

THE INDEX FUND ADVANTAGE:

LOW-COST PASSIVE INVESTING

By Albert J. Fredman

Index funds are a plain-vanilla investment that offer disciplined individuals rock-bottom costs, tax efficiency, style consistency, and a chance to beat the majority of actively managed funds over the long haul.

During the unprecedented four-year period through year-end 1998, the S&P 500 produced an amazingly high average annual return of 30.5%, in contrast to its longer-term, 73-year average of 11.2%, according to Ibbotson Associates.

The spectacular surge in large-cap domestic stocks drew legions of investors into S&P index funds, and more than 100 such funds now exist.

But index funds are not designed to be a get-rich-quick vehicle. As a plain-vanilla investment, they offer disciplined individuals a chance to beat the majority of actively managed, large-cap domestic stock funds over the long haul.

However, there is more to indexing than the S&P 500, which mirrors the performance of huge domestic stocks with a \$60-billion median market capitalization. For instance, a more balanced exposure to domestic equities can be obtained with the Wilshire 5000, which tracks about 7,200 companies. More than 75% of the Wilshire's value consists of S&P 500 companies; mid-cap companies represent the majority of its remaining value. A large number of small-cap companies also are included, but they account for a very small proportion of the benchmark's total value.

A LOSER'S GAME

How did indexing become such a popular approach?

One of the first popularizers of the approach was "The Loser's Game," a seminal article by Charles D. Ellis that appeared in *The Financial Analysts Journal* in 1975. According to Ellis, the stock market has become a loser's game like amateur tennis or golf because of the now dominant role played by the professionals. The idea in a loser's game is not to be greedy and try to win big time but simply to do an adequate job and avoid losing points. Many intelligent, highly skilled professionals compete intensely to beat the market, making it increasingly difficult to win big.

With a growing acceptance of the efficient-market hypothesis, indexing began to appeal to pension funds in the 1970s. In an efficient market, the price of each stock hovers very closely around its true value, offering astute stockpickers few opportunities to uncover substantially undervalued companies. Managers pay a high price for making risky bets in their struggle to outperform. Most professionals lag their benchmarks because the high costs of active management are a substantial drag on returns.

The theory is that if you can't beat the market, you can at least closely track it and not do worse than it. Many people have the mistaken conception that it is necessary to outperform the market to get rich. However, you can do very well if you simply combine your patience and discipline with the market's return. It's possible to build a six- or even seven-figure nest egg by regularly investing relatively modest sums over several decades at the market

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return.

Indexed portfolios mimic a market benchmark such as the S&P 500 or the Wilshire 5000. Stocks are owned in proportion to their weight in the index. The first index mutual fund, the Vanguard 500 Index, was introduced in 1976, and was not an instant success. Assets grew slowly until the early 1980s, when the great bull market began; the 500 portfolio reached the \$1 billion asset mark in 1988. By the mid-1990s, the index fund concept had become firmly implanted in the minds of many serious investors and a variety of other index portfolios are available.

INDEXING ADVANTAGES

Index funds offer several advantages:

Rock-bottom costs: Each dollar lost in cost cuts your earnings by a dollar. A rock-bottom expense ratio and minimal transaction costs are hallmarks of a true index fund, and translate into enhanced long-run performance.

Tax efficiency: Because S&P 500 and Wilshire 5000 index funds have minuscule portfolio turnover rates, taxable distributions are very modest. Other index funds also feature low turnover, but it's often higher than for the S&P 500 and Wilshire 5000 portfolios.

Above-average performance: In a typical year, two-thirds of actively managed domestic stock funds lag their benchmarks. This shortfall tends to be about two percentage points for a big-cap stock fund.

Style consistency: Index funds do not stray from their target benchmarks so you need not worry about a manager's so-called "style drift" impacting your asset allocation. These funds also remain fully invested so an impulsive manager can't switch to cash at the wrong time.

Possibly less downside risk: The portfolio of an actively managed fund may be more volatile than that of an index fund if a manager has

made big stock or sector bets or simply holds smaller, less liquid stocks. Because they normally are capitalization weighted, larger, higher quality stocks dominate the major indexes. According to Morningstar's downside risk measure, the Vanguard 500 was 15% less risky than the average domestic equity fund over the past decade. As a recent example, in the summer of 1998's mini-bear market, the average diversified domestic equity fund fell by 22.31% over the July 17 to August 31 period as opposed to the 19.13% setback in the S&P 500, according to Morningstar, Inc.

On average, 85.7% and 83.7% of large-cap equity funds underperformed the S&P 500 and the Wilshire 5000, respectively, for the 10 years ended December 1998, according to Lipper Inc. The percentage of underperformers varies widely from year to year and with different benchmarks. Of course, investors always can argue that by carefully doing their homework and selecting top performers, they can pinpoint the minority of "hot-handed" managers that will outperform in the future. But a stellar track record offers no guarantees. The select group of top performers can and does change yearly.

The longer a fund has delivered a star-studded record, the more likely its margin of superiority will "regress to the mean." A manager's style could go out of favor, a highly successful fund could grow too large to deliver the market-beating performance it once did, or the outperformance could simply have been the result of a lucky bet. And there's always the cost burden.

THE COST ADVANTAGE

The single greatest advantage of index funds is their substantially lower cost. Many actively managed funds impose hefty load charges, which take a big bite out of returns. AAIL members are well aware of the advantages of no-load funds, but

among no-loads index funds have a major edge. According to Lipper Inc., large-cap domestic stock funds have a dollar-weighted average expense ratio of 0.903% versus a corresponding 0.205% for S&P 500 index funds. Dollar-weighted averages take into account where investors' money is. About 43% of S&P 500 index fund dollars were in the Vanguard 500 at year-end 1998.

In addition to their higher expense ratios, actively managed funds normally incur far greater transaction costs than their indexed counterparts. Think of total trading costs as an iceberg. Brokerage commissions are the tip of the iceberg, the "visible" portion of transaction costs. You can spot the average commission rate incurred by a fund in the financial highlights table of the prospectus and shareholder reports. The dealer spread and the market impact costs of trading are the more important, yet "invisible" portion of transaction costs.

The bid-asked spread is generally a bigger cost component than are commissions, especially if the manager deals in smaller, less liquid stocks. ABC Corp. might be quoted at 12 bid, 12¹/₈ asked. A fund manager, like other investors, would generally buy at the asked and sell at the bid. The ¹/₈-point difference is the spread. Funds typically pay only two to eight cents a share in commissions, but they can't easily minimize the spread.

Market impact costs of large block trades can be the most burdensome transaction cost component. A big purchase (sell) order exerts upward (downward) pressure on price. Suppose a manager wants to acquire 300,000 shares of a technology firm at a \$25 target price. The shares may be driven up to \$28, or higher, by the time the order is filled. Market impact costs are particularly evident among larger stock funds. Conversely, an index fund manager places an order to buy or sell a relatively small number of shares of each of, say, 500 stocks. These small

orders have negligible price impacts.

While not easy to measure, trading costs amount to at least 0.5% yearly. For funds that deal in less liquid stocks or have above-average turnover rates, these costs easily can amount to 1%. Because they buy and hold, trading costs are largely avoided by index funds.

COSTS ERODE WEALTH

Over time, small yearly percentage point differences in returns compound to huge dollar differences. Table 1 assumes a \$10,000 initial investment and a 10% return on the S&P 500 index. Future values of the hypothetical investment appear for different time horizons, ignoring costs. The S&P 500 has no expenses so individual funds will underperform the index even if they just match it before costs. The negative numbers in Table 1 measure the amounts by which the ending gross values are eroded by different levels of cost.

With any given expense ratio, the percentage of gross wealth consumed by costs mounts with time. A fund with a 1.25% expense ratio consumes \$895, or 5.6%, of the \$16,105 future gross wealth in five years, but over 30 years its \$50,649 in costs amount to a staggering 29% of the \$174,494 gross wealth. The expense drag is far less with an index fund. A portfolio with a 0.20% expense ratio would cost the investor \$9,271 over 30 years, or a mere 5.3% of the \$174,494 future index value.

Some S&P funds are available with expense ratios of 0.2% or less. But others have significantly higher costs and a few even impose front-end loads. According to Lipper Inc., the performance differential between the best and worst S&P 500 index funds widened to 3.4 percentage points in 1998 from two percentage points in each of the two prior years. Index managers may be able to add a little value, but the expense ratio is the main factor that affects

return differences. Expense ratios are well above 1% at a few S&P 500 index funds.

Transaction costs incurred by actively managed funds can take a big bite out of returns. I have referred only to expense ratios when discussing Table 1, but the impact of transaction costs easily can be considered by assuming that the expense ratios also incorporate these costs. An actively managed domestic equity fund might have expenses and transaction costs that average 2% yearly, costing investors \$73,867 over 30 years. A small stock or foreign stock fund with expenses and transaction costs totaling 2.5% would cost \$86,944 over 30 years. In conclusion, those funds that lose the fewest basis points of cost have the best odds of becoming the real long-run winners.

On an aftertax basis, the advantages of indexing could be even greater in a taxable account. With portfolio turnover rates often as low as 5%, or less, these investments distribute little or no capital gains. Active managers often run their funds with scant regard to the tax consequences of trading. Portfolio turnover rates average between 80% and 90% and large gains often are realized and distributed to shareholders during good years. Some active funds are more tax efficient

than others are, but past tax efficiency is not a reliable guide to future tax efficiency. On the other hand, S&P 500 and Wilshire 5000 funds are normally highly tax efficient because they rarely sell securities.

A ZERO-SUM GAME

Collectively, all investors form the market so if one manager is beating a benchmark by, say, four percentage points, another must be lagging by that amount. Simply put, 500 good stockpickers will profit at the expense of 500 bad ones. Relative performance is, therefore, a "zero-sum game," with outperformers offset by laggards.

Thus, managers face considerable difficulty in struggling to be at a market average because they shoulder the burdens of expenses and transaction costs. Such costs amount to at least two percentage points a year for the typical large-cap domestic stock fund. That's a steep price to pay given that the S&P 500 has returned about 11% on average, as noted earlier. In addition, actively managed funds commonly hold 5% to 10% of their assets in cash, sometimes more. This represents another performance hurdle. Index funds stay fully invested.

In short, a typical actively man-

TABLE 1. COSTS ERODE INVESTMENT VALUE*

	Number of Years			
	5	10	20	30
Future value of \$10,000 earning 10%; no expense	\$16,105	\$25,937	\$67,275	\$174,494
Loss in value with expense ratio of: (\$)				
0.20%	-146	-468	-2,405	-9,271
0.25%	-182	-583	-2,993	-11,513
0.50%	-363	-1,155	-5,859	-22,291
0.75%	-542	-1,715	-8,603	-32,378
1.00%	-719	-2,264	-11,231	-41,817
1.25%	-895	-2,801	-13,746	-50,649
1.50%	-1,069	-3,328	-16,155	-58,912
2.00%	-1,412	-4,348	-20,665	-73,867
2.50%	-1,749	-5,327	-24,796	-86,944

**These numbers are not necessarily predictive of the S&P 500 or any fund.*

aged fund must best its benchmark by at least two percentage points yearly just to stay even. If the market returns 10% during a year, a fund that incurs two percentage points of fees and transaction costs must earn 12% to match the market. This is difficult to do consistently in efficient markets.

INEFFICIENT MARKETS

The general consensus among experts is that indexing works best for large-cap stocks and high-quality corporate and government bonds because managers can't add much value in these efficient markets.

On the other hand, the track record of active managers is much better in other markets—for example, foreign stock managers measured against the Morgan Stanley Capital International Europe, Australasia, Far East ("EAFE") index and small-company stock managers measured against the Russell 2000. Over the 10 years ended December 1998, only 17.4% of foreign-stock funds and a mere 8.3% of small-cap domestic stock funds underperformed the EAFE and Russell 2000, respectively, according to Lipper Inc. Astute stockpickers apparently can add value in the less efficient small-stock and foreign market arenas. At least this was true of the funds in existence for this 10-year period.

Foreign-stock index funds have to live with constraints. An international index fund would be bound by the country allocations of its target benchmark such as the EAFE. Conversely, an international fund manager could vary the allocations, avoiding or minimizing exposure to severely troubled markets like Japan's in the 1990s. Managers also can search for inefficiently priced bargain stocks that are not included in a target benchmark.

Small stock index funds also face problems. Indexing to the Russell 2000 forces a fund to stick with small companies, many of which are mediocre. The up-and-coming small

companies are forced out of the portfolio because they outgrow the benchmark, whereas an actively managed small-stock fund could retain some of its winners. In addition, there is a higher turnover in the composition of the Russell 2000 than the S&P 500, so that small-company index funds will need to do more buying and selling than their big-cap relatives, which leads to higher transaction costs and greater taxable distributions.

However, a case can still be made for indexing because costs are higher in less efficient markets. Highly skilled investors will have more opportunity to outperform in an inefficient market, but less skillful managers could underperform by a greater magnitude. Like efficient markets, inefficient markets are a zero-sum game, so the laggards will offset the outperformers. But management fees are greater and trading costs higher in illiquid markets where investors face wider bid-asked spreads and higher market impact costs.

Table 2 contains a simple illustration. The top 10% of stock fund managers perform three percentage points per year better than average in an efficient market and five percentage points above average in an inefficient market. Conversely, the bottom 10% do the reverse. Total fund costs (expense ratios plus transaction costs) are 1.5% in efficient markets and 2.5% in inefficient markets. After costs, the top managers garner excess returns of 1.5% in efficient markets and 2.5% in inefficient markets. The bottom 10% generate returns of -4.5% and -7.5%, respectively.

Thus, the superior results of skilled stockpickers are eroded by greater costs in inefficient markets, and the inferior results of the laggards are dragged down further by costs.

Another possible plus of index funds that target inefficient markets is that their managers may be able to improve results significantly by employing a "patient buyer" strategy to get a better price on illiquid stocks with wide spreads. Essentially, the manager will only buy a stock when the price is right. This works well with funds that target an index of many stocks such as the Russell 2000. In this case a manager does not buy all the stocks in the benchmark, but rather a smaller sample that will mimic the index, so he can be picky about price.

AVOIDING STYLE DRIFT

Mutual funds are increasingly being labeled by their investment style—such as "small-cap growth" or "large-cap value." This tells you what kind of stocks they supposedly target. Active managers may stray from their style in an effort to improve performance if their group is lagging. In another case, a small-stock fund may drift from its style because it has received so much new money that the manager decides to invest in some bigger companies. Or a domestic equity fund may decide to move a sizable chunk of its money into foreign companies. Still another example is a growth fund

TABLE 2. THE BURDEN OF EXPENSES ON RETURNS FOR TOP AND BOTTOM MANAGERS

	Return Difference From the Average (%):			
	Before Expenses		After Expenses*	
	Top 10%	Bottom 10%	Top 10%	Bottom 10%
Efficient markets	3	-3	1.5	-4.5
Inefficient markets	5	-5	2.5	-7.5

**Assumed costs are 1.5% in efficient markets and 2.5% in inefficient markets.*

Source: The Vanguard Group.

that moves heavily into cash and bonds because the manager fears a downturn.

Style drift can lead to unexpectedly good or bad performance of a fund

relative to its peers. It's usually better if a fund sticks to its style so investors won't be surprised. Style drift can be a problem if you're trying to maintain a predetermined

mix of funds in your portfolio. For instance, if you have 20% of your equity allocation in a small-stock growth fund you probably wouldn't want that slice to fall to 10%

because the manager shifts half of the assets into blue chips. Index funds protect you from style drift.

CONCLUSION

Because there are so many highly intelligent, well-trained, competitive professional investors, money management has become a loser's game. This makes it difficult both for individual and professional investors to beat the market. By avoiding risky investment bets and being a penny-pincher with fund costs, you stand a better chance of building a substantial nest egg through the magic of compounding. With their natural cost advantage, index funds have become increasingly popular, especially as core holdings. Contrary to popular belief they can even make sense when markets are inefficient, although the arguments for tracking small-stock and international indexes are not as strong as those for the S&P 500 and the Wilshire 5000. Of course, not all index funds are equivalent. If you're shopping for any index fund, stick with those that have the lowest expense ratios in their respective categories.

Table 3 provides a list of the index funds along with the indexes they track and their expense ratios. ♦

TABLE 3. INDEX FUNDS

Fund (Ticker)	Index Followed	Expense Ratio (%)
Stock Funds		
American Century:Global Gold/Inv (BGEIX)	FTSE Gold Mines	0.69
Aon Funds:REIT Index (AREYX)	Morgan Stanley REIT	0.51
Vanguard REIT Index (VGSIX)	Morgan Stanley REIT	0.24
Rydex Srs Tr:OTC Fund/Inv (RYOCX)	Nasdaq 100	1.13
Vanguard Small-Cap Index (NAESX)	Russell 2000	0.23
Aon Funds:S&P 500 Index (ASPYX)	S&P 500	0.37
Dreyfus Index Fds:S&P 500 Index (PEOPX)	S&P 500	0.50
Fidelity Spartan Market Index (FSMKX)	S&P 500	0.19
Galaxy Funds II:Large Company Index (ILCIX)	S&P 500	0.40
Northern Stock Index (NOSIX)	S&P 500	0.55
S&P 500 Index, CCM Partners (SPFIX)	S&P 500	0.20
Schwab S&P 500/Inv (SWPIX)	S&P 500	0.35
Scudder S&P 500 Index (SCPIX)	S&P 500	0.40
SSgA:S&P 500 Index (SVSPX)	S&P 500	0.17
Strong Index 500 (SINEX)	S&P 500	0.45
T. Rowe Price Equity Index 500 (PREIX)	S&P 500	0.40
USAA S&P 500 Index (USSPX)	S&P 500	0.08
Vanguard 500 Index (VFINX)	S&P 500	0.19
Vanguard Growth Index (VIGRX)	S&P 500/BARRA Growth	0.20
Vanguard Value Index (VIVAX)	S&P 500/BARRA Value	0.20
Dreyfus Index Fds:Midcap Index (PESPX)	S&P MidCap 400	0.50
S&P Midcap Index, CCM Partners (SPMIX)	S&P Midcap 400	0.40
Galaxy Funds II:Small Company Index (ISCIX)	S&P SmallCap 600	0.40
Galaxy Funds II:Utility Index (IUTLX)	S&P Utilities	0.40
Schwab 1000 Fund/Investor (SNXFX)	Schwab 1000	0.46
Schwab Small Cap Index Fd/Inv (SWSMX)	Schwab Small Cap 1000	0.52
Vanguard Extended Market Index (VEXMX)	Wilshire 4500	0.23
Fidelity Spartan Total Market Index (FSTMX)	Wilshire 5000	0.26
Vanguard Total Stock Market Index (VTSMX)	Wilshire 5000	0.20
Vanguard Balanced Index (VBINX)	Wilshire 5000 (60%)/Lehman Aggreg Bd (40%)	0.20
Bond Funds		
Galaxy Funds II:US Treasury Index/Ret A (IUTIX)	Galaxy U.S. Treasury	0.40
Schwab Total Bond Mkt Index (SWLBX)	Lehman Aggregate Bond	0.31
Vanguard Total Bond Mkt Index (VBMFX)	Lehman Aggregate Bond	0.20
Vanguard Intermediate-Term Bond Index (VBIIIX)	Lehman Fund Intermd (5-10) Gov't/Corp	0.20
Vanguard Long-Term Bond Index (VBLTX)	Lehman Fund Long (10+) Gov't/Corp	0.20
Schwab Short-Term Bond Mkt Index (SWBDX)	Lehman Fund Short (1-5) Gov't/Corp	0.46
Vanguard Short-Term Bond Index (VBISX)	Lehman Fund Short (1-5) Gov't/Corp	0.20
International Funds		
Vanguard Total International (VGTSX)	MSCI EAFA + MSCI Emerging Mkts Free	0.00
Vanguard Emerging Mkts Stock Index (VEIEX)	MSCI Emerging Markets Free	0.57
Vanguard European Stock Index (VEURX)	MSCI Europe	0.31
Vanguard Pacific Stock Index (VPACX)	MSCI Pacific	0.35
Schwab International Index/Investor (SWINX)	Schwab International	0.61

Source: AAI's Quarterly Low-Load Mutual Fund Update/Standard & Poor's Micropal. Data as of March 31, 1999.