

# **The Development of Improved Exchange-Traded Funds (ETFs) in the United States**

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## The Introduction of ETFs – Something to Trade on the American Stock Exchange

Many of mankind's great ideas owe at least some of their success to serendipity. A popular legend suggests how serendipity helped mankind learn the usefulness of fire. When one of our ancestors came upon the site of a fire that had been started by lightning, this early human discovered that an animal's carcass had been burned by the fire. The "cooked" meat tasted better than raw meat. This kind of serendipity has been a common theme in many of mankind's innovations.

One of the best examples of serendipity in the financial markets – from several angles – is the early development of exchange-traded funds. In attributing some features of exchange-traded funds to serendipity, we certainly do not mean to minimize the role of the developers of the early exchange-traded funds. They deserve full credit for the wisdom they displayed in designing the ETFs introduced in Canada and the United States. Our focus is on the interaction of serendipity and financial engineering in the development of some important elements of the exchange-traded fund structure. Some key features became part of the ETF almost by accident, but they are so important that they serve as the basis for revolutionary financial engineering to reshape the U.S. fund industry.

We have described the early history of ETFs elsewhere, so this description will be brief.<sup>1</sup> The first viable open-end exchange-traded fund was developed in Canada and began trading in 1989 as the Toronto Stock Exchange Index Participations (TIPs). It took four more years for the American Stock Exchange to launch the SPDR, the first open-end ETF in the United States.

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<sup>1</sup> See Gastineau, Gary L., "ETFs: An Introduction," *Journal of Portfolio Management*, Spring 2001, pp. 88-96 or [The Exchange-Traded Funds Manual](#), John Wiley & Sons, 2002, pp. 31 – 54.

The American Stock Exchange (AMEX) has always operated in the shadow of other markets, principally the New York Stock Exchange. The original name for the American Stock Exchange was the New York Curb Exchange. The name comes from the fact that the exchange's early traders made informal markets standing on the sidewalk and in the street at the corner of Broad Street and Exchange Place outside the New York Stock Exchange. That corner is now occupied by a security guard's station for the New York Stock Exchange, a very different kind of security activity. "The curbstone brokers were always the have-nots, excluded from the privileges and information of the formal exchanges, but instrumental in forcing the evolution of efficient markets as the system moved from auction to pits to specialist to computers and continuous markets." <sup>2</sup>

After it moved indoors in 1921, the Amex grew and sometimes prospered by developing and embracing new products to trade. By far, the most significant and most successful of the products introduced to U.S. investors by the Amex is the exchange-traded fund or ETF.

The labels "exchange-traded fund" and "ETF" are applied to a number of financial instruments. The fact that investors can trade most of the products called ETFs throughout the day at market-determined prices that are very close to the intraday value of an underlying portfolio or index is one common feature of these securities. To the best of our knowledge, the term "exchange-traded fund" was first used by Nuveen Investments to refer to its closed-end funds a number of years before the S&P 500 SPDR appeared in the U.S. in 1993. Many so-called "ETFs" are not funds or even investment companies – as defined by the Investment Company Act of 1940. The ETF label has been attached to some open-end structured notes and to a number of trust products including HOLDRs and various currency- and commodity-based instruments. Vanguard offers exchange-

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<sup>2</sup> The Kerb (1921) , in Sharp, Robert M., The Lore and Legends of Wall Street, Dow Jones – Irwin, 1989, p. 193.

traded share classes of a number of its mutual funds. Vanguard calls these shares ETFs, but these share classes do not have some important features that characterize the ETFs descended from the original SPDR.

The open-end ETFs based on the SPDR model have a number of specific features that will be fundamental characteristics of a new generation of funds. These open-end ETFs do not have shareholder accounting expenses at the fund level and they have few embedded marketing expenses. These expense-saving features and the fact that the fund shares are traded like stocks often make ETFs more costly to buy and sell but nearly always less costly to hold than comparable mutual funds. Some early investors in ETFs were attracted by the fact that the ETFs were low-cost index funds. However, today's index funds – ETFs and mutual funds – are not always the low-cost portfolios their owners expect.<sup>3</sup> It is also noteworthy that investors and the financial advisers who serve them have developed a number of ways to use ETFs with customized fee structures that meet both the investor's and the adviser's needs.

We want to focus on two important characteristics of the SPDR-style ETF that were, in some respects, serendipitous. These characteristics have helped attract investors and they have been important in the early success of ETFs. These characteristics also provide a basis for growth in the SPDR-style ETF model well beyond its impressive beginnings. Not everyone attaches as much significance as we do to these two features, but we are convinced that they hold the key to development of better funds. The two features of existing ETFs that we emphasize are **shareholder protection** and **tax efficiency**.

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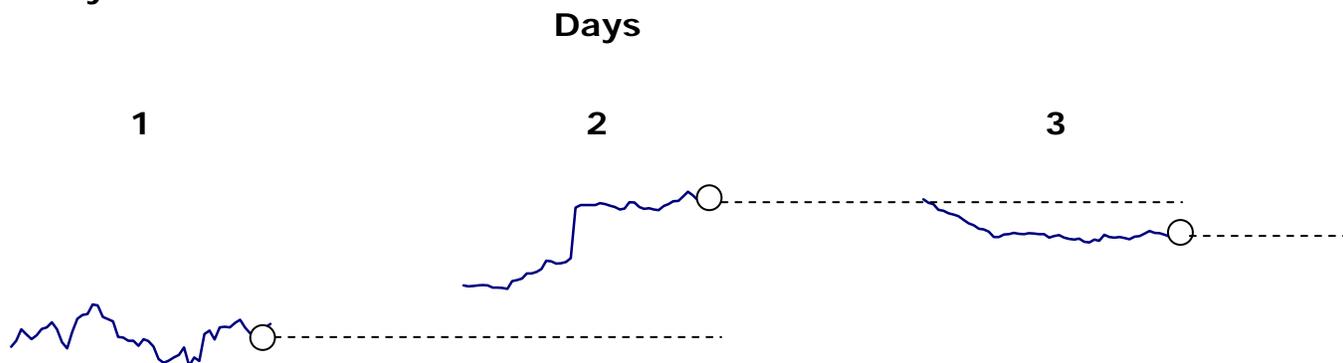
<sup>3</sup> We will have more to say about index fund problems later.

## Shareholder Protection

To illustrate the value of shareholder protection, we call your attention to two figures. Figure 1 shows how mutual funds were priced for sales and redemptions prior to 1968. This diagram shows the pattern of fund intraday values during market trading hours for three consecutive trading days. At the end of each day, a mutual fund calculates its net asset value (NAV) per share. Prior to 1968, the price at which investors invested in the shares of a fund or redeemed their shares was the net asset value *as of the previous day's close*.<sup>4</sup> In Figure 1, the fund publishes its net asset value at the end of Day 1. Prior to 1968, that net asset value was the basis for fund share transactions until the following day's market close – and the calculation of a new net asset value. Clearly, buying shares of the fund at Day 1's net asset value as the market rose on Day 2 was a great opportunity for trading profit – and for abuse of the fund's established shareholders by opportunistic investors. Correspondingly, if someone wanted to redeem shares in the fund, they would know from the intraday behavior of market indexes on Day 2 that they

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**Figure 1: Pre 1968 – Buying and Selling Mutual Fund Shares at Yesterday's Net Asset Value**



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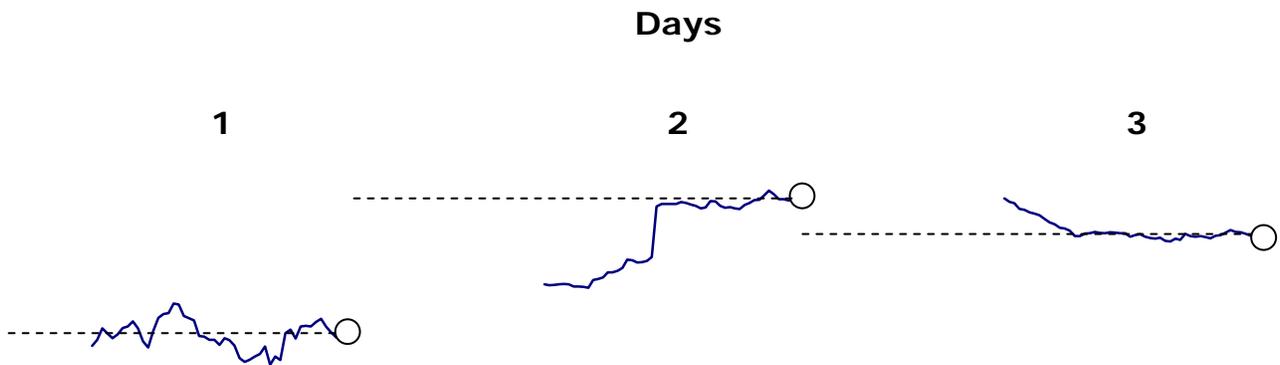
<sup>4</sup> The material described in this and the next few paragraphs is widely known, but not frequently discussed. A recent comprehensive description of mutual fund pricing over the years is available in Swenson, David F., Unconventional Success, Chapter 9, pp. 270 – 294.

could redeem at a higher fund share price by waiting until after the determination of net asset value on Day 2. As it became clear that the market was going to close lower on Day 3, redeeming fund shares at the net asset value from Day 2 would have seemed like a better idea than waiting for calculation of Day 3's lower net asset value. It would also be clear on Day 3 that the price of buying shares would be lower if the purchase was deferred until Day 4. Backward pricing led to a lot of abuses by dealers and by traders who could avoid the fund sales charges that were common in that period.

In 1968, the rules changed. The SEC implemented Rule 22(c)(1), which required fund share transactions to be priced at the net asset value *next determined* by the fund. This meant that anyone entering an order after the close of business on Day 1 would purchase or sell fund shares at the net asset value determined at the close on Day 2. Correspondingly, someone entering an order to purchase or sell shares after the close on Day 2 would be accommodated at the net asset value determined at the close on Day 3. This process is illustrated in Figure 2.

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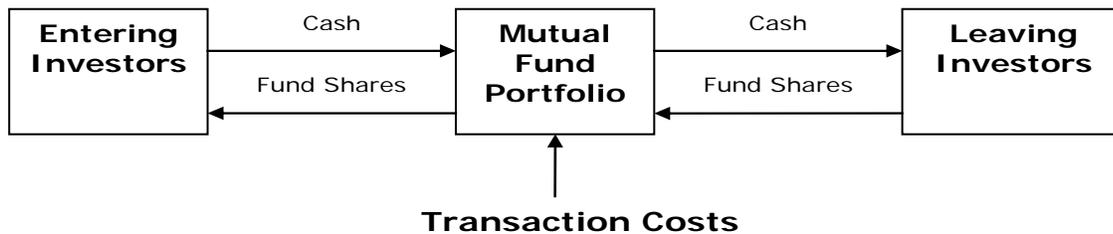
**Figure 2: Since 1968 - Buying and Selling Mutual Fund Shares at the Net Asset Value Next Determined**



While any mutual fund share *trader* might have preferred the pre-1968 system, most *investors* would agree that the basic idea behind Rule 22(c)(1) was a sound one. Allowing traders to decide today to buy or sell shares at yesterday's price is unfair to long-term investors in the fund's shares. However, there is still a transaction fairness problem for fund investors with Rule 22(c)(1) in place. That problem is illustrated in Figure 3.<sup>5</sup>

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**Figure 3 –Cash Moves In and Out of a Mutual Fund: The Fund Trades Securities to Invest Incoming Cash or to Raise Cash for Redemptions**



Share purchases and redemptions are priced at the next net asset value calculated by the fund

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By pricing all transactions in the mutual fund's shares *at the net asset value next determined*, as required by Rule 22(c)1, the fund still provides free liquidity to investors entering and leaving the fund. All the shareholders in the fund pay the cost of providing this liquidity. As Figure 3 shows, anyone purchasing mutual fund shares for cash gets a share of the securities positions already held by the fund and priced at net asset value. The new investor typically pays no transaction costs. Furthermore, all the shareholders of the fund share the transaction costs associated with investing the new investor's cash in portfolio securities. Similarly, when an investor departs the mutual fund, that investor receives cash equal to the

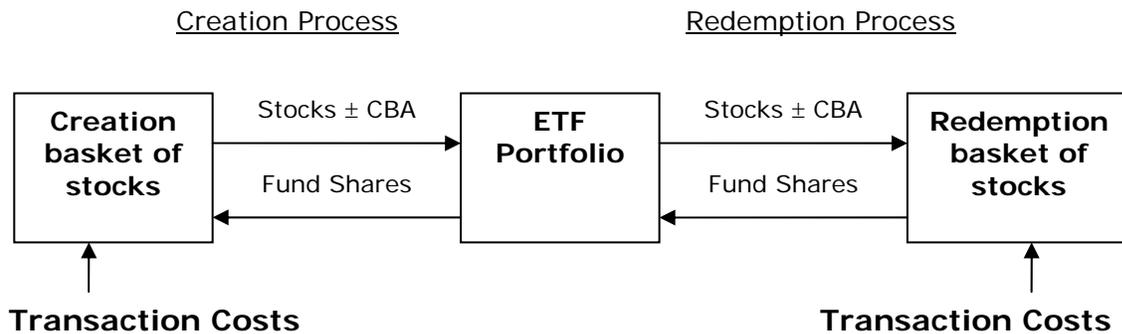
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<sup>5</sup> Figures 3 and 4 and parts of the text are based on Broms, Todd J. and Gary L. Gastineau, "Exchange-Traded Funds: A Market-Based Solution to Mutual Fund Regulation," presented at The American Enterprise Institute, April 26, 2006.

net asset value of the shares when the NAV is next calculated. All the shareholders in the fund bear the cost of selling portfolio securities to provide this liquidity. To the entering or leaving shareholder, liquidity is essentially free. To the ongoing shareholders of the fund, the liquidity given transacting shareholders is costly. Over time, the cost of providing this free liquidity to entering and leaving shareholders is a perennial drag on the fund's performance. We will discuss the size of this long-term drag on performance in a few moments.

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**Figure 4 – ETF Creation and Redemption is In-Kind: Transaction Costs Are Paid by Entering and Leaving Investors**



All securities transfers are priced at net asset value  
 CBA = Cash Balancing Amount

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Figure 4 shows that exchange-traded funds work differently than mutual funds. For exchange-traded funds, creations and redemptions of ETF shares are typically made *in kind*. Baskets of portfolio securities are deposited with the fund in exchange for fund shares in a creation. In a redemption, fund shares are turned in to the fund in exchange for a basket of portfolio securities. The creating or redeeming investor – in most cases, a market maker in the ETF shares – is responsible for the costs of investing in the portfolio securities for deposit and the

cost of disposing of portfolio securities received in the redemption of outstanding fund shares.<sup>6</sup> The market maker expects to pass these transaction costs on to investors when he trades fund shares on the exchange. The cost of entering and leaving a fund varies, depending on the level of fund share trading activity and the nature of the securities in the fund's portfolio. For example, the cost of trading in small-cap stocks can be much greater than the cost of trading in large-cap stocks.

ETFs are different from mutual funds in the way they accommodate shareholder entry and exit in at least two ways. The trading costs associated with ETF shareholder entry and exit are ultimately borne by the entering and exiting investors, not by the fund. Furthermore, unlike a mutual fund, an exchange-traded fund does not have to hold cash balances to provide for cash redemptions. An ETF can stay fully invested at all times. As a result of these differences, the performance experienced by ongoing shareholders in an ETF should, over time, handily surpass the performance experienced by ongoing shareholders of a conventional mutual fund using the same investment process. Ironically, even though the exchange-traded fund was designed to be traded throughout the trading day on an exchange, it is a much better product than a conventional fund for the shareholder who does not want to trade. As any market timer will tell you, a mutual fund is a better product to trade than an ETF because the mutual fund pays the timer's trading costs.

The conventional mutual fund structure that provides this free liquidity to investors who enter and leave the fund is behind the problems of late trading and market timing which provoked the mutual fund scandals of 2003 and 2004. The SEC has spent a great deal of time and effort trying to deal with the problem of market timing trades in mutual funds without eliminating the free liquidity which ongoing shareholders in mutual funds give entering and leaving shareholders. A variety of

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<sup>6</sup> The market makers even pay a modest creation or redemption fee to cover the fund's administrative expenses.

operational “patches” have been made by some fund companies as they attempt to restrict market timing trades. The SEC is in the middle of implementing a complex and costly reporting structure with nearly mandatory redemption fees on mutual fund purchases that are closed out within a week. In the final analysis, the elimination of free liquidity – most easily through the exchange-traded fund in-kind creation and redemption process – is the only way to eliminate market timing without imposing unnecessary costs on all fund investors. Even if there is no such thing as a market timer in the future, long-term investors will fare better in funds that protect them from the costs of other investors entering and leaving the fund.

### **Tax Efficiency**

One of the most frequently discussed advantages of exchange-traded funds is tax efficiency. Tax efficiency benefits some taxable investors profoundly, but it has value to tax-exempt investors as well. The tax efficiency of ETFs is essentially tax-deferral until the investor chooses to sell the fund shares. This deferral is a natural result of Subchapter M of the Internal Revenue Code which permits fund share redemptions in-kind (delivering portfolio securities to departing fund shareholders) without tax impact inside the fund. A redemption in-kind does not give rise to a distributable capital gain for shareholders of the fund.<sup>7</sup>

This kind of tax efficiency benefits tax-exempt investors because it prevents the build-up of unrealized gains inside an ETF. The build-up of unrealized gains in a mutual fund portfolio can lead to portfolio management decisions that adversely affect tax-exempt shareholders. When the choice facing a portfolio manager is (1) to realize gains on appreciated portfolio securities and distribute taxable capital gains to the fund’s shareholders or (2) to hold over-valued securities and avoid

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<sup>7</sup> For more details on ETF tax efficiency, see Gastineau, Gary L., Someone Will Make Money on Your Funds, Why Not You? A Better Way To Select Mutual and Exchange-Traded Funds, John Wiley & Sons, 2005, Chapter 3, pp. 39 – 66.

realizing capital gains, the portfolio manager faces a conflict between the interests of tax-exempt and taxable investors.

The back story on the October 31, 2005 manager change at Fidelity's Magellan Fund and the results of that change illustrate the problems a mutual fund can have in dealing with the conflicting interests of tax-exempt and taxable investors. The Magellan manager change led to the realization of substantial embedded capital gains that had given the fund a very large capital gains "overhang" prior to the beginning of the 2006 tax year. The new Magellan manager realized capital gains, dramatically changed the composition of the portfolio, achieved good near term performance – and distributed a mammoth capital gain which will be taxable to Magellan's taxable shareholders in 2006.<sup>8</sup> While this policy change was certainly the best choice open to the new manager of Magellan, the situation illustrates the inherent portfolio management conflict between taxable and tax-exempt investors in mutual funds.

Magellan had performed poorly for a number of years before 2005, partly because its managers had been reluctant to sell low-cost portfolio securities. Portfolio managers of conventional mutual funds often defer transactions that would improve pre-tax performance because they do not want to trigger the distribution of taxable capital gains. The conflict of interest between taxable and tax-exempt investors – inevitable in a conventional mutual fund – disappears in an ETF.

With exchange-traded funds, the decision to change the portfolio can be based solely on investment considerations, not on the tax basis of portfolio securities.

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<sup>8</sup> The Halloween date of the change in Magellan's manager was no coincidence. The timing of the manager change announcement made it clear to anyone familiar with mutual fund tax rules that dramatic portfolio changes were coming. Under mutual fund tax rules, gains realized in the last two months of the calendar year do not affect investors' tax returns for that year. The tax impact of portfolio changes made at Magellan during the last two months of 2005 would not affect investors' tax returns until 2006. Rather than wait until the end of 2006, Magellan distributed capital gains equal to about 19% of the fund's assets to its shareholders in May. Some aspects of the impact of this distribution are described in Laise, Eleanor, "A Surprise Hit for Small Investors," *Wall Street Journal*, August 24, 2006, pp. D1, D5.

The conflict between taxable and tax-exempt shareholders disappears because the achievement of tax efficiency in ETFs is largely a matter of careful designation of tax lots so that the lowest cost lots of a security are distributed in-kind in redemptions and high cost lots are sold to realize losses in the fund when a sale is necessary or appropriate.

Exchange-traded funds grow by exchanging new fund shares for portfolio securities deposited with the fund. Redemptions are also largely in-kind. Investors sell their fund shares on the exchange. Dealers buy the fund shares and turn them in to the fund in exchange for portfolio securities. This process serendipitously lets ETF managers take full advantage of the redemption in-kind provision of the Internal Revenue Code. The early developers of exchange-traded funds were aware of this tax treatment, but the tax efficiency it gives ETFs was by no means a significant objective in the early development of exchange-traded funds. It is largely serendipitous that most well-managed exchange-traded funds will never distribute taxable capital gains to their shareholders. Creation and redemption in-kind not only transfers the cost of entering and leaving the fund to the entering and leaving shareholders. It also defers capital gains taxes until a shareholder chooses to sell the fund shares.<sup>9</sup>

The in-kind creation and redemption of exchange-traded fund shares is a simple, non-discriminatory way to allocate the costs of entry and exit of fund shareholders appropriately and to solve the portfolio manager's conflict of interest between taxable and tax-exempt shareholders. This in-kind ETF creation/redemption process is an efficient, even elegant, solution to several of the obvious problems

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<sup>9</sup> Interestingly, tax efficiency helps encourage "shareholder loyalty" to an ETF. An investor in a mutual fund will usually receive taxable gains distributions that increase his basis as the value of his fund shares increases over time. When he sells the mutual fund shares, the higher basis reduces the capital gains tax on the sale. An investor in an ETF should never get a capital gains distribution. Consequently, the basis of the fund shares will stay at the investor's original cost. The tax due on sale of the ETF shares will tend to be greater than the tax due on an otherwise comparable mutual fund position. An investor with both mutual funds and ETFs will defer taxes by selling the mutual fund shares first when he needs money for living expenses. Hence, the ETF shareholder will be a more loyal shareholder simply because he wants to minimize and continue to defer his tax liability.

that continue to plague the mutual fund industry. A growing number of fund industry experts believe that the exchange-traded fund structure should replace conventional mutual funds. To make that happen, however, the serendipity of early ETF development needs to be harnessed through creative financial engineering to overcome weaknesses in the index ETF structure and extend the best ETF features to a wider range of portfolios.

### **Improving ETFs**

Understanding how effective and efficient ETFs can be requires us to examine a few features of an improved ETF model that builds on the strengths and overcomes the weaknesses of today's ETFs. ETF weaknesses are less egregious and more easily overcome than some of the weaknesses of today's mutual funds. ETF weaknesses are weaknesses we can eliminate. With SEC approval of a few modifications, a new breed of ETF can deliver marked improvements over the current model – and even more dramatic improvements over mutual funds. The 2003-2004 mutual fund market timing scandals mandate that all fund share transactions be consistent with the ETF model, wherein entering and departing shareholders pay the costs of their entry and exit. The great shareholder protection advantage ETFs have over conventional mutual funds can provide more robust shareholder protection than is possible with the mutual fund model after any possible mutual fund reform.

It is time to look at some new ETF features that will improve performance. If any fund is going to serve the interests of its shareholders, the portfolio manager needs to implement portfolio changes without revealing the fund's ongoing trading plans. Whether a fund is attempting to replicate an index or to follow an active portfolio selection or allocation process, portfolio composition changes cannot be made efficiently if the market knows what changes a fund will make in its portfolio before the fund completes its trades. A number of recent studies have highlighted

an index composition change problem which many of indexing's strong supporters have been aware of for sometime: Benchmark indexes like the S&P 500 and the Russell 2000 do not make efficient portfolio templates. Investors in index funds based on popular, transparent indexes are disadvantaged by the fact that anyone who cares will know what changes the fund must make before the fund's portfolio manager can make them.<sup>10</sup> When transparency means that someone can earn an arbitrage profit by frontrunning a fund's trades, transparency is not desirable.

The cost to ongoing shareholders of pre-announced portfolio composition changes in index ETFs must be eliminated. The best way to improve index fund performance is to use Silent Indexes, indexes that keep portfolio composition changes confidential until after the fund has traded. This requires radically new procedures for the management of indexes and the management of some index funds. A similar procedure will be used for actively managed exchange-traded funds. Everyone seems to agree that actively managed funds require confidential treatment of portfolio composition changes until after the fund has traded. Only recently have investors begun to understand the costs index transparency imposes on index fund investors. Making portfolio changes confidential and efficient requires changes in the ETF structure and the portfolio trading process.

Intraday trading in ETFs is useful to some investors. However, market makers and other large traders may have an intraday trading advantage over individual investors who are less able to monitor market activity and intraday fund price and value relationships. To state this problem in another way, there is asymmetry in

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<sup>10</sup> This problem is discussed at length in Chen, Honghui, Gregory Noronha and Vijay Singal, "Index Changes and Losses to Index Fund Investors," *Financial Analysts Journal*, July-August 2006, pp. 31 – 47 and Gastineau, Gary L., "Equity Index Funds Have Lost Their Way," *Journal of Portfolio Management*, Winter 2002, pp. 55 – 64; "Silence is Golden," *Journal of Indexes*, Second Quarter 2002, pp., 8 – 13; The Exchange-Traded Funds Manual, John Wiley & Sons, 2002, pp. 127 – 176 and Someone Will Make Money on Your Funds, Why Not You? A Better Way To Select Mutual and Exchange-Traded Funds, John Wiley & Sons, 2005, pp. 115 – 152.

the amount and kind of information available to large traders on one hand and small investors on the other hand.

Many individual investors have a stake in being able to make small, periodic purchases or sales in their fund share accounts. The prototypical investor of this type is the 401(k) investor who invests a small amount in his defined contribution retirement plan every payroll period. The mutual fund industry has developed an elaborate framework which permits small orders for a large number of investors to be aggregated and for cash to enter or leave the fund to accommodate a large number of small investors at net asset value. There are ways to modify ETF procedures so that these investors, while paying a little more than they have paid in the past to cover the transaction costs of their entry and exit, will still be accommodated at low cost. The snowballing rush to greater transparency in the economics of defined contribution accounts like 401(k) plans will make fund cost and performance comparisons easier – to the advantage of ETFs.

### **ETF and Mutual Fund Economics**

Table 1 provides an economic comparison of ETFs and mutual funds with the advantages of the ETF cost structure measured in terms of improved investment performance for fund shareholders. In the first column, the particular ETF advantage is shown first. The information in parentheses in that column is our estimate of the range of improved annual investment performance a long-term shareholder who uses an ETF rather than a mutual fund will enjoy. As these numbers indicate, the advantage of an ETF over a comparable mutual fund can vary over a wide range in some instances.

In column two we list some problems with today's ETF structure and column three notes the solutions that we propose for implementation in a new generation of ETFs. In a few cases (such as the need for more efficient indexes), the Silent

**Table 1 – Using ETFs to Deliver Better Investor Performance**

<b>ETF Advantages</b>	<b>Possible ETF Problems</b>	<b>Solutions</b>
Shareholder Protection (<0.1% to >5.0%)	Uncertain Transaction Costs Fairness of Execution	New Trading Process Improves on Basic ETF Shareholder Protection
Lower Operating Costs/Cost Transparency (0 to 0.35%)	Under the Alternative Minimum Tax (AMT) Embedded Costs Cover Fees	New Fund Delivery Structures
Capital Gains Tax Efficiency (0 to 2.5%)	None	None needed
Taxable/Tax-Exempt Conflict (0 to 1.0%)	None	None needed
Indexing (Equal)	Inefficient Indexes: The more popular the index, the greater the performance drag from index transparency	Silent Indexes as portfolio templates
Active Management (Equal)	Confidentiality in portfolio changes is essential	Same portfolio disclosure as mutual funds

Index solution is equally applicable to conventional mutual funds that follow an indexing strategy. It is not in any fund investor's interest to pay significant index change transaction costs that the fund incurs because its index is totally transparent.

Each of the features we propose for new ETFs merits at least a brief discussion. The first ETF advantage reflects the value of shareholder protection from the cost of investors entering and leaving a fund as we discussed in connection with Figures 3 and 4. The return comparison in parentheses reflects the allocation of all entry and exit costs to entering and leaving shareholders. In an ETF transaction, a shareholder pays only the cost of his own entry to and exit from the fund. The

mutual fund shareholder pays a pro rata share of the entry and exit costs of all fund buyers and sellers for as long as he owns the fund.

There has been only one appropriately designed study of the shareholder performance cost of the **flow** of cash into and out of mutual funds. In a study published in 1999, Roger Edelen, then a professor at Wharton, measured the cost of flow for a sample of 166 equity and hybrid mutual funds using data from 1985 through 1990.<sup>11</sup> He calculated the cost of flow in terms of its adverse effect on fund shareholder performance at 143 basis points per year in the average fund in his sample. The shareholder turnover in the sampled funds was low enough that it is clear that market timing and late trading was not a significant factor in the cost of flow to these funds' shareholders. Shareholder turnover in most large mutual funds is lower today than it was in Edelen's sample from 15 – 20 years ago. Some transaction costs associated with accommodating flow are also probably lower today. If the cost of flow for the average mutual fund investor (not the average mutual fund) is 1% per year for the \$5 trillion equity fund market in the United States, this represents a performance loss to investors of \$50 billion per year. If the cost is as low as 0.5% per year, the cost to investors is still \$25 billion per year. This lost performance dwarfs the costs attributable to mutual fund market timing on any reasonable assumption.

Note the wide range we use for the cost of flow (less than 0.1% to more than 5.0% per year) in Table 1. The less than one-tenth of one percent number is probably representative of some very large mutual funds with very low shareholder turnover. The more than 5% annual cost figure applies to some small and small-cap funds with high shareholder turnover. Clearly, the cost of accommodating market timers and late traders in some funds implicated in the

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<sup>11</sup> Edelen, Roger M., 1999 "Investor Flows and the Assessed Performance of Open-End Mutual Funds," *Journal of Financial Economics* 53, 439 – 466. For a more detailed discussion of this paper, see Gastineau, Gary L., "Protecting Fund Shareholders from Costly Share Trading," *Financial Analysts Journal*, May/June 2004, pp. 22 – 32.

2003 – 2004 “scandals” was well in excess of 5% per year.<sup>12</sup> There is at least some cost disadvantage to a mutual fund’s ongoing shareholders relative to an ETF when there is any flow.

The only “problem” that limits the ability of ETFs to deliver this degree of shareholder protection is that the true transaction costs associated with buying and selling shares of an ETF can be difficult for an investor to determine in advance of trading. The information available to investors on intra-day values of an ETF is not as good or as readily available as it should be. Calculations of intraday fund portfolio values are made and disseminated, but many investors – including some institutional and semi-institutional investors – do not have easy access to the every 15-second net asset value proxy calculations for existing ETFs. Furthermore these NAV proxy calculations, particularly those for funds that hold a significant number of illiquid or foreign securities, do not always give a meaningful intraday value for the fund. While the ETF structure eliminates the need for fair value pricing, the limited availability and methodology for calculating intraday NAV proxy values can make ETF execution costs uncertain and, in some instances, increase these costs.

Our proposed solution to this problem is a new trading process that increases the transparency of ETF transaction costs and, consequently, improves the ETF structural shareholder protection without compromising the ETF “gold” standard

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<sup>12</sup> The analyses made in connection with financial settlements paid by parties associated with the 2003 – 2004 market timing scandals reveal that market timing was practiced by many fund share traders who did not have formal or informal arrangements with fund managers or distributors. In at least one case, “non-arrangement timing” accounted for more shareholder costs than arrangement timing. Furthermore, these analyses document some of the trading and dilution costs Edelen found in connection with ordinary fund share purchases and redemption transactions. See Anand, Shefali, “Little Guys Were Market-Timing Funds, Too,” *Wall Street Journal*, August 25, 2006, pp. C1 and C9 and U.S. Securities and Exchange Commission, File No. 3-11814, Columbia Management Advisors, Inc. and Columbia Funds Distributor, Inc., <http://www.sec.gov/divisions/enforce/claims/columbiamanage.htm>, especially Sections III – V. One of the most comprehensive discussions of the impact any purchase or sale of mutual fund shares has on the broadly defined transaction costs, opportunity costs and dilution experienced by ongoing fund shareholders is in Green, Jason T. and Conrad S. Ciccotello, “Mutual Fund Dilution from Market Timing Trades,” (September 27, 2004) <http://ssrn.com/abstract=596482>.

whereby investors entering and leaving the fund pay the costs of their entry and exit.

The second advantage of exchange-traded funds is that they frequently offer lower operating costs and greater cost transparency than conventional mutual funds. Some of the reduction in operating costs and increase in cost transparency is associated with the elimination of costs associated with shareholder accounting at the fund level. Some of these shareholder accounting costs still have to be borne by someone. They may be charged to investors by the financial intermediary that provides fund share transaction and custody services to the investor. In addition, sales and advisory charges are paid outside the fund by ETF investors who use those services.

Unbundling costs can create a problem for taxable investors – particularly for investors subject to the Alternative Minimum Tax (AMT). The embedded costs of mutual funds, because they are taken out before the fund's income distributions are made, are deducted from the income that taxable investors receive. A separately billed advisory fee is usually not fully deductible and may not be deductible at all to an investor who falls under the Alternative Minimum Tax regime. There can be significant advantages for many taxable investors from embedding advisory and administrative costs and sales charges in the financial instrument rather than have them billed as separate fees. The solution is a variety of new fund delivery structures that provide tax efficiency by re-embedding some of the costs that have been taken out of exchange-traded funds.

Capital gains tax deferral and taxable/tax-exempt conflict of interest elimination are unmitigated gains for all ETF investors. There are no problems that we are aware of in realizing these advantages, so no solution is necessary. These important gains flow to ETF investors automatically.

With respect to the last two issues listed in Table 1, performance penalties associated with transparency in indexing and the need for confidentiality of an active manager's trading activity, the solutions for the two fund structures are essentially identical: Eliminate portfolio trading transparency. All index funds should be based on efficient indexes. There are some very efficient published indexes available today. An outstanding example of an efficient broad-market index is the Dow Jones Wilshire 5000.<sup>13</sup> Some inherently inefficient indexes are used for such a small asset pool that scalpers who know what the ETF has to do to match the published composition changes in its index are not likely to increase the fund's transaction costs materially by frontrunning the fund's portfolio manager.<sup>14</sup> Nonetheless, there is no reason why the index templates for most index funds should not be Silent Indexes. All investors should have the opportunity to buy index funds based on Silent Indexes to protect themselves from the cost of index composition frontrunning trades.

In most discussions of actively managed ETFs, there has been appropriate concern expressed for the cost of achieving enough portfolio transparency to facilitate trading in ETFs without subjecting the fund's trades to the frontrunning risk that all of today's index funds experience. The SEC's Concept Release on actively managed ETFs stressed the importance of finding a solution to this problem.<sup>15</sup> We believe – and we can document this – that the manager of an actively managed ETF needs to offer no more information on his portfolio composition and portfolio changes than the manager of a conventional mutual fund must publish today. Funds that do not require the full measure of confidentiality available under today's rules for

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<sup>13</sup> See Gastineau, Gary L., "The Best Index for the Thoughtful Indexer," forthcoming in the Institutional Investor [Guide to Exchange-Traded Funds](#).

<sup>14</sup> If one of these funds grows in response to a spate of fortuitous index changes, the manager may face the same frontrunning problems that S&P 500 and Russell 2000 index fund managers experience regularly.

<sup>15</sup> Actively Managed Exchange-Traded Funds Concept Release, Release No. IC-25258, File No. S7-20-01, United States Securities and Exchange Commission, November 8, 2001, <http://www.sec.gov/rules/concept/ic-25258.htm>.

fund asset disclosure can reduce transaction costs for their entering and leaving shareholders and market makers by providing more frequent disclosure.<sup>16</sup> But more frequent disclosure is not essential. An investment process that requires the maximum permitted portfolio confidentiality can work well inside an actively-managed ETF.

## **Conclusion**

Fund issuers can build on the compelling advantages of exchange-traded funds to offer better and more varied portfolios. New actively managed and Silent Index funds can offer the shareholder protection from the cost of entry and exit by other fund shareholders and the tax efficiency that are inherent in the initial generation of SPDR-style exchange-traded funds. We propose a new ETF structure and an improved trading mechanism for investors who buy and sell ETF shares. The new ETFs will offer alternative fund delivery structures and systems. Transparent index funds will be challenged by Silent Index funds which will provide improved performance as a result of lower transaction costs in the fund. Actively managed ETFs will feature flexibility in portfolio disclosure to permit the fund manager to determine the degree of transparency that is appropriate for a specific fund.

In expressing confidence in the desirability – and the inevitability – of the improved exchange-traded funds we describe, we are well aware of the obstacles facing innovators in the financial services industry. Professor John Y. Campbell, in his presidential address to the American Finance Association earlier this year, addressed this issue.

“I suggest that retail financial innovation is slowed by the cost of advertising and educating households, together with the weakness of patent protection for financial products...I speculate that the existence of naive households

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<sup>16</sup> Many funds already publish their portfolios more frequently and/or with a shorter lag than required by the SEC.

permits an equilibrium...in which confusing financial products generate a cross-subsidy from naive to sophisticated households, and in which no market participant has an incentive to eliminate this cross-subsidy...It may be difficult for new investment products to gain acceptance if sophisticated households, who are the natural early adopters, must give up the benefit of a cross-subsidy when they move from an existing product to a new product."

Professor Campbell raises some important concerns, but there is every reason to believe that this innovation will succeed. Mutual funds subsidize the *fund share trading costs* of short-term investors (market timers and all other mutual fund share traders), small investors (young investors and others with few assets) and investors who invest small amounts periodically (largely owners of 401(k) and similar defined contribution retirement accounts). These trading cost subsidies come at the expense of some of the most "sophisticated households" that hold mutual fund shares as long-term investments. The regulatory interest in thwarting mutual fund timers and traders is well known. Small investors and 401(k) contributors tend to be long-term investors. They will pay a transaction cost to buy and sell ETF shares, but new delivery mechanisms should minimize this cost and clarify the total ETF cost and performance advantage. We believe the incentives for all long-term investors and regulators to embrace this new ETF fund structure are compelling.

We welcome your comments and suggestions.

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