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# Quantifying the Value of Tax-Aware Decision Making

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In order to provide sound advice, it is absolutely essential that investment advisors to ultra-high net worth ("UHNW") families incorporate the impact of taxes across the full spectrum of their decision-making processes. If you happen to meet an advisor that doesn't do so, run the other way…and fast. Be forewarned, however, that while most advisory firms claim to consider taxes, simply "talking the talk" is insufficient. UHNW clients must demand that their investment advisors offer a granular framework and possess the necessary quantitative tools to assess the impact of taxation at each critical decision point of the advisory process. Specifically, the capable UHNW advisor must:

1. Understand how taxes impact strategic portfolio design (a.k.a. asset allocation) decisions
2. Evaluate active managers, passive investments and alternative strategies on an after-tax basis
3. Actively harvest tax losses (especially short-term losses)
4. Optimally locate investments to maximize after-tax results

In this paper, we attempt to quantify the potential benefits of incorporating tax analysis at each stage of the investment process. By doing so, we hope to inform both UHNW investors and their advisors of where they derive the biggest bang for the tax-evaluation buck.

## Strategic Portfolio Design (a.k.a "Asset Allocation")

Ask UHNW advisors and the majority will claim that the most important decision an investor can make is how to apportion their assets among broad asset classes like stocks, bonds, real estate, etc. This widely-held belief is based on a large body of academic research that began in earnest with Brinson, Beerbower and Hood's 1986 paper, *The Determinants of Portfolio Performance*. That is not to say, of course, that manager selection is unimportant – it most certainly is – but these studies consistently show that investor outcomes are more heavily influenced by allocation decisions rather than manager selection.

Allocation decisions are usually made by trading off the desire for returns with an aversion to risk. In most allocation models, volatility is used as a proxy for risk. We readily acknowledge that volatility is an incomplete measure of risk, however, it is both the most easily measured and the most commonly accepted quantitative metric. Leaving aside the known limitations and flaws of measuring risk simply as volatility, most asset allocation processes seek to find the optimal combination of assets that offer the highest return for a given level of volatility; this is the so-called efficient frontier. Whether one relies strictly on the quantitative output of a mean-variance optimization model or employs a more qualitative means of portfolio construction, in the end, everyone is seeking to find the highest level of return per unit of risk.

For UHNW investors who are burdened with the need to pay taxes, there is a big difference between pre-tax returns and after-tax returns. Moreover these differences vary greatly by asset class (see Appendix A). As a result, UHNW advisors who allocate simply using pre-tax return assumptions will likely suggest sub-optimal

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risk/return tradeoffs. In order to quantify the benefit of properly allocating for UHNW investors using after-tax return assumptions, we first used Greycourt's pre-tax asset class forecasts to generate a series of optimized investment portfolios. We then performed the same exercise using Greycourt's asset class forecasts but this time adjusted for taxes. Note that a complete summary of Greycourt's pre-tax and after-tax assumptions can be found in Appendix A. By comparing the projected after-tax returns of the two "optimally constructed" portfolios (each having the same degree of volatility but each suggesting different asset class weights), we can observe the degree by which portfolio optimization using pre-tax return assumptions is inefficient.

As illustrated in **Table 1** below, the value of optimally allocating using after-tax assumptions versus pre-tax assumptions adds 30 to 60 basis points of improved after-tax return. The impact of using after-tax assumptions is more meaningful for lower risk portfolios; this is primarily related to UHNW investors favoring tax-free bonds over taxable bonds and/or diversifying hedge funds. Of course, we don't need a complex model to tell us that – but going through this process helps us to quantify the level of improvement in expected returns when using after-tax assumptions.

**Table 1**

| | Portfolio A - Optimization: | | Portfolio B - Optimization: | | Portfolio C - Optimization: | | Portfolio D - Optimization: | |
|---|---|---|---|---|---|---|---|---|
| **Asset Allocations** | **Pre-Tax** | **After-Tax** | **Pre-Tax** | **After-Tax** | **Pre-Tax** | **After-Tax** | **Pre-Tax** | **After-Tax** |
| **Equity** | | | | | | | | |
| US Equity | 1% | 4% | 8% | 13% | 17% | 20% | 24% | 26% |
| Non-US Developed | 0% | 3% | 0% | 7% | 0% | 10% | 0% | 14% |
| Emerging Markets | 1% | 1% | 8% | 5% | 17% | 9% | 24% | 13% |
| **Bonds** | | | | | | | | |
| IG Taxable Bonds | 48% | 0% | 34% | 0% | 16% | 0% | 2% | 0% |
| Municipal Bonds | 0% | 62% | 0% | 45% | 0% | 31% | 0% | 17% |
| **Alternatives** | | | | | | | | |
| Global REITs | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% |
| Opportunistic RE | 17% | 13% | 21% | 15% | 25% | 16% | 29% | 18% |
| Private Equity | 13% | 17% | 9% | 15% | 5% | 14% | 1% | 12% |
| Diversifying Hedge | 20% | 0% | 20% | 0% | 20% | 0% | 18% | 0% |
| **Standard Deviation** | **6.0%** | **6.0%** | **8.0%** | **8.0%** | **10.0%** | **10.0%** | **12.0%** | **12.0%** |
| **After-Tax Return** | **4.0%** | **4.6%** | **4.7%** | **5.2%** | **5.4%** | **5.7%** | **6.0%** | **6.3%** |
| **After-Tax Advantage** | | **0.6%** | | **0.5%** | | **0.3%** | | **0.3%** |

## Evaluating Active Managers After-Tax

For many years, Greycourt has extoled the virtue of passive investing for certain informationally-efficient asset classes such as most kinds of U.S. equities. While we won't repeat earlier arguments on that topic here[1], we

[1] For more information regarding Greycourt's approach on the topic of active vs. passive investing, see Greycourt White Paper #57, *Actively Passive*.

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note that empirical data over the past 15+ years strongly supports our view[2]. In **Table 2**[3] below, we seek to quantify the impact that frequent securities trading has on the tax efficiency of managers' after-tax results relative to a simple capitalization-weighted index fund. We utilized Greycourt's Cassandra model which, among other things, carefully tracks a portfolio's cost basis over time and quantifies the impact that selling appreciated securities has on a manager's after-tax results. **Table 2** below clearly illustrates that portfolio turnover imposes a significant adverse impact on the after-tax results generated by equity managers.

**Table 2**

| | | Annual Portfolio Turnover | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Asset Class | | 5% (Index Fund) | 10% | 20% | 30% | 50% | 70% (Avg. Active) | 100% |
| | Pre-Tax Returns | After-Tax Returns | | | | | | |
| Global Equities | 5.8% | 5.0% | 4.9% | 4.7% | 4.5% | 4.3% | 4.1% | 3.7% |

The average active equity manager exhibiting annual turnover of approximately 70% **loses 90 basis points more to tax costs each year** than does a passive index fund which turns over only 5% annually. Even so-called tax-sensitive active equity managers, who explicitly suppress turnover to say 30%, lose 50 basis points more to taxes annually than does a typical index fund.

Importantly, while we believe the above analysis to be accurate, we acknowledge that turnover is not a perfect proxy for tax efficiency. A given manager might, for example, hold its winning positions for a long time but trade its losing positions quickly. Over the near term, such an approach would exhibit high turnover but would also be highly tax efficient as it delays gains realization but captures tax losses. Over just a few years, however, such a high turnover manager harvesting primarily losses will find itself in a box where all its holdings are subject to deeply embedded gains. The manager will be required to either realize significant long-term gains or abandon its active management of the portfolio in order to preserve tax efficiency.

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[2] SPIVA® U.S. Scorecard December 2016.

[3] Pre-tax returns based on Greycourt's 10-year forecast for global equities.
After-tax return calculated using Greycourt's Cassandra model and assuming the following:
-Top Federal tax rate of 39.6% for short term gains and 20% for long-term gains,
-Dividends taxed as qualified dividends at 20%,
-PPCA ("Obamacare") tax of 3.8% applied to all dividends and capital gains,
-All returns shown are geometric assuming a 10-year time horizon, and
-Management fees of 10 bps assumed.

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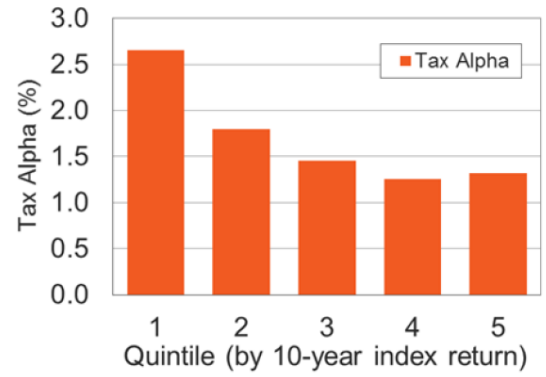
# Improving on Simple Index Funds

As illustrated above, investing in a passive equity index fund is extremely tax efficient due to its intrinsically low turnover. Even a low turnover index fund's after-tax results can be improved, however, by utilizing passive tax-aware strategies designed not only to closely replicate the pre-tax returns of a selected equity index but to also actively harvest tax losses of individual securities within the portfolio. This approach, while far from new[4], is generally underappreciated given the magnitude of after-tax improvement it can afford to an UHNW investor's portfolio.

**Figure 1**




| | Quintile | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Average Tax Alpha | 2.66 | 1.80 | 1.46 | 1.25 | 1.32 |

To quantify the potential value of tax-loss harvesting, the Aperio Group analyzed the after-tax results of several hundred simulated U.S. large cap stock portfolios using security-level historical data from 1973 to 2016.[5] **Figure 1**[6] shows that over 10-year periods the gross tax alpha (i.e., the excess after-tax return of an actively tax-loss harvested strategy over a simple passive index approach) ranged from 132 basis points to 266 basis points with a mean tax alpha of 146 basis points. We note that Greycourt clients' actual results over the past decade broadly confirm the results shown by the Aperio study.

UHNW advisors need not rely only on the efforts of passive tax-aware managers like Aperio to capture tax alpha. Following periods of heightened volatility, UHNW portfolios often find themselves with comingled investments (i.e., mutual funds, ETFs, limited partnerships, etc.) that are trading below cost. By proactively initiating sales of these loss positions and substituting similar positions, UHNW advisors can themselves harvest the value of tax losses almost as effectively as passive tax-aware managers. Importantly, decisions to trade out of loss positions should be an ongoing and continuous part of an advisor's regular portfolio review.

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[4] Several financial institutions including Parametric Portfolio Associates, State Street Bank and Mellon Bank simultaneously introduced passive tax-aware portfolio management in the mid-1990s.

[5] The Tax Loss Harvesting Cycle, January 2017 by Lisa Goldberg, Pete Hand, and Alan Cummings of Aperio Group, LLC.

[6] Source: Aperio Group, LLC.

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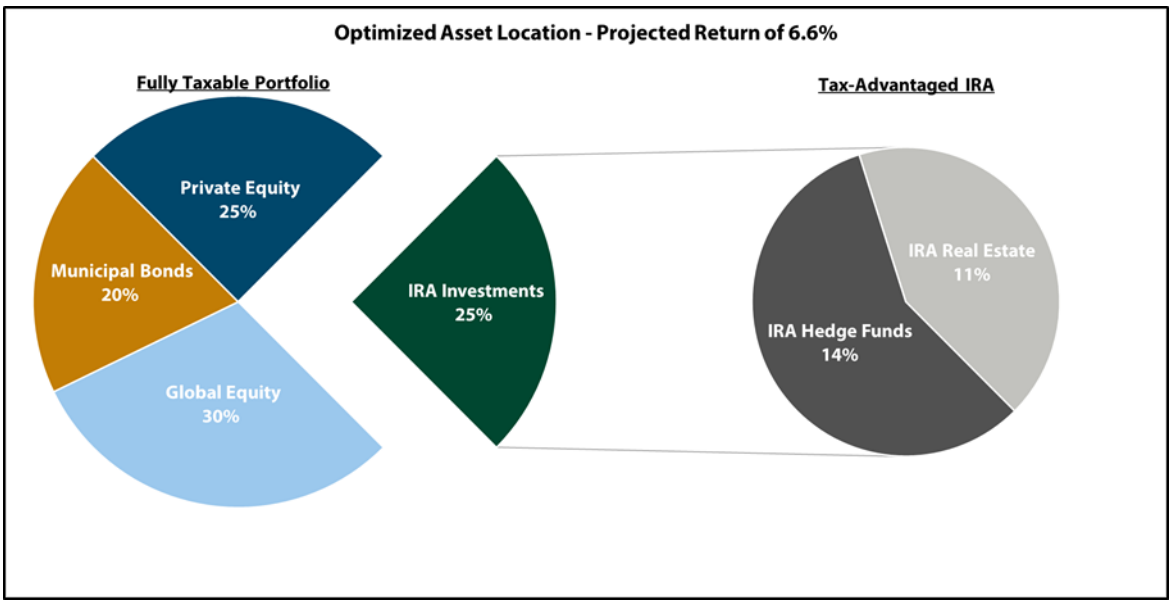
Sadly, too many advisors do not engage in tax-loss selling at all or they simply limit their efforts to a cursory year-end portfolio review.

## Asset Location to Maximize the After-Tax Returns

UHNW families acting on the advice of their accountants and attorneys often implement numerous tax and estate planning strategies, each having their own tax and liquidity characteristics. Not only do these strategies add meaningful value from an estate planning perspective, but by properly positioning investments within different entities advisors can further enhance after-tax returns for their clients. To illustrate this point, we examine one of the more common tax-deferral strategies - the Individual Retirement Account or IRA. As most of us know, an IRA enables an investor to defer taxes on both investment income and capital gains generated from assets held in that account. Ultimately, taxes do need to be paid once the IRA account holder reaches the mandatory distribution age of 70.5 years but for purposes of this example, we ignore the impact of distributions.

In light of an IRA's ability to defer taxes on income and investment gains for many years, logic suggests that an investor would benefit by locating less tax-efficient investments like high yield bonds, hedge funds or real estate within the tax-advantaged IRA. To test this thesis, we constructed a hypothetical UHNW client portfolio with a starting value of $100MM split between a fully taxable account ($75MM) and an IRA ($25MM).

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Using Greycourt's forecasted pre-tax and after-tax returns, we allowed our asset allocation software (a combination of Zephyr Allocation Advisor and Greycourt's proprietary Cassandra model) to optimize **both** asset allocation and asset location across both the taxable and IRA portfolios.

As shown in **Table 3** below, the combined projected return from this hypothetical client's optimized portfolios is 6.6% annually. To isolate the value added from optimizing asset location, we compared this result to an identically structured portfolio with the only difference being that we forced the taxable and IRA portfolios to hold identical allocation weights. This second (non-location optimized) portfolio generated a projected return 40 basis points lower than the optimized portfolio.

Table 3

| Asset Allocations | Taxable Portfolio ($75MM) | IRA Portfolio ($25MM) | Optimized Combined Portfolio ($100MM) | Equal Allocated Combined Portfolio ($100MM) |
|---|---|---|---|---|
| **Equity** | | | | |
| US Equity | 15.2% | 0.0% | 15.2% | 15.2% |
| Non-US Developed | 8.6% | 0.0% | 8.6% | 8.6% |
| Emerging Markets | 6.5% | 0.0% | 6.5% | 6.5% |
| **Bonds** | | | | |
| IG Taxable Bonds | 0.0% | 0.0% | 0.0% | 4.9% |
| Municipal Bonds | 19.7% | 0.0% | 19.7% | 14.8% |
| **Alternatives** | | | | |
| Opportunistic RE | 0.0% | 10.6% | 10.6% | 10.6% |
| Private Equity | 25.0% | 0.0% | 25.0% | 25.0% |
| Diversifying Hedge | 0.0% | 14.4% | 14.4% | 14.4% |
| Total Allocation | 75.0% | 25.0% | 100.0% | 100.0% |
| **Standard Deviation** | -- | -- | **12.0%** | **12.0%** |
| **After-Tax Return** | -- | -- | **6.6%** | **6.2%** |
| **Location Advantage** | | | | **0.4%** |

In this simple example, the results are clear: less tax-efficient assets like hedge funds (high turnover, active management) and yield-generating private real estate should be held disproportionately in an investor's tax-advantaged IRA while more naturally tax-efficient public and private equity and tax-exempt bonds should be held in the fully taxable portfolio.

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## Summary

In the UHNW marketplace, customization is critical given the variables that exist with each family and individual. No series of charts and tables, certainly not those presented here, can possibly encapsulate all the nuances of actual client portfolios. The purpose of this analysis is to demonstrate that there is substantial value to be added across the investment decision-making spectrum by carefully paying attention to the impact of taxes. Clients often focus on pre-tax measures of value added (or recently not added) by their advisors from manager selection and allocation decisions. Such focus on pre-tax measures is understandable in light of the lack of readily available after-tax performance data. Not withstanding this lack of data, the value of thoughtful tax-aware processes can, as illustrated in this paper, add meaningful value to UHNW investor portfolios.

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## Appendix A

| Asset Class Assumptions | | | | | | |
|---|---|---|---|---|---|---|
| Asset Class | Pre Tax Vol. | Pre-Tax Return[1] | Management Fee[2] | Estimated Turnover[2] | After Tax Return[4] | Loss From Tax Drag |
| US Large Cap | 15.3% | 6.8% | 0.1% | 5.0% | 6.0% | -0.7% |
| US Small Cap | 19.8% | 7.8% | 0.2% | 20.0% | 6.36% | -1.3% |
| International Equity | 17.3% | 7.5% | 0.1% | 5.0% | 6.5% | -0.9% |
| Emerging Markets | 22.8% | 8.9% | 0.2% | 10.0% | 7.6% | -1.2% |
| Municipal Bonds | 3.6% | 2.6% | 0.2% | 5.0% | 2.4% | 0.0% |
| Taxable Bonds | 3.5% | 2.4% | 0.1% | 13.0% | 1.3% | -1.0% |
| Non-US IG Bonds | 8.2% | 3.8% | 0.1% | 13.0% | 2.0% | -1.7% |
| Global High Yield Bonds | 10.3% | 5.1% | 0.4% | 20.0% | 2.6% | -2.1% |
| Hedge Funds[3] | 5.0% | 4.6% | 0.0% | 75.0% | 3.0% | -1.6% |
| Private Equity[3] | 21.1% | 10.6% | 0.0% | 10.0% | 8.7% | -1.9% |
| Real Estate[3] | 20.3% | 9.5% | 0.0% | 20.0% | 6.2% | -3.3% |
| Commodity-Futures | 16.5% | 4.4% | 0.8% | 60.0% | 2.4% | -1.2% |
| Cash | 0.3% | 0.8% | 0.2% | 100.0% | 0.3% | -0.4% |

*(1) Pre-tax forecasts reflect Greycourt's most recent strategic asset allocation views developed January 2017.*
*(2) Fees and turnover shown reflect cost of passively investing in stocks and bonds.*
*(3) Hedge funds, private equity and real estate pre-tax returns reported net of all fees.*
*(4) After-tax return calculated using Greycourt's Cassandra model and assuming the following:*
*-Top Federal tax rate of 39.6% for short term gains and 20% for long-term gains,*
*-Dividends taxed as qualified dividends at 20%, and*
*-PPCA ("Obamacare") tax of 3.8% applied to all dividends and capital gains.*

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