

## **Investment Management for Taxable Investors**

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## INTRODUCTION

Much of the practice of investment management has evolved to suit the needs of tax-exempt institutional pension funds. There is an increasing realization, however, that many of the paradigms suitable for tax-exempt investing need to be modified for taxable investing.

Taxes matter a great deal. Taxes represent a very large performance drag, often larger than transaction costs, management fees, or inflation. The popular sentiment is that investors should not allow their investment decisions to be dominated by tax considerations. While it is true that tax considerations should not *dominate* investment decisions, tax considerations do significantly *influence* investment returns, and investors would be well advised to consider taxes in their investment decisions. Failing to do so can be expensive, particularly if investors allow taxes to erode their returns over the long term.

Taxes complicate decision-making in many ways. Here are a few key examples:

(1) Asset allocation, one of the most important investment decisions, is complicated not only by the particular tax rates that investors face, but also by their investment horizons and by the unrealized appreciation in their portfolios.

(2) There are many different tax rates, even for the same type of taxable investor. Federal rates differ for long-term capital gains, for short-term capital gains, and for dividend income. Many states tax gains and dividends as well. For most taxable investors the tax rate on dividends is much higher than on capital gains, yet for some the opposite is true. Tax laws are complex and change frequently. This makes tax-sensitive investing more difficult.

(3) In the presence of taxes, portfolio valuation becomes a more complex subject. The value of a taxable portfolio depends in large part on what happens to it in the future. The calculation of returns is difficult and idiosyncratic, and is dependent not only on tax rates

but also on the sequence of cash flows into and out of the portfolio. A good manager before taxes can become a poor one after taxes. Finally, there is no single benchmark or even set of benchmarks that apply to all taxable investors.

(4) Taxes affect the investment strategy chosen. Many indexed strategies are very attractive to taxable investors because they naturally have low turnover. Taxes complicate both the search for superior returns and the task of rebalancing portfolios.

(5) Taxes affect the choice of investment vehicle. Many commingled vehicles, which are attractive to tax exempt investors because of their returns to scale, are unattractive to taxable investors. Separate accounts provide customized and flexible tax management.

(6) Taxes change the risk characteristics of portfolios, insofar as risk is a function of the portfolios' return volatility.

In this chapter we shall discuss some of these issues in greater depth. We shall focus primarily on portfolios of publicly traded *equities*, but shall address other investment topics as well.

Taxes are a liability, intricately connected to the investment asset. We take the position that this liability is best managed in co-ordination with the asset. To deal successfully with taxes, managers must change their tax-exempt investment processes. Managers who understand after-tax performance measurement will naturally prefer certain investment styles, e.g. relatively passive approaches. Clever tax management methods can enhance after-tax returns.

## **INVESTMENT DECISIONS IN THE PRESENCE OF TAXES**

### **Types of Taxes**

We shall discuss three broad classes of taxes in this paper: the taxation of capital gains, dividends and estates.

**Taxes on capital gains:** Capital gains taxes are incurred whenever securities are sold. The tax rate depends on the holding time and generally decreases with age. Current Federal tax rates on realized capital gains vary widely, e.g. from as little as 10 percent (for individuals with little other income) to as much as 35 percent (for corporations) or roughly 40 percent (for individuals with short-term gains and significant other income). Most states tax realized capital gains as well.

From the portfolio managers' point of view, capital gains taxes are a hurdle that they must overcome to justify trading a security. When considering the sale of a security, managers must compute the tax due and evaluate whether the benefit of selling the security would warrant the realization of the gain. Often the answer will be no. Investment managers should be particularly cautious about realizing short-term gains if the tax rate on short-term gains is much higher than that on long-term gains. In most situations investors have the option not to realize unrealized gains. Deferring gain realization is one of the easiest and most direct ways to improve after-tax performance.

**Taxes on dividends:** Individual investors generally pay taxes on dividends at the same rate as ordinary income, often twice the rate of capital gains. Reducing the dividend component of investment returns can thereby increase these investors' after-tax returns — as long, of course, as aggregate total returns are not reduced by such an effort. The common way to accomplish this is by investing in a portfolio of “growth” stocks with low dividend yields, rather than “value” stocks with high dividend yields.

Corporations pay a lower tax on dividends, due to the so-called Dividends Received Deduction,<sup>1</sup> than they do on realized capital gains. This encourages corporations to seek

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<sup>1</sup>The United States taxes dividends twice, once as part of a corporation's pre-tax profits, and a second time when that profit is distributed to shareholders. In one situation it is even possible for dividends to be taxed three times. Suppose Corporation A owns shares of Corporation B. Corporation B earns a profit and pays a tax. It then pays a dividend to Corporation A, which pays a second tax. Corporation A then pays a dividend to its shareholders, who pay a third tax.

investments whose returns are tilted in favor of dividends rather than capital gains. There is no free lunch, however. Carrying out a successful, tax-efficient, higher-yield investment strategy can be both difficult and risky.

**Taxes on estates:** Estate taxes themselves are beyond the scope of this chapter, but note that these taxes have important consequences for individual investors. Investors' estates pay no capital gains taxes. Their securities' costs are stepped up to their market values at the valuation date used in the estate appraisal (generally the date of death)<sup>2</sup>. This fact has the effect of giving elderly and terminally ill investors a life insurance policy for their appreciated securities. The policy pays off when those investors die, but disappears if they sell their stocks beforehand<sup>3</sup>. This option-like feature complicates investment decisions by making it worthwhile to continue to hold appreciated securities even when their long-term outlook may be unattractive.

### **After-tax Performance Measurement**

The Association for Investment Management and Research (AIMR) has promulgated a set of standards for measuring investment returns. The second edition of those standards<sup>4</sup> presents a method for measuring after-tax returns. These standards were designed primarily for investment managers' use when presenting historical returns to potential clients. Nevertheless, the standards provide a useful starting point for calculating and evaluating individual portfolio returns.

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To reduce this tax burden slightly, Congress allows Corporation A to exclude 70 percent of the dividends it receives from its taxable income. The Dividends Received Deduction reduces the tax rate on the dividends paid by Corporation B and received by Corporation A to 10.5 percent (30 percent times 35 percent).

<sup>2</sup>While it may seem odd that living investors pay capital gains taxes while dead ones do not, we have heard that this is because Congress has long had a policy of taxing an event only once. Apparently even Congress balks at applying *both* estate taxes and capital gains taxes upon an investor's death.

<sup>3</sup>Garland, James P. "Taxable Portfolios: Value and Performance" *Journal of Portfolio Management*, Winter 1987.

<sup>4</sup>See the AIMR Performance Presentation Standards Handbook, second edition, 1997, which can be ordered from the AIMR at P.O. Box 3668, Charlottesville, VA 22903 or at [www.aimr.com](http://www.aimr.com).

The basic formula is:

$$\begin{aligned} \text{after-tax return} = & \left[ \text{realized gains} * (1 - \text{capital gains tax rate}) \right. \\ & + \text{increase in unrealized gains} \\ & + \text{taxable income} * (1 - \text{income tax rate}) \\ & \left. + \text{tax free income} \right] \\ & / \text{ starting asset value.} \end{aligned}$$

The standards use simplifying assumptions such as the absence of state taxes and a uniform (maximum) Federal tax rate for all clients. They also provide guidelines for adjusting returns for client-ordered withdrawals.

Managers' aggregate after-tax return data have a somewhat limited utility. Individual taxable investors' performance is idiosyncratic. Well managed, tax-efficient portfolios within a single firm will necessarily have different holdings with different cost bases. The firm's clients may have significant differences in their income and capital gains tax rates. Unlike the case for tax-exempt managers, where a low dispersion in returns is desirable, a tax sensitive manager who treats each client individually will have a relatively high dispersion of returns.

### **After-tax Performance Evaluation**

Performance measurement requires measuring the change in value of a portfolio from one period to the next. In calculating after-tax returns, the AIMR standard (and industry practice) is to deduct taxes paid on dividends and on *realized* capital gains. Morningstar measures the tax efficiency of mutual funds in this same manner. This gives an incomplete picture. What is missing is an attempt to evaluate the *unpaid* tax liability.

Stein<sup>5</sup> discusses the question of portfolio valuation in depth and provides a more accurate and generally more useful method of measuring current value. Two simple estimates of portfolio value are:

*Market value,  $V_m$*

Market value is used by AIMR, Morningstar, and the industry in general. This overstates true value. At any time a security is sold for a gain and taxes paid,  $V_m$  will be reduced.

*Liquidation value,  $V_l$*

At the other extreme, consider if we were to liquidate the portfolio immediately at the tax rate  $t_g$ <sup>6</sup>. This understates true value for investors with no desire to liquidate. The liquidation value  $V_l$  is:

$$V_l = V_m - t_g(V_m - V_c).$$

Both of these valuations are limited because they over-simplify the tax liability. If the portfolio remains invested into the future, we need to be more precise.

Consider an example<sup>7</sup>. Assuming an initial market value of \$100 and cost basis \$50, let the portfolio evolve over 20 years. Assume also an annual price appreciation of 7%, a

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<sup>5</sup> Stein, D.M., "Measuring and evaluating portfolio performance after taxes" Journal of Portfolio Management (1998), to appear.

<sup>6</sup> For simplicity here,  $t_g$  is the tax rate on both long- and short-term capital gains.

<sup>7</sup> More generally, let us assume an investment horizon of N periods at which point the portfolio will be liquidated and any unrealized taxes will be paid. Under assumptions on return (r), dividend rate (d), dividend tax rate ( $t_d$ ), capital gains tax rate, ( $t_g$ ), and the rate at which gains are realized (g), we can compute the final after-tax value of the portfolio. Let  $V_I$  and  $C_I$  be the market value and cost basis respectively of the portfolio at the start of period I. Then taxes are due on dividends  $dV_I$  at the end of the period, and the capital gain realized is  $g[(1+r-d)V_I - C_I]$ . Dividends and capital gains are re-invested, and taxes paid from the portfolio. For simplicity we allow capital losses, and credit the portfolio with the value of the tax saving. Then, at the start of period I+1,

$$C_{I+1} = C_I + (1-t_d)dV_I + g(1-t_g)[(1+r-d)V_I - C_I]$$

$$V_{I+1} = (1+r)V_I - t_d dV_I - t_g g[(1+r-d)V_I - C_I]$$

The final liquidation value after N periods is  $V_N - t_g(V_N - C_N)$

dividend rate of 3%, an annual capital gain realization rate of 5%, and a tax rate on dividends of 40% and capital gains of 20%. Exhibit 1 then shows how this investment will evolve over time.

**Exhibit 1**

	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	.....	<i>Year 20</i>
Starting market value	100	108.23	117.14		449.24
Starting cost basis	50	54.08	58.50		223.50
Ending market value, before taxes, divs	107	115.81	125.34		480.69
Dividends	3	3.25	3.51		13.48
Gain (unrealized)	57	61.73	66.84		257.19
Realized gain	2.85	3.09	3.34		12.86
Taxes paid	1.77	1.92	2.07		7.96
Re-investment	4.08	4.42	4.78		18.37
Ending cost basis	54.08	58.50	63.28		241.87
Ending value	108.23	117.14	126.78		486.20
Liquidation value					437.34

This computation now allows us a more careful evaluation of the tax liability. To value the portfolio currently, we ask the following question. What current cash value will result in terminal wealth equal to the liquidation value (\$437.34) under the same investment assumptions? We term this the Full Cost Equivalent (FCE) value of the portfolio. If  $V_c < V_m$ , the FCE value lies between the market value and liquidation value. It turns out that the value is \$95.7 for this example.

This valuation depends on the following parameters:

- the investment horizon
- the final disposition of the assets (some investors receive a step-up in tax basis on a bequest to heirs)
- future tax rates
- future returns – both capital appreciation and dividends (through investment returns on unrealized taxes)
- the rate at which capital gains will be realized over the period

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The difference equations (1) and (2) provide the cost basis and market value of the portfolio at each stage in time.

Stein<sup>8</sup> shows that the FCE valuation  $V_f$  can be written as:

$$V_f = V_m - f t_g (V_m - V_c) \quad (1a)$$

or

$$V_f = (1-f)V_m + fV_l \quad (1b)$$

for some value of  $f$ ,  $0 \leq f \leq 1$ . Comparing with the definition of liquidation value  $V_l$ , (1a) allows us to think of the FCE value as a liquidation value, but with the modified tax rate  $f t_g$ : the factor  $f$  adjusts the actual tax rate downwards. Expression (1b) allows us to think of  $V_f$  as a weighted average of the market value  $V_m$  and the liquidation value  $V_l$ . For the numeric example in Exhibit 1,  $f = 0.43$ .

A simple method for portfolio valuation, then, is to compute a liquidation value of the portfolio, but to use as the tax rate on capital gains a fraction  $f$  of the true tax rate. The value of the fraction depends on the investor, the horizon, tax rates, return expectation, and gain realization rate. Or, one can similarly compute a weighted average of the liquidation value and market value, where  $f$  is the weight of the liquidation value.

### **Performance Benchmarking**

In evaluating portfolio performance, the benchmark is key. It would be misleading to compare after-tax returns from a portfolio with pre-tax returns from a benchmark; consequently, the benchmark must be taxed as well. However, only a few firms publish after-tax benchmark returns.

For a portfolio that starts not from cash but from a pre-existing set of appreciated holdings, one useful benchmark would be the unchanged initial portfolio, held into the future. A good manager must provide additional after-tax value to this base case<sup>9</sup>.

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<sup>8</sup> Op. Cit.

On the other hand, starting with cash, an ideal benchmark would be an indexed portfolio with cash flows identical to those of the portfolio. Investment flows affect both portfolio performance and benchmark performance since taxes depend on the cost basis at which the securities were acquired.

Stein<sup>10</sup> determines the historical after-tax return of an S&P 500 indexed portfolio by computer simulation and explores the effect of the start date on after-tax return. These simulations are complex, but simplifications can be made. For example, one can treat an investment in the S&P 500 as a single security and, using the actual S&P 500 turnover level each month, apply the difference equations of footnote 7 to estimate how the cost basis and value of the benchmark change over time. A further simplification can be made, if necessary, by applying a uniform annual turnover rate to the benchmark index. Jeffrey and Arnott<sup>11</sup> and Dickson and Shoven<sup>12</sup>, for instance, found that turnover of the S&P 500 during the 1980s averaged around 3 percent per year. In any case, the after-tax returns of the benchmark index depend upon the basis of the securities in the index and therefore on the starting date of the analysis. For example, the after-tax benchmark returns for the S&P 500 during 1996 would be different (and lower) for an investor who began investing in 1990 than for one who began investing in 1996.

### **After-tax Risk**

One of the basic goals of investment management is to control risk by diversification. Here we define risk as the volatility of return or as the “tracking error” from a

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<sup>9</sup>The authors are indebted to Keith Ambachtsheer and Jean L. P. Brunel for this insight.

<sup>10</sup> Op. Cit.

<sup>11</sup> Jeffrey, Robert H. and Robert D. Arnott, “Is Your Alpha Big Enough To Pay Its Taxes?” *Journal of Portfolio Management* (Spring 1993), pp 15-25.

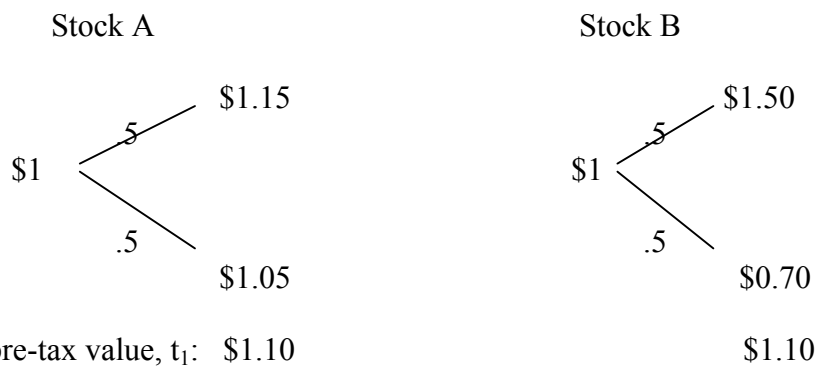
<sup>12</sup> Dickson, J.M. and J.B. Shoven, “A stock index mutual fund without net capital gains realizations,” *National Bureau of Economic Research, Working paper no. 4717, 1994.*

benchmark<sup>13</sup>. The presence of taxes changes the nature of risk. Let us consider a few aspects of this premise.

With respect to diversification, a common pragmatic concern is the following: how much is it worth paying now (because of the immediate taxation of capital gains) in order to diversify a portfolio of low-basis holdings? Once again, there is no easy answer, and the solution depends on the expected horizon, the expected return of the proposed assets, the expected return of the existing assets, the tax rate and risk tolerance of the investor. However, thoughtful tradeoffs based on analysis as in footnote 7 can provide useful insight.

Tax exempt investors often monitor the tracking error of their portfolios with respect to their benchmarks. The typical concern is the risk that the active manager takes relative to a broadly diversified benchmark in seeking the active return. Taxable investors concerned with this issue need to specify the base against which the tracking error is to be measured. A pre-tax benchmark is inappropriate if it requires taxable turnover. In practice, it is often worthwhile to incur tracking error risk relative to a pre-tax benchmark if this reduces taxes.

To illustrate that the nature of risk changes in the presence of taxes, let us work through a simple model. Consider two stocks with the same expected return but different degrees of volatility.




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<sup>13</sup> Grinold, R.C. and R.N. Kahn, *Active Portfolio Management* (Richard D. Irwin, Inc., 1995).

Pre-tax standard deviation: .07

.57

At time  $t_0$ , we have two stocks each with a purchase price of \$1. Each stock has two, equally likely, pre-tax return outcomes at time  $t_1$  and the expected return for each stock is 10%. However, stock A has less volatility than stock B.

To simplify further, assume that subsequent to time  $t_1$ , the two stocks behave the same, each with a return of 10% per year for 20 years. After this, the investment will be liquidated. We assume a tax rate of 20% on capital gains and 40% on dividends. We also assume that the investor has external capital gains at time  $t_1$ , and there are no capital loss limitations (i.e. the investor can productively exploit any losses).

Using our FCE valuation above, our parameters define the  $f$  value at time  $t_1$  as .43 and we use this to determine the value of each stock at  $t_1$ . If stock A rises to \$1.15 at  $t_1$ , its FCE value is \$1.137. If stock A rises to value \$1.05, its FCE value is \$1.046. Stock A therefore has expected FCE value at period 1 of \$1.09. The after-tax risk, measured by the standard deviation of return at .06, is lower than the pre-tax risk.

Similarly, consider stock B. If stock B rises to \$1.50 at  $t_1$ , its FCE value at  $t_1$  is \$1.457. If, however, stock B falls to value \$.70 we can realize a loss, and obtain a tax saving. The value is  $$.70 + (0.2)(.3) = $.76$ . Stock B therefore has expected FCE value at  $t_1$  of \$1.11. The after-tax risk is .49.

Note that stock B, with higher volatility, has a higher after-tax expected return because of the way in which losses are realized. In addition, the nature of risk is asymmetrical. While losses are never desirable, losses that do occur can be exploited to the investor's advantage, and the degree of loss can be alleviated. As a result, taxable investors should be more willing than tax-exempt investors to endure high-volatility pre-tax returns.<sup>14</sup>

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<sup>14</sup> This phenomenon is essentially a result of the optionality of capital gains taxes. The investor has the option of choosing when to realize his capital gains. This option has a value, and is more valuable when the underlying security has higher volatility. The risk and return profile of an option is asymmetrical. (See Constantinides, G.M. "Optimal stock trading with personal taxes". Journal of Financial Economics (13,1984) pp.65-89.)

## **After-tax Asset Allocation**

After-tax asset allocation is a particularly complex subject that has received minimal industry attention. While some publications have addressed aspects of the topic, we know of no truly pragmatic and general work. We consider a detailed discussion of the subject beyond the scope of this chapter.

Perhaps the simplest initial way of addressing after-tax asset allocation is to pursue a mean-variance study, but to adjust the returns for taxes. The first basic observation is that tax-free bonds have an important place in a portfolio<sup>15</sup>.

But, harder issues remain. Given an initial starting portfolio, its cost basis is critical, and will affect decisions. Brunel<sup>16</sup> discusses this subject briefly, and presents a conceptually difficult three-dimensional efficient frontier, where the third dimension is the portfolio's cost basis. The practical choice of an operating solution is not easy. In general, the investment horizon and expected turnover within the component asset classes will affect the decision.

Once an allocation has been made, the issue of re-balancing appears. While recommendations are often made to keep the allocation tightly within bounds, doing this now comes at a tax cost. Some have suggested that the re-balancing trigger points must be wider for taxable investors.

The implementation of an asset allocation strategy is different in the presence of taxes. It is now inefficient to use derivative securities to gain *underlying* exposure to the asset classes. Any appreciation of a futures contract (for example) is taxed each year, 40% at the short-term rate and 60% at the long-term rate. If one wishes to pursue a strategy of

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<sup>15</sup> J.P. Meecham, D. Foo and H.G. Fong, "Taxable asset allocation with varying market risk premiums", *Journal of Portfolio Management* (Fall 1995), pp 79-87

<sup>16</sup> Brunel, Jean L.P. "The Upside-Down World of Tax-Aware Investing" *Trusts & Estates* (February 1997), pp34-42.

tactical allocation, taxes are due on any gains realized. Jeffrey and Arnott<sup>17</sup> make the point that an efficient way to implement a tactical strategy is to let the base portfolio accumulate its unrealized gains as long as possible, and to re-balance with a futures *overlay*.

Individual investors have the ability to accumulate tax-deferred (e.g. 401K) savings accounts. While these are powerful tax-saving tools, issues arise as to how to construct a balanced total portfolio with sensible choices on where the different asset classes reside, and where the active strategies are pursued. For example, a tax-efficient approach is to invest a core passive equity portfolio in the taxable component, and to pursue very aggressive active decision-making in the tax-free component. The liquidation of tax-free savings accounts comes with a substantial tax penalty as gains are taxed at income tax rates.

This subject is in its infancy.

### **Investment Vehicle**

An important issue that taxable investors face is whether to use a separate account or a commingled account as the vehicle for investing in equities. Separate accounts offer particular advantages and commingled vehicles suffer disadvantages for the taxable investor.

Separate accounts offer the best opportunity to manage capital gains taxes. Maintaining records of individual tax lots can be used to substantial advantage. An investor has additional flexibility with respect to the ultimate disposition of the assets, and can select which assets to bequeath to his heirs and which to donate to a charitable remainder trust.

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<sup>17</sup> Op. Cit.

Commingling also offers some advantages. Indeed, some tax-managed indexed mutual funds are attractive investment options for many people<sup>18</sup>. The costs for commingled accounts are generally lower than for separate accounts. A more subtle advantage is that commingled accounts may have fewer problems with diversification. The cash flows – both in and out of the account – can be directed towards diversification. Many tax-sensitive separate accounts develop a handful of concentrated, highly appreciated holdings after many years.

On the other hand, commingled accounts present several problems. One is that investors who join a commingled fund may be buying shares or units of a pool whose average basis is lower than its current market value. Taxes will ultimately have to be paid on this liability. Ironically, this problem is worse for low-turnover funds.

The major problem with commingled funds is more severe. It is possible for one investor to receive a tax liability that was caused by another investor's action. In fact, it is possible for the same realized gain to create two tax liabilities.

We can explain this most easily with an example. Suppose investor A and investor B each invest \$100 in a new mutual fund, of which they are the only shareholders. Their \$200 investment doubles to \$400. Investor A decides to liquidate his holding. The manager sells half of the fund to produce \$200 cash for investor A, and this sale triggers a \$100 realized capital gain within the fund. At the end of the year, the fund manager will declare a \$100 capital gain distribution, which will be taxable to the only remaining shareholder, investor B. Thus, at the end of the year, the total realized gain, in the eyes of the IRS, will be the following:

Investor A:	\$100 in realized capital gain
Investor B:	\$100 in capital gains distributions

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<sup>18</sup> Garland, James P. "The Advantage of Tax Managed Index Funds" *Journal of Investing* (Spring 1997), pp13-20.

Investor A's withdrawal creates a tax liability for investor B, and the total tax liability is for \$200 of realized gains, double the fund's actual realization<sup>19</sup>.

While this example is extreme, the problem is real. Investors do not eliminate it by avoiding the purchase of mutual funds shares just preceding the year-end capital gains distributions. The problem is a perennial one. Investors in commingled funds can experience tax liabilities that in a rational world would belong to other investors.

## **PORTFOLIO MANAGEMENT SOLUTIONS**

Taxes complicate investment decision-making. Portfolio managers who understand the effect of taxes on performance will be driven in the direction of certain investment styles. Additionally, careful tax management can enhance after-tax returns. While this is a complex subject, it has received little formal attention in the literature.

Taxable portfolio managers need to put in place portfolios that they will be comfortable with for a long time. Ideally, such portfolios will be broadly diversified and will realize capital gains at an extremely low rate. The managers may want to tilt their portfolios to suit the tax situations of their clients: individual investors may prefer capital appreciation to dividend yield, while corporations may prefer dividend yield. The portfolio must also out-perform a suitable after-tax benchmark.

### **The Power of Passive Investing**

We first focus on capital gains. Taxes on turnover are effectively a transaction cost. Jeffrey and Arnott<sup>20</sup> show that long-term benefits accrue to managers who can reduce the

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<sup>19</sup>This story can become even more extreme if investor B wishes to receive his capital gains distribution in cash. In this case, the manager will need to liquidate the entire fund's holdings.

<sup>20</sup> Op. Cit.

realization rate to the lowest levels possible<sup>21</sup>. This benefit derives essentially from the re-investment of the deferred tax liability, and implies a very passive approach, with very few gains realized each year.

This is not as hard as it sounds. A capitalization-weighted indexed portfolio<sup>22</sup> is a suitable starting point because it needs action only when index constituents change or when dividends are to be re-invested. If there are no constituent changes and no corporate actions, a portfolio that is indexed at the start will still be indexed in the future, independent of the movement of the constituent stock prices.

(Note that the term “passive” has two common investment meanings. First, a passive portfolio remains fixed, does not buy and sell securities, and realizes gains only when withdrawals are made. In a second meaning, a passive portfolio is one that does not engage in “active” stock selection to try and beat the benchmark. Efficient tax management requires passive in the first sense. Portfolios that are indexed to a cap-weighted benchmark are passive in the second sense as well.)

In most developed markets an indexed portfolio has the added benefits of being extremely well diversified and of having median pre-tax performance. It is close to “efficient” in the sense that it is the consensus expectation of a large number of market participants.

While a passive indexed portfolio is hard to beat for tax-exempt investors, it is even more powerful for taxable investors. One way of seeing this is to evaluate the “hurdle” that an active portfolio manager must overcome before taxes in order to justify realizing capital gains. Using the earlier difference equations and under simple assumptions<sup>23</sup>, we evaluate this hurdle in Exhibit 2.

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<sup>21</sup> Reducing the rate of gain realization each year from 70% to 30% does not provide much value. The real benefits accrue at very low rates, those below 10%.

<sup>22</sup> For example, the S&P 500 or the Frank Russell Company’s Russell 3000.

<sup>23</sup> Assumptions for Table 2: 10% total return per year, of which 5% is dividends; liquidation after 20 years; tax rates are 40% on dividends and short term (less than 1 year) capital gains, 20% on long term capital gains; at turnover (gain

**Exhibit 2.** Pre-tax hurdle (alpha, percent) as a function of market return and rate of realization of capital gains

		Rate of realization of capital gains										
		5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Market	8%	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.3	2.5
Return	10%	0.5	0.7	1.0	1.3	1.6	1.8	2.1	2.5	2.8	3.1	3.5
	12%	0.5	0.7	1.1	1.5	1.9	2.3	2.7	3.1	3.6	4.0	4.5

A number of studies (Jeffrey and Arnott<sup>24</sup>, Dickson and Shoven<sup>25</sup>) have explored the after-tax performance of populations of mutual funds. All have concluded that indexed portfolios are consistently superior performers after taxes and fees. With an average turnover rate of over 70% a year, there are very few managers who are able to deliver the consistent pre-tax excess return required by Exhibit 2.

**Taxation of Dividends**

For individual investors, the dividend tax rate is higher than the capital gains tax rate. Individual investors would therefore prefer return in the form of long-term capital appreciation rather than as dividend income.

If the portfolio has a very high turnover rate, then capital gains are taxed at the short-term rate as well, and there is no preference for low dividend yield. At the other extreme, if turnover is low, then the taxation of dividends becomes very important. In this latter case,

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realization) rate of T%, a fraction (1-T) is short-term gain and T is long term gain. We also assume an additional 50bp management fee for the active portfolio.

<sup>24</sup> Op cit.

<sup>25</sup> Dickson, J.M. and J.B. Shoven, “Ranking mutual funds on an after-tax basis.” Center for Economic Policy Research, Publication No, 344, Stanford University, 1993.

if dividends are taxed at the 40% rate, then reducing the dividend rate from 4% to 2% (while keeping total return constant) can improve after-tax return by up to 0.8% per year.

For most individual investors, a tilt towards a “growth” style, with a lower dividend yield, is then preferable. One cost of adopting a growth stock strategy is a reduction of diversification and increased risk relative to the market as a whole.<sup>26</sup> Style indexes are common (e.g. Russell and S&P/Barra Value and Growth indexes), but these have relatively high annual turnover rates of 15-20% per year. Investing in portfolios that are indexed to these styles is not always a good idea. For taxable investors, an alternative passive definition of style, one with lower turnover, would be more suitable.

Conversely, most tax-exempt and corporate investors prefer a “value” style. Some researchers have argued in the absence of taxes that value stocks, with a higher dividend yield, out-perform growth stocks over the long run<sup>27</sup>. But, note that “value” stock investing may generate more turnover due to the less stable nature of some of their businesses and therefore realize higher capital gains.

### **Active Tax Management**

Investment managers can enhance after-tax performance with careful tax management. Dickson and Shoven<sup>28</sup> discuss the benefits of tax lot accounting and show that these are substantial.

Some simple methods of loss management work well<sup>29</sup>. In diversified portfolios, losses on individual holdings typically occur, even when the portfolio as a whole does very

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<sup>26</sup> It has been argued that book/price (a measure of style) is an important dimension of risk, e.g., E.F. Fama and K.R. French, “The cross section of expected stock returns”, *Journal of Finance* (47, June 1992), pp 427-465.

<sup>27</sup> Lakonishok, \*\*\*\*

<sup>28</sup> Op. Cit.

<sup>29</sup> Jacob, N.L. “Tax-efficient investing: reduce the tax drag, improve asset growth” *Trusts and Estates* (May 1995), pp25-33.

well. Such losses have value to the investor if they are realized immediately. A portfolio manager who acts as “Maxwell’s Demon,”<sup>30</sup> realizing losses when they occur and letting gains ride, can obtain a non-trivial after-tax advantage for the investor<sup>31</sup>.

Whenever the portfolio is re-balanced or optimized, taxes must be considered. There is typically a tradeoff between risk (i.e., tracking error) and the realization of capital gains. For indexed taxable investors, it is often beneficial to hold onto securities that leave the index if selling them would realize a capital gain. This will result in a tracking difference from the index.

### **Active Stock Selection**

The challenge for tax-sensitive active equity managers is to find securities that they will be willing to hold for extremely long periods of time. They need to be extremely confident about their stock selections. Apelfeld, Fowler and Gordon<sup>32</sup> discuss the challenges of active equity management. They make two strong points. First, a tax sensitive optimization process is important, with the risk/return impact of each trade carefully evaluated. Second, their value-based strategies tend to perform better over the long haul than their momentum-based strategies.

The most difficult challenges to active portfolio management appear after portfolios have been in place for many years and some securities have accrued large unrealized gains. At this time it is necessary to “re-fresh” the portfolio, but the tax cost of doing so is very high. To exchange existing securities for others that are expected to out-perform over the long haul is extremely difficult. This need to refresh a portfolio can be delayed by diversification.

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<sup>30</sup> In thermodynamics, an idealized demon of Maxwell opens a trap door between two chambers of air, separating low-energy molecules from high-energy molecules, and so creates an efficient engine.

<sup>31</sup> Stein, D.M., “The value of active tax management”, in preparation.

<sup>32</sup> Apelfeld, Roberto, Gordon B. Fowler, Jr., and James P. Gordon, Jr “Tax-Aware Equity Investing” *Journal of Portfolio Management* (Winter 1996), pp. 18-27.

Active portfolio management is a complex subject. The community of active portfolio managers must still prove its mettle in an appropriately measured taxable world.

## **CONCLUSION**

Tax exempt investors are used to thinking of equity investing in two key dimensions, those of risk (volatility) and return. In this chapter, however, we have argued that taxable investors face many more issues. The additional dimensions of taxable investing include portfolio cost-basis, investment horizon, and turnover. These additional dimensions influence portfolio valuation, benchmarks, asset allocation, tactical decisions, and the investment vehicle.

The practice and theory of taxable investing is immature. Most of the citations in this chapter are recent. While the industry has identified many problems, some of which we have discussed here, solutions are still far from complete.

Taxes must be an important consideration for investors. The bad news is that taxable investing is both idiosyncratic and difficult. Investment managers are only slowly integrating tax sensitivity into their investment processes. The good news is that investors, investment managers, and the academic community are becoming increasingly aware of the burden of taxes and the benefits to managing them. With this increased interest will come increased tax sensitivity and eventually improved after-tax returns. While tax-sensitive investing offers intellectual challenges, it also offers that most basic of tangible rewards — more money in one's pocket. It is an effort worth pursuing.