# Tax Optimized Strategic Asset Allocation

## - Why Taxes Do Not Matter?

## Authors:

**Sameer Jain**
**Partner**
**Sameer.Jain@activeallocator.com**

**Brian Jones**
**Partner**
**Brian.Jones@activeallocator.com**

# Insights

## I. Introduction

Managing taxes are clearly an important part of any investment strategy for taxable investors. Harvesting losses, timing decisions, deferring gains can certainly add value to a portfolio. But what impact, if any, do taxes have on arriving at long term strategic asset allocation?

Our conclusion: Having tested over 100,000 randomly generated unbiased portfolios with unbiased tax rates, we discovered that taxes have an impact not only on return, but also on risk. This fact mediates the impact of taxes on asset weights, as the relative efficiency of assets is roughly the same before and after tax. Tax optimization is important and adds value to tactical asset allocation, to asset location, but is largely irrelevant for determining ex- ante long term strategic asset allocation. On a risk-adjusted return basis taxes do not matter.

## II. Asset Allocation: The Basics

A. Asset allocation is complicated but essentially consists of two steps:

(i) formulating views about asset class performance in the future

(ii) constructing portfolios based on those views

B. Taxes affect the first, but how much do they affect the second?

C. Notably, in the strategic asset allocation process, four things matter:

(i) investor objectives: how much risk am I willing to bear? (post-tax)

(ii) asset risk: how risky is each asset on the margin and what is its risk-ranking?

(iii) risk-adjusted returns: what is the level and ranking of risk-adjusted returns? In the classic mean variance problem, this can be expressed as efficiency (excess return over risk)

(iv) portfolio risk: how do the assets fit together in terms of risk and return? Here correlation of asset returns is a critical input.

## III. Taxes: An overview

A. In the U.S., three types of taxes are usually considered:

(i) taxed as ordinary income (either interest/yield or short-term gains)

(ii) taxed as dividends or long-term gains

(iii) state taxes

B. The other consideration is how much positive and negative returns can be offset in each category.

## IV. Tax Impact on Returns

A. Three key factors in determining the "effective tax rate" for a particular asset class:

(i) turnover of the portfolio

(ii) yield and dividend rates

(iii) tax rates

B. The impact of turnover

(i) definition matters: turnover is calculated as dividing either the total amount of buys or total amount of sells over a period by the total net asset value. Each dollar of turnover requires two dollars of trading. So, e.g., the total annual cost of trading is 25%/day $\times$ 2 $\times$ 0.001 $\times$ 252 days

(ii) does turnover imply the proportion of cap gains which is short-term? No.

(iii) if turnover is independent of tax considerations, then short-term gains will approximately = Turnover^2

Note: in practice managers might be more than simply random in managing tax implications of trading strategies which will reduce this further

C. Putting it all together

(i) based on the three assumptions above, we can calculate an effective tax rate

(ii) in this case, returns will be (1-Effective Tax Rate) * Pre-tax Return

(iii) this is the conventional stopping point: some assets are more heavily taxed than others and therefore should be penalized in the portfolio construction process

## V. Risk: The Forgotten Quantity

A. Two important components of risk: volatility and correlation

B. Volatility

(i) key point is taxes "shrink" not only returns but also volatility

(ii) volatility based asset returns before and after tax

(iii) key assumption: losses can be roughly offset with gains

(iv) result is that volatility shrinks at the same rate as returns

(v) this in turn means that the efficiency of a particular asset class is held roughly constant before and after tax

(vi) only impact on asset allocation therefore will be the ranking of assets in terms of risk but not in terms of efficiency (in other words, it can potentially move the place on the frontier that the asset sits, but not the average level (ranking versus penalization)

(vii) possible exception: if sources of volatility are not proportional to sources of return. As an example, consider bonds. Yield is a large component of return but a very small component of marked-to-market and trading volatility. If this is true, then volatility might change at a different rate than return.

C. Correlation

(i) key point: correlation is unaffected by taxes as well

(ii) why? Correlation is unaffected by multiplying

## VI. Conclusion

The key thing missing in conventional wisdom and classic approaches to tax optimization is that taxes affect risk as well as return. This mediates the impact of taxes on asset weights, as relative efficiency of assets is roughly the same before and after tax. Tax optimization is important and adds value to tactical asset allocation, to asset location but is largely irrelevant for determining ex- ante long term strategic asset allocation.