, improve the use of research information in the fund-management industry, and ultimately improve investor performance would be to build a better pooled investment fund product—a self-indexing fund (SIF)—using a multiple-share-class fund structure.

Self-indexing funds would be benchmarked to so-called silent indexes, which could cover the same market segments and subsegments as benchmark indexes do. But unlike benchmark indexes, where all changes must be publicly disclosed before they become effective, changes to a silent index would be disclosed publicly only after the manager of a silent index fund has had the opportunity to incorporate the change into the silent index fund portfolio.

A silent index fund should outperform an index fund based on a benchmark index because speculators and other investors, who acquire full—and costless—knowledge of benchmark index changes, impose a transaction cost penalty on funds using those indexes. Benchmark index funds are forced to make portfolio changes amid a flurry of market activity caused by the announcement of changes to an index—and often buy high and sell low during the blizzard of rebalancing and related speculation. Transaction costs associated with high-profile index changes are increasingly embedded in benchmark index performance.

By contrast, a silent index can be based on many of the same kinds of rules as a good benchmark index, but the specific silent index rules are not subject to use by multiple funds—or by speculators attempting to front-run trades by funds using the index. The degree to which silent index funds outperform comparable benchmark index funds will depend largely on the benchmark index's rules, capitalization range, and popularity and could end up being anywhere from a few basis points to a few hundred basis points per year.

Granted, the silent index will be less well known than

similar benchmark indexes and, consequently, may have a fund marketing penalty associated with it. However, the performance of the most popular benchmark indexes is so adversely affected by embedded transaction costs that the silent index and its fund are very likely to outperform the benchmark over any reasonable time interval.

Of course, some people may be shocked by the suggestion that a silent index could be created and managed by the same organization that advises the fund. But who, after all, is more likely than the fund manager to have the interests of the fund in mind? Indeed, with actively managed funds, a single organization—sometimes even a single individual—is ultimately responsible for the whole investment process.

People also forget that benchmark indexes were not designed to serve as fund templates. This fact was of little consequence in the early days of index funds. The value of indexed assets was small relative to actively managed assets, and indexing was concentrated in liquid, large-cap market sectors. As indexing has grown, the disadvantages of using a benchmark index as a fund template have become increasingly evident. Specifically, announcement of pending benchmark index changes means that the trading plans of benchmark index funds are announced in advance. No active manager would tolerate a performance penalty of perhaps as much as 50–100 basis points annually for large-cap index funds—and much more for funds based on popular small-cap indexes. In fact, active managers keep their trading plans secret because they don't want to give away information.

Indexes can be constructed and reconstituted in a variety of ways to minimize portfolio turnover costs in a fund based on the index. If, for example, an index is based on mid-cap stocks or small-cap stocks, turnover can be

reduced by putting a buffer range above or below—or possibly at both ends of the capitalization range—to limit changes in the membership of the index that may be reversed on the next rebalancing date. If a stock gets far enough outside the index’s desired company size range, for example, a full reversal becomes less probable and the stock can be dropped from the index with less likelihood of its reentering at the next rebalancing.

Self-indexing exchange-traded funds (ETFs) could also impose an early deadline for authorized participants to declare their commitments to create or redeem fund shares. Currently, ETF-authorized participants have until 4:00 p.m. Eastern time (that is, until the market close) to reveal their intentions. This means that when an ETF manager changes his portfolio, he can’t be assured of buying and selling the right quantity of stock. If, for example, there are net creations on the day in question, the manager will have sold too little of the stock being dropped from the

portfolio and will have to clean up the residual the next day. Conversely, if a redemption occurs, the manager will have to reverse part of the trade, buying back enough of the liquidated stock to cover the redemptions.

Changing the structure of a fund to include multiple share classes can also enhance its performance potential. Today, most sizable investment-management organizations offer a variety of products to investors. These investment products are usually managed independently. However, because funds and other products from the same adviser hold numerous securities in common and because the investment manager has a responsibility to the beneficial holders of each portfolio to treat them fairly, management of the products is partly integrated. In practice, this means that the firm often will purchase a particular security or group of securities for many or even all of the manager’s accounts or funds. To manage conflicts of interest, investment-management organizations have developed techniques



PEOPLE FORGET THAT BENCHMARK INDEXES WERE NOT DESIGNED TO SERVE AS FUND TEMPLATES. THIS FACT WAS OF LITTLE CONSEQUENCE IN THE EARLY DAYS OF INDEX FUNDS. BUT AS INDEXING HAS GROWN, THE DISADVANTAGES OF USING A BENCHMARK INDEX AS A FUND TEMPLATE HAVE BECOME INCREASINGLY EVIDENT.

STRUCTURAL ENGINEERING



The table "The Self-Indexing ETF Cost Advantage," (see opposite), evaluates the operating cost advantages/disadvantages of competing fund structures.

Fund-Level Shareholder Accounting

Because ETFs have just a single registered shareholder, the Depository Trust's nominee, Cede & Co., there are no shareholder accounting costs at the fund level for ETF shares or ETF share classes. By contrast, fund-level shareholder-accounting costs at conventional funds vary greatly from one company to another. For the most credible minimum estimates of these costs, we considered the difference between Vanguard's conventional index fund expense ratio for ordinary shareholders (investor shares) and the expense ratios for the VIPERs ETF share classes and for Admiral Shares (offered only to very large shareholders). The difference in both cases is usually 6 basis points.

Index Calculation or License Fees A self-indexing fund with a silent index will bear some costs associated with development and maintenance of its underlying index. Because silent index funds will lack meaningful retail index branding, they will almost certainly need to be launched with an institutional share class in place. An important purpose of this institutional class is to build the new index fund's credibility. But the net cost of any index licensing and calculation will not be material when measured against assets—probably less than 1 basis point for the fund as a whole.

Vanguard currently pays a \$50,000 annual maximum index license fee to Standard & Poor's, and most industry observers believe that the fee it pays for its new MSCI brand indexes is similarly immaterial. Most non-Vanguard conven-

tional index funds pay annual license fees of 3 basis points or less. Meanwhile, Barclays Global Investors has entered into an essentially uniform license fee arrangement with its principal equity index providers. Under this licensing arrangement, most of its license fees fall in the range of 1.5–5 basis points, with most of the fund assets above the midpoint of that range. Most other large benchmark index ETFs pay annual license fees of 3–6 basis points.



Actively managed funds, of course, typically pay no index license fees.

Embedded Transaction Costs Like benchmark indexes, silent indexes for self-indexing funds incur some market-impact transaction costs when a portfolio is changed, but the costs are not nearly as high as those for benchmark index funds where the full advance disclosure required sets up long-term index fund investors to be ravaged by front-running traders. Our estimates show a minimum net disadvantage vis-à-vis SIFs for large-cap benchmark index ETFs of 20 basis points and a maximum net disadvantage for small-cap index funds of 190 basis points.

These estimates also highlight an interesting trend among indexed funds: that is, the relatively poor performance of ETFs compared with that of conventional index

funds. A number of managers of conventional benchmark index funds—Vanguard being the best known—along with many institutional indexed portfolios have consistently beaten their benchmarks after expenses. In contrast, most ETFs have done little better than track their indexes before expenses. For example, the Vanguard Small-Cap Index Fund Investor Shares, which until mid-May 2003 were benchmarked to the Russell 2000 Index beat that index before taxes and after expenses by an average of 76 basis points over the 10-year period ending December 31, 2001. For the year ending December 31, 2001, when the Vanguard fund beat the Russell 2000 Index by 61 basis points, the iShares Russell 2000 ETF returned 53 basis points less than the index.

Granted, few ETFs fall as far behind their benchmarks as the iShares Russell 2000 ETF did in 2001, but as a group the principal managers/administrators of most equity index ETFs have not been aggressive in attempting to beat their benchmarks. Part of the reason seems to be that the transparency of the current equity index ETF structure may encourage disclosure of trade timing through the creation basket and correspondingly discourage—or at least complicate—efforts to beat the benchmark. But this obstacle to improving returns relative to the benchmark index is largely artificial and can be eliminated completely by simply setting the cutoff time by which an authorized participant must commit to create or redeem earlier in the trading day than the market close.

Last-Minute Creations and Redemptions Requiring early notice of intent to create or redeem fund shares can have another favorable impact on an ETF's

performance. With early notice, the manager can hit the portfolio composition target by completing trades after 2:30 p.m. to reflect creations and redemptions to be made at that day's close. In estimating embedded transaction costs in the table, we assume that all benchmark index ETFs will require earlier cutoff times and will start to beat their benchmark indexes. Our calculations suggest that the irreducible cost to ongoing shareholders from last-minute creations and redemptions in an otherwise well-managed ETF is typically less than 5 basis points annually.

Last-Minute Cash Purchase of Conventional Fund Shares One of the least appreciated yet most important advantages of the ETF structure is the protection it provides shareholders from the impact of fund share traders. With very minor exceptions, current issuers of ETFs have set the conditions for creation and redemption to place the entire cost of fund share turnover in the creation and redemption process and to protect ongoing shareholders from the impact of fund share trading completely.

A 1999 academic study of fund trading estimated the net cost to conventional mutual funds of providing liquidity to investors at approximately 1.43 percent per year. The study explored why various other researchers have found that although fund managers appear to add value in market timing and stock selection, this performance does not flow through to fund shareholders. Performance is penalized

by the funds' cost of providing liquidity to traders, who tend to take advantage of momentum. They buy funds when the market is trending upward and sell funds when the market is trending downward. When a trader buys a fund at Monday's net asset value, the fund has cash to invest on Tuesday morning. If short-term

momentum persists, the cash will be deployed at higher prices than those that determined Monday's net asset value, thereby subsidizing the fund share buyer. The same dynamics apply in reverse to fund share sales.

By contrast, a short-term trader does not affect the ETF portfolio unless his trades stimulate creation or redemption of ETF shares in kind. When creation or redemption occurs, the creating or redeeming dealer (or trader) pays all the costs of buying or selling portfolio shares as well as the creation or redemption fee that covers the administrative and processing costs of the transaction. The significance of this difference between conventional funds and ETFs is that, other things being equal, an ETF should outperform a comparable conventional fund by the conventional fund's net cost of providing liquidity to fund share traders.

Net Cost Disadvantage Relative to the Self-Indexing Fund This column shows the total net cost disadvantage range of each of the alternative structures relative to the self-indexing fund.

Rank in Tax Efficiency The final column shows an estimate of the relative tax efficiency of each fund or fund type. The market decline that followed the first quarter of 2000 makes this ranking less significant than it would have been before the market decline, but it remains of considerable long-term importance for shareholders who pay taxes. —GLG, C/L

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THE SELF-INDEXING ETF COST ADVANTAGE

	Fund-level shareholder accounting	Index calculation or license fees	Embedded transaction costs	Late-minute creation/redemption	Late-minute cash purchase	Net cost disadvantage relative to SIF*	Rank in tax efficiency
Self-indexing fund ETF share class —active or silent index	—	Not material	—	—	—	—	1
Vanguard 500 conventional index fund	0.06%	Not material	0–0.50%	—	—	0.06%–0.56%	4
Benchmark index ETF	—	0.015%–0.05%	0.20%–1.90%	See text	—	0.22%–1.95%	2
Index ETF share class (based on a newly designed benchmark index)	—	Not material	0.10%–0.95%	Inadequate data	—	0.10%–0.95%	3
Conventional active mutual fund	0.06+%	—	—	—	1.43±%	1.49+%	5

*An investor in a large-cap silent index fund using the SIF structure should enjoy an average annual pretax performance advantage over the Vanguard 500 fund of 0.06–0.56 percent, or 6–56 basis points.

to handle purchases and sales for different accounts in a sequence or rotation. The rotation is designed to ensure that a particular account comes first on the list for some investment ideas, in the middle for some, and, inevitably, at the bottom of the list for others.

Although typically no formal announcements of these sales/purchases are made, each type of account has characteristics that cause a manager trading in it to reveal different amounts and kinds of information, almost at random, to other market participants while the trading moves through account categories.

For example, many advisers of actively managed conventional funds also manage a variety of separate taxable accounts and other separate and pooled institutional accounts such as pension and profit-sharing plans. Any activity in one account has possible implications for other accounts handled by the same manager. If an investment manager is responsible for a number of separate taxable accounts for individual investors, the arrival of a trade confirmation in the

There's nothing malicious or problematic in any of these information transfers. The point is simply that they occur and that different individuals and organizations with different policies and regulatory constraints on how they treat trading information are involved in each category of account. This information leakage could be eliminated if all of the manager's clients participate in a single investment pool. And pooling can be accomplished most efficiently with multiple-share-class funds.

Indeed, any investment-management operation increases in efficiency as more positions are consolidated before they get to the ultimate investor's account statement. For example, the amount of programming, processing, human interaction, and paper generation associated with an account in which an investor owns shares in a fund is substantially less than the resources required to process a similar risk/reward position for an investor holding individual positions in hundreds of different companies. Investment decisions made and implemented within a more consolidated



A SILENT INDEX CAN BE BASED ON MANY OF THE SAME KINDS OF RULES AS A GOOD BENCHMARK INDEX, BUT THE SPECIFIC SILENT INDEX RULES ARE NOT SUBJECT TO USE BY MULTIPLE FUNDS—OR BY SPECULATORS ATTEMPTING TO FRONT-RUN TRADES

investor's mail—and in the mail or e-mail of a financial planner or other adviser who monitors portfolio-management activities on behalf of the investor—reveals what has been done in the account. Many investment advisers manage wrap programs, and changes in the program's prototype portfolio are communicated by the adviser's investment personnel to financial counselors and consultants at brokerage firms who enter orders with their firms' trading desks to change positions in individually crafted, tax-sensitive accounts. Disclosure of a portfolio change to advisers and to their firms' trading desks has the effect of disseminating the investment manager's transaction plans very widely.

The dissemination of information about changes in institutional portfolios is usually slower and more restricted than information dispersed in executions of separate-account transactions. Nonetheless, trading information is communicated to a variety of individuals and organizations when institutional accounts trade, partly because the accounts will typically use an independent executing broker and, in the case of pension accounts, because a consultant and fund trustees are apprised of transactions promptly.

framework give every client the benefits of greater efficiency, tighter control of information leakage, and reduced cost.

The impact that a multiple-share-class, ETF-based structure will have on aggregate costs will largely be a function of the success the fund enjoys overall and with each category of potential investors. But in general, the fixed expenses in the multiple-share-class fund structure will be higher initially and variable expenses much lower ultimately than the cost structure of an investment-management business that only partly integrates the portfolio-management process and has different operating structures for diverse accounts.

There will be initial software and administrative costs associated with a multiple-share-class fund, however, and the start-up costs will be significant for the first fund constructed along these lines. But once the regulatory hurdles have been cleared, the process is in place, and the software has been developed, start-up and software costs for future funds should be similar to start-ups of simpler funds.

The fund-trading desk will be concerned with tax-lot accounting largely for the benefit of taxable investors in the exchange-traded share class. Tax-lot management is a



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relatively straightforward and highly automated process. The small incremental cost of this process will be attributed to the ETF share class and any other share classes for taxable investors. Use of ETFs by taxable investors will not depend merely on tax efficiency in a single fund portfolio. Most multimanager overlay techniques will work with diversified portfolio sector ETFs at lower cost than accounts composed of individual securities.

The trading that the active investment manager would ordinarily have to do to invest cash coming in or going out of the fund will be done by the authorized participants who create and redeem ETF shares and who, in effect, manage the fund size increase and decrease transactions. The fund portfolio-management process itself will deal only with portfolio composition changes. The trading staff required

will be much smaller than the trading staff needed to handle the same level of assets for diverse types of accounts.

To many investors, the principal attraction of exchange-traded funds has been the low expense ratios the funds have posted relative to expense ratios of most similar conventional funds. Major institutions make only occasional or limited use of ETFs for specific applications because the fees institutions are accustomed to paying for index fund management are even lower than the exchange-traded funds' expense ratios. One of the principal reasons for offering different share classes is to give investors who are putting \$100 million or \$1 billion into an indexed (or actively managed) portfolio approximately the same fee structure they've enjoyed in the past. A special share class of a silent index fund should deliver superior performance

at a comparable or even lower cost.

So far, we've offered few details on relationships among share classes. The exchange-traded share class will be exchangeable into other share classes on request and probably tax-free. The non-ETF share classes will have varied expense ratios. In some cases, a share class will have embedded sales charges to permit the investor to pay a financial planner or other adviser tax-efficiently out of the fund's investment income. In-kind creation and redemption will dominate, but there will be some partial cash redemptions for purposes of realizing losses within the fund. Notices of creation or redemption will be tendered by 2:30 p.m. each day to give the portfolio manager an opportunity to complete any desired portfolio changes by the market close.

of their trading pattern, but we would expect all these funds to adopt a more open policy on disclosure of portfolio composition than conventional funds, perhaps publishing the actual portfolio every 10 trading days with a 10-trading-day lag, in contrast to the requirement for conventional funds with actively managed portfolios to publish holdings every quarter with a 60-day lag.

The greatest obstacle to success for the new fund structure is finding the right place for it in the fund industry's marketing framework. The funds will be different in some important ways from what investors are used to, and those differences will require an explanation. If marketing groups and fund evaluators who care about their investor clients' performance and want to add value



TODAY MAJOR INSTITUTIONS MAKE ONLY OCCASIONAL USE OF ETFs FOR SPECIFIC APPLICATIONS BECAUSE THE FEES INSTITUTIONS ARE ACCUSTOMED TO PAYING FOR INDEX FUND MANAGEMENT ARE EVEN LOWER THAN THE ETFs' EXPENSE RATIOS

The portfolio basket used as an intraday valuation proxy for trading purposes will be the actual fund portfolio as it existed at the opening of trading on that day. To protect the interests of the fund's ongoing shareholders, the intraday fund valuation publication frequency should be reduced from every 15 seconds to once an hour. This will protect long-term shareholders' confidentiality in trading and will provide an adequate frame of reference for market makers and investors interested in judging the appropriateness of fund share bids and offers in the marketplace. Less-frequent intraday valuation proxy publication will frustrate efforts to use the valuation publication to determine precise portfolio composition and portfolio changes in progress. We would expect research organizations—and perhaps even the investment manager—to publish information on the risk characteristics of the portfolio as a supplement to intraday values and the end-of-day net asset value.

In a silent index fund, the index changes—except in unusual circumstances, such as a bankruptcy or a tender offer with a limited period of effectiveness—would be concentrated when possible. They might occur largely in the first 10 or the last 10 trading days of the month or largely at a set time during the calendar quarter or year. Under ordinary circumstances, investors and authorized participants could count on full portfolio transparency a large part of the time. Actively managed funds will need greater flexibility in terms

will help deliver the necessary information, the new funds will succeed on their merits.

To sum up, the structure of the self-indexing fund is very much like existing funds in many respects, but it reduces costs and protects the value of the investment manager's research information. Portfolios and expenses will be more transparent, but trading will be done with less short-term transparency, and there is scope for a wide range of sales plans and marketing charges. Because all entries and exits will be through the core exchange-traded share class, the additional or reduced fees for special share classes will be easier for all parties to understand. A useful selling point for most users may be a cost structure that's easier to understand than the cost structure of most other funds. The most important feature of the new funds, though, is their cost and probable performance advantages over existing funds.

The self-indexing fund may not have all the features of an ideal fund structure, but we hope it stimulates others to find additional ways to improve fund performance for investors.

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