



Investment

Management

Reflections

**IS YOUR ALPHA
BIG ENOUGH
TO COVER ITS TAXES?**

*The Active Management
Dichotomy*

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The Active Management Dichotomy

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A great deal of capital and intellectual energy has been invested over the years in seeking to improve the efficiency of the portfolio management process. But most of this effort has been directed at *tax-exempt* investors (e.g., pension funds, foundations and endowments), even though approximately two-thirds of marketable portfolio assets in the United States have owners for whom taxes are a major consideration.¹ Individuals, either directly or through mutual funds, and insurance and holding companies are particular cases in point, but their assets are too often managed with a blind eye to the tax consequences of the management style.

As Garland [1987], one of the few commentators on this subject, reminds us: "Taxes are the biggest expense that [many] investors face—more than commissions [and] more than investment management fees." Brealey [1983] commented that "return is likely to depend far more on the risk the fund *assumes and more on its tax liability* [emphasis added] than on the accuracy of the analysts forecasts." We shall demonstrate here that, for many investors, taxes are clearly the largest source of portfolio management *inefficiency*, and thus of mediocre investment returns. This is the bad news. The good news is that there are trading strategies that can minimize these typically overlooked tax consequences.

The intriguing but troublesome aspect of taxes, which obviously diminish investment returns, is that they are generated by the very activity that is intended to enhance returns, namely, *turnover*. Portfolio managers sell one holding and buy another solely because they believe this activity will result in an economic benefit to the owner, which is to say they believe the trade will produce more wealth than if they simply held a static portfolio. In simplified portfolio management parlance, this expected economic benefit from trading is known as *alpha*.

As the title proposes, our purpose here is to question whether the typical active manager's alpha is large enough to cover not only fees and trading costs, which affect all investors, but also—for taxable investors—the taxes that this turnover begets. We will offer both theoretical and

empirical evidence that suggest quite clearly that the answer is generally—though not universally—negative. Because the preponderance of evidence is so convincing, we conclude that the typical approach of managing taxable portfolios as if they were tax-exempt is inherently irresponsible, even though doing so is the industry standard.

Taxable investors should bear two simple points in mind. First, passive indexing is a very difficult strategy to beat on an after-tax basis, and therefore active taxable strategies should always be "benchmarked" against the after-tax performance of an indexed alternative. Second, while active management can conceivably add value on an after-tax basis, this will only occur with careful planning that results in maximizing the build-up of unrealized capital gains.

WHAT TAXES ARE WE TALKING ABOUT?

We shall be concerned here primarily with taxes on *realized capital gains* as distinct from dividends and interest, because these are the taxes that are precipitated by the portfolio managers' trading activity. Said another way, we want to focus on realized capital gains, because they are the root of the dichotomy between active management's hopefully positive alpha and the assuredly negative impact of the resulting taxes. Furthermore, as we shall demonstrate later in the case of equity portfolios, capital gains taxes typically have a substantially greater impact on after-tax returns than do dividend taxes, an important reality that is commonly overlooked.

Tax rates vary widely between jurisdictions (e.g., federal, state, and many municipalities). They apply differently to different classes of owners (e.g., individuals versus corporations and special kinds of corporations such as insurance, Sub-chapter S, and personal holding companies). And they also apply differently to different classes of income (e.g., dividends, both domestic and foreign, interest, both taxable and tax-exempt,

¹ Of the \$9 trillion in liquid, investable stock and bond assets in the U.S. at year-end 1990, only about \$3 trillion was held by pension funds and other tax-exempt investors.

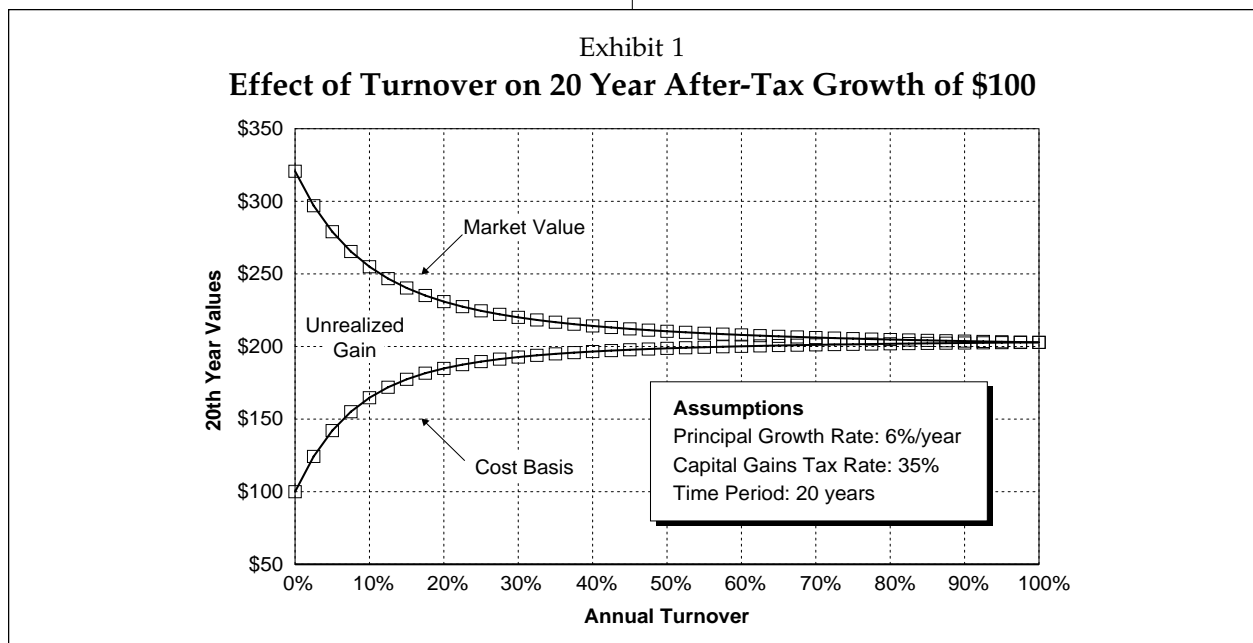
and capital gains, both short-term and long). To simplify the presentation, we assume throughout the article a constant 6% per annum principal growth rate and a conservative 35% combined federal/state/local tax rate, with this rate being applicable to both capital gains and ordinary income.² Recognizing that tax consequences vary directly with these rate assumptions, readers can interpolate accordingly to reflect their own circumstances. Finally, because principal growth (and thus the capital gains tax problem) is more characteristic of stock than fixed income investments, we use equity portfolios to illustrate our points.

THE IMPORTANCE OF UNREALIZED GAINS

Though often disregarded, unrealized gains are an enormously valuable asset to a taxable investor. (We deal separately later with capital losses.) Unrealized gains are simply that part of the portfolio's principal growth that has not yet

been "cashed in," and thus has not yet been diminished by taxes. While GAAP accounting requires taxable corporate entities to maintain a liability account for the deferred taxes that would be due *if* the unrealized gains were immediately realized, this is a non-cash, bookkeeping entry that has absolutely no effect on the amount of the invested assets. That this accounting provision for possible future taxes is sometimes termed an "interest-free loan from the Treasury" simply affirms the importance of maximizing unrealized gains, because the longer the gains remain unrealized (which is to say the longer this so-called "interest-free loan" remains unpaid), the more valuable it becomes, since the compounding is working for the owner and not the Treasury. (It is this same principle, of course, that makes IRAs so appealing.)

This term, "interest-free loan from the Treasury," is unfortunate, because it implies (since one party's liability is another party's asset) that this liability provision for possible future taxes is *already* an asset of the Treasury, which has benevolently agreed to forego the interest thereon. But this is clearly not the case, because



² The top combined federal/state/local capital gains tax rate for New York City individuals and corporations in 1991 was slightly over 40% and 48% respectively. The federal rate alone was 28% and 34% respectively. At the opposite end of the spectrum, some other locations or lower-bracket investors will have lower effective rates than the 35% used here for illustration, but these differences will not materially affect the conclusions. The 6% growth assumption happens to approximate the Ibbotson Associates compound principal appreciation rate of common stocks for the sixty-six years ending in 1991.

Exhibit 2
Examples of Effect of Turnover on 20 Year After-Tax Growth*

Year	ANNUAL TURNOVER					
	10%				0%	100%
	1st	2nd	20th	Σ1...20	20th	20th
Beginning market value	100.00	105.79	251.19			
Ending market value before taxes	106.00	112.14	266.27			
Beginning cost basis	100.00	100.39	164.17			
Realized gain	0.60	1.17	10.21	108.94	0.00	176.83
Capital gain tax	0.21	0.41	3.57	38.13	0.00	61.89
After-tax proceeds reinvested	0.39	0.76	6.63	70.81	0.00	114.94
Ending cost basis**	100.39	101.15	170.81		100.00	214.94
Ending market value	105.79	111.73	262.69		320.17	214.94

* Assumes principal growth of 6% per annum and a capital gains tax rate of 35%.

** Note that the difference between the ending and beginning cost bases is the after-tax proceeds of the realized gains.

the “loan” only becomes due at the “borrower’s” option, i.e., when the taxpayer opts to liquidate the un-realized gain. Too many taxable investors, not to mention their advisors, overlook this immensely important distinction.

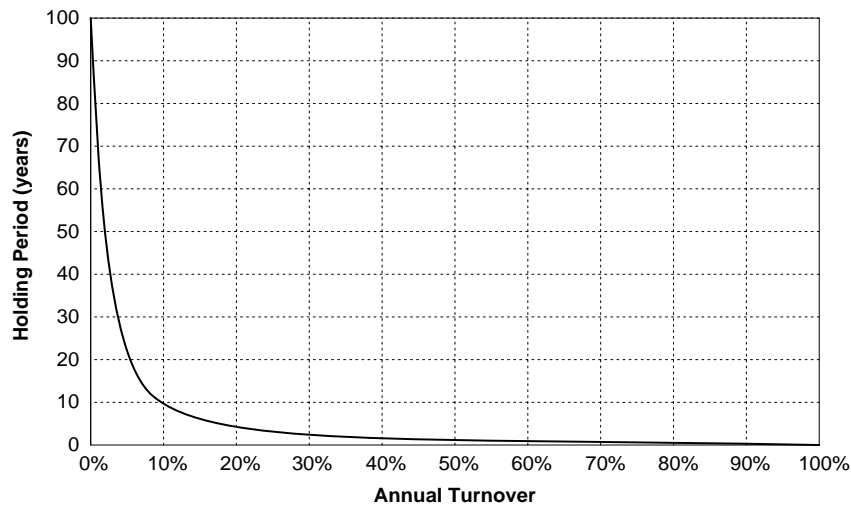
The horn-like chart on Exhibit 1 illustrates the very positive relationship between the size of a portfolio’s unrealized and thus untaxed gain (depicted by the width of the horn’s bell) and its after-tax terminal market value (depicted by the upper curve). The upper curve also illustrates how steep and slippery is the turnover road—especially at the outset. \$100 compounding at 6% per year grows to \$321 in twenty years if there is no turnover and thus no tax diminution, but with just 5% turnover the after-tax terminal value drops by 12% to \$284. (About two-thirds of this shrinkage is due to the taxes themselves, and the balance is the foregone compounding.) At 10% the terminal value falls another 7% to \$263. At a still modest (by present day standards) 25% turnover, it slips 11% more to \$235, and at 50% the terminal value is barely above the \$215 when turnover is 100%. Beyond 100%, there is no further tax diminution, because the cost basis of the portfolio, having been increased by the reinvestment of the after-tax sales proceeds (depicted by the lower curve), now equals the

market value, and there is no unrealized gain left to be realized and taxed. A sample of the data underlying Exhibit 1 using 10% turnover for illustration appears in Exhibit 2. For comparison purposes, Exhibit 2 also includes ending terminal data for zero and 100% turnover.

HOLDING PERIOD VERSUS TURNOVER

What is counterintuitive—but *very* important—about the chart on Exhibit 1 is that the marginal impact of taxes is the most severe at the outset (i.e., as turnover commences). Even the slightest turnover can sharply affect returns. Equally curious is that the marginal impact of taxes *diminishes* as turnover increases, and *disappears entirely* at turnover rates above 100%. These surprising phenomena stem from the fact that *the tax consequences of trading are a function, not of turnover, but of holding period*. Turnover is a straight line function that varies directly with trading activity; but holding period, which is the reciprocal of turnover, is non-linear with respect to activity. Exhibit 3 depicts the “hockey stick” relationship between turnover and holding period.

Exhibit 3
Relationship Between Turnover and Holding Period



Referring back to Exhibit 1, at 5% turnover, the average holding period is 20 years, and the after-tax terminal value is \$284. With a seemingly nominal increase to just 10% turnover, the holding period drops in half to 10 years, and the terminal value falls by more than 7% to \$263. In contrast, at 50% turnover the holding period is two years, and the after-tax terminal value is \$222; but the same 5% increase in turnover (going to 55%) drops the holding period only slightly to 1.8 years, and the terminal value slips imperceptibly to \$221.

Whereas conventional wisdom thinks of any turnover in the range of, say, 1% to 25% as being categorically low and thus inconsequential, and of anything greater than 50% as being high and presumably of considerable consequence, the reality is just the opposite. While 25% turnover does seem low, such a strategy actually incurs over 80% of the taxes that would be generated at turnover levels of 100% or greater. Because of the "hockey stick" relationship between turnover and holding period, *it is far more critical for taxable investors to be mindful of changes in the very low turnover ranges than in the medium and high ranges, because once the low ranges have been passed, nearly all of the tax damage has already been done.*

HOW MUCH ADDITIONAL RETURN IS REQUIRED?

Looking only at Exhibit 1, one would conclude that a zero turnover, "buy and hold," passive approach is the optimal strategy for a taxable investor. But this presupposes two important conditions: first, that the active manager's turnover will actually add nothing to the passive return (i.e., that the manager's "alpha" is indeed zero or worse); and, second, that the assumed principal growth rate (6% in our example) will persist throughout the horizon period (twenty years) despite the maturation of the individual holdings that must inevitably occur. Exhibit 4 addresses the first of these issues, and Exhibit 5 the second.

The upper curve on Exhibit 4 indicates the annual pre-tax asset growth required at each turnover level to net the 6% after-tax growth when turnover is zero (the flat curve in the middle). At just 5% turnover, 6.7% growth (70 additional basis points) is needed to offset the taxes. At 10% turnover, 7.2% growth (120 additional basis points) is required. The break-even incremental pre-tax growth increases to 215 basis points at 25%; to 278 at 50%; and to 323 at

IS YOUR ALPHA BIG ENOUGH?

Exhibit 4
Additional Pre-Tax Growth Required to Equal After-Tax Growth at Zero Turnover

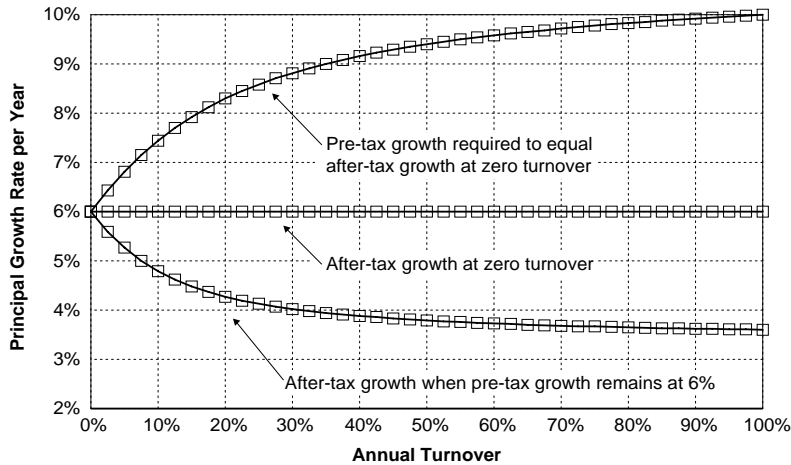
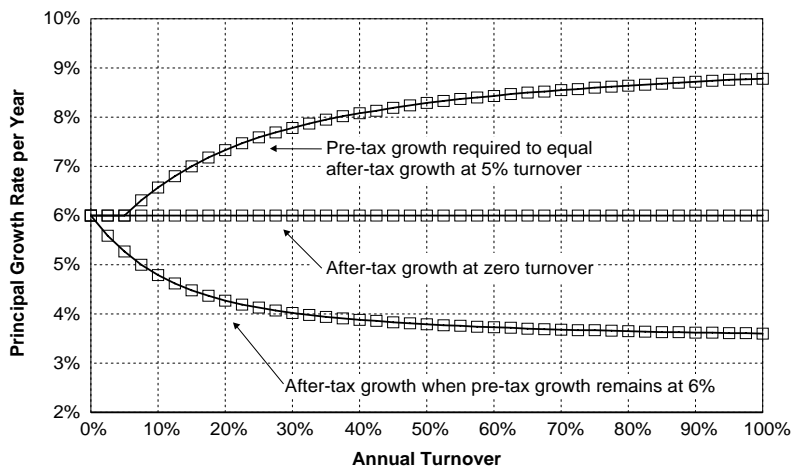


Exhibit 5
Additional Pre-Tax Growth Required to Equal After-Tax Growth with 5% Turnover



100% or higher turnovers. The lesson here is obviously that even at very low turnover levels the “alphas” required to compensate for the concomitant capital gains taxes are substantial, and are unlikely to be achieved except in a very inefficient market.

But despite this unpromising theoretical prospect, an ever-hopeful owner might still respond, “Well, let’s see what our manager can

do.” But before signing the manager’s contract, the owner would be advised to study the lower curve on Exhibit 4, which plots the after-tax growth that would result if the manager incurs the turnover but does *not* generate any additional “alpha.” At just 5% turnover, the owner ends up with 5.36% growth or 64 basis points less than the static return. This frictional loss from taxes increases to 105 basis points at 10% turnover; to

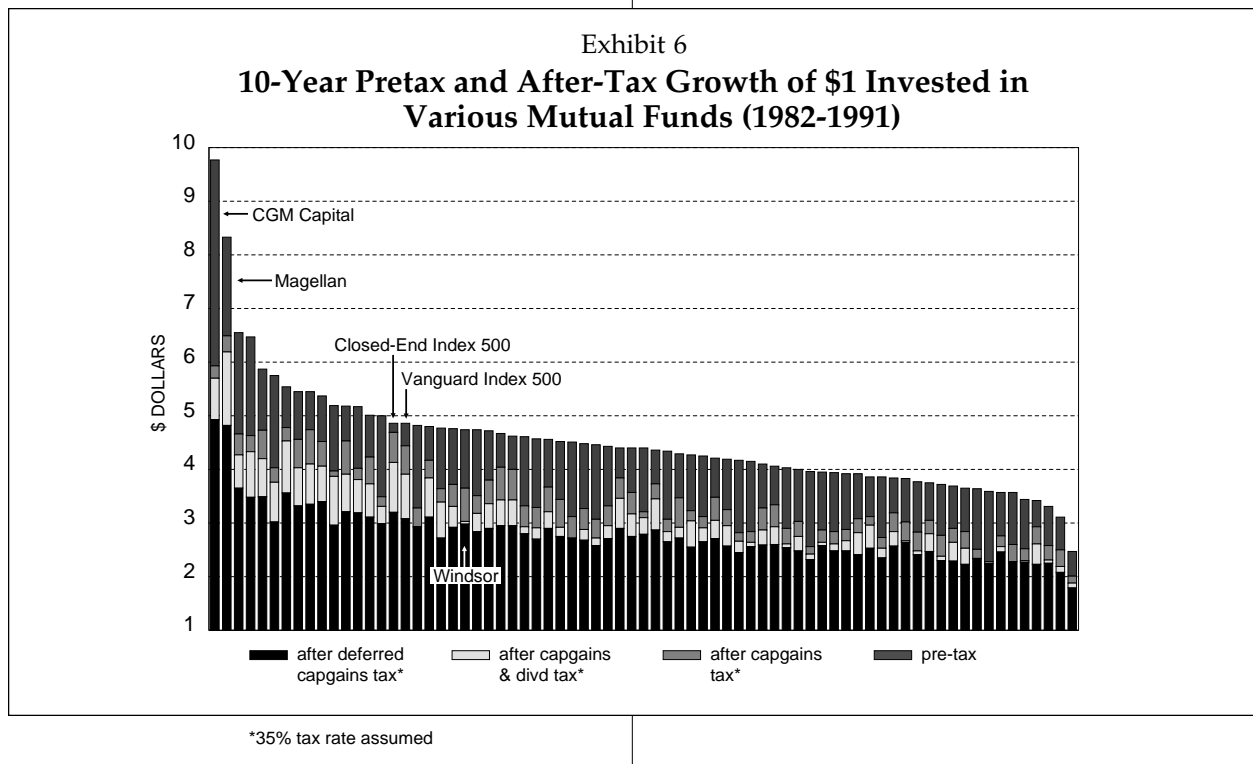
163 at 25%; to 193 at 50%; and 210 at 100%. Given the enormity of the additional “alpha” required to break even after taxes, plus the considerable downside cost of coming up short, the “bird in hand” of the static growth rate would seem to be a much better bet than an active manager’s “bird in the bush” promise of adding value by actively trading the portfolio.

BUT THE “STATIC GROWTH RATE” CAN’T GO ON FOREVER

We turn now to the second “buy and hold” mandatory condition, namely, that the assumed 6% static growth rate will persist undiminished throughout the horizon period, in this case twenty years. Since any sensible investor understands that a “buy and hold” strategy, if pursued long enough, must inevitably result in flat and eventually negative growth as the holdings mature, portfolios must therefore be pruned, and

pruning means turnover, which means realizing gains, which for taxable investors means paying taxes. This reality pertains even to totally passive index funds, because the index compilers (be they Standard & Poor’s, Russell, Wilshire, or whoever) must periodically adjust their universes to reflect take-overs, bankruptcies, etc.

As a proxy for this “some inevitable turnover,” we assume on Exhibit 5 a 5% annual turnover rate, which happens to modestly exceed the turnover in the S&P 500 in recent years.³ The only difference between Exhibit 5 and Exhibit 4 is that the upper curve has been shifted downward as a result of reducing the after-tax bogey from zero turnover and 6% growth to 5% turnover and 5.36% growth. But even after lowering the bogey, the additional “alpha” requirement to offset turnover-generated taxes is still considerable. 48 basis points is required at 10% turnover; 131 at 25%; 186 at 50%; and 224 at 100%. If 5% is a reasonable approximation of the “real world turnover” that should be reflected in a passive or semi-passive performance benchmark, taxable investors would still be advised to bear *caveat*



³ The annual turnover of a purely passive S&P 500 index fund for the ten years ending in 1991 was 3.2%.

emptor (or more specifically, *caveat mercator*⁴) in mind when considering active managers' promises of sufficient additional alpha to cover their turnover-generated taxes.

MOST ALPHAS CAN'T SUPPORT THEIR TAXES

Having seen the height of the theoretical hurdles that the tax costs of active management impose, we turn in Exhibit 6 to review some empirical data. Exhibit 6 plots in order of descending pre-tax growth the pre-tax and after-tax performance of 72 large equity mutual funds from 1982 through 1991, including the Vanguard Index 500 fund, which mirrors the Standard & Poor's 500 index.⁵ After-tax growth is shown for taxes actually paid during the ten years, first on the funds' realized capital gains (marked with medium shading) and then for capital gains plus

ordinary dividends (marked with light shading). The black bars extending *below* the light shading represent the *optional* tax consequences of liquidating the mutual fund investments at the end of the ten year period and paying the deferred capital gains taxes, a subject we discuss separately later. The methodology underlying Exhibit 6 is detailed in footnote 6.⁶

Because index funds packaged in open-end mutual fund form, like the Vanguard Index 500, often realize capital gains when liquidations are made to meet net shareholder redemptions, and because these so-called "redemption gains" are *in addition* to gains arising from changes in the index's constituent holdings, Exhibit 6 also includes a fictional (but quite possible to replicate) fund labeled the "Closed-End Index 500."^{7,8} This fund is basically a hypothetical closed-end version of the open-ended Vanguard Index 500. Because a closed-end fund would not incur "redemption gains," the "Closed-End Index 500's" tax cost over the 1982-91 period is 47 basis points a year less

⁴ While Latin is neither authors' forte, we hope that *caveat mercator* translates as "trader beware."

⁵ The 72 mutual funds on Exhibit 6 include all of the Growth and Growth & Income funds as classified in *Morningstar Mutual Funds* that had at least \$100 million in year-end net assets throughout the 1982-91 period.

⁶ The methodology for calculating after-tax growth of mutual funds is explained in the following example. Assume for a given year a beginning NAV/share of \$10.00, a capital gains dividend/share of \$2.50, an income dividend/share of zero (to simplify the example), and a total return with all dividends reinvested of 30%. (All of this data is available in *Morningstar Mutual Funds* and elsewhere.) Using our assumed 35% tax rate, the tax expense is \$.875 (35% of \$2.50). The ending pre-tax wealth is \$13.00 (\$10.00 plus 30%). "Paying" the \$.875 tax out of the ending wealth leaves \$12.125, which is an after-tax return of 21.25%. Linking the decimalized after-tax returns (e.g., 1.2125) for each of the years produces the ten year after-tax growth of \$1.00 as shown in Exhibit 6.

The deferred capital gains tax (which is assumed to have been "paid" at the end of the tenth year) is 35% of the difference between the ending pre-tax growth and the tax cost basis, which is the \$1.00 originally invested plus the sum of all the capital gains and income dividends received and reinvested during the ten years. The per share dividend information is known, but the additional number of shares bought with the previous dividends must be determined to properly calculate the cost basis. Using the example above (i.e., a beginning NAV/share of \$10.00, a capital gains dividend of \$2.50, a total return of 30%, and an ending NAV/share of \$12.00), we can calculate that the ending number of shares must be 1.0833 (130% of \$10 divided by \$12.00 times the beginning number of shares of 1). The next year's dividends per share are then multiplied by this 1.0833 factor to determine the new cost basis, and the procedure is repeated for each subsequent year. That this calculation assumes for convenience that all the dividends are reinvested at the same point in time each year would seem to be of minor consequence.

⁷ Index funds generate capital gains taxes as gains are realized when the constituent companies change, with the replacement of taken-over companies being a particular case in point. Index funds, however, like the Vanguard Index 500, which are packaged in open-end mutual fund form, may also realize capital gains when liquidations are made in the portfolio to meet net shareholder redemptions. These realized gains (although incurred on behalf of the departing shareholders, who will pay their own capital gains taxes) are distributed at year-end to the remaining fund shareholders and are taxable to them. The little known result is that *the Treasury temporarily collects two taxes on essentially the same gain*. Because of this double taxation on so-called "redemption gains," the use of an open-end vehicle such as the Vanguard Index 500 as an after-tax performance benchmark *overstates* the tax impact of owning an S&P 500 index fund outright.

⁸ If there were sufficient demand from taxable investors, it is possible that one of the mutual fund houses might offer a closed-end index fund product wherein redemptions would be limited to the availability of cash flow coming into the fund. Alternatively, several large taxable investors could, perhaps, create such a fund in partnership form. Obviously, any format that limits withdrawals has adverse liquidity implications, but for long-term investors the tax savings may well be worth this cost. In seeking more tax-efficient alternatives, however, investors need to remember that the Vanguard Index 500 and its cousin, the Vanguard Institutional Index, at 18 and 8 basis points respectively, have exceptionally low fee structures, which may offset, to some extent, the "redemption gain" tax problem.

than the Vanguard Index 500.⁹ We use the “Closed-End Index 500” as a proxy for a “real world” after-tax benchmark in Exhibit 6. Some readers, however, may prefer to substitute the readily available Vanguard Index 500, whose after-tax results still compare quite favorably.

Of the 72 actual funds on Exhibit 6, fifteen had pre-tax growth greater than the “Closed-End Index 500,” but only five of these had better growth after capital gains taxes. And of these five, only two funds, CGM Capital and Magellan, exceeded the Closed-End Index 500 by more than 0.2% per annum. While it is tempting to assume that these exceptions are evidence that “it can be done” (i.e., that funds producing superior after-tax returns can be identified *ten years in advance*), the reality is that the chances of identifying two star performers out of 72 contenders *in advance* are slim at best.¹⁰

With its 200+% average turnover, capital gains taxes consumed almost 40% of CGM Capital’s extraordinary ten-year pre-tax wealth.¹¹ Magellan, on the other hand, had 15% lower pre-tax wealth than CGM, but, giving back only 22% in capital gains taxes, its after-tax value was 9% higher.¹² Windsor, whose pre-tax value was almost as high as the S&P 500’s, lost 23% to capital gains taxes as compared to only 9% for the Vanguard Index 500 and 4% for the “Closed-End Index 500.” Both of the index funds’ capital gains tax costs as a percent of pre-tax wealth were by far the lowest of any of the funds. Studying the pattern of the top after-tax bars on Exhibit 6 should leave no doubt as to the major importance of capital gains taxes on a taxable investor’s *real* economic return. Exhibit 7 further emphasizes the tendency of index funds to have superior after-tax returns.

Taxes on dividends are also important,

⁹ Using Standard & Poor’s “500 Information Bulletin,” which first became available in September, 1985, we analyzed the “sales” in the S&P 500 index for each of the 76 months ending December 1991. Because the “500 Information Bulletin” was not previously available, we assumed that 9/1/85 was the indexed portfolio’s inception. We also assumed that “sales” were made at the holding’s weighted market value at the end of the prior month. And, needing a reasonable approximation, we assumed that the cost basis was 50% of the holding’s weighted market value at 9/1/85 if it had been in the “original portfolio,” or its actual cost if it had been subsequently added to the S&P. (These cost basis assumptions have the effect of understating the tax consequences for a very long-term index fund holding, and vice versa.) If *all* “sales” had been taxable, the annualized capital gains tax cost would have been 59 basis points per year (using the assumed 35% tax rate). Consulting a tax service, we then checked each “sale” for taxability (e.g., companies disappearing from the index as a result of exchanges of stock with other S&P 500 companies would not have been taxable transactions). This further analysis indicated that the true tax cost for this six-plus year period was only 47 basis points per year, which we then opted to use to adjust the full ten year history of the Vanguard Index 500. This adjustment was made by reducing the Vanguard Index 500’s actual capital gains dividends per share each year to the point where the capital gains tax equalled .0047 (47 basis points) of the beginning net asset value per share. Using these adjusted capital gains dividends, we repeated the procedure described in footnote 6, and labelled the result the “Closed-End Index 500.”

¹⁰ In the ten year 1982-91 period, Magellan’s net assets grew from \$107 million to \$19.2 billion, but \$18.3 billion of this growth was *new money*, of which more than half came in the last three years, and more than a third in the final year. [The beginning NAV of \$107 million multiplied by the ten-year total return (1.236¹⁰) is about \$900 million.] While Magellan was indeed a marvelous horse to ride over these ten years, the fact is that very few investors actually did. The other “big winner” in Exhibit 6, CGM Capital, presents a different story but a similar moral. The fund’s net assets grew over the 1982-91 period from \$64 million to \$326 million, but this was only about half of the fund’s actual internal growth. Unlike Magellan, CGM Capital apparently had rather significant cash outflows, perhaps prompted by its very volatile performance (e.g. up 76% in 1982 and 99% in 1991). In any case, it is fair to say that many –if not most– investors did not enjoy the full extent of this fund’s spectacular ten year performance.

¹¹ The correlation between average annual turnover and capital gains taxes as a percent of pre-tax growth was just over 40% for the 72 fund universe. This correlation, while statistically significant, was nonetheless lower than we would have intuitively suspected. A possible explanation may be that some very active managers turn over their *unsuccessful* holdings rapidly and retain their winners, while some very low turnover managers use their infrequent trades primarily to sell their highly appreciated holdings. Another explanation –and probably a better one– is that within the high turnover range, the tax impact of changes in turnover is minimal, because of the “hockey stick” effect discussed in connection with Exhibits 1 and 3. Given that the average turnover of the funds on Exhibit 6 was a hefty 75%, we probably should not have expected a stronger correlation between turnover and taxes.

¹² Because mutual funds typically distribute realized capital gains only at year-end, and because these distributions go to the year-end shareholders, these statistics on the impact of capital gains taxes on various funds may be somewhat misleading, especially in the case of a highly successful fund like Magellan. Funds that attract large amounts of new money (usually because of their superior performance records) have the additional advantage of having their capital gains distributions diluted, because the realized gains are distributed over a larger base of shareholders. That Magellan’s capital gains tax impact on Exhibit 6 is so much less than CGM’s may have as much or more to do with the funds’ capital inflows as with their respective investment styles. [We are indebted to C. M. Royce for this important insight.]

Exhibit 7

Number of Large Actively Managed Mutual Funds That Out-Performed Index Funds (1982-91)

Total Return	"Closed-End Index 500"	Vanguard Index 500
Pre-tax	15 of 71	15 of 71
After capital gains taxes	5 of 71	10 of 71
After capital gains & dividend taxes	6 of 71	9 of 71
After all taxes, including deferred	10 of 71	13 of 71

especially for higher yielding funds like Windsor or, to a lesser extent, the two index funds, but from the relative lengths of the vertical lines above and below the black diamonds on Exhibit 6 it is obvious that capital gains taxes are far and away the more significant. Even Windsor, whose 6% average dividend yield was the highest in the universe, gave up only 13% of its pre-tax return in dividend taxes as compared with 23% in capital gains taxes. For the universe as a whole, dividend taxes consumed 7% on average of the pre-tax return while the capital gains tax cost averaged 23%. For taxable investors, however, this is good news, because *the decision to incur capital gains taxes rests largely in the owner's hands*. The irony is that taxable owners usually delegate this very critical option to agents (e.g., mutual funds and portfolio managers), who typically disregard it completely.

While both the index funds' dividend tax expense was 11% of pre-tax value, which is the seventh highest in the Exhibit 6 universe, two additional points should be borne in mind. First, a *corporate* owner eligible for the 70% dividend received deduction would have a substantially lower (by about two-thirds) dividend tax expense. Second, it is possible to construct an index fund with a "low yield tilt," which, in combination with low turnover, might provide taxable investors with an even better after-tax return than the S&P 500, providing, of course, that the tax saving from the tilt were not offset by a lower pre-tax return.

BUT WHAT ABOUT THE DEFERRED TAXES?

The casual rebuttal to the "taxes matter" argument always seems to hinge on "yet-to-be-paid" deferred taxes on the unrealized gains. Notwithstanding the fact that the decision to pay these deferred taxes is usually *voluntary*, we appended the deferred taxes to the bottom of each bar on Exhibit 6 as if they had been paid at the end of the ten-year period. The lower ends of each bar therefore represent the "*after-all-taxes*" value of the mutual funds had they been liquidated at the end of 1991. Because the two Index 500 funds had the lowest cost bases in the universe and thus the largest unrealized capital gains, their deferred tax expense, at 17% of the pre-tax return for the open-end fund and 19% for the closed-end fund, were the highest in the universe. Even so, only 10 of the 72 funds had better "*after-all-taxes*" growth than the closed-end index fund, and only 13 exceeded the open-end fund. Furthermore, had we done the Exhibit 6 exercise using a longer holding period (e.g., twenty years instead of ten), the index funds' "*after-all-taxes*" relative growth would have been even better, because pre-tax growth compounds geometrically (because the tax money is working for the owner and not the Treasury) while the deferred tax liability does not.

As we said at the outset, unrealized gains (which generate only “book entry” deferred taxes as distinct from real taxes paid with real money) are an enormously valuable asset to a taxable investor. Not only are the so-called deferred taxes working for the taxpayer and not the Treasury, but, better yet, tax deferral can in some cases eventually become tax avoidance, since, under present law in the case of individuals, the deferred tax liability is forgiven at death. Garland [1987] appropriately refers to this so-called “stepped up cost basis at death” provision as “free life insurance (from the IRS) for owners of appreciated property.” Given these points, it is difficult to understand how there could be any doubt about the importance of maximizing the deferred tax liability account.

REALIZED LOSSES ARE LIKE CASH IN THE BANK

Four approaches come to mind which taxable investors might take to minimize capital gains taxes. The first is the most simple and straightforward, namely, that *losses should always be realized (i.e., harvested) when they have reached an economical size*. Since realized capital losses can be offset against realized gains, whether concurrent or from the past or in the future, they are almost like cash in the bank, because they can be essentially exchanged at the Treasury window for tax dollars that would be paid, or have already been paid, or will be paid in the future.¹³

There are only two limiting factors in realizing losses, of which the first, transaction costs, is by far the more important. *The loss must be large enough so that the tax savings from netting realized losses against gains exceeds the transaction costs, including brokerage and especially the unseen but very important “impact on the market.”*¹⁴ The second factor is the IRS’s so-called “wash sale”

rule, which prohibits holdings sold at a loss to be purchased within 31 days on either side of the sale. But given any reasonable assumption about the difficulty of predicting short-term market prices, the calculable “cash value” of realizing a loss would seem to easily outweigh the risk of “being out of the stock” –especially if the replacement investment were another equity.

While there is definite utility in realizing losses, it should be understood that this will only alleviate, but not resolve, the chronic capital gains tax problem that long-term equity investors are almost always facing. Because equity prices in general must rise over the long term as the economy grows, in long horizon portfolios, unrealized gains will almost always outweigh unrealized losses except for rare and relatively short periods such as the early '30s. Rather than a panacea, taxable investors might better think of realizable losses as simply opportunities to periodically refresh their portfolios by realizing offsetting capital gains tax-free.

UNDER CERTAIN CIRCUMSTANCES, OVERLAY STRATEGIES CAN BE “PURE ALPHA”

The second approach for minimizing taxes is the use of so-called *overlay strategies*, the practicality of which, generally speaking, have only developed in recent years with the advent of viable markets for derivative securities. Overlays, as the name implies, leave the basic underlying portfolio strategy in place, but, like a press in golf, they become a second and typically contrary or hedging bet on the market using futures (or options or swaps) to temporarily tilt the strategy in a particular direction. For instance, a manager of a taxable equity portfolio who is bearish about the near-term outlook for stocks should still be concerned about liquidating all or even a significant part of the portfolio, because

¹³ The IRS carry-forward and carry-back regulations obviously apply here, but, at least at the present time, these rules afford considerable flexibility.

¹⁴ Jeffrey [1991] comments: “The only advantage taxable investors have over their non-taxable counterparts is that the transaction cost nemesis is so tangibly apparent (because of the taxes) that turnover is more apt to be minimized. For non-taxable investors, where the transaction costs may be only in the 100- to 300-basis point range and are mostly of the invisible ‘impact on the market’ variety, the cost of turnover is too easily overlooked.”

avoiding the stock market decline (if the forecast were correct) would be offset in large part by the capital gains taxes that the liquidation would precipitate. For example, the liquidation of a \$100 million portfolio with a \$50 million cost basis would trigger \$17.5 million in capital gains taxes at 35%. For this market timing strategy to break even on an after-tax basis assuming, say, 1% transaction costs each way, the underlying equity portfolio would have to decline by almost 20%, *and stay down long enough to allow buying back in*. And this is the good news. The bad news is that if the manager's forecast were incorrect (i.e., if the market did not decline over the fairly short-term life of the overlay), the taxes triggered by the liquidation could not be undone, and thus the portfolio's after-tax total return would substantially underperform the market.

But suppose that, instead of selling the underlying portfolio's stocks, the manager sells \$100 million in futures contracts on, say, the S&P 500 index (which we assume to resemble the portfolio). Now the scenario becomes quite different. In the above example, if the unrealized gain in the underlying portfolio were to decline by \$20 million, an offsetting gain of \$20 million (disregarding the fairly modest expenses of the futures contract) would be realized on the overlay futures contract. After deducting \$7 million in taxes on this gain, the overlay strategy would have produced \$13 million in "excess return" over and above the return from the primary underlying strategy.

Furthermore, if the overlay "hedge bet" should turn out to be wrong (i.e., if the market stays flat or goes up), the taxable loss on the overlay strategy would be available to offset realized gains (past, present, or future) in the underlying primary portfolio. To the extent that these gains being offset were from the "inevitable turnover" discussed earlier that all portfolios must incur to remain viable over the long term, the overlay strategy (by offsetting taxes that would otherwise be paid) is again providing "excess return," *even though the manager's market prediction was wrong*. In this limited sense, the overlay strategy can be termed "pure alpha."

But is this a "free lunch?" Of course not. Overlay strategies have their own costs, including commissions, fees and collateral requirements. But the "killer cost" would be if the manager's overlay hedging bets were large, frequent, and often wrong, thereby necessitating *extra turnover* in the underlying portfolio to generate the offsetting capital gains. In this regard, overlay strategies are much like any more conventional strategies: if they are expected to be unsuccessful in their own right, they shouldn't be pursued. While overlay strategies, standing alone, may appear to provide "pure alpha," they can only be used in concert with the underlying basic portfolio strategy, where we have already demonstrated that the alpha from turnover is problematic at best.

It seems strange that overlay strategies are growing in popularity in pension and endowment situations, where wrong guesses about the market cannot be tempered by tax savings; and yet they seem to be rarely used in taxable portfolios despite their very significant tax minimizing potential. This is presumably due to three factors. First, as already noted, taxable portfolio owners are too often oblivious to the tax consequences of the investment strategies being used on their behalf, and their managers are loathe, for obvious reasons, to call attention to the fact that their turnover-generated "alphas" may not, in fact, be positive after taxes. Second, derivative securities are still somewhat foreign to most taxable investors and to most conventional portfolio managers –not to mention derivatives' traditional "speculative" connotation. Third and perhaps most important, the benefits of overlay strategies for taxable investors are subtle and thus difficult to explain. Combining these factors with the ever-present "fail conventionally" syndrome, it is not difficult to see why business has continued as usual.

“DESIGN A PORTFOLIO YOU’RE NOT LIKELY TO WISH TO TRADE”¹⁵

The third approach taxable investors might take to minimize capital gains tax shrinkage is akin to pre-marital counseling advice: namely, to *try to build a portfolio that you can live with for a long, long time*. But how does one do this? A passive, well-diversified, low turnover index fund is an obvious answer.¹⁶ A semi-passive portfolio tailor-made to fit the owner’s particular taste and circumstances is another alternative.¹⁷ Dealing with the latter is best left to a separate article, but it may be helpful here to discuss briefly some categories that might best *not* be owned.

- So-called cyclical stocks are the first category that comes to mind. For taxable investors, cyclical strategies are likely to have mediocre results to the extent that the winners are typically not retained (because they aren’t expected to be winners in the long term), and the taxes on the winnings are thus paid earlier rather than later. The cyclical losers do, of course, provide usable capital losses, but the higher turnover inherent in most cyclical strategies limits the after-tax rewards.
- Small companies may be another case in point insofar as the winners tend to disappear in taxable takeover transactions, although we would be the first to agree that an equity portfolio with a long-term growth orientation should probably have some seeding of smaller, younger companies.
- So-called select funds, in which companies from a particular industry have been grouped in a mutual fund format, are perhaps the *antithesis* of the ideal strategy for long term taxable investors, because their whole *raison d’etre* is to facilitate trading in and out of market sectors. Select funds’ sponsors would

presumably argue that their *raison d’etre* is to facilitate *concentration*, but since the keystone of a viable long term investment strategy is *diversification* rather than concentration, we stand by our view that select funds are probably not in most taxable investors’ best interest.

WHOSE RISK IS BEING DIVERSIFIED?

The last suggestion for minimizing capital gains taxes is simply to encourage owners to be more mindful of the selling that goes on in the good name of diversification. Too often, big winners are trimmed back or sold off at tremendous tax expense, not because the appreciated holding no longer fits the *owner’s* circumstances, but rather because it “outgrows the portfolio in which it originated, either in terms of its own market capitalization or, more often, because its increased weight... exceeds the *manager’s* comfort level” (Jeffrey [1991]). As Kirby [1984] says of his own portfolio management profession, “most of us are faster than Wyatt Earp... when it comes to taking a profit.” This propensity for profit-taking is explained by the fact that portfolio managers are fearful of seeing their performance results “torpedoed” by a market downturn in a large holding, plus the fact that they are typically not held responsible by clients for the tax consequences of their trading activity.

In multiple-manager situations in particular, *taxable clients must become involved in the tax problem*, at least to the extent of insuring that the managers are cognizant of and accountable for the tax consequences of their own activity, and that the tax consequences are integrated across the board. Common sense dictates that losses in one portfolio be realized to offset gains realized

¹⁵ Arnott [1991].

¹⁶ Not all index funds, however, have low turnover. Funds based on the Russell 2000, for instance, have considerably higher turnover than the S&P 500 funds. This is in part because of unsuccessful small companies dropping out of the universe, but the much more important factor is the upward migration of successful companies into the higher capitalization Russell 1000, offset by Russell 1000 companies migrating *down* into the Russell 2000.

¹⁷ We are familiar with a taxable situation in which *dividend growth* is the primary criterion in selecting and maintaining the portfolio. In addition to tilting the portfolio toward having good dividend growth itself, which the owner desires, steering primarily by the slow turning “dividend compass” instead of the much more volatile “earnings compass” used by most other “portfolio navigators” tends to materially reduce turnover and, therefore, taxes, which is why the owner has made this choice.

in another, and that no economically realizable losses be left unharvested. There is an understandable tendency for clients to assume that their managers should be insulated from these tax problems lest their management styles be inhibited. This attitude presupposes, however, an affirmative answer to the question we ask in our title, "Is Your [Manager's] Alpha Big Enough To Cover Its Taxes?" Because we cannot find much evidence to support an affirmative answer, and because we know the money management industry tends to have a tax-free mentality, we believe taxable clients should become more involved. As Garland [1987] reminds us, "treating appreciated securities like outlaws in a Western movie –worth as much dead as alive, or (in this case) worth as much sold as held" simply makes no sense if one is taxable.

SUMMARY

Managing a taxable portfolio is indeed a very different undertaking from managing a non-taxable portfolio, and the arithmetic basis of this contention is simple. If asset growth, for example, is 6% per annum and the capital gains tax rate is 35%, *the tax cost is a very material 210 basis points* if the portfolio is turned over completely each year, and nearly as much if turnover is held to a low (by modern day standards) of 25%. Perhaps the most valuable lesson that surfaced in this study is that *it is much more important for taxable investors to be concerned with changes in turnover in the very low ranges than in the high ranges*, because once the high ranges have been reached, nearly all the tax damage has already been done.

With very few exceptions, our comparison of the ten-year results of 71 actively managed mutual funds with two passively managed S&P 500 index funds gives little indication that turnover adds enough value to compensate for the capital gains taxes that turnover generates. In fact, the evidence is quite to the contrary. On a pre-tax basis, only 15 of the actively managed funds out-performed the S&P 500, but after taxes

–and after an average of 75% annual turnover in the quest for "alpha"– ten *fewer* active funds out-performed. Pre-tax, the average return of the 71 active funds was 16% per year; but after-tax the average dropped to 13%. This empirical evidence on top of the arithmetic that demonstrates how quickly and how severely turnover-generated taxes impact returns would seem to answer the question we raised in the title, namely, that *most manager's alphas are not big enough to cover their taxes*.

We also demonstrate that there are some ways –besides the viable option of holding a totally passive portfolio– to reduce turnover and ameliorate the tax problem. Using these approaches, perhaps more active managers' alphas may actually become positive on a tax-adjusted basis. Some of these tax conscious approaches are dictated by common sense, such as always harvesting realizable losses when they are large enough to justify the transaction costs, and avoiding strategies that have inherently high turnover. Using derivatives to effect portfolio changes without realizing taxable gains in the underlying portfolio is another possibility. We suggest in particular that the use of a low turnover primary strategy in concert with an active overlay strategy employing derivatives might conceivably be a major breakthrough in dealing with the active management dichotomy between turnover and taxes.

What we know for certain is that the job can be done better than it typically is today. But this will only happen if the client/owners become involved and insist that it happens. As Ellis [1985] says so well, "*Clients* –not their portfolio managers– have the most important job in successful investment management." Nowhere is this more true than in the case of taxable portfolios.

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