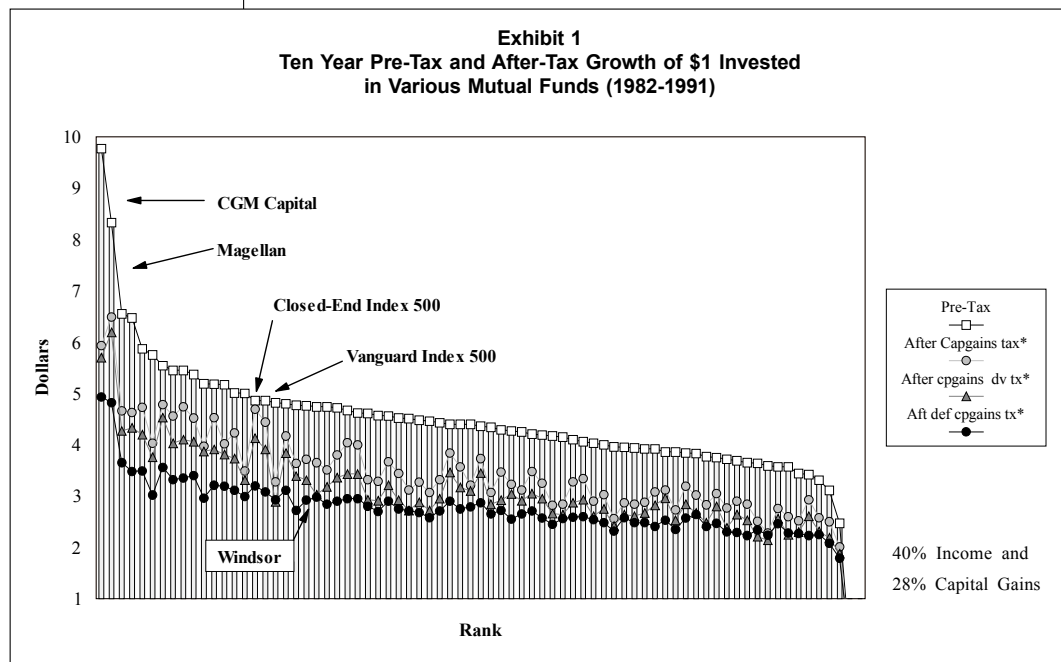


# How Well Have Taxable Investors Been Served in the 1980's and 1990's?

## FQ Perspective

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Much of the management of taxable investment capital is carried out with very little regard for the consequences of after-tax returns. Frequently, taxable investors not only pay hefty fees (or expense ratios), but also face active trading which triggers massive tax consequences. One reason investors have not given tax considerations their appropriate due is, of course, the tremendous bull market, which masks all but the worst errors, compounded by the dearth of pertinent after-tax performance information. While pre-tax results are readily available for any mutual fund, only recently have after-tax returns even appeared on the investment radar screen. In October of 1999, Vanguard announced that they would start publishing after-tax performance for 47 of their mutual funds. Furthermore, legislation now under consideration would require disclosure of after-tax results<sup>1</sup>.



Jeffrey and Arnott (1993) were among the first to study the tax consequences of active management. As part of their exploration of the topic, they found that of the 71 equity-oriented mutual funds with at least \$100 million in assets throughout the decade, only 15 added value relative to the S&P 500 on a pretax basis from 1982 -1991, dropping to just 6 after taxes. These results are summarized in Exhibit 1, drawn from that article. These results are even more striking when one considers that the study suffered from survivorship bias; the funds which disappeared, typically due to poor results, were not even in the analysis. The subject triggered quite a flurry of interest (Hertog and Gordon[1994a,b], Jeffrey and Arnott [1994], Dickson and Shoven[1993, 1994], Ghee and Reichenstein [1996], Bogle[1997]).

<sup>1</sup> The Mutual Fund Tax Awareness Act of 1999, sponsored by Rep. Paul Gillmor (R-Ohio) and Rep. Edward Markey (D-Mass.).

This paper contributes to the literature on taxable investing in two ways. First, we expand the work of Jeffrey and Arnott (1993) by rolling that research forward, *and backward*, to investigate the most recent ten, fifteen and twenty years. We examine *all* equity-oriented mutual funds with at least \$100 million in assets in 1979, 1984 or 1989, including funds that subsequently disappeared. This gives us a larger sample than before, without the survivorship bias of the earlier article.<sup>2</sup> Furthermore, we update this previous work by incorporating the true historic federal tax rates, shown in Exhibit 2. The results are sobering but unsurprising. We note the importance of two factors in explaining this underperformance of active management: small-stock bias and taxes.

Second, in order to isolate effects purely from taxes, we examine the difference in before-tax and after-tax performance, relative to that same difference for an index benchmark. For example, if a fund returns 2 percent lower than the S&P 500 before taxes and 2.5 percent lower after taxes, then the cost incurred from taxation alone is 0.5 percent. We refer to this as the “pure tax effect”. We find that, in addition to a pattern of absolute underperformance, most mutual funds also shed further value because of taxes.

One of the ironies in this pattern of taxable funds management is that it is remarkably *easy* to add to after-tax returns with a suitable attention to the management of tax consequences. In the last section, we discuss methods to manage assets in a tax efficient manner. We also discuss when taxes do and do not matter, and give conclusions.

**Exhibit 2  
Historic Tax Rates**

Long-term capital gain (LTCG) and dividend/short-term capital gain (D/STCG) rates by year

	LTCG	D/STCG
1979	28%	70.0%
1980	28%	70.0%
1981	20%	70.0%
1982	20%	50.0%
1983	20%	50.0%
1984	20%	50.0%
1985	20%	50.0%
1986	20%	50.0%
1987	28%	38.5%
1988	28%	38.5%
1989	28%	38.5%
1990	28%	38.5%
1991	28%	38.5%
1992	28%	38.5%
1993	28%	39.6%
1994	28%	39.6%
1995	28%	39.6%
1996	28%	39.6%
1997	20%	39.6%
1998	20%	39.6%

**Performance of Mutual Funds**

First, let's take a closer look at the results from Jeffrey and Arnott's 1993 article. It is worth noting that while 15 of the 71 mutual funds managed to outpace the S&P 500, only six (less than 10 percent) garnered an improved return on an after-tax basis. One set of results *not* published in that paper was the relative *magnitude* of the value added by the winners and the value lost by the losers. This appears in Exhibit 3. Note that the six winners added value by an average of only one percent per annum, while the 65 losers cost their customers nearly three percent per annum on

**Exhibit 3  
How Many Funds Beat the Vanguard 500 Index  
(1982-1991)?**

	Won	Avg. Margin of Gain	Lost	Avg. Margin of Shortfall
Pre-Tax Returns	15	1.8%	56	-1.9%
After Capital Gains	5	1.0%	66	-3.5%
After Capital Gains and Dividend Taxes	6	0.9%	65	-3.1%
After Liquidation	10	1.1%	61	-2.4%

<sup>2</sup> The authors convey their appreciation to Don Phillips, CEO of the Morningstar Company, for assembling these data.

an after-tax basis. In a very real sense, daunting 10:1 odds become a 30:1 long-shot, if we take account of the magnitude of gains and losses.

What was missing from this study? Apart from the fact that the span was relatively short, there were two other glaring gaps, both of which make the results even worse for investors. The first is survivorship bias. That study included only those funds which *finished* the 1982-91 decade with over \$100 million in assets. As we shall demonstrate, survivorship bias has a material negative influence on the results. This is not surprising, since those funds that failed to survive the decade were probably not stellar performers! The second gap

**Exhibit 4**  
**How Many Funds Beat the Vanguard 500 Index**  
**over Different Time Periods?**

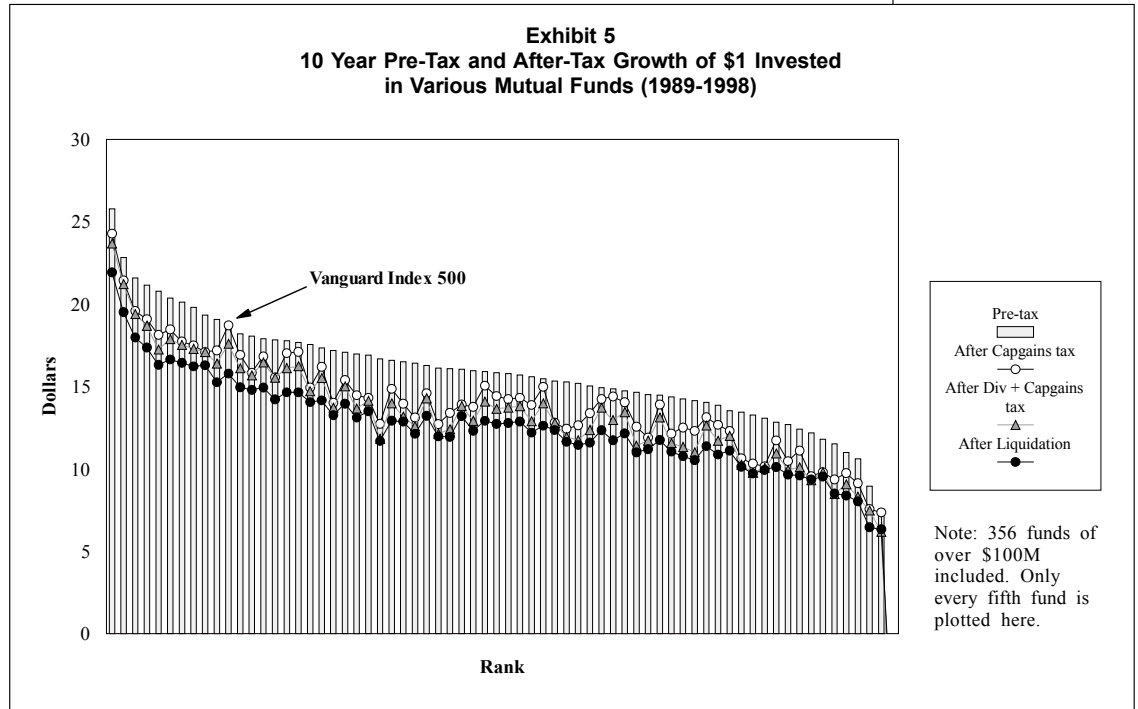
<b>Panel A:</b> <b>10 Year Results</b> (only funds with >\$100m from 1989-1998)	<b>Ahead of</b> <b>Vanguard 500</b>		<b>Behind</b> <b>Vanguard 500</b>	
	<b>Number</b> <b>of Funds</b>	<b>Margin Above</b> <b>Vanguard 500</b>	<b>Number</b> <b>of Funds</b>	<b>Margin Above</b> <b>Vanguard 500</b>
Pre-Tax Returns	50 (14%)	1.90%	305 (86%)	-3.87%
After Capital Gains and Dividend Taxes	33 (9%)	1.79%	322 (91%)	-4.79%
After Liquidation <sup>(a)</sup>	44 (12%)	1.67%	311 (88%)	-3.87%

<b>Panel B:</b> <b>15 Year Results</b> (only funds with >\$100m from 1984-1998)	<b>Ahead of</b> <b>Vanguard 500</b>		<b>Behind</b> <b>Vanguard 500</b>	
	<b>Number</b> <b>of Funds</b>	<b>Margin Above</b> <b>Vanguard 500</b>	<b>Number</b> <b>of Funds</b>	<b>Margin Above</b> <b>Vanguard 500</b>
Pre-Tax Returns	11 (5%)	1.10%	192 (95%)	-3.76%
After Capital Gains and Dividend Taxes	8 (4%)	0.59%	195 (96%)	-4.76%
After Liquidation <sup>(a)</sup>	10 (5%)	0.74%	193 (95%)	-3.96%

<b>Panel C:</b> <b>20 Year Results</b> (only funds with >\$100m from 1979-1998)	<b>Ahead of</b> <b>Vanguard 500</b>		<b>Behind</b> <b>Vanguard 500</b>	
	<b>Number</b> <b>of Funds</b>	<b>Margin Above</b> <b>Vanguard 500</b>	<b>Number</b> <b>of Funds</b>	<b>Margin Above</b> <b>Vanguard 500</b>
Pre-Tax Returns	36 (22%)	1.35%	126 (78%)	-2.64%
After Capital Gains and Dividend Taxes	22 (14%)	1.28%	140 (86%)	-3.19%
After Liquidation <sup>(a)</sup>	26 (16%)	1.46%	136 (84%)	-2.67%

<sup>(a)</sup> Including deferred taxes, at 1998 capital gains rate, on resale at the end of the period.

is the omission of state taxes. Because state tax rates vary so widely, especially for capital gains taxation, they were ignored by the earlier paper, as we do now. However, to state the obvious, state taxes can only magnify the problem.



### Updated Results

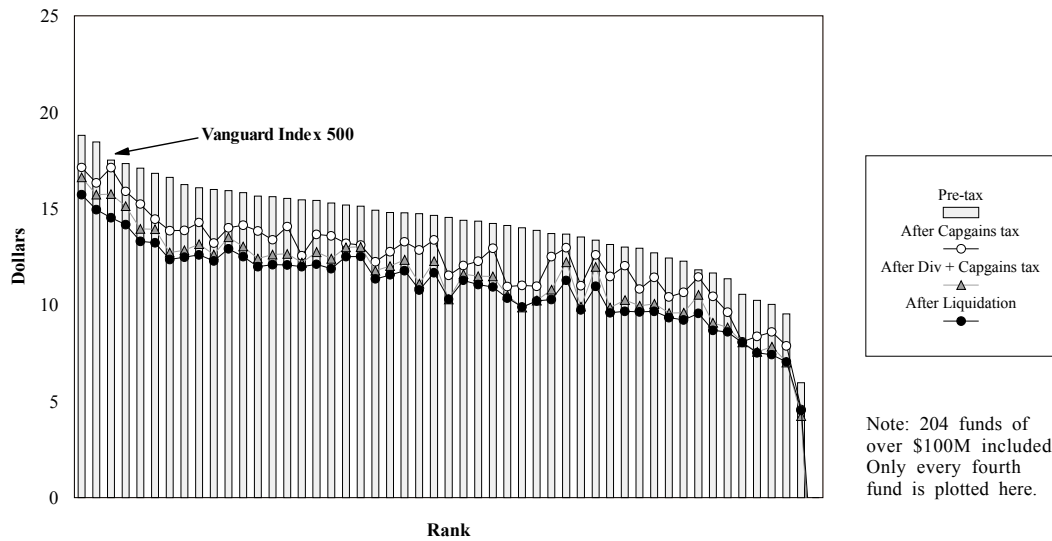
We have come through a period of truly remarkable returns for the S&P 500. Through 1998, the S&P rose 24 percent per annum over the prior five years, 19 percent per annum over the prior ten years, 18 percent per annum over the past 15 years, and almost 18 percent per annum over the past 20 years. Perhaps this long lasting bull market is one reason why tax consequences have not received the attention they deserve. Although taxes are one of the largest expenses for mutual fund investors, their cost is overlooked in the face of such stunning market performance.

In this section we examine the performance of mutual funds during these periods, both before and after tax. We compare the returns to that of the Vanguard Index 500 fund. This Vanguard index fund serves as a more appropriate benchmark than the S&P 500 index itself, because the returns are adjusted for management fees, transaction costs, and taxes. Unlike the hypothetical returns on the S&P 500, an investor could actually have put money in the Vanguard Index 500 fund and received the returns summarized here.

We study three time horizons: 10 years (1989 – 1998), 15 years (1984 – 1998), and 20 years (1979 – 1998). For the most recent 10 years, the results are as shown in Panel A of Exhibit 4 and in Exhibit 5. Only 14 percent of the 355 equity-oriented mutual funds that had at least \$100 million throughout the 10-year span, were able to outpace the S&P 500 index fund pre-tax. After

capital gains and dividends taxes, only 33 (9 percent) of the funds outperformed the S&P 500 while 322 (91 percent) funds underperformed. When we look at the compounded margin of "victory" or "defeat," the results are even more disappointing. The few winners won by an average of 1.79 percent, while the many losers lost by an average of 4.79 percent.

**Exhibit 6**  
**15 Year Pre-Tax and After-Tax Growth of \$1 Invested**  
**in Various Mutual Funds (1984-1998)**



Panel B: 15 Year Results (only funds with >\$100m from 1984-1998)	Ahead of Vanguard 500		Behind Vanguard 500	
	Number of Funds	Margin Above Vanguard 500	Number of Funds	Margin Above Vanguard 500
Pre-Tax Returns	11 (5%)	1.10%	192 (95%)	-3.76%
After Capital Gains and Dividend Taxes	8 (4%)	0.59%	195 (96%)	-4.76%
After Liquidation <sup>(a)</sup>	10 (5%)	0.74%	193 (95%)	-3.96%

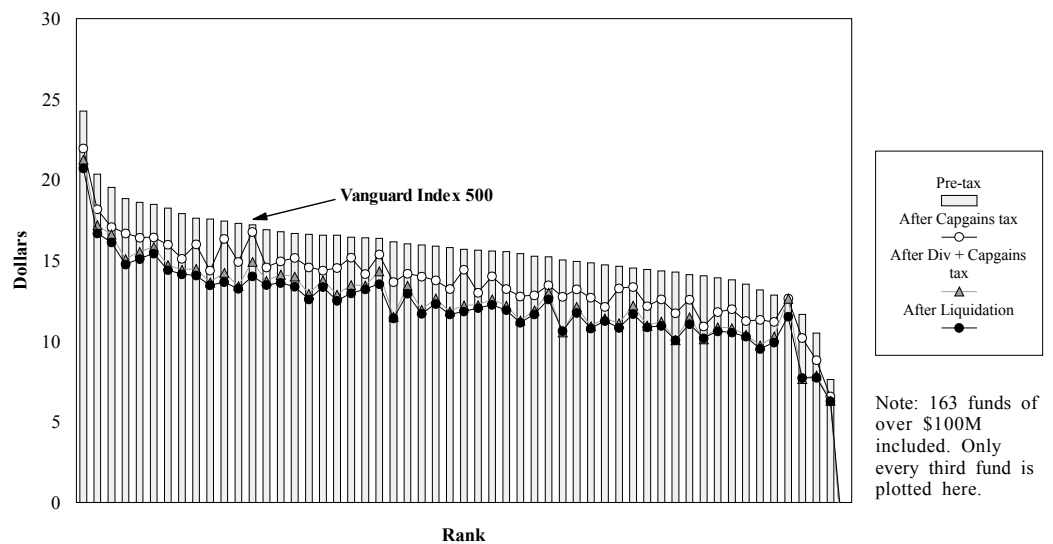
<sup>(a)</sup> Including deferred taxes, at 1998 capital gains rate, on resale at the end of the period.

The results are even gloomier over the past 15 years, as seen in Panel B of Exhibit 4 and in Exhibit 6. Only 11 of the 203 (5 percent) mutual funds added value over the S&P 500 benchmark before taxes, dropping to 8 (4 percent) after capital gains and dividend taxes. The 8 winners added an average of 0.59 percent, with only two funds adding more than 1 percent per annum after-tax. The 195 losers gave up an average of 4.76 percent annually. This 4.76 percent underperformance means that starting with an equal amount of money in 1984, 15 years later an investor in the average

losing fund would have roughly half the wealth that would have been amassed, had he or she invested in the S&P 500 index fund.

Finally, consider the past 20 years as shown in Panel C of Exhibit 4 and in Exhibit 7. After capital gains and dividends taxes, 86 percent of the funds underperformed the S&P 500, and only 14 percent won. The average winner added 1.28 percent to the after-tax returns; the average loser lost over 3 percent. If one factors in the deferred taxes that would be incurred by liquidating at the end of the 20 years, 16 percent of the funds were winners, with an average margin of just over 1.46 percent, and 84 percent of the funds were losers with an average shortfall of 2.67 percent. This is still a depressing result, but it is certainly less frightful than the 10 and 15-year pictures.

**Exhibit 7**  
**20 Year Pre-Tax and After-Tax Growth of \$1 Invested**  
**in Various Mutual Funds (1979-1998)**



Note: 163 funds of over \$100M included. Only every third fund is plotted here.

Panel C: 20 Year Results (only funds with >\$100m from 1979-1998)	Ahead of Vanguard 500		Behind Vanguard 500	
	Number of Funds	Margin Above Vanguard 500	Number of Funds	Margin Above Vanguard 500
Pre-Tax Returns	36 (22%)	1.35%	126 (78%)	-2.64%
After Capital Gains and Dividend Taxes	22 (14%)	1.28%	140 (86%)	-3.19%
After Liquidation <sup>(a)</sup>	26 (16%)	1.46%	136 (84%)	-2.67%

<sup>(a)</sup> Including deferred taxes, at 1998 capital gains rate, on resale at the end of the period.

One common pattern in these exhibits is that there are always more losers than winners. In addition, the shortfall of the losers is always much greater than the value added of the winners. These results hold at all time horizons and types of taxation. To further examine these effects, we combine the performance of the winners and losers into overall average returns, seen in Exhibit 8.

In Exhibit 8 we can see that over the past 20 years, the average fund underperformed by 1.75 percent pre-tax, 2.58 percent after capital gains and dividends taxation, and by 2.00 percent per annum after all taxes, assuming liquidation at the end of the 20 years. What does this mean in dollars? If we had invested \$1000 in the Vanguard Index 500 fund 20 years ago, it would have grown to \$24,000 pre-tax, \$16,200 after capital gains and dividend taxes, and \$13,800 after liquidation. If instead we had invested in the average fund, those numbers would be \$19,600 pre-tax, \$11,300 after capital gains and dividend taxes, and \$10,600 after liquidation. Because of compounding, these seemingly small differences in annual return add up to material differences in final wealth accumulation. Note that the shortfall is less severe after liquidation. An index fund will pay more taxes than the average fund upon liquidation because it has accumulated more unrealized gains.

**Exhibit 8**  
**Overall Average Results for Equity Mutual Funds**  
**Relative to Vanguard 500 Index**

	20 Years		15 Years		10 Years	
	Including Survivor Bias	No Survivor Bias	Including Survivor Bias	No Survivor Bias	Including Survivor Bias	No Survivor Bias
Pre-Tax Returns	-1.75%	-2.12%	-3.50%	-4.17%	-3.06%	-3.51%
After Capital Gains and Dividend Taxes	-2.58%	-2.82%	-4.55%	-5.06%	-4.17%	-4.49%
After Liquidation <sup>(a)</sup>	-2.00%		-3.73%		-3.18%	

<sup>(a)</sup> Including deferred taxes, at 1998 capital gains rate, on resale at the end of the period.

If we take away survivor bias, and include the funds that were over \$100 million in assets in 1979 but have since fallen out of the picture (33 out of 195 funds), the results are a little more depressing. The average equity fund had a pre-tax shortfall of 2.12 percent and a shortfall of 2.82 percent after capital gains and dividends taxes. Note that it is not possible to calculate the “after all taxes” shortfall without survivorship bias, since we don’t have 20-year numbers on those funds which have disappeared! The 15-year results are more sobering, with over 5 percent per annum lost relative to the S&P 500, once one strips away the survivor bias problem; 10-year results are not unlike those for 15 years.

Comparing the results in Exhibit 8 across the different time periods, one common theme again jumps out. The results which include the non-survivors are *always* worse. This is not too surprising. Funds that have dropped below the

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Pre-Tax Returns	-1.75%	-2.12%	-3.50%	-4.17%	-3.06%	-3.51%
After Capital Gains and Dividend Taxes	-2.58%	-2.82%	-4.55%	-5.06%	-4.17%	-4.49%
After Liquidation <sup>(a)</sup>	-2.00%		-3.73%		-3.18%	

<sup>(a)</sup> Including deferred taxes, at 1998 capital gains rate, on resale at the end of the period.

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Comparing the results in Exhibit 8 across the different time periods, one common theme again jumps out. The results which include the non-survivors are *always* worse. This is not too surprising. Funds that have dropped below the



It is important to recognize that mutual fund results would almost certainly have been better, both before-tax and after-tax, if the markets had been kinder to SmallCap stocks during these years. The results we have presented reflect a market that has been difficult for active managers, since most active managers have, in fact, had a bias towards these underperforming SmallCap stocks.

This SmallCap bias is *not* a sign of carelessness on the part of the managers, nor is it a failure of judgment; rather, it is structural in the nature of active management. Market indexes, including the S&P 500, are typically capitalization-weighted. The consequence is that the index emphasizes the very largest stocks far, far more heavily than the “typical” stock. In the past 20 years, anywhere from six to thirty-four stocks have been larger than the weighted-average for the index. So, any stocks that a manager favored outside of this slender list would serve to reduce the average size of the stocks in the portfolio, relative to the index. It would be rare for a manager, following hundreds of stocks, to overweight enough of these few “MegaCap” stocks, relative to the hundreds of smaller names, to prevent a tilt towards SmallCap stocks. This provides a powerful “pull” towards smaller stocks than the index. Add to this the fact that the stocks that can be materially *underweighted* relative to the index are, by definition, these self-same MegaCap stocks, and the stocks that are underweighted provide an additional “push” towards smaller stocks than the index.

### Pure Tax Effect

As we noted earlier, the average after-tax performance of mutual funds, relative to an index fund, is always worse than before-tax results. In this section we study the tax effects in greater detail. We define the “pure tax effect” as the difference between before and after tax returns of a mutual fund relative to the same difference in the Vanguard 500 Index fund. We use this definition because even a passive index fund will have tax consequences due to both dividend payouts and capital gains realizations from fund withdrawals and index reconstitution. For example, between 1979 and 1998, Vanguard’s average annual returns were 17.2 percent before taxes, 16.8 percent after capital gains taxes, 14.9 percent after capital gains and dividends taxes, and 14.0 percent after liquidation. We examine the pure tax effect for capital gains alone and for both capital gains and dividends to differentiate the impact of these two types of taxation. Finally, we consider the results assuming liquidation at the end of the 10, 15 and 20-year time spans.

Exhibit 10 displays the results, with Panel A for the 10-year period, Panel B for 15 years and Panel C for 20 years. As before, we break these results into both “winners” and “losers”, as reported in columns 2 - 5. For all three time horizons, only 2 to 3 percent of the funds paid less capital gain taxes than the index fund, and no more than 10 percent of the funds did better after both capital gains and dividend taxes are considered. The shortfall of the losers is noticeably greater than the tax savings of the winners. That said, when we account for taxes at liquidation, the winners rise to as high as 35 percent of the funds and the magnitude of shortfall for the losers is comparable to the benefits of the winners. To better examine these tax effects, we now turn attention to the final column, giving the overall average performance.

One obvious pattern is that the overall average performance (last column) is *always* negative. This means that the average mutual fund had not only underperformed, but also did not manage its portfolio in a tax efficient manner. The first row of numbers in each panel shows that mutual funds paid much higher capital gains taxes than the index. This is presumably due to higher turnover, which results in the realization of capital gains. Interestingly, the numbers improved after dividend taxes are also included (the second row in each

**Exhibit 10**  
**Mutual Funds Pure Tax Effect vs. Vanguard 500 Index**

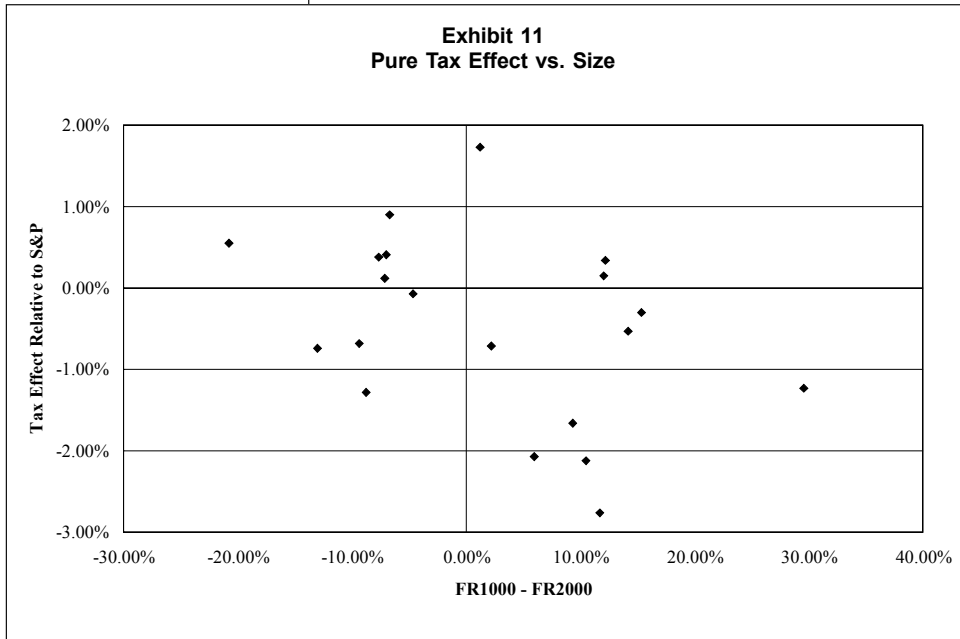
<b>Panel A: 10 Year Results</b> (only funds with >\$100m from 1989-1998)	Ahead of Vanguard 500		Behind Vanguard 500		Total
	Number of Funds	Margin Above Vanguard 500	Number of Funds	Margin Above Vanguard 500	
After Capital Gains	6 (2%)	0.21%	349 (98%)	-1.68%	-1.65%
After Capital Gains and Dividend Taxes	31 (9%)	0.39%	324 (91%)	-1.27%	-1.12%
After Liquidation <sup>(a)</sup>	125 (35%)	0.50%	230 (65%)	-0.47%	-0.13%

<b>Panel B: 15 Year Results</b> (only funds with >\$100m from 1984-1998)	Ahead of Vanguard 500		Behind Vanguard 500		Total
	Number of Funds	Margin Above Vanguard 500	Number of Funds	Margin Above Vanguard 500	
After Capital Gains	7 (3%)	0.26%	196 (97%)	-1.63%	-1.56%
After Capital Gains and Dividend Taxes	17 (8%)	0.60%	186 (92%)	-1.20%	-1.05%
After Liquidation <sup>(a)</sup>	53 (26%)	0.60%	150 (74%)	-0.53%	-0.23%

<b>Panel C: 20 Year Results</b> (only funds with >\$100m from 1979-1998)	Ahead of Vanguard 500		Behind Vanguard 500		Total
	Number of Funds	Margin Above Vanguard 500	Number of Funds	Margin Above Vanguard 500	
After Capital Gains	5 (3%)	0.37%	157 (97%)	-1.49%	-1.43%
After Capital Gains and Dividend Taxes	16 (10%)	0.75%	146 (90%)	-1.00%	-0.83%
After Liquidation <sup>(a)</sup>	44 (27%)	0.56%	118 (73%)	-0.56%	-0.25%

<sup>(a)</sup> Including deferred taxes, at 1998 capital gains rate, on resale at the end of the period.

panel). This is evidence that mutual funds are getting at least one portion of taxable investing right, by taking a low yield tilt. Tax-aware managers should prefer stocks with low yields because dividends must be realized, and taxed as ordinary income, while capital gains can be deferred before they are taxed at a



lower rate.<sup>3</sup> We do not necessarily feel that managers are consciously considering tax effects when they take this tilt, but rather it is fallout from an asset selection process that favors growth stocks. The average after tax performance suggests that in aggregate these funds are investing more in growth stocks compared to the S&P 500, but alas are turning their portfolios over far too frequently.

An interesting trend is how tax effects vary with the size dependence of the market from 1979 to 1998, as seen in Exhibit 11. Note the resemblance between Exhibits 9 and 11. While Exhibit 9 illustrates the relationship between size and the relative performance of mutual funds, Exhibit 11 shows size versus the pure tax effect of these funds. Although noisier than Exhibit 9, the negative relation in Exhibit 11 is still clear. In fact, both intercept and slope are negative and marginally significant. The negative intercept is further evidence that after taxes, mutual funds do even worse than before taxes, relative to an index fund. The negative slope shows that this underperformance is worst when LargeCap stocks outperform SmallCap. Perhaps Exhibit 11 indicates that in a LargeCap dominated market, managers trade excessively trying to find those few smaller stocks that will outperform, and suffer the subsequent tax consequences. Another possibility is that more investors make withdrawals from underperforming mutual funds, and as we have seen earlier, mutual fund performance has been worst in LargeCap dominated markets. Investor withdrawals mean that the mutual funds must sell assets and hence suffer the tax consequences.

<sup>3</sup> It is worth noting that, for corporate investors, this is not necessarily true. Dividends are treated favorably, due to a "dividend exclusion," while capital gains are taxed at the same rate as ordinary corporate income. So, the corporate investor should, *ceteris paribus*, prefer a high-yield portfolio.

Apart from capital gains and dividends, investors also incur taxes when they sell their shares. The after liquidation numbers reflect this effect, shown in the third row of each Panel. The shortfall is far less severe after factoring in liquidation. This result is not surprising. One tax advantage of an index fund is its very low turnover, so that it retains most of its capital gains and defers tax payment. This advantage decreases after liquidation, when the average mutual fund will have fewer deferred capital gains to be taxed. However, due to the effect of compounding, the index fund still comes out ahead. Indeed, with longer time to compound, the mutual fund shortfall increased from 0.13 percent for the 10-year horizon to 0.23 percent and 0.25 percent for the 15 and 20-year horizons. Furthermore, this eventual tax on liquidation of a portfolio can be eliminated, at the investor's discretion by simply not liquidating; the cost-basis "step up" on death bypasses this tax altogether (although estate taxes are another matter!).

### Conclusion

In short, the way that taxable assets are managed poses a very serious problem for the taxable investor. Most mutual funds do a disservice to their clients by ignoring or dismissing the taxes triggered by their trades. The importance of "getting it right" on taxable investing is magnified by the fact that most investors face taxes on their investments and there is more taxable investment capital than tax-exempt. All too often, we focus attention on pensions, foundations and endowments, all of which are tax-exempt (at least until the money is distributed, and sometimes even then). Funds such as 401k's are also significant, but nonetheless there is still a large amount of money that is subject to taxes. In addition to individual investors in mutual funds as discussed here, insurance companies, corporate capital, and some specialized corporate trusts, including many VEBA's for pre-funding post-retirement medical costs and most Nuclear Decommissioning Trusts (NDT's) are also taxable. These, collectively, are roughly twice the size of all of the pension, foundation and endowment money in the country.

When do taxes on investments not matter so very much? When one is intending a withdrawal shortly. If an investment is held two to three years, then an investor has only deferred the first year's tax consequences by one or two years. The net present value of this deferral is small. Indeed, one of the most common charges leveled at those who advocate tax-sensitive investing is that investors rarely hold a position long enough to garner the full benefits of tax-advantaged investing. However, the time span of an investment *is the investor's choice!* For the investor who chooses, in the words of Warren Buffett, to "sit quietly" and take the long-term view, the mutual fund world offers little comfort.

What is needed is a change in mindset, a change in paradigm, *both* among fund managers and among their clients.

- Instead of spending client assets on certain taxes in the quest for uncertain returns, fund managers can choose to minimize the *known* taxes and, only to the extent that one can do so without incurring unnecessary taxes, pursue *possible* gain.
- Instead of seeking the hottest new funds, clients can choose to consider embedded tax consequences in either retaining or changing their mix of funds. Often, this will mean a more loyal, lasting relationship between client and fund, and active management of an investor's mix of funds only by redirecting cash flows.

One common misconception in the growing field of tax-advantaged investing is the notion that indexing is the right answer. As seen in this paper, there can be no question that indexing, for most categories of taxable investor and for most market conditions, will outperform *conventional* active management. However, this answer is simplistic and, while it is clearly a step in the right direction, it is not the optimal choice. Just as the medical profession tells us that there is "good cholesterol" and "bad cholesterol," a careful study of taxable investing demonstrates that there is "good trading" and "bad trading," from a tax perspective. Trading which harvests a gain is typically not good. It often triggers taxes that are larger than any rational investor could fairly judge his or her skill to be worth in terms of the alpha of a trade (See Arnott, Berkin, and Ye [2000]). However, gain realization is also unavoidable: whenever there is a corporate action (e.g., a takeover) which triggers a cash distribution to an investor, there is a tax obligation.

There is the possibility of "good trading," in the form of "loss harvesting" which can deliver losses, which can offset that tax obligation on the gains. For separate account management, losses can even be passed on to the client to offset against corporate earnings, thereby providing a true negative tax obligation from the portfolio. If the client were likely to liquidate their portfolio in a year or two, the trading costs associated with loss harvesting would rarely be justified: the net present value of deferral of taxes on gains realized elsewhere in the portfolio would not cover the trading costs. But, for any portfolio that has an investment horizon longer than a year or two, it is easy to see that loss harvesting can be used to defer taxes that might otherwise have been paid. This provides the client with a genuine *cash flow* benefit, which translates into greater wealth.

A final observation is in order. No matter how appealing a move towards tax-advantaged investing may seem, the benefits do not justify selling an existing mutual fund position with large embedded gains in order to invest in a tax-advantaged fund. This triggers the very taxes that the investor is seeking to defer or eliminate.

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