

The Pursuit of After-Tax Returns

Indexed Exchange-Traded Funds vs. Indexed Separately Managed Accounts

By Patrick Geddes

Exchange-traded funds (ETFs) offer retail and nontaxable investors convenient and low-cost access to the many benefits of indexing broad-market domestic or foreign stock benchmarks. However, for most taxable investors with sufficient assets to qualify for separately managed accounts (SMAs), SMAs can go beyond the basic tax efficiency of ETFs by creating a unique additional tax benefit while still delivering indexing at low cost. Tax-loss harvesting SMAs can increase after-tax returns for index portfolios from 0.80 percent to 1.74 percent per annum over ETFs. This article examines alternative indexing using SMAs and compares the costs and benefits of ETFs and SMAs.

Background

Exchange-traded funds have grown immensely popular in the past decade, a reflection of their low costs, general tax efficiency, and easy access for retail investors. Broad-market stock index ETFs reflect most of the benefits of traditional index funds, including higher pre-tax returns than average for active managers and avoidance of the tax drag of active stock selection.

For taxable investors, however, ETFs may not provide the highest possible return available from indexing after taxes. Index-invested SMAs, on the other hand, can take advantage of tax-loss harvesting and deliver higher after-tax returns than ETFs.

Both ETFs and SMAs provide exposure to broad-market benchmarks through a transparent indexing strategy; ETFs do so through a single security that in turn owns the underlying stocks in the benchmark, while an SMA holds the actual individual stocks. Both can earn a higher return by saving on expenses paid to money managers, but only SMAs can save a lot more on expenses paid to the government in the form of taxes.

The following is a summary of comparisons between ETFs and SMAs:

- SMAs and ETFs both offer low-cost indexing.
- Legal structure allows SMAs to benefit from tax-loss harvesting to add value.
- SMAs can increase returns after tax from 0.80 percent to 1.74 percent per annum versus ETFs.
- SMAs slightly increase portfolio risk.
- ETFs tend to charge slightly lower fees.

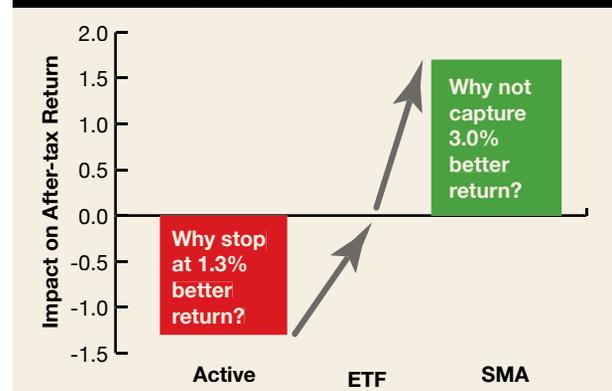
- ETFs tend to be superior for small portfolios or for some nontaxable investors.
- SMAs tend to be superior for many taxable investors with enough assets to qualify.
- SMAs offer additional flexibility and customization vs. ETFs.

Mechanics of Tax-Managed SMAs

How do index SMA portfolios actually create higher returns after taxes? The basic concept, called loss harvesting, incorporates holding a portfolio's winners and selling its losers while rebalancing with an index methodology to maintain constant exposure to a benchmark, e.g., the S&P 500. As a simplified example, if Coca-Cola is at a loss within a portfolio, the stock can be sold and replaced with Pepsi, which still keeps the portfolio in balance with the benchmark's exposure to soft-drink companies. Thus a taxable investor can recognize the tax loss, which can shrink the amount the investor sends to the Internal Revenue Service (IRS) while still earning about the same pre-tax return as the benchmark. It may seem counterintuitive to value losses as beneficial, but reducing expenses (e.g., taxes) can improve the bottom line as effectively as increasing return. Furthermore, the discipline of forced selling can overcome behavioral biases of investors who resist the acknowledgement of their losses. In other words, investors don't like realizing their losses in a tax sense because it means they have to realize them in a psychological sense.

The first step to understanding the value added requires a shift from measuring investment performance that ignores

FIGURE 1: IMPACT OF GAINS ON RETURNS





taxes (i.e., pre-tax return) and focusing on after-tax return. For taxable investors, after-tax return is the only number that really counts anyway. Savvy taxable investors who choose ETFs already benefit enormously from the improved tax efficiency of indexing over active management. Such ETF investors avoid the significant tax penalty from active managers' high-turnover strategies that trigger high tax bills for their investors. The tax drag from gains booked by active managers has averaged 1.3 percent per annum of lost returns over the past 15 years.¹

However, investors with sufficient assets to qualify for SMAs can go beyond simply eliminating the tax penalty created through active management. Investors who qualify for SMAs can create a tax benefit while still indexing at very low cost. Because of the legal structure of ETFs, losses cannot be passed through to their shareholders. SMA investors, however, can benefit from pre-tax returns similar to a benchmark, like conventional indexing, and superior after-tax returns in the form of a lower tax bill. Figure 1 illustrates how moving from the average active manager to traditional indexing through an ETF improves after-tax return by 1.3 percent per annum by eliminating the tax drag shown in red.² Through SMAs, a taxable investor can capture up to an additional 1.7 percent per annum in lower taxes, as shown in green, for a total of up to 3.0 percent better return. Note that these benefits presume that investors are paying taxes at high marginal rates and that they have both long-term and short-term gains from other strategies.

Table 1 presents a simple example of how this approach adds value in an overall portfolio during the first year of an index SMA. In any portfolio, the value of losses generated presumes the presence of taxable gains from sources such as active strategies or disposition of concentrated positions or other assets.

TABLE 1: EXAMPLE OF VALUE ADDED

		Hedge Fund Plus ETF	Hedge Fund Plus SMA
Portfolio Allocation	Hedge Fund, Beginning Value	\$5,000,000	\$5,000,000
	Index Equity, Beginning Value	\$5,000,000	\$5,000,000
	Total Portfolio, Beginning Value	\$10,000,000	\$10,000,000
Portfolio Pre-tax Return		10.0%	10.0%
Pre-tax Portfolio, Ending Value		\$11,000,000	\$11,000,000
Tax Impact	Capital Gain, Hedge Fund	\$500,000	\$500,000
	Capital Gain, Index Equity ^a	\$0	-\$840,000
	Net Capital Gain	\$500,000	-\$340,000
	Tax at 42%	-\$210,000	\$0
Ending Wealth		\$10,790,000	\$11,000,000
Value Added by SMA, \$			\$210,000
Portfolio After-tax Return		7.9%	10.0%
Value Added by SMA, %			2.1%

TABLE 2: FORECAST ANNUAL VALUE ADDED, AFTER TAXES

	No State Tax	Moderate State Tax	High State Tax
Liquidated	0.80%	0.86%	0.93%
Not Liquidated	1.34%	1.54%	1.74%

Higher Returns

So how big is this supposed benefit from the loss harvesting over a longer time horizon? Taking the same portfolio introduced in table 1, table 2 shows estimates of the annual theoretical after-tax return improvement generated by a loss-harvesting strategy over 10 years, based on different assumptions about tax rates and whether assets are liquidated or passed on to charities or heirs.

These benefits reflect the advantage of an SMA versus an index ETF, ignoring expenses for either. The numbers are calculated based on Monte Carlo simulations that forecast after-tax performance across a wide range of market outcomes (see appendix 1 for details). The benefits shown reflect income tax rates as of 2011, but the advantage of an SMA would jump further if federal rates increase in 2013 as currently legislated, due to either previous tax cuts from 2001 and 2003 set to expire or from the Medicare tax hike of 3.8 percent on investment income.

A traditional criticism of loss harvesting SMAs has been the fact that in an average rising market the opportunities for losses diminish over time due to the fact that the overall basis in a portfolio declines while the market value increases. Based on the same Monte Carlo simulations, the quantity of losses available to harvest drops significantly in years six through 10, and remains minimal thereafter. While that might appear to diminish the value of SMAs versus ETFs, the time horizon for liquidated portfolios actually has little impact on the value differences between the two. Over longer periods of time, the portfolio does "ossify," i.e., provides fewer opportunities to add value through losses, but that decline is offset by the increase in the time value of the losses already realized.

Because the economic benefit of harvesting derives from deferred taxes in the case of liquidation (and even higher value from elimination of taxes

TABLE 3: HARVESTING STRATEGY COMPARISON, LIQUIDATION ONLY

Harvesting Strategy	Losses Forecast over 10 Years, % of Original Portfolio	Forecast Annual After-Tax Benefit from Harvesting	
		High State Tax + Not Liquidated	No State Tax + Liquidated
ETF	12%	0.35%	0.16%
SMA	64%	1.74%	0.80%

in the case of an estate step-up), the longer the deferral period the higher the value of the SMA strategy. For example, in rising markets that reflect long-term U.S. stock market averages over the past 85 years, the most losses will be realized in the first year of the strategy. Since that benefit accrues effectively as an interest-free loan from the government, it's better to hold such a loan for 20 years rather than for 10 years. For that reason, the value added for 10-, 20-, or 30-year holding periods is almost identical. Thus the strategy still adds value even when the losses have dried up, although the direct benefit of the SMA manager may diminish. Investors could let "seasoned" SMA accounts convert to completely unmanaged, but then the investor faces the trade-offs between saving fees and the administrative responsibility of managing cash inflows and outflows, the build-up of dividends, and the possibility of a rising tracking error as a portfolio remains completely unmanaged.

While loss harvesting in an SMA provides significant benefits over even long time periods, some investors have taken the approach that they can just as easily harvest losses using only ETFs, which to a limited extent is true. An investor can use the same basic approach of selling an ETF when it's down, although IRS rules prevent

TABLE 4: HARVESTING ACROSS MARKET CONDITIONS

Market Return	ETF	SMA
>+20%	No harvesting	Some harvesting
0% to +20%	No harvesting	Good harvesting
-20% to 0%	Some harvesting	Excellent harvesting
<-20%	Excellent harvesting	Excellent harvesting

immediate reinvestment into what is defined as substantially the same asset. While ETF investors may be prohibited from repurchasing the identical asset, some interpret IRS rules as not applying to shifts in underlying indexes, such as selling an S&P 500 index fund then buying a Russell 1000 fund.⁴ Nonetheless, investors can create some limited losses through this approach, but significantly less benefit than can be generated in a separate account. See appendix 2 for more detail on the difference in volatility that explains the increase in harvesting opportunities.

Table 3 describes total losses and the value added (tax alpha) estimated through Monte Carlo simulations for both ETF and SMA strategies. Table 4 describes benefits across different market return environments, presuming that the wash sale rules do not limit loss harvesting. SMAs offer superior harvesting opportunities except for extremely negative markets.

Extra Costs Incurred

Now that we've seen the substantial benefits of SMAs over ETFs for taxable investors, the skeptic might ask, "That's all well and good, but what are the disadvantages in terms of risk and fees?"

Costs associated with risk.

Since both index SMAs and ETFs are really just variations of indexing, the appropriate metric is comparative risk to the benchmark. This risk, referred to as tracking error, reflects the probability of missing the benchmark, whether by outperforming or underperforming. Since ETFs that are managed to such benchmarks as the S&P 500 or Russell 3000 produce only negligible tracking error, we'll focus on the tracking error of SMAs. For more information about tracking error, see appendix 3.

SMAs, like index ETFs, attempt to mimic the performance of an underlying benchmark index through holding the individual stocks. Because of the harvesting of losses in the SMA version, it's necessary to sell the stocks

TABLE 5: NET AFTER-TAX RETURN IMPROVEMENT FOR SMA OVER ETF

Cost Difference Between Approaches: SMA fee minus ETF fee		0.00%	0.05%	0.10%	0.15%	0.20%	0.25%
Liquidated	No State Tax	0.80%	0.75%	0.70%	0.65%	0.60%	0.55%
Liquidated	High State Tax	0.93%	0.88%	0.83%	0.78%	0.73%	0.68%
Not Liquidated	No State Tax	1.34%	1.29%	1.24%	1.19%	1.14%	1.09%
Not Liquidated	High State Tax	1.74%	1.69%	1.64%	1.59%	1.54%	1.49%



that have declined and immediately reinvest in companies with similar risk characteristics. Through highly sophisticated equity risk models, SMA managers can tightly control this slight extra variation around a benchmark's returns.

Costs associated with fees. ETFs sometimes can offer a lower fee cost than SMAs. For simple domestic portfolios, the fee advantage for ETFs typically ranges from 0.15–0.25 percent for smaller accounts, but that difference can drop dramatically for large portfolios. For foreign accounts, the difference typically is smaller, and for large accounts ETFs actually can cost more than SMAs even though they track the same benchmark. Table 5

shows the annual after-tax return advantage of SMAs across a wide range of tax scenarios and fee differentials between ETFs and SMAs.

The question of course arises whether the net benefit after fees shown in table 5 sufficiently justifies the incremental tracking error. To determine the value added by SMAs after adjusting for both incremental costs and risk, we'll utilize a metric commonly used by institutional investors, the information ratio (IR), which compares the value added by a strategy to the amount of comparative risk borne, as measured by tracking error.

The IR varies based on the tax situation and cost differential versus an

ETF as summarized in table 5. Using an estimated tracking error of 1.11 percent per year for the SMA loss-harvesting strategy, the SMA would generate an after-tax IR in the range of approximately 0.7 to 1.6.⁵ Based on pre-tax performance, an IR of 0.5 puts a manager in the top quartile and an IR of 1.0 puts a manager in the top decile of performance rankings; the SMA's after-tax IR is even better because it reflects the elimination of the tax penalty for active management, documented above.⁶

When Should Investors Use ETFs and When Should They Use SMAs?

SMAs can add substantial and reliable value for taxable investors in certain situations, but that doesn't mean SMAs are always preferable. For many investors ETFs represent the wisest choice.

The first and most obvious advantage of ETFs remains their ability to provide good diversification for the tiniest portfolio because there is virtually no minimum size requirement for owning ETFs. Tax-indexed SMAs, on the other hand, usually require minimums beginning at \$250,000. Unfortunately for those investors without large-enough portfolios, the tax and other advantages of SMAs remain unavailable.

In addition, the economics of value added for index SMA investors depends upon the presence of taxable gains that flow through to Schedule D, the part of IRS Form 1040 that reflects capital gains and losses. For a tax-exempt investor with no need for the customization available with SMAs, ETFs are frequently the lowest-cost option and thus the best choice.

For most investors with taxable capital gains, though, as well as the assets to qualify for SMAs, the advantages over ETFs clearly outweigh the drawbacks. For those investors, index SMAs offer consistently reliable tax benefits not available with ETFs.

Special Situations

In addition to the higher after-tax return of straightforward loss harvesting, SMAs offer additional benefits that can make them even more compelling in certain situations, as described below.

Migration of an existing portfolio. Investors who seek to terminate one manager or deploy assets received from an exchange fund face negative tax consequences from liquidating a portfolio and paying the taxes. Index SMAs allow for evaluating the trade-offs between tracking error and tax impact to optimize a portfolio's conversion.

Charitable contributions. SMAs allow for similar management of the tax consequences of allocating assets for charitable donations, enabling investors to optimize the impact of risk and taxes on gift planning.

Ongoing liquidity management. Investors who need to withdraw cash can do so more efficiently from a tax perspective within an SMA than with ETFs. With an ETF, a withdrawal basically forces taxable gains at the average cost basis of the entire portfolio, unlike within an SMA, where the highest-cost lots can be selected to control the tax costs more efficiently.

Customization. Taxable high-net-worth (HNW) investors often face complex portfolio issues that can be addressed more effectively through SMAs than through one-size-fits-all ETFs. While still taking advantage of all the improved risk-adjusted return benefits, HNW investors sometimes can best achieve the following goals through an SMA:

- constructing a risk-offset portfolio to build around an existing concentrated position such as the stock of a company founder
- reflecting the social or environmental values of an investor, e.g., excluding unwanted industries such as tobacco or overweighting positively perceived behavior such as clean energy
- incorporating factor tilts sought by those who seek to outperform based on specific criteria selected by the investor, such as emphasizing quality companies or those with above-average dividend yields

TABLE A1: MONTE CARLO SIMULATION ASSUMPTIONS

Time Horizon	10 years
Individual Stock Volatility	41%
Dividend Yield	2.0%
Bid/Ask Spread (round-trip)	0.08%
Annual Delisting from Index	4.0%
Per-share Commissions	\$0.01
Expected Market Return	7.0%

TABLE A2: EXAMPLE OF TRACKING ERROR CONVERSION TO ABSOLUTE RISK

	Variance or Std. Dev ²	Standard Deviation
Market Risk (benchmark)	2.72%	16.48%
Incremental Tracking Error	0.01%	1.11%
New Portfolio (combined risk)	2.73%	16.52%
Net Increase in Risk vs. Market		0.04%

These benefits translate directly into higher after-tax returns and higher after-tax ending wealth. In addition, SMAs offer flexibility and the ability to customize a portfolio beyond what an ETF investor can achieve (see sidebar for more details).

Conclusion

ETFs and index SMAs both offer the comparatively low fees and superior pre-tax returns common to nearly all forms of indexing. For investors with taxable gains, however, SMAs can deliver sizeable return benefits to taxable high-net-worth investors. ETFs remain a superior choice for smaller investors or tax-exempt accounts, but for many taxable HNW investors the fee- and risk-adjusted improvement in returns of SMAs offers considerable improvement over ETFs. 

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Appendix 1: Assumptions underlying Monte Carlo Simulation

The data shown from the Monte Carlo simulation reflect the assumptions shown in table A1.

In table 2, the value added reflects a comparison of the internal rates of return for an ETF with no tax consequences other than from delisting versus the internal rate of return for loss harvesting SMA.

Appendix 2: Role of Volatility

In a tax-managed SMA, value can be created through the harvesting of losses while still hewing to the benchmark and thus maintaining the basic market exposure of an index ETF. This process reflects the difference between the lower risk of the overall market, as reflected in ETFs, and the higher risk of the individual stocks that make up the overall market. For U.S. stocks, the Russell 3000 for the period 2001–2009 carried a risk in standard deviation of 16 percent,⁷ while the average individual stock’s risk in standard deviation was 41 percent.⁸

Because of this difference between the risks of the overall stock market and

the individual stocks within the market, the loss harvesting available in an SMA is significantly higher than what’s available harvesting losses with ETFs. The higher the volatility of an asset, the more likely there will be a large-enough drop in value at some point to warrant paying the small transaction costs necessary to realize the loss. To manage risk, this process is implemented through a multi-factor model, which allows for losses on individual securities to be realized while still ensuring that the overall SMA portfolio looks very much like an index ETF. Thus the overall risk of the SMA portfolio will be nearly identical to the overall risk of an ETF, but the higher volatility of the individual stocks within the portfolio allow for significant loss harvesting.

Appendix 3: Tracking Error

Tracking error is a statistical measure of the standard deviation around the benchmark’s returns. Like any stochastic variable, mismatches have both a mean (the average) as well as a standard deviation. The mean impact of the return mismatches is expected to be 0.00 percent across time and accounts, as portfolio theory would suggest. A mean of 0.00 percent is also the goal of both ETF and SMA indexing on a pre-tax basis, i.e., investors want their index funds to return the same as their benchmarks.

But tracking error measures only comparative risk, not the increase in absolute portfolio risk as measured by portfolio standard deviation. For example, if a broad-based market index ETF portfolio has an expected annualized portfolio standard deviation of 16.48 percent, adding 1.11 percent of tracking error standard deviation does not increase the portfolio risk to 17.59 percent. Instead, the new portfolio risk must be calculated using variance (from which the standard deviation is calculated anyway) since variance terms are additive while standard deviation terms are not, as shown in table A2.



Thus an investor does take on additional incremental overall portfolio risk with an index SMA, but it's only 0.04 percent higher than the benchmark's risk. 

Endnotes

- 1 Based on data from Morningstar Principia as of June 30, 2010, comparing the pre-tax and after-tax returns of all active U.S. equity mutual funds over the trailing 15-year period, excluding tax effects of dividends and liquidation. Data reflect 2010 maximum federal and high-tax state rates, with California as a proxy for high-tax states.
- 2 Source: Ibid. for 1.3-percent tax drag. SMA value added reflects additional after-tax return of 1.74 percent for high-tax states as described in table 2, excluding tax effects of liquidation. ETFs are assumed to generate no capital gains prior to liquidation, which is why their tax drag is shown as 0.0 percent. Values would reflect assets passed through an estate subject to step-up in basis or

donated to charity; returns on liquidated assets would be lower.

- 3 SMA account presumed to generate 16.8 percent of initial portfolio value in losses in first year, all of which are short-term. Losses generated in SMA account after first year will include both short- and long-term and will decline over time. Dividends have been ignored as tax treatment remains constant between ETF and SMA. Returns exclude any fee differential between ETF and SMA. Tax rate assumes federal rate of 35 percent and net state rate of 7 percent on short gains. Effects of tax upon liquidation are excluded.
- 4 The IRS does not clearly establish with mathematical precision what constitutes "substantially the same" asset.
- 5 Using the high and low range of the return improvement and a tracking error forecast of 1.11 percent, the information ratio is calculated as $0.80\% / 1.11\% = 0.72$ for the low end and $1.74\% / 1.11\% = 1.57$ for the high end. Both ignore fees for an

SMA strategy. The after-tax IR for an ETF typically would be inapplicable because the alpha can be assumed as a negative number equal to the fees and the tracking error as zero, which means there can be no IR for a pure index ETF.

- 6 This evaluation of the information ratio (IR) is from page 114 of Richard C. Grinold and Ronald N. Kahn's 1999 book, *Active Portfolio Management: A Quantitative Approach for Producing Superior Returns and Controlling Risk* (New York: McGraw-Hill), a widely respected authority on measuring the performance of active managers.
- 7 Source: Dimensional Fund Advisors risk-and-return data for 2001–2009 reflected average annualized volatility of 16.48 percent.
- 8 Source: CBOE, average year-end volatility of stocks in Russell 3000 from 2001–2009 reflected volatility of 40.93 percent.



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