DIVERSIFIED EQUITY INVESTMENTS

INTRODUCTION

Known simply as mutual funds, mutual investment funds are management companies organized to invest moneys contributed by individuals and institutions in specific types of financial assets. The entire mutual fund constellation offers a broad range of investment possibilities, varying according to fund philosophy. Financial holdings range from short-term, money market instruments delivering modest but virtually risk-free returns to very volatile portfolios of thinly traded U.S. or foreign equities. Most funds, however, invest in corporate stocks and bonds with anticipated yields and beta coefficients (risk measurements) lying somewhere between these two extremes.

As with all investments, establishing an appropriate strategy requires striking a balance between desired financial return and personal tolerance of default risk. Weighing both factors is the first step in choosing wisely among these popular financial instruments. Given the diversity of fund objectives, it is imperative to recognize that there is no inherent safety in selecting mutual funds as an overall investment category. To underscore this point, included in every mutual fund's prospectus is the often-overlooked warning that past fund success is no indication of future performance.

According to an official survey conducted in July 2000 by the Investment Company Institute (ICI), mutual funds dominate the financial services universe with $7.077 trillion in total assets. Of the nearly $2 trillion in savings invested by U.S. households during the past five years, mutual funds account for about 70% of that amount. At the end of 1999, U.S. households held 81% of mutual fund assets; institutional holdings accounted for the remaining 19%. The private sector's holdings include mutual funds held in retail accounts as well as through employer-sponsored pension plans, Individual Retirement Accounts, and variable annuities. While mutual funds were invented over one-half century ago with the specific purpose of simplifying investing and giving ordinary citizens diversified access to the financial markets, the current plethora of funds has greatly complicated their original intent.

Over 11,000 mutual funds exist on the market today. Investors buy shares in the fund of their choice; share value rises and falls with the market value of the fund as determined at the end of each trading day. Market value is expressed in terms of *net asset value (NAV).* Net asset value is calculated by adding up the fund's total assets on a given day, subtracting its liabilities, and dividing the result by the number of shares outstanding. Investors can sell their shares at any time, and the mutual fund is obligated to redeem them.

In every mutual fund, shareholders obtain a portfolio that is diversified at some level and overseen by investment professionals. The fund pays a fee to the management company for its professional services. One notable exception is the Vanguard family of funds. Since the Vanguard Group is jointly owned by the funds it manages (and indirectly by the funds' shareholders), it delivers management services *at cost*. Compared to funds owned by management investment companies, Vanguard's offerings enjoy reduced expense ratios.

Unfortunately, no empirical evidence exists that active professional management results in consistently superior fund performance when measured against average annual market returns. As a result, passively managed mutual funds have been created that simply attempt to match—rather than outperform—a particular stock or bond market index, such as the closely watched Standard and Poor's 500-Stock Index (S&P 500). This strategy is known as *indexing* and is explored in the next discussion. Index funds are an essential topic when addressing mutual fund investments.

INSIGHTS INTO INDEX FUNDS

Index funds are a specialized form of common stock mutual fund. According to ICI, they constitute less than 10% of all money invested in common stock mutual funds. For reasons that are described below, index funds have grown in prominence in recent years, especially among corporate pension plans and similar institutions.

There are several index funds that seek to duplicate the performance of a broad stock market index. The oldest and largest of these is the Vanguard® 500 Index Fund established in 1976 (ticker symbol: VFINX). It holds all of the stocks in the venerable S&P 500 and was valued at $104.2 billion as of July 31, 2000. The fund's investment objective is "to match the performance of a benchmark index that measures the investment of large-capitalization stocks." Over time, the performance of this fund closely approximates that of the underlying stock index. It does this by always owning the constituents of the index in the same proportion as they are represented in that index. However, as with all index funds, it will not be able to match the performance of the underlying index exactly because of fund operating expenses and transaction costs.

Investment in such a broad-based index fund provides a number of valuable features as follows:

- The investment will be widely diversified in a large segment of the overall stock market.
- Index funds have low portfolio turnover as stocks are bought or sold only as necessary to redeem shares of the fund, invest proceeds from new shareholders, or match any changes in the composition of the underlying index.
- Capital gain distributions are minimized as a result of low turnover, and the tax on most asset appreciation is deferred until shares of the fund are liquidated by the owner.
- Management expenses are very low in comparison to other mutual funds. For example, the total expenses for the standard-class shares of the Vanguard 500 Index Fund are currently 0.18% of total assets (versus 1.4% for a typical, actively managed stock fund).
- There are no entry or exit fees for a true *no-load* index fund.
- Empirical studies suggest that index funds are likely to outperform managed stock funds over time, especially when the effect of taxation is considered.

The last point may require some substantiation, as it seems counterintuitive that an unmanaged index fund would provide better investment results than a fund under active professional management. This is nevertheless the case.

THE DOWNSIDE OF ACTIVELY MANAGED MUTUAL FUNDS

Actively managed mutual funds employ professional investment managers who use research, market forecasts, and their own investment knowledge and experience to select securities for the investment funds they oversee. Passively managed mutual funds rely on indexing, seeking to match the performance of an established target index as closely as possible. These are two distinct schools of investment thought.

With the active approach, the investment strategy is based upon picking a number of managers who have previously outperformed their respective market indexes and allowing them to do their magic. Many members of this school believe in *dynamic asset allocation*, the use of computer models to predict which sectors will outperform the market within predetermined volatility constraints. They frequently transfer fund assets from one market segment to another in order to maximize returns, a process known as *rebalancing*.

Not surprisingly, the most avid proponents of this intensive investment approach are those who receive a fee for picking the fund managers and monitoring fund asset allocation. Fans also include individuals employed throughout the financial industry whose compensation is tied directly to the level of transaction costs generated by the funds, rather than from overall fund performance. As members of the investment community, we could hardly begrudge these individuals their fees if their impressive theories indeed worked. Unfortunately, they do not.

Dynamic asset allocation is accomplished through the use of complex, multivariable regression analyses that, with perfect accuracy, predict the investment mix you should have had in the past. Since financial markets seldom react consistently to the same dominant drivers, this approach to divining outperforming markets has proven to be essentially worthless. Bond managers, in particular, so rarely outperform a passive bond portfolio of equivalent risk that paying them anything seems inadvisable.

There are an enormous number of empirical studies demonstrating that past performance is virtually useless as an indicator of future superior performance, and no serious evidence to the contrary exists. In general, fund managers do not perform as well as an unmanaged target index because they:

- All have access to the same information at the same time and cancel each other out.
- Incur transaction charges.
- Keep cash reserves on hand that underperform markets over time.
- Charge fees that reduce annual returns.

There is another factor influencing all the frantic investment activity advocated by the asset allocators. It does not show up in their performance but is even more destructive of wealth creation than the preceding flaws. That is the accelerated recognition of taxable income, and attendant diversion of resources to tax payments that would otherwise be productively invested. While it is unlikely that a dynamically managed portfolio will be superior to its passive counterpart, over any significant time period it is virtually impossible for such an active approach to do so after the tax liability on an unsheltered portfolio is considered.

Andrew Lo, a professor of finance at MIT and an expert on financial engineering and computational finance, summed up the dangers of actively managed mutual funds this way: “Past performance should not be the sole or even the major criterion by which investment managers are judged… Selecting an investment manager solely by past performance is one of the surest paths to financial disaster…since even the most successful strategy can always be explained by pure luck.”

This brings us to the second school of thought regarding diversified equity investments—the passive approach we advocate.

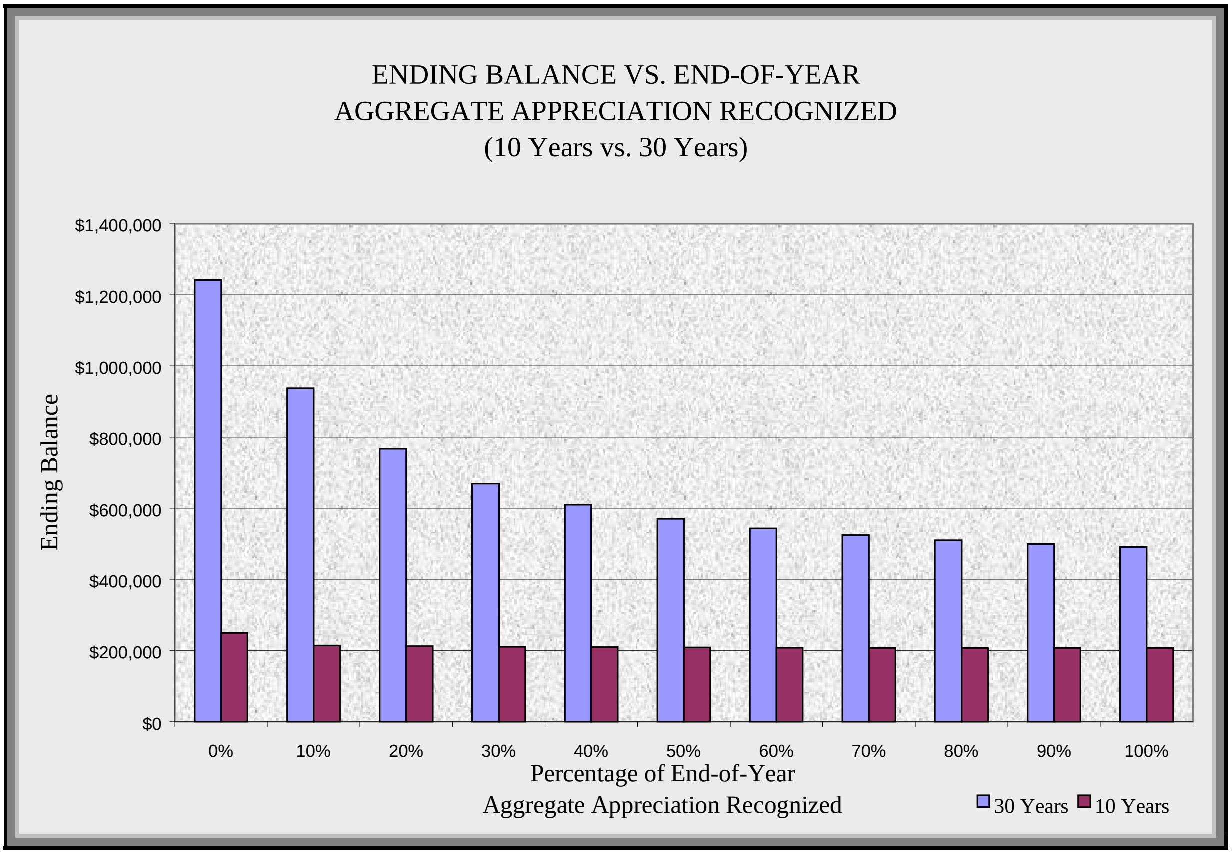
WHY PASSIVE IS PREFERABLE

Academic research demonstrates unquestionably that a mutual fund’s annual operating expenses are the single most powerful indication of how it will perform in the future when compared to similar funds. According to 1990 Nobel laureate William Sharpe, professor of finance at Stanford University, “The first thing to look at is the expense ratio.” The future operating expenses of a mutual fund are almost perfectly predictable, unlike its future performance or the composition of its management team.

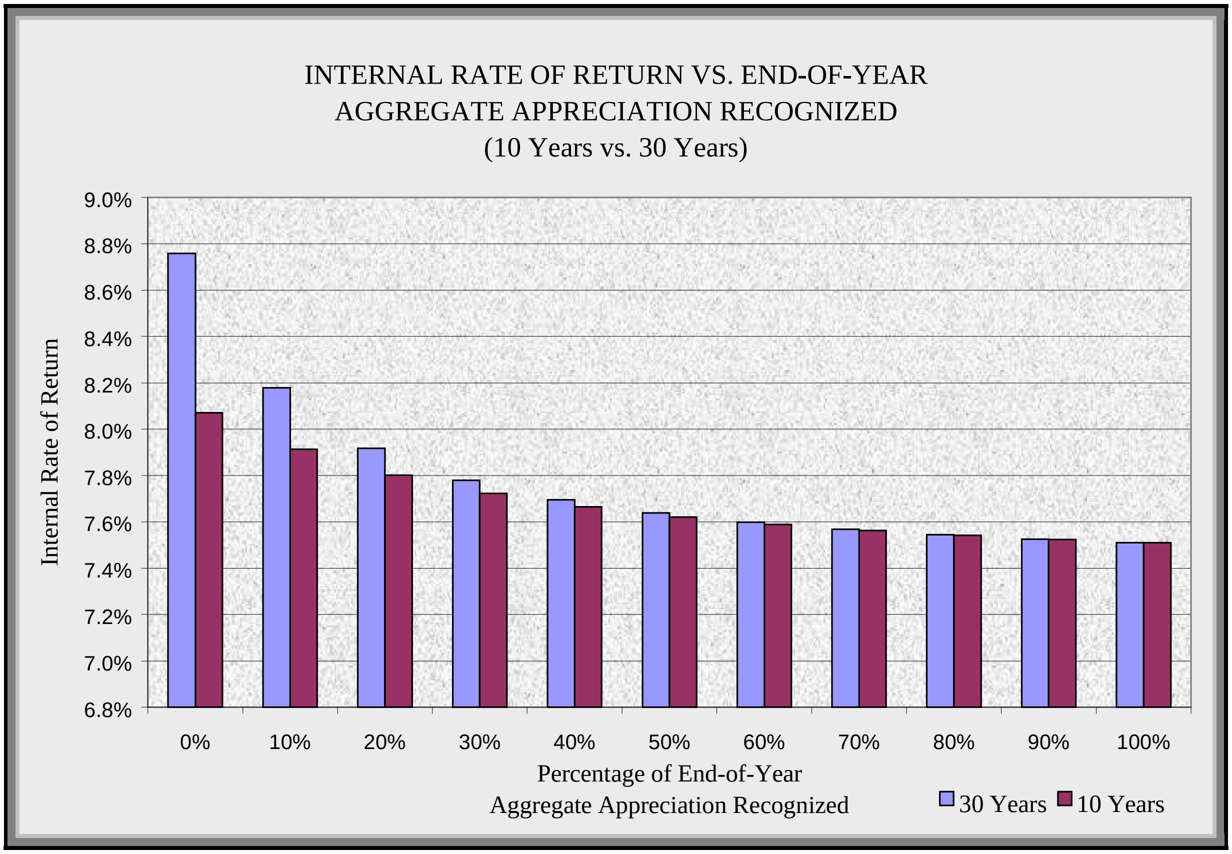
Cost of ownership, then, should be the first filter used to select mutual funds. A low expense ratio is a criterion that remains totally within investors’ control. With this in mind, index funds are the clear choice over managed funds.

Tax efficiency is the next major criterion for consideration. In general, the more often a manager trades securities to meet the objectives of the fund, the higher the fund’s portfolio turnover rate. A higher turnover rate is likely to lead to a greater tax bill. It will certainly lead to higher fund costs in the form of transaction charges. By their very nature, index funds are considered tax-efficient because they generally do not liquidate their holdings except when a particular equity is removed from the underlying market index. There are also active *tax-managed* mutual funds on the market that maintain tax efficiency as their primary investment objective.

The chart below demonstrates the negative effect over time an increasing portfolio turnover rate has on a mutual fund investment. The analysis assumes an average annual return of 9% for the two holding periods (10 years versus 30 years) and yearly dividend income of 1%. Long-term capital gains are taxed at 23% (including state taxes); short-term capital gains are taxed at 42% (including state taxes).



Using the same assumptions as the above analysis, the chart below demonstrates the negative effect of increasing portfolio turnover rates on internal rate of return:



According to Morningstar, Inc., the average turnover rate for all passively managed domestic equity stock index funds was approximately 18% during 1999. For the Vanguard 500 Index Fund, it was 6% in 1999; excluding in-kind redemptions, the rate was 3%. For actively managed funds, the average turnover rate was approximately 89%.

The typical U.S. stock fund charges its customers about 1.4% in annual operating expenses and 1.6% in annual trading costs, according to Plexus Group, a Los Angeles-based consulting firm that advises investors and traders on portfolio trading costs. That adds up to three percentage points a year. In keeping with this total, the average U.S. stock fund underperformed the S&P 500-Stock Index by 3.16% per annum over the 10-year period ending December 31, 1999. Specifically, the S&P 500-Stock Index returned 18.05%, while the average annual return of U.S. stock mutual funds was 14.89%.

During the 4-year period from 1995 to 1998, the unmanaged S&P-500 Stock Index, as measured by the Vanguard 500 Index Fund, produced a total return exceeding that of 90% of actively managed *large-cap* mutual funds. In 1999, this proxy fund ranked in the 69th percentile—above more than two-thirds of its actively managed counterparts. This position was accomplished despite the shift in investors' fancy towards the smaller high-tech stocks not contained in the index.

NOTHING IS PERFECT

The enormous size of the Vanguard 500 Index Fund is leading some shareholders to the erroneous conclusion that its high market acceptance automatically increases its safety as an investment. Since most of the fund's assets are contained in retirement accounts, the majority of shareholders will remain committed to it over the long haul. But its stability cannot be assured.

Like actively managed funds, index funds do not eliminate market risk—the fluctuation in the overall level of stock prices. In fact, they guarantee that their investors will participate in it. As we have seen, index funds also hold little or no cash in their portfolios, unlike their actively managed counterparts. The actively managed funds typically hold at least 5% to 10% of their assets in other short-term securities, a dead weight in bullish markets but a welcome reserve during bearish times.

Because of this difference, index funds could reasonably be expected to decline more severely in a powerful market downturn than actively managed funds, since they remain more fully invested in the securities of the underlying market index. This was in fact the case during the stock market crash of 1987. From September through November 1987, the S&P 500 fell 32%. By comparison, the average equity fund declined 28.7%—3.3% less during the same period. The cash positions held by active managers then helped to cushion their funds during the catastrophic freefall that ensued. They were able to react defensively during swiftly changing market conditions.

In addition, the S&P 500-Stock Index is a capitalization-weighted index. The proportion of each company contained in this large-cap index is linked to its market value, or total capitalization (number of shares outstanding multiplied by stock price). An executive committee at Standard and Poor's governs the exact composition of the index and tries to retain a flexible approach in managing the weighting of the index's components relative to overall market dynamics. Maintaining the stability of the companies included in the S&P 500 Index is a primary consideration.

Because of this weighting technique, the 50 largest companies in the index currently comprise more than 50% of its value. As of March 31, 2000, the values of the top three stocks listed in the S&P 500 Index—Microsoft Corporation (4.36%), Cisco Systems Inc. (4.17%), and General Electric Company (4.01%)—accounted for 12.54% of the entire 500-member index. Investors in S&P 500 Index funds should keep in mind that the performance of large-capitalization stocks relative to the overall stock market is unpredictable in nature. During certain periods, these stocks as a group can trail returns from other asset classes or the stock market as a whole, a characteristic known as *investment risk.*

As the rise in the S&P 500 leveled off during 2000, so has the inflow of new money into Vanguard's flagship fund. Recent reduced returns pose the first challenge to indexing in almost a decade. And, there is more cause for concern. It comes in the form of unrealized capital gains. Unrealized gains exist only on paper until an appreciated security in the fund is sold and proceeds distributed to shareholders. At that time, the profit is taxable as a capital gain, even if the fund as a whole is performing poorly.

By law, mutual fund companies must distribute the profits made on the sales of their investments to their shareholders annually in the year they are declared. Investors are required to pay taxes on those gains, even if they reinvest them, unless the funds are held in a tax-deferred account (such as an Individual Retirement Account). Note that the tax rate for long-term capital gains is now considerably lower than the rate for taxes on short-term capital gains, particularly for investors in the higher brackets. The long-term rate is 20%; short-term capital gains are taxed at the investor's ordinary income tax rate, up to 39.6%.

The Vanguard 500 Index Fund has unrealized capital gains greater than 40% of assets. In the event of a broad market decline, some investors may reduce their holdings, possibly forcing capital gains distributions—and greater tax bills than anticipated—upon the remaining shareholders in the fund. This situation will occur if the fund realizes redemption-driven net capital gains once fund expenses are deducted and capital losses are calculated as an offset. In the event that annual net capital gains occur, the fund will distribute them to shareholders in proportion to their holdings.

The fund will also notify shareholders about the classification of the liquidated shares as either long- or short-term. This classification is based upon how long the fund owned the shares that produced the capital gain—not on how long the shareholders have owned the shares. (Note that for large accounts, Vanguard can distribute securities in-kind rather than selling them and subjecting major shareholders to huge capital gains distributions.)

In view of the foregoing discussion, the primary dilemma with passive investing is that it requires you to avoid the urge to change your portfolio composition in the face of apparently lucid arguments for such alterations. Many of the changes, in retrospect, will be advisable, but over time the tax and transaction costs of all changes, including those which do not work out, will overwhelm the good calls. The difficulty is that it will be impossible to sort out good from bad advice except after the fact.

THE EXPLOSION OF EXCHANGE-TRADED MUTUAL FUNDS

There is growing interest in a new form of passive investment called exchange-traded mutual funds (ETFs). The total assets of ETFs have grown dramatically in recent months. To understand the relationship between exchange-traded mutual funds and their more traditional index fund relatives requires an understanding of the difference between *open-ended* and *closed-ended* mutual funds, since ETFs are a cross between the two.

Open-ended, or *open,* funds are the most common variety of mutual funds available, the type discussed throughout this analysis. Whether actively or passively managed, all share one trait: there is no initial limit placed on the total number of shares available in these funds. Both current and new investors may invest any amount of money they desire once a minimum level has been contributed; this baseline figure is determined by the fund. Investors buy and sell shares in open funds directly through the mutual fund's management company, not a market exchange. The share price fluctuates in relation to the net asset value of the investments contained in the fund as calculated at the end of each trading day. Shareholders who redeem units from the fund receive the NAV for their withdrawn shares.

By contrast, shares in *closed-ended* mutual funds are actually traded in the open stock market. A sponsor, either a mutual fund company or investment dealer, creates a *trust fund* through an underwriting that raises money to be invested in a specific way. The fund retains an investment manager to manage the fund assets in the specified manner. Closed-ended mutual funds consist of baskets of stocks or bonds and can mirror well-known indexes, such as the S&P 500-Stock Index. Like any publicly traded company's stock, only a fixed number of shares are available.

Once underwritten, closed-ended mutual funds trade on stock exchanges like stocks and corporate bonds and assume the market trading risks common to other securities. Investors buy and sell shares in the fund through a broker—and pay commission charges—just as they would when trading stocks. The share value of closed-ended funds is controlled by the open market, not by the fund manager's calculation of net asset value at the end of the trading day. Prices fluctuate throughout the day based upon the amount for which investors are willing to buy and sell the shares. Traditional closed-ended mutual funds usually trade at discounts to their underlying asset value. The reason is debatable, but is partly attributed to the lack of liquidity of the fund units and the presence of the management fee.

In January 1993, the American Stock Exchange joined forces with Standard & Poor's and State Street Global Advisors (SSgA) to provide a convenient way for major investors to trade the aggregate stock of the companies listed in the S&P 500. This 3-way partnership resulted in the introduction of a hybrid form of mutual fund structured as a Unit Investment Trust (UIT). Called Standard & Poor's Depository Receipts (SPDRs), or *Spiders*, they currently enjoy an expense ratio capped at 0.12%. SSgA subsequently added nine sector spiders to the original offering; they invest in different sectors of the S&P 500. Also added were the Diamond, based on the Dow Jones Industrial Average, and 17 World Equity Benchmark Shares (WEBS), which are single-country foreign index funds.

Although slow to take hold at first, the SSgA exchange-traded mutual funds exploded on the scene once *the Cubes (QQQ)* were introduced to trade the NASDAQ 100 index in March 1999. They can be purchased and sold at any time throughout the trading day, a characteristic much ballyhooed in the press. Since they trade as securities, ETFs can also be sold short when anticipating falling prices. They can be purchased on margin, and bought and sold with limit orders (that is, setting the trading price in advance). Most importantly, they should always trade at parity with the index they are created to replicate.

What makes ETFs so appealing to us is that they eliminate the main drawbacks of traditional index funds and typical unit investment trusts, the two most common forms of passive investments. With open-ended mutual funds, the net asset value is quoted only once a day, and net fund redemptions force the fund manager to sell some shares, generating capital gains taxes for investors who do no selling at all. Closed-ended funds, usually known as investment trusts, create other problems. While there is a fixed number of shares that are traded on an exchange, and pricing and trading is continuous throughout the day, mismatches in supply and demand of those shares can result in hefty premiums or discounts to the trust's net asset value. This pricing unpredictability can make retail investors queasy in a hurry.

Note that exchange-traded mutual funds, unlike traditional index funds, cannot reinvest dividends immediately upon receipt. Dividends are held in an interest-bearing account and are invested at the end of the quarter. This delay, called *cash drag*, negatively affects the total return of the product (albeit very modestly).

The new hybrid ETFs are advantageous because they trade on a secondary market, dealing is continuous, and they can be bought on margin and sold short, allowing for much more sophisticated trading strategies. But, unlike traditional closed-ended funds, ETF prices will always be tied to the underlying value of the stocks they hold. Market makers can settle very large trades using the underlying shares of stock rather than cash. Consequently, large individual and institutional investors will step in to take advantage of even the smallest imbalance, thereby correcting it, through arbitrage trading techniques. This ability should prevent discounts or premiums to the fund's net asset value from occurring, and will cut down on unanticipated taxable capital gains for investors. In our view, this predictability is their most important attribute.

ALL EYES ARE ON THE iSHARES

During the spring and summer of 2000, Barclays Global Fund Advisors (BGFA) launched 35 new exchange-traded index funds. Barclays is the largest institutional money manager in the world, with over $783 billion under management. Barclays introduced the world's first index fund some 25 years ago, and today is the largest index fund manager worldwide. The company's new fund offerings, called iShares, make up the iShares Trust. Like traditional index funds, iShares funds attempt to mirror financial returns consistent with their underlying equity market indexes, those compiled by Standard & Poor's, Dow Jones & Company, and Frank Russell Company. All are listed for trading on the American Stock Exchange (AMEX).

The iShares are not redeemable securities, except when aggregated in *Creation Units*. Each of the funds will issue and redeem iShares at their net asset value in Creation Units, large blocks of 50,000 shares, and multiples thereof. Because of the huge price tag for such a transaction, only institutions and large investors can afford to purchase or redeem iShares Creation Units. But, it is this feature which permits arbitrage, ensuring their pricing is tied to net asset value.

The lower expense ratios of iShares, compared to their traditional index fund cousins, are also a noteworthy advantage. These ETFs have no front-end loads, back-end loads, or redemption fees. However, as noted in the previous section, investors must pay brokerage commissions to buy and sell them. But, purchasing iShares through a deep discount broker makes their total return virtually indistinguishable from that of the no-load Vanguard index funds, especially the recently announced Admiral class of shares (see related discussion below). For example, Barclays' new iShares S&P 500 Index Fund (AMEX trading symbol: IVV), offered for sale beginning on May 19, 2000, has an annual fund expense ratio of a mere nine basis points (0.09%), expressed as a percentage of average market value.

Another advantage is the tax efficiency stemming from their structure. Because iShares fund managers do not have to liquidate stock for redemptions, there are potentially fewer capital gains associated with them than traditional index funds. As we have seen, traditional index funds can surprise shareholders with year-end capital gains, even if they have not sold their shares during the year.

STAR WARS

Barclays' iShares pose a long-term challenge to indexing giant Vanguard. During the first half of 2000, over $17 billion gushed into exchange-traded funds of all kinds. To combat the looming threat of reduced inflows of new capital into its funds, Vanguard is slated to launch five low-cost ETFs of its own called *VIPERs*. The new VIPERs will be priced to compete with the iShares, as will offerings introduced by other competitors. However, investors should not postpone their investments while waiting to see if these new entrants into the ETF field will beat the iShares' low fees by a couple of basis points. The price difference will be so incremental that it is insignificant.

The following Vanguard funds will introduce a VIPER class of exchange-traded funds: the Vanguard 500 Index Fund, Vanguard Total Stock Market Index Fund, Vanguard Small-Cap Index Fund, Vanguard Growth Index Fund, and Vanguard Value Index Fund. Selling existing shares of Vanguard index funds would generate capital gains taxes; current shareholders should not do so to redirect their holdings into the new ETFs.

Vanguard is offering the new ETFs in an attempt to hold onto current short-term index fund investors who do not maintain the long-term horizon advocated by the company. A press release noted that: “The addition of the VIPER shares is expected to have no immediate impact on existing fund shareholders. Vanguard believes though that, over time, existing fund shareholders will benefit from a reduction of the deleterious effects of short-term investors who are likely to be attracted to the VIPER shares and away from the traditional shares.”

Vanguard has also announced a new class of shares to reward their loyal retail customers and major investors. Called Admiral shares, the new class will have an expense ratio of 0.12%, compared with 0.18% for the standard class of shares. To be eligible, investors must hold $50,000 in a fund account they have maintained for at least ten years, or maintain $150,000 in an account for at least three years. Investors with accounts worth at least $250,000 will be immediately eligible for the reduced administrative fees.

Vanguard’s index funds will enjoy the optional new pricing plan beginning in the fourth quarter of 2000. Most of the equity, bond, and balanced funds will see the new ratio phased in during 2001. The plan encourages Vanguard’s most desirable customers—large investors who do little trading and maintain their investments over the long term—to remain invested with Vanguard. To pay for the program, the expense ratios on the regular share class of some of the smaller Vanguard funds may go up by 0.01% to 0.03%. Expenses for the standard-class shares of the mighty Vanguard 500 Index Fund will remain at 0.18%.

SUMMING UP

As we have seen, exchange-traded funds offer net asset value pricing, tax efficiency, low costs, and trading flexibility. ETFs are a new frontier in the world of indexing. The table below provides a comparison of the features offered by the traditional Vanguard 500 Index Fund and the recently introduced Barclays iShares:

A Comparison of the Vanguard 500 Index Fund and Barclays iShares

	Vanguard 500 Index Fund	iShares
Acquisition Cost	None	Brokerage Commission
Annual Maintenance Fee	0.12%*	0.09%
Gain Recognition Upon:		
Index Composition Change	Yes	Yes
Net Redemption	Yes	No
Marginable	No	Yes
Short Sale Possible	No	Yes
Shares Easily Transferred	No	Yes

* For Admiral class of shares.