

# Smart Planning

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INDEXES & INDEX FUNDS

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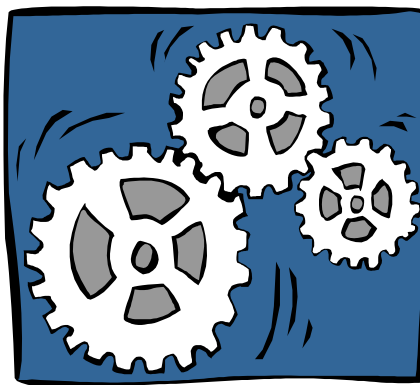
## THE POWER OF INDEXING

## INDEX FUND INVESTING

About 27 years ago I was preparing to head off on a long backpack trip into the Montana wilderness. My goal was to take the very best equipment with the least weight since it was going to be on MY back for 2 long weeks. At REI it was hard to compare things since the European stuff was in grams while the US used ounces. And some items had no weight listed at all. So I returned with a small scale and assembled my pack. The folks at REI had a good laugh over that.

I look at your portfolios like that backpack. You are taking it with you on a long trip through your retirement years. So your humble advisor is constantly weighing everything we put into your backpack to make sure that you have the best investment tools available and the least possible weight. The weight could be the emotional burden of excess volatility, the drag of high fees, the pressure of underperformance, and the draw down of income taxes. Average is not acceptable. Only the very best is good enough for you.

Today we pulled out that old scale again to examine indexes and index fund investing in fine detail. I took off the marketing department wrappers and weighed everything. We looked at the various indexes, index fund types, and index fund families. Then we selected the best ones and compared their results to actively managed funds. We realize that some of you don't have the time or interest to read this level of detail. So we have included a short Executive Summary on page 8.



Index Funds operate like a well tuned piece of fine machinery.

The information furnished in this newsletter about investments, tax provisions, and planning techniques is intended solely for your general information. This is a complex area with many ramifications not mentioned herein. You should consult your attorney and other professional advisors before making any decisions or taking any course of action mentioned herein.

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An index fund is a mutual fund that is trying to match the investment returns of a specific stock market (or bond market) index. The index fund manager attempts to duplicate the investment results of the target index by holding all, or in the case of a very broad index, a representative sample, of the securities in the index. Active managers have traditionally attempted to achieve superior results by making "bets" on individual securities, asset classes, industries, or style segments, in an attempt to outpace their benchmark index. The point of an index fund is not to beat anything. It's purpose is to get a diversified exposure to an entire market, or a specific part of a market, and to capture an extremely high percentage of the returns in that market in a low cost, tax-efficient fashion. Index investing is an alternative "passive" approach which emphasizes broad diversification, low fees, and infrequent trading.

**Index Funds are Not Average:** Many investors mistakenly believe that people using index funds are 'settling' for average performance. In fact, index funds have a number of built in advantages that allow them to outperform most actively managed funds. We outline them on page 2. On page 6 we offer charts and tables that compare the Frank Russell and Standard & Poors US equity indexes to all of the open-end equity mutual funds in the US. The after tax results we calculated were far beyond our expectations. The S&P indexes beat over **80%** of the actively managed

*(Continued on page 3)*

## INDEX INVESTING - Advantages of Index Funds



**Low Management Fee:** The management fees for actively managed equity funds average 1.3% a year. The management fee for most no-load domestic equity index funds is under .4%. The family of U.S. equity index funds we prefer has an average fee of less than .2% a year.

**Low Trading Costs:** Actively managed funds also incur a substantial cost for brokerage commissions and bid-ask spreads for trading stocks in the fund. This can be as high as 1%, and is usually at least .5% annually. Index funds typically only buy or sell a security when changes are made to the index the fund is tracking. This means that most index funds have far lower trading costs than actively traded funds.

**Tax Efficiency:** Low turnover means that an index fund is not generating substantial capital gains from its trading activities. Those internal capital gains must be passed on to the mutual fund shareholders each year, regardless of whether the fund price is up or down that year. Exchange traded index funds are especially tax efficient because of their unique design, as discussed in the companion article on page 4.

**Stay 100% Invested:** Actively managed funds keep as much as 5% of assets in cash to pay shareholders for their shares when they sell. Open end index funds only need to keep a small amount of cash on hand since they trade less. All the trades in the exchange traded fund shares are on a stock exchange with other investors, so the fund itself does not have to keep cash on hand for redemptions. This cash position reduces the performance of actively managed funds over a complete market cycle.

**Better Cash Management:** Most investors tend to flood actively managed funds with cash after hot periods and redeem their cash after long cold spells. This often forces active managers to buy stocks when they can't find any that meet their usual parameters, or to sell stocks when they would prefer to hold them, or buy more. Index funds attract advisors, and sophisticated investors, who trade less and trade smarter, so this is less of a problem.

**Style Purity:** Index funds always stay in the same Morningstar style category (e.g. large growth, small value, mid blend, etc). This style purity helps investors maintain their target asset allocation. Active funds managers tend to drift toward the style categories that are enjoying a long period of dominance [like plants tilting toward the sun]. This means they buy stocks at higher prices than they would if they continued to accumulate the out of favor low-priced stocks in their original category. The style consistency of index funds reduces the risk that investors will inadvertently overloaded their portfolio toward a style category that is about to fall out of favor. This occurred a few years ago as many value and midcap funds tilted toward the large growth stocks just before they peaked and dropped precipitously in early 2000.

**Stability:** Index funds are far more stable than actively managed funds. They do not have to deal with the effect of manager changes, shifts in manager philosophy, or the impact of mergers with other funds. Their returns also tend to be smoother, with less variation from year to year. By avoiding oversized bets on sectors, industries or hot stocks they do not have the super charged hot years, and the bone chilling down drafts.

### WHAT IS AN INDEX?

An index is a list of securities which are intended to form a performance benchmark for a specific segment of the stock or bond market. Indexes range from very broad indexes which attempt to measure the performance of an entire market to a very narrow index designed to measure the performance of a specific segment of the market. There are indexes now for virtually everything. Here is a partial list of the various types:

Total stock market, large companies, mid size companies, small companies, specific industries, total bond market, treasury bonds, gnm bonds, corporate bonds, long term bonds, mid term bonds, short term bonds, convertible bonds, and money market funds, all foreign markets, specific countries, continents, regions, and even the entire world. Individual exchanges like the New York stock exchange, the AMEX, and NASDAQ have their own indexes. Trading vehicles like options, futures, and commodities also have indexes. There is even a broad range of real estate indexes for various segments of the commercial, industrial, and residential markets.

A major index providers are the Standard & Poors Company of New York, Dow Jones & Associates Inc, of New York, Wilshire Associates of Los Angeles (stocks), the Frank Russell Co. of Tacoma Washington, Lehman Brothers of New York (bonds) and Morgan Stanley Capital International of NY & London (international). The leading index fund managers are Wilshire Associates, the Vanguard Group of

*(Continued on page 3)*

# INDEX FUND INVESTING



(Continued from page 1)

funds in all 9 categories and over **90%** in six categories. Finally, on page 7 we compare 10 years of account growth in an S&P index portfolio with an average mutual fund portfolio. We estimate that low fees and trading costs accounted for about 1.4% of the 2.1% gap between the after-tax return of the index funds and the average active fund. Because of the magic of compounding that little 2.1% gap will make a tremendous difference over a long period. After 36 years the portfolio of the index fund investor will be twice as large as that of the active fund investor.

**Computers and Indexes:** The power of index funds is one of the products of the computer revolution. The widespread use of Indexes really began in the early 1970s when people started using computers to make stock market calculations. Computer calculations enabled the introduction of index funds, and the first two (based on the S&P 500 index) appeared in the mid 1970s. Before powerful PCs and the Internet superior active managers were able to consistently beat the market averages because they did significantly better research. Fidelity was the dominant mutual fund shop in the '60s, '70s, and '80s because its sophisticated research department had better information than other people, and its managers used it intelligently. Today's high-powered PCs and the Internet have changed everything. Information that a financial adviser had to pay thousands of dollars to obtain on a delayed basis in the mid-1980s is instantly available to everyone in the world, for free, over the Internet. This flood of free information has made it become extremely difficult for any active fund manager to beat the market, because everybody else has exactly the same information.

**Which indexes are the best to use for investing in US stocks?** The table below compares some of the principal features of each of the broad based US equity style indexes from the four leading providers. All except those from Standard & Poors (S&P) are selected by mathematical formulas calculated by computers. The sidebar on page 7 examines the work of the S&P selection committee. The number of stocks in the four indexes range from 1000 to 3000. A smaller number of stocks allows an index provider to choose higher quality stocks. The number of stocks in the Dow Jones indexes varies slightly from year to year.

S&P has the lowest annual turnover. They replace stocks that merge, go bankrupt, or no longer represent their industry. The others are adjusted regularly based on a quantitative formula. There is some indication that propeller heads have cracked the Russell formula and 'front run' the semi-annual index revisions. In the four charts on page 5 we compare the total return of the four index groups over 5, 10, and 15 years ending March 31, 2002. The S&P indexes led in all three of the total market categories, and most of the others. They clearly give an index investor a nice head start. □

Index	# Stocks	How Selected	Funds Using	Changes
Dow Jones	1000?	math formula	SSgA ETFs	annual
Frank Russell	3000	math formula	many	semi-annual
Standard & Poors	1500	committee	many	as needed
Wilshire & Assoc	2500	math formula	Wilshire OEFs	annual+

OEF means Open End Fund. ETF means Exchange Traded Fund.

WHAT IS AN INDEX? (Continued from page 2)

Valley Forge, PA, State Street Global Advisors of Boston (SSgA), and Barclays Global Investors of San Francisco & the UK (BGI).

Indexes have been created and maintained for a variety of reasons:

To measure the performance of a money manager (Wilshire) or a manager evaluation service (Russell) against an average. Investors want to find the best manager, and companies who know they are achieving superior performance want to be able to tell others about it. Indexes help to market a company's services.

As a news service to their readers. They provide a quick summary of the status of a particular market so the investing public will know how it's doing. Financial publisher Dow Jones has been providing its Industrial Average since 1896.

To try to establish a standard benchmark for a particular market. By linking their name to the "standard" index they obtain a long-term brand-name recognition for their company. This has helped Standard and Poors become a world wide source of financial information and publications.

Today the popular indexes are a major source of revenue for the index providers. Indexes are protected by intellectual property rights and their use is licensed by the owners. Companies that form a new index fund must obtain a license from the index provider to use their name and index data. They are not cheap. The computation, marketing and distribution of index data is a big business. □

## EXCHANGE TRADED FUNDS - ETFs



**History:** ETF's are a new variety of mutual funds that has become very popular in the last few years. The first ETF, called Spiders, or SPDR, was approved by the SEC in 1995. It was an index fund based on the Standard & Poors 500 Index. Similar funds were added gradually, based on other indexes. They included Diamonds, based on the 30 stocks in the Dow Jones Industrial Average, and Cubes, based on the NASDAQ 100 Index. After several years of slow growth, they have suddenly been embraced by institutional and individual investors alike.

All three funds noted above are managed by State Street Global Advisors (SSgA) in Boston. This idea really took off in July 2000 when Barclay Global Investors (BGI) introduced about 35 ETFs called iShares. There are now over 100 ETFs. In addition to the funds from SSgA and BGI, some of the others entering the fray are Merrill Lynch, with their Holders; and Vanguard, with their Vipers.

**Types:** So far, all of the ETFs have been index funds. They fall into four main groups: U. S. equity index funds, foreign equity index funds, single country funds, and single industry or sector funds. A few bond index ETFs have also been released. Actively managed ETFs are rumored to be coming soon.

**Trading:** Like open-end mutual funds, they consist of a basket of individual stocks. Investors buy and sell ETFs on a stock exchange, while open-end funds are traded directly with the fund family. Most ETFs are traded on the American Stock Exchange (AMEX). ETFs are priced constantly during the day like stocks. To buy & sell shares in an ETF, investors pay the same brokerage

commissions that they pay to buy a similar number of individual stocks.

**Fees:** The annual management fees for ETFs are very low. The annual fee for the BGI S&P 500 iShares is 0.08%. The fee for the BGI S&P 400 and 600 iShares is only .20%. Compare this to the 0.18% for the Fidelity Spartan Market Index 500 fund. The average equity mutual fund has a 1.3% expense ratio.

**ETF Creation Units:** ETF shares are created differently than those of open-end funds. An institutional investor, like a pension fund, stock broker, or bank, buys a basket of stocks (or bonds) proportionate to the securities held by the ETF. These baskets of stocks are called "creation units." Creation units are worth several million dollars. The institution then trades the creation unit to the ETF for share certificates in the ETF of equal value. The institution can divide these ETF shares among its individual clients, or sell them on the stock exchange where they trade.

**Redemptions:** ETFs do not redeem individual shares for cash. When an institution wants to sell it delivers a creation unit to the fund, which gives them a pro-rata share of all the securities in the fund, instead of cash. The fund can even give the institution the stocks it holds with the lowest cost basis. When the institution later sells the individual stocks, it must pay all of the accrued capital gains taxes on those stocks. The ETF and its remaining shareholders do not. ETFs were designed to solve the tax problem of open-end funds described in the sidebar. The unique design of ETFs will reduce the taxable distributions to long term investors in the fund.

### Open-end Mutual Funds:

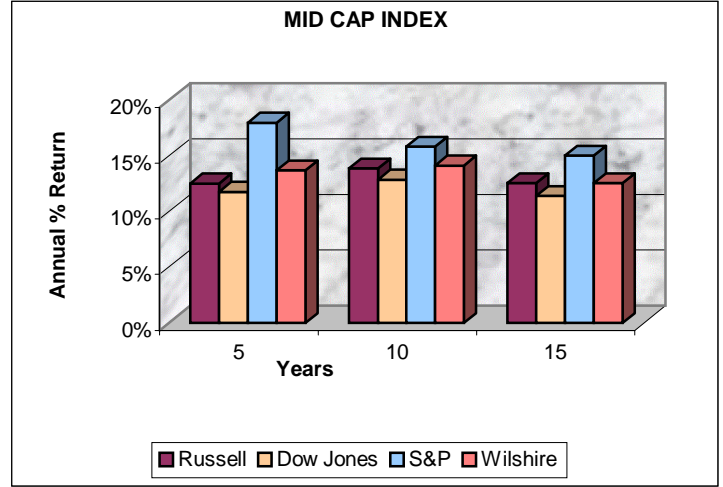
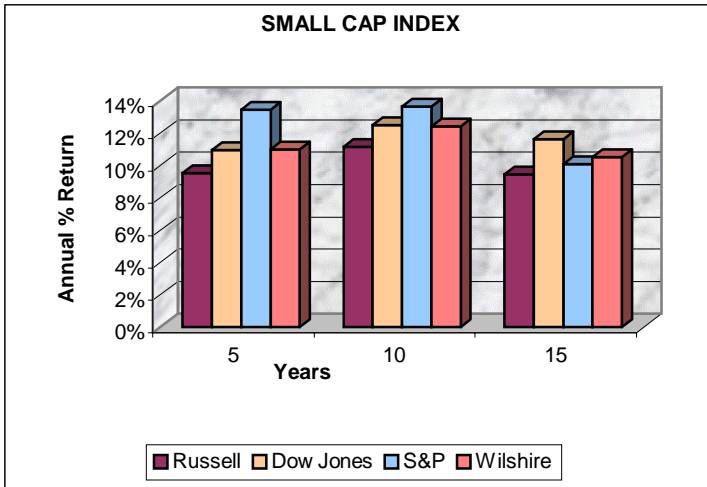
The funds we buy from families like Fidelity & Vanguard are called open-end funds. New mutual funds are started with seed money from the fund family. The fund then buys a group of stocks or bonds with the seed money. After awhile the fund is opened up to individual investors who pay money for fund shares - which the managers use to buy more securities. At any time investors can sell their shares back to the fund (redeem them) and receive cash equal to the current price. The shares are priced once, at the end of each trading day. All of the trading of fund shares is with the fund itself. They are called 'open end' because the number of outstanding shares varies with investor demand.

### Open-end Fund Tax Problem:

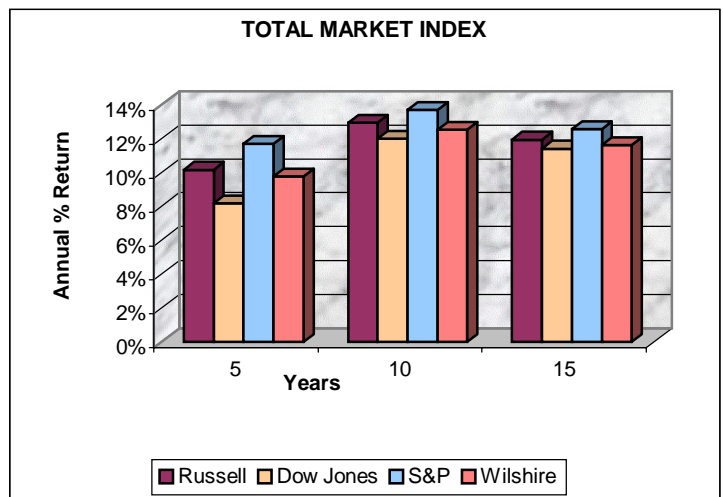
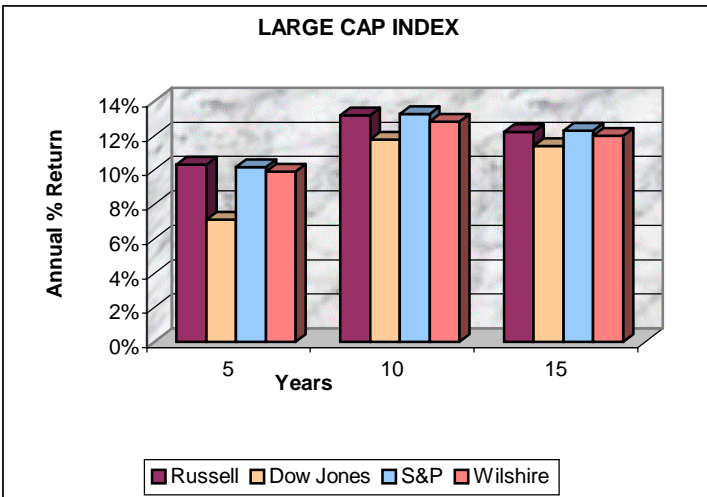
Many of you with taxable accounts experienced large capital gains distributions in the last three years because fund managers were forced to sell stock positions with large accumulated gains. Many investors were selling their shares back to the fund, and the managers needed to raise cash to pay for them. This is a common occurrence with open-end mutual funds. When a manager sells stocks with gains during the year, those long and short term capital gains must be distributed to all of the remaining shareholders in the fund before the end of the calendar year. This means that short term traders can pass the duty to pay taxes onto the long-term investors who stay in the fund. The disproportionate distribution of taxable gains to the remaining investors has been one of the major disadvantages of open-end mutual funds.



COMPARISON OF MAJOR US STOCK MARKET INDEXES

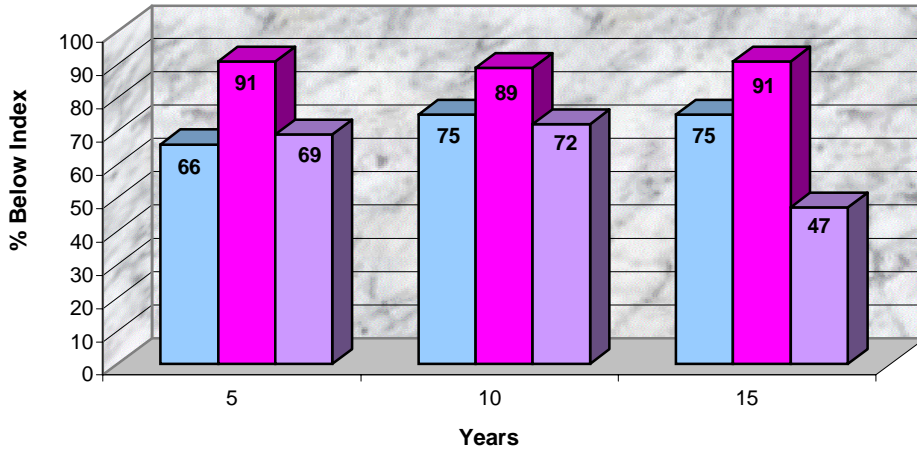


People often ask us which index is better. The four charts on this page compare the total returns of the four major US equity market indexes. The data was based on the 5, 10 and 15 year periods ending March 31, 2002. Neither Dow Jones nor Standard & Poors had a total market index for this period. So we used their other index data to create a weighted average for them. The weights we assigned were: Large cap 76%, Mid cap 16%, and Small cap 8%. We think those weightings are reasonable based on our experience and knowledge. Over time these percentage figures will vary somewhat as the market ebbs and flows. However, those variations should not affect the results. The Standard & Poors indexes led every category except the 15 year small cap and the 5 year large cap. Their 500 large cap index and 400 mid-cap index are the benchmarks used by most money managers. The Russell 2000 is generally accepted as the standard for small caps. The Wilshire 5000 has gradually gained acceptance as the standard for measuring the performance of the entire US stock market. The combined Standard & Poors index out-performed the Wilshire 5000 by 1% annually over the longer periods and by almost 2% annually over 5 years. Many institutions prefer to use the Wilshire or Russell indexes because the constituent stocks are selected by a computer using quantitative formulas. We like the Standard & Poors indexes because they are not. □





Funds Below S&P Indexes (Pre-tax)



After Tax

The table below shows the percentage of funds below the S&P indexes after taxes on distributions and sales over 5, 10, and 15 years.

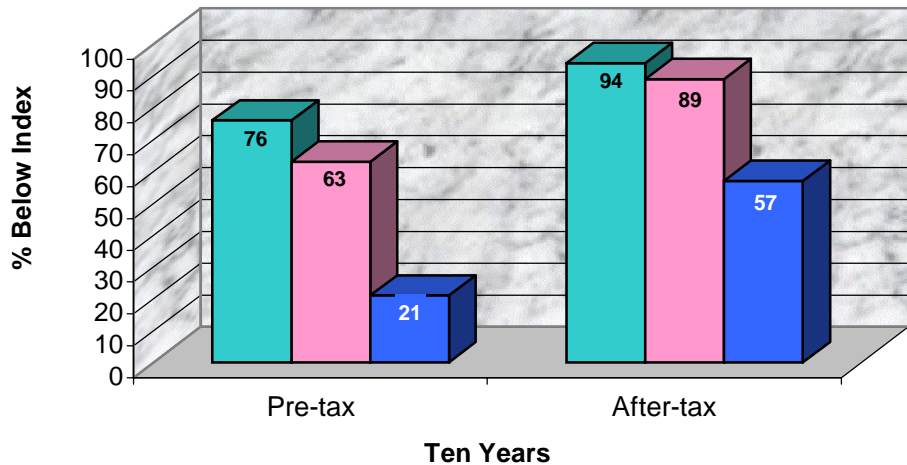
Index	5yr	10yr	15yr
500	85	93	90
400	97	98	98
600	85	95	82

■ S&P Lrg Cap 500 ■ S&P Mid Cap 400 ■ S&P Sml Cap 600

The chart above shows the percentage of open-ended funds with annual returns below the Standard and Poors indexes over a 5, 10, and 15 year period ending on March 31, 2002. All of the returns are pre-tax. The chart below shows the percentage of open-ended funds with annual returns below the Russell indexes over the ten year period ending December 31, 2001. Results are shown both pre-tax, and after all taxes on distributions & sales. The index number in the charts do not include management fees and expenses. However the annual fees for the S&P and Russell iShares range from only .1 to .25%. The after-tax data for the S&P indexes is shown in the table above. The index numbers were reduced by the BGI iShares management fee. The results in both charts and the table are skewed in favor of the funds because of a survivorship bias. Weaker performing funds are shut down or merged into stronger funds who do not inherit their track record. But the Morningstar database only includes the strong funds that survived. This problem is especially acute over longer time periods. If we had been able to include those failures the number below the index would be even higher.

These two charts show that it is very difficult for an active manager to out perform an equity index. Taxes, management fees, and trading cost drag most of them under.

Funds Below Russell Indexes



■ Russell Large Cap Idx ■ Russell Mid Cap Idx ■ Russell Small Cap Idx

## EXCHANGE TRADED FUNDS - ETFs



(Continued from page 4)

**Liquidity Issues:** The trading volume in some of the sector, style, and foreign ETFs has been extremely low at times. This liquidity problem has led to larger spreads between the bid and ask prices, and greater price volatility. This has not been a problem with the BGI iShares representing the S&P 500, 400, and 600 indexes. We will not be buying any ETFs with a history of liquidity problems.

**ETF Returns:** Since ETF managers do not have to hold cash to pay for redemptions they can be close to 100% invested in the index stocks or bonds. They keep about .1% cash for fund expenses, and to match any

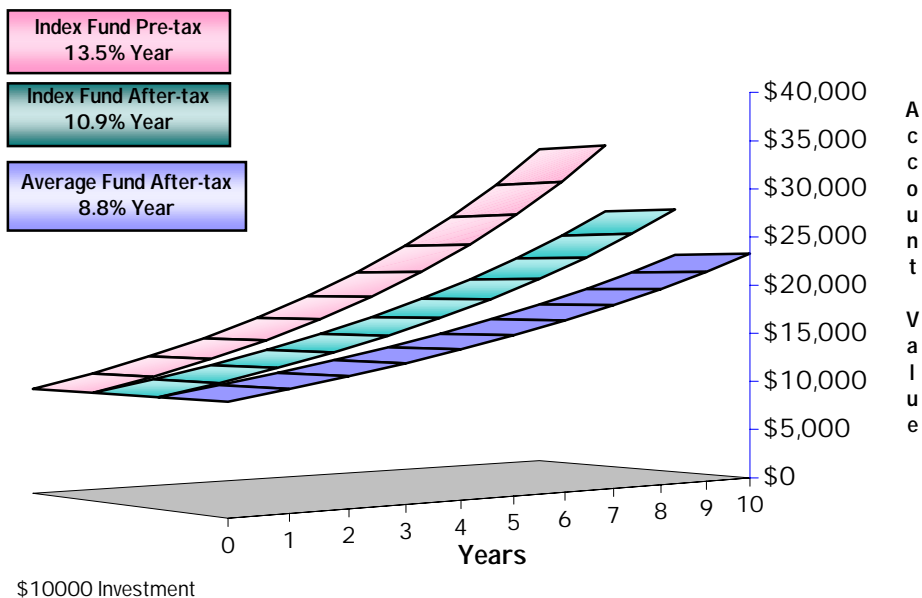
changes in the underlying index. This will increase their long term investment returns.

The SSgA ETFs are formed as unit investment trust, which means they can only reinvest their dividends quarterly. The BGI iShares are structured differently, so they can reinvest their dividends daily. This small advantage boosts their total return. The iShares also have slightly lower management fees. SSgA does not have a small cap fund based on the S&P 600 index. For these reasons we prefer the BGI iShares to the SSgA funds. More information about BGI and their funds can be found on their website. [www.iShares.com](http://www.iShares.com)

**Using ETF in a Portfolio:** A taxable account should consider using the S&P iShares exclusively for their diversified US equity investments. Of course your tax bracket, and the tax impact of selling existing funds with accumulated capital gains must be considered. This account can also begin to use the new ETFs for assets classes like bonds & REITs.

Tax deferred and tax free account can use ETF as core holdings, which will be flanked by skilled active fund managers who are achieving superior long term results. Many will manage small cap funds, where there is more room for their skill in uncovering and interpreting new information. □

### 10 YEARS OF ACCOUNT GROWTH



In the chart above we compare 10 years of account growth in a portfolio of S&P index funds with a portfolio of open-end funds that grew at the category average. The period ended on March 31, 2002. We used the largest index fund for each category to obtain both pre-tax and after tax results. Both portfolios had 76% large cap, 16% mid cap and 8% small cap. The \$10,000 initial investment grew to \$28,139 in the after tax index portfolio and \$23,243 in the after tax mutual fund portfolio.

Selection of the Standard & Poors index stocks.

The stocks in each of the Standard & Poors indexes are selected individually by a committee, and not by any quantitative method. For many years their process was top-secret. But in recent years they have opened the curtain slightly and released more information about their criteria. They are:

- Roughly match the sector and major industry allocations of the market.
- Companies that are highly representative of each industry.
- Firms with a history of reported earnings.
- Sufficient outstanding shares so they can be easily traded by institutions and individual investors.
- Solid fundamentals so they will stay in the index for many years.

Their process has worked. Their US indexes have consistently included the leading companies in each industry, regardless of the company's size. The result is a powerful set of indexes, as shown in the charts on pages 5-7.

## CREATING A PORTFOLIO

The next step is to forge your index funds into a powerful portfolio. This topic needs a full newsletter in itself. But consider this. The most popular index for investors is the S&P 500 large cap index. From 2000-2 it suffered an annual loss of -14.6%, for a total 3 year decline of -37.7%. However, a portfolio of the three S&P cap size indexes with the market weights on page 5 reduced the annual loss to -10% and the 3 year total loss to -27.1%. REITs and government bonds had nice gains during this period as interest rates fell. A well balanced portfolio with 50% S&P stock indexes, 10% REITs, and 40% GNMA & corporate bonds did not change during this 3 year period. A broadly diversified portfolio can increase your return and lower your risk.



## EPILOGUE



## EXECUTIVE SUMMARY

Some of the articles in this report have appeared in earlier newsletters or handouts we provided to clients and prospective investors. We have expanded and updated them to reflect our current thinking and to better educate you about this type of investment. We wanted to put them all together in one place, so you would have a handy reference guide for Indexes and Index Fund Investing. All of the data came from Morningstar. This report contains the bare essentials. You should also read the prospectus and annual reports for each fund you buy. We hope this information is helpful to you.

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The computer revolution has enabled the development of a new breed of passively managed funds called Index Funds which contain stocks or bonds from a particular index. Indexes are a fixed group of securities that are used as a benchmark for the performance of a particular market segment. The low management fees & trading cost, infrequent turnover, and broad diversification enable Index Funds to outperform most actively traded funds after all costs and taxes are considered. The new exchange traded index funds (ETFs) are the vehicle of choice because of their unique design. The iShares from Barclays Global Investors based on the S&P 500, 400, and 600 Indexes should enable serious long term investors to capture an extremely high percentage of the future gains in the US equity markets.

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The Power of Using Index Funds  
Active vs. Passive Funds Compared  
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