



Investment

Management

Reflections

**THE MANAGEMENT AND MISMANAGEMENT
OF TAXABLE ASSETS**

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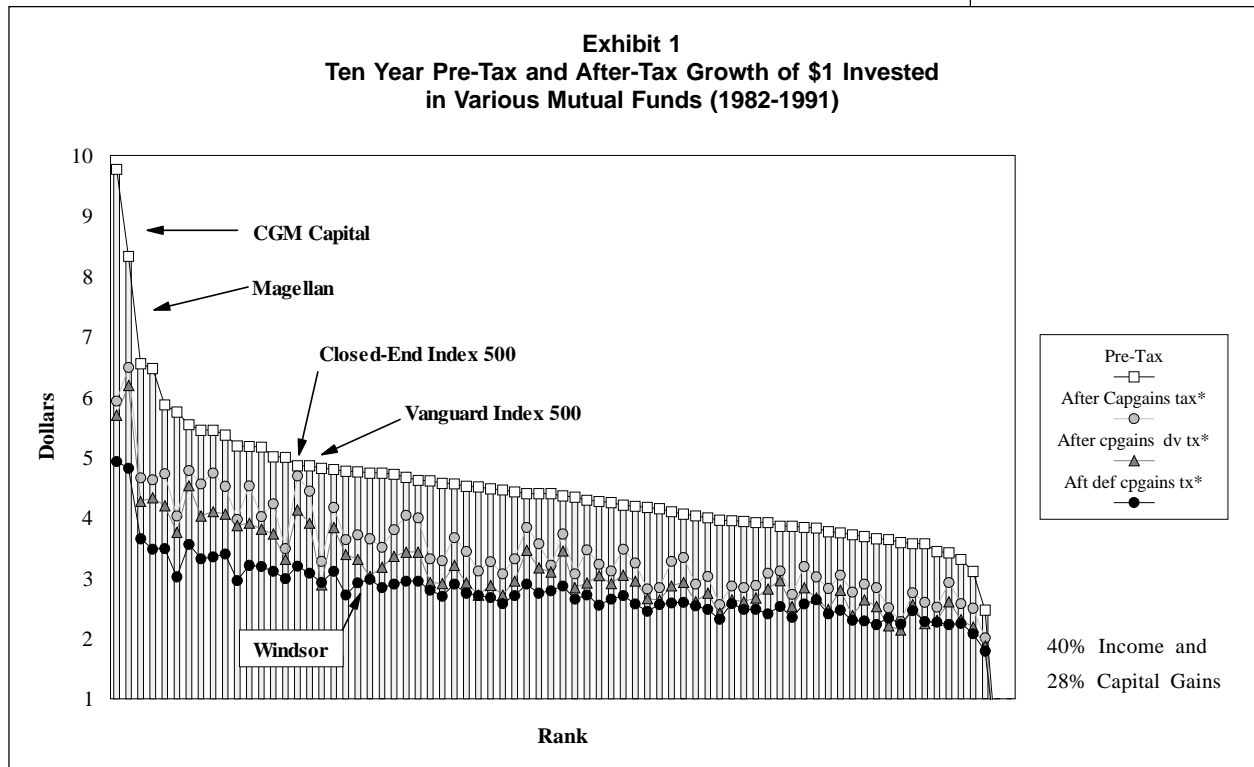
In this world nothing is certain but death and taxes.

Benjamin Franklin, 1789

As the adage implies, taxes are unavoidable, as we are all made acutely aware each April. And, individual investors are not alone. Virtually all companies also contend with the taxes, not only on operating earnings but also on large segments of their investable assets. Apart from corporate cash balances, there are insurance reserves, VEBA trusts for prefunding post-retirement medical costs, Nuclear Decommissioning Trusts (NDTs) for nuclear utilities, nonqualified pensions for senior management and so forth. The aggregate taxable money that companies invest actually exceeds the value of the tax-exempt money in pensions, endowments, foundations and the like. Yet most of these assets are invested as if taxes did not matter.

Despite the inevitability and importance of taxes, most institutional management of taxable assets does not get the attention that it deserves. We have seen tangible evidence of this in the mutual fund arena. Arnott and Jeffrey [1993] showed the ten-year pre-tax and after-tax growth of a dollar invested in various mutual funds, seen in Exhibit 1. The Vanguard Index fund beats about three-fourths of all mutual funds before taxes. What is especially note-worthy is that its after-tax return beats all but six out of 71 mutual funds: less than one in ten mutual fund managers beat the market on an after-tax basis, and only two beat it by any meaningful margin. Identifying those two out of 71 funds in advance would be a neat trick.

The picture becomes worse, when we consider the margin of victory for the winners and the margin of loss for the losers. The average margin of gain for the six winners is a slender 90 basis points per year. The 65 that lost value relative to



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the index, lost an average of 310 basis points per year, for a decade. Results for the most recent decade are just as compelling, as seen in Arnott, Berkin and Ye (2000). For the past ten years, only 33 out of 355 funds beat the index, with an average outperformance of 1.80%. The 322 underperformers lost an average of 4.79% compared to the Vanguard Index fund.

These results confirm that adding value in actively managed portfolios is a difficult challenge. This task is further complicated by taxes: on an after-tax basis the number of outperforming funds decreased, and the average fund underperformed the index by 50 to 150 basis points more than they had pretax.

Despite this gloomy scenario, finding alpha through tax avoidance and tax deferral is actually an easy task. Basically, to succeed in taxable investing, an investor should avoid taxes that can be avoided, defer taxes that can be deferred, add value in areas where they have skill, avoid trading in areas where they lack skill, and eliminate errors in each of the above decisions.

Unfortunately, assured alpha through tax savings is too often tossed aside in the quest for uncertain alpha in active management. Numerous studies have shown that it takes 2%-3% of alpha for a conventional actively managed portfolio to match the after-tax returns of "plain vanilla" indexing (Jeffrey and Arnott [1993], Arnott, Berkin and Ye [2000]). While some of this alpha goes to higher trading costs and management fees, a significant portion goes to the government as well in the form of taxes.

In this paper, we identify sources of taxable asset *mismanagement* and suggest ways for improvement. We also discuss important considerations when choosing a manager for a tax efficient fund. Finally, we describe the details of actually implementing a tax efficient portfolio.

Sources of Taxable Mismanagement

There are three main sources for mismanagement of taxable assets: unnecessary capital gains realization, neglecting to harvest losses, and failure to take the appropriate dividend yield tilt. We discuss these in order.

Unnecessary Capital Gains

The largest source of fund underperformance, net of taxes, is the realization of unnecessary capital gains. Unrealized capital gains in a portfolio are effectively a "free loan" of deferred tax obligations from the government. Suppose we hold a portfolio which is 10% above its cost; with a 40% capital gain tax, it is equivalent to having an interest-free "loan" from the government that is worth 4% of the portfolio value. We can earn investment income with this free loan. These retained capital gains are also like in-the-money options held by the government against a taxable individual or corporation, with the *investor* holding the right to decide when the options will be exercised. Any time we sell an asset at a profit, we are making a tacit bet that the trade is more valuable than this *known* asset, the free loan and free option. Capital gain realization is therefore a costly event for taxable investors, far beyond the direct trading costs.

Capital gain realization can partly be reflected in the turnover rate, which is inversely related to the holding horizon of a portfolio. The higher the turnover

rate and thus the shorter the holding horizon, the more likely it is that the portfolio manager realizes capital gains at a high frequency. This is why we typically see taxes take away a bigger portion of alphas from an actively managed fund than a passively managed fund. At 50% turnover, the first year's gain is still in the portfolio, tax-deferred, for one additional year. Our 4% interest-free "loan" of the previous paragraph if held for one year, with an 8% return on investment, adds 32 basis points to our aftertax performance. At 10% turnover, the 4% capital gain is retained in the portfolio for ten years, and is worth over 400 basis points with compounding. Clearly, the potential benefit of such a long term interest-free loan is much higher because of the compounding effect.

One simple moral therefore is to avoid equity sales at a profit unless there is a compelling reason. Such a sale could still be justified if the valuation basis for trading is exceptionally strong (if we have confidence that our view of value is correct and the market's appraisal of value is not!). It could also occur if there is an offsetting loss to reduce the overall tax bill.

Failure to Harvest Losses

Not only are managers too eager to realize gains, they also are too reluctant to harvest losses. This is another source of tax inefficiency and has comparable effects on both active and passive management. No matter the skill of the manager, almost all portfolios will have some assets that have suffered losses. Realizing these losses generates tax credits which can be used to offset capital gains, whether these gains come from inside the portfolio or outside. Without loss harvesting, paying taxes associated with these gains will reduce the investor's wealth by a significant and known amount. Harvesting losses essentially retains this money, which can then continue to be invested. Quite simply, the tax credit created by realizing losses is like invisible cash in the portfolio, with a value of the loss multiplied by the tax rate. Upon harvesting that loss, the value of the portfolio effectively increases.

We can actually quantify the effects of loss harvesting and the subsequent reinvestment of the tax savings. This is possible because the tax impact of trading is really the only aspect of active management that we can measure with precision. Not only can we measure this tax impact, we can also manage it, and therefore deliver an after tax alpha. At First Quadrant we developed a simulation to find out how much value could be added by systematic loss harvesting.

We ran 400 Monte Carlo simulations, each with a universe of 500 assets, generating a 25-year history of monthly returns for each asset.¹ These 400 simulations give a wide range of market conditions, including bull markets as good as (or better than) the most recent 25-year span and bear markets as bad as 1929-1953, a 25-year span in which US stocks actually fell! These market and asset level assumptions closely approximate what we observe in the real world.

To more closely approximate the real world, we also assume that one stock disappears as a result of corporate actions (takeovers, mergers, etc.) each month. This assumption leads to an involuntary gain or loss realization, and the subsequent tax consequences. We assume that the proceeds are reinvested in the new stock that is added to replace the stock that disappears. In an actual portfolio (or benchmark) the proceeds would be reinvested more broadly, but we wanted to keep the portfolio and benchmark as close to "apples-with-apples" as possible.

1 We assume the market returns have a log-normal distribution with 5% volatility and 0.7% return per month, decomposed into a 0.15% average dividend per month plus 0.55% average monthly market gain. This is equivalent to an average annual total return of about 8%. We also assume the return of each individual asset is the market return for that month plus a log-normal distributed variable with zero mean and 10% volatility. This becomes a daunting set of simulations: with 2 portfolios, 400 runs of 500 stocks covering 300 months, and an average of 100 tax lots per stock, we have about 12 billion individual stock positions to simulate. We would like to thank Dean Petrich, of Scudder Kemper Investments, for his work in designing the first generation of this tax lot simulation software.

Lastly, we assume a 35% tax rate. Some investors pay up to 41% marginal federal taxes (plus state and local taxes the total is typically 46% to 52%). Corporations often pay 35% federal tax on gains (typically 40-42% total if state and local taxes are included) and roughly 15% federal tax on dividends (typically 20-23% total). Other taxable investors (qualified Nuclear Decommissioning Trust portfolios and some classes of insurers) pay as little as 20%. The 35% assumption is “not too far wrong” for both extremes. Suffice it to say that the 50% taxpayers should care even more about taxes than we suggest, and the 20% payers should care just a notch less.

In each simulation, we monitor two portfolios; one is just buy-and-hold and the other is tax-advantaged. In the buy-and-hold portfolio, the only transactions that occur are those forced by the corporate actions mentioned above. In the tax-advantaged portfolio, we sweep through the portfolio every month, find all assets that have losses, sell those, and immediately buy them back. We ignore the wash rule for purposes of the simulation². The wash rule typically has a slightly negative impact in the real world because of the mild tendency for sharply-fallen assets to rebound slightly, but this will not significantly change our results.

Each year, we take any tax obligations out of each portfolio and any tax savings from loss harvesting are reinvested back into the portfolio. This latter assumption merits some discussions, since it implies “negative taxes.” We take this step because the tax savings are a “cash flow event.” Almost all investors will have other assets, outside of the portfolio, which will occasionally be generating taxable gains. Even if these gains do not occur in the same year as the losses that result from “loss harvesting,” tax law permits carryforward and carryback of losses to offset against gains in other years, within reasonably liberal bounds. Money not paid to the government is money retained by the investor. Warren Buffett’s observed recently (1999) that many insurance companies that “manage their earnings” by taking gains out of their investment portfolio in order to report those gains as earnings, and that, in so doing, they are basically just burning up shareholder value.

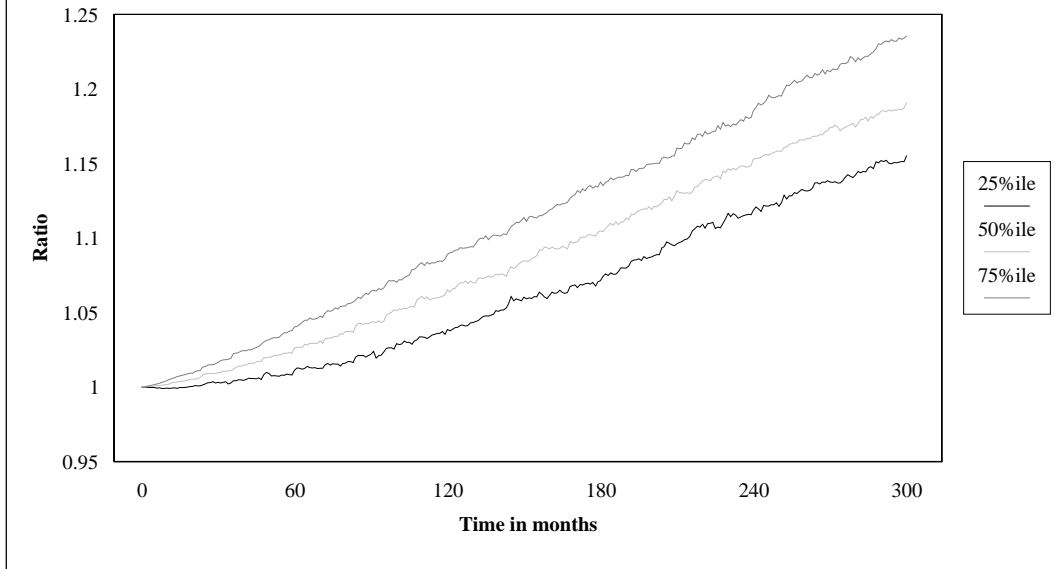
For each month, we ask the simple question: if we were to liquidate both portfolios *right now*, how does the tax-advantaged portfolio compare to the passive buy-and-hold benchmark, after all remaining taxes have been paid? In other words, liquidation taxes are considered in these simulations. If they weren’t, results would have been *far* more impressive!

Exhibit 2 shows the cumulative benefits of loss harvesting. A great deal of loss harvesting occurs in the first few years, and the earnings on the associated tax savings lead to an immediate, *and increasing*, value added. A close look at the figure shows that over time, as loss harvesting opportunities diminish, the annual value added similarly begins to diminish. Yet, even after 25 years, the tax savings are still around 0.5% per annum, *an alpha that most active managers can’t add reliably even before taxes*. After 25 years, the median cumulative gain from loss harvesting is nearly 20%, or about 80 bp per annum.

Despite the fact that the simulation will cover scenarios with splendid returns and scenarios with awful returns, the range is surprisingly tight: from 60-100 basis points per annum is added through loss harvesting. Interestingly, the best value-added typically comes from the scenarios with *lackluster* returns: the opportunities to harvest losses, over a span of many years, are best if market returns are poor.

2 The wash rule states that assets cannot be repurchased within one month of their sale in order to receive the tax credits. It matters a great deal in the real world. In a monte carlo simulation, in which each asset has a random return, with the same distribution as any other asset, it does not make any difference.

Exhibit 2
Ratio of Liquidation Values
Tax-Advantaged vs. Buy and Hold



Failure to Take Appropriate Yield Tilt

Another source of poor after tax performance is the failure to take an appropriate yield “tilt.” Unlike loss-harvesting, which affects all investors similarly, the appropriate yield tilt depends on the relative tax rates of dividends and capital gains for an investor. Corporate investors receive a dividend exclusion, and are therefore better off with a high-yield portfolio. For most individual investors (and most taxable VEBA trusts), long-term gains are taxed less heavily than dividends, so a low-yield portfolio is best. For investors with neutral dividend tax treatment, such as Nuclear Decommissioning Trusts, the best approach involves a very slight bias towards lower-yielding assets: capital gains are still preferred because of the “free loan” associated with deferred taxes. Such a yield tilt is rather easy to manage, as the dividends paid by individual assets tend to be smooth and predictable.

Considerations When Selecting a Manager

So far we have identified sources of mismanagement of taxable money. Obviously, choosing a manager is not as simple as merely making sure that these sources are avoided. In this section, we put ourselves in the investor’s shoes and discuss some relevant issues when selecting a tax-advantaged manager: 1) the active versus passive debate, 2) the timing of entering or leaving a commingled fund, and 3) manager transitions and liquidation of funds.

Active vs. Passive

In the previous section, we argued that taxable investors should avoid realizing unnecessary capital gains, strive to harvest losses, and take an appropriate yield

tilt. Although these results suggest limited turnover, they do not imply passive management. In fact, if we view the tax burden as negative alpha and tax credits as positive alpha, tax-advantaged investing is actually a very special type of active management. It can then be combined with other active management strategies to enhance investment performance, but with trading driven by tax considerations rather than by the quest for “alpha.”

The decision of whether to sell a stock already in the portfolio is primarily motivated by the tax consequences. Taxes are a certain thing (as noted in the quote at the start of this article); their magnitude is often large and almost always predictable with considerable precision. Only in the cases where the gains or losses are small should the less certain alpha signals from other sources play any material role in the decision to sell. The exact combination of signals will depend on the faith the manager has in the alpha forecast signals.

On the other hand, buying decisions *can* depend mainly on these alpha forecasts, if a manager has some confidence in his/her ability to add value. Even if the turnover of appreciated assets is reduced to zero, opportunities to buy still arise because of corporate actions, loss harvesting, dividend distributions and cash flows into the portfolio. These buying decisions will be determined both by the investor’s tolerance for risk and faith in the signals, and can add value beyond passive investing. Taxable consequences can further enhance the performance of the buy decision through the appropriate yield tilt.

Commingled Funds: Better If You Are First In

Our simulation results showed that much of the tax savings occurred in the first few years. The marginal benefit of taxable investing, while still significant, decreases over time as the opportunity to harvest losses diminishes. Since the stock market tends to appreciate in the long run, positions with large gains become “locked in”. This has direct implications for the timing of entering a tax-advantaged fund: Better sooner than later!

This implication is based not only on the diminished loss harvesting opportunities, but also the large tax obligation from potential capital gains realization. This timing runs counter to the conventional behavior of investors, who enter a mutual fund after it has performed well, for an extended period of time. When the fund then shifts its positions to a new set of assets, the tax burden falls upon all investors. Those who entered later are sometimes saddled with the taxes, but without the gains that led to the taxes!

Our timing advice applies as well to when to exit a fund. If a fund suffers net outflows, it must sell assets to raise the cash, and thus realize capital gains. Those who exit later will have an inequitably large share of this tax burden. Again, better sooner than later!

This advice is most applicable to smaller investors who do not have sufficient assets to hire a manager specifically for their own funds. Investors with sufficient assets, such as institutional investors and high net-worth individuals, should ideally hire a manager who can run their taxable money on a stand-alone basis. They not only avoid the tax burden of other investors, but also can have the assets tailored to their specific tax rates. One of the important ironies in the management of taxable assets is that so much of it is carried out in mutual funds and other commingled vehicles, when the benefits of separate management are immense.

Transitions and Liquidation

As we noted previously, unrealized capital gains in the portfolio are like an interest-free loan from the government, which should be retained for as long as possible. This applies not only to managing taxable money, but also to manager transitions and liquidation, which should be handled in as tax-sensitive a fashion as portfolio management itself.

One strategy is to time manager transitions or liquidations to periods when offsetting losses are available from other sources to minimize the overall tax bill. Individuals can also wait for periods of lower income, such as going back to school or retirement, when tax rates will be lower. In addition, investors can donate their appreciated shares to charity, thereby avoiding the tax bill. Finally, investors who will funds with unrealized gains avoid taxes. Upon death of an investor the heirs inherit the portfolio at current market value without tax obligation. In this case, the saying should be “death or taxes”!

Plan sponsors and high net-worth individuals have other options. For example, during a manager transition, assets with capital gains can be transferred from one manager to another, rather than liquidating. Liquidating an existing fund triggers the very taxes that people are trying to avoid.

Implementation

We have previously discussed the management of taxable money from both the fund managers’ and investors’ points of view. In this section we go into details of the implementation of a taxable strategy.

We can use the same forecasts of expected return in managing taxable accounts as for tax-free accounts. After all, the price of an asset will appreciate or depreciate the same in either case. However, the marginal return to the investor will differ when taxes are taken into consideration. To reflect this difference in marginal return, the utility function for taxable accounts will have extra contributors to return, relative to tax-free strategies. These include 1) the costs incurred by capital gains realization, noting that the penalty for short-term capital gains is higher than for long-term capital gains, 2) the tax credits realized from loss-harvesting, and 3) an adjustment for the appropriate yield tilt. Because these additional components of return are typically both quantifiable and large, they can have a dramatic effect upon the final composition of the portfolio. Given the certainty of the tax consequences and the uncertainty of the return estimates, managers may wish to even further increase the relative weight of the tax components.

The most crucial difference in the implementation of a taxable strategy is the need to break each asset held into different tax lots, corresponding to when and at what price they were purchased. This vastly complicates the optimization process. Each stock effectively acts as multiple assets, and the number tends to grow in time. Many optimizers exist for conventional tax-free assets, but only recently have commercial optimizers appeared which can handle taxable portfolios. At First Quadrant we chose to build our own optimizer, to effectively tailor our taxable products for each of our clients.

Tax-advantaged investing is actually a very special type of active management.

Conclusion

In conclusion, how do we cut taxes on taxable portfolios? There are several things that the owner of taxable assets should *not* do:

- ✗ **Don't sell any existing portfolio just to buy an index fund.**
Sometimes people will ask, "should we just liquidate what we have and turn it over to a tax-advantaged manager?" The answer is, "absolutely not: it triggers the very taxes you want to avoid."
- ✗ **Don't handle manager transitions in a conventional fashion.**
Transitions, when you fire Manager A and hire Manager B, should be handled in *as tax-sensitive a fashion as portfolio management itself*.
- ✗ **Don't allow equity sales at a substantial profit unless** 1) there is an offsetting loss that can save you from being hit with a large tax bill, or 2) the valuation basis for trade is exceptionally strong. Remember that you are paying a *known* tax bill in order to capture an *unknown* potential benefit from the trade.

There are also several things that the owner or manager of taxable assets *should* do:

- ✓ **Do harvest losses.** What Exhibit 2 shows is just the "tax alpha" from harvesting of losses, and that tax alpha is material. Over a 25-year span, assuming modest 8% returns on stocks, we earn an average of almost 2000 basis points of cumulative alpha *just* from harvesting the losses. And that's *net* of all of the taxes that you would face at the end of the period for liquidating the portfolio. It's a very important source of after-tax alpha, and it's both reliable and predictable.
- ✓ **Do encourage managers to realize losses, *even to the point of taking losing assets away from managers who don't harvest their losses!***
Suppose you have a \$500 million portfolio, with such large gains from a roaring bull market that you only have \$5 million of unrealized losses embedded in the portfolio. Are you "locked in"? No: if you don't harvest even these modest losses, you are missing an opportunity to save \$2 million in taxes. Harvest your losses, even if they're relatively small!
- ✓ **Do apply a yield tilt.** Whether to favor low-yield or high-yield depends upon the relative tax treatment of dividends and capital gains in your portfolio. For most corporate investors, with the dividend exclusion, you are better off with a high-yield tilt. For most individual investors (and most taxable VEBA trusts), long-term gains are taxed less heavily than dividends, so you need a low-yield tilt.
- ✓ **Do consider reducing fees** by moving towards less active, hence less costly strategies, and perhaps consolidating with fewer managers.

- ✓ **Do fund a separately-managed tax-advantaged strategy**, even if only with incremental cash flows, into the portfolio. Why do you want to do that if you've already got a portfolio established with a commingled indexation strategy? Because when you do need to handle liquidations, the earliest liquidations can then come from the separate account first, on a tax-optimized basis. And that can save you millions.

In summary, do consider your tax bill as an integral part of the returns on your assets. Taxes can hurt you a little or hurt you a lot. Unfortunately, for most taxable investors, they hurt a lot.

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