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Benchmarking After-Tax Performance

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Taxable investors are right to be concerned with measuring performance on an after-tax basis. However, to put after-tax performance in perspective requires a benchmark, just as pre-tax performance measurement does. Yet unlike pre-tax performance, after-tax performance is unique to each investor's tax situation and asset flow patterns. Accordingly, a good after-tax benchmark must be customized for each client to accurately measure the value of the manager's active tax-management decisions.

This brief is intended to help investors understand Parametric's approach to constructing customized after-tax benchmarks.

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The Rationale for a Client-Specific, Simulated Benchmark

Aside from the tax rate, the primary factors that affect after-tax performance are the timing of cash flows and the gains or losses embedded in the portfolio, as they determine any realized gains or losses and associated taxes. These aspects differ markedly by client, making it essentially impossible to simulate a standardized after-tax benchmark that would be an appropriate yardstick for all investors in any given period. For example, consider a portfolio with large, widespread unrealized gains. If a substantial withdrawal is made from that portfolio, its after-tax performance would look unfairly poor against a benchmark portfolio with no embedded gains or outflows. Similarly, a portfolio with large unrealized losses may produce overly impressive after-tax returns if the benchmark doesn't reflect this as well.

Taking this into account, Parametric maintains an after-tax benchmark for each tax-managed client portfolio, in a manner similar to the "shadow portfolio" approach described by the United States Investment Performance Committee (USIPC).[1] The shadow portfolio approximates a passive investment in each client portfolio's benchmark with the same inception date as the client portfolio and the benchmark's pre-tax returns, tailored to reflect client-specific cash flows, cost basis, and tax rates.

To create an exact formulation of the shadow portfolio would entail tracking each of the underlying securities in the benchmark over time. However, we find we can improve the clarity of the calculations without sacrificing usefulness by modeling the benchmark as a single investment. This approach incorporates price returns, dividend returns, and turnover at the aggregate benchmark level rather than for each underlying security.

The Simulated Benchmark After-Tax

In alignment with the USIPC recommendations, Parametric reports after-tax returns on a pre-liquidation basis, which doesn't reflect potential future taxes on any unrealized gains remaining in the portfolio. This allows us to calculate after-tax returns on any benchmark or portfolio, as long as we know the realized gains and losses, dividend income, and tax rates.

For the client portfolio, we can use the pre-tax returns, realized gains and losses, and dividend income that was actually experienced by the client during the period. However, for the simulated benchmark, we need to generate realized gains and dividend income. Dividend income can simply be estimated using the index's dividend return during the period, but estimating realized gains is more complex.

Because the simulated benchmark is a passive, hypothetical investment without active tax management, any realized gains arise solely from our turnover assumption or client asset flows. Turnover is incorporated to mirror the natural evolution of the index the client portfolio is tracking, in which securities are dropped or reweighted over time to keep the constituents in line with its methodology. Client asset flows are incorporated into the benchmark to reflect tax impacts in the client account outside of the manager's control.

Because we model the simulated benchmark as a single security investment, rather than tracking individual constituents, the realized gain or loss triggered by the turnover or asset flows depends on whether the benchmark has an unrealized gain or loss as a whole. In other words, a realized loss will occur only if the total market value of the benchmark is less than the total cost basis. This contrasts with the client portfolio, where there may be individual tax lots trading at a loss that can

[1] USIPC After-Tax Performance Standards, January 1, 2011.

be harvested by the manager, even if the portfolio has an total market value greater than the total cost basis. For the benchmark, on the other hand, the size of the realized gain or loss is simply the turnover multiplied by the unrealized gain or loss. This means that the larger the unrealized gain, the worse the measure of the benchmark after-tax return. And correspondingly, the larger the unrealized loss for any given level of pre-tax return or turnover, the better the benchmark after-tax return.

Therefore, in order for the simulated benchmark to serve as a useful after-tax reference, its unrealized gain or loss must be as relevant as possible. Essentially, this entails reflecting any embedded gains or losses in the client portfolio in the simulated benchmark, both at inception and in response to client asset flows. We approximate this by distinguishing between the impact of cash or security flows on the unrealized gain or loss as well as any gain or loss realization. Once any adjustment is made to mirror the flows, the embedded gain or loss in the simulated benchmark and client portfolio will evolve independently depending on the returns and turnover in each, as well as the tax management of the client portfolio.

After-Tax Benchmarks Illustrated

Without a thoughtfully constructed simulated benchmark, the after-tax return comparison may be meaningless, making it impossible to accurately measure the success of active tax management. Below, we illustrate this point by calculating the after-tax return for two benchmarks that differ only in their initial unrealized gain or loss.

In our hypothetical example, simulated Benchmark 1 starts the period with an unrealized loss and simulated Benchmark 2 starts with an unrealized gain. During the period, the underlying index for both benchmarks experiences a pre-tax total return of 1.85%, of which 0.17% is attributable to dividends, and turnover of 0.38%. For tax-rate purposes, we assume all the dividends are qualified and all the gains are long term.

Figure 1: Benchmark After-Tax Example

	Sim. Benchmark 1	**Sim. Benchmark 2**	
Beginning Market Value	500,000	500,000	Given
Beginning Cost Basis	700,000	300,000	Given
Ending Market Value Before Dividends	508,400	508,400	Beginning MV x Pre-Tax Price Return of 1.68%
Unrealized Gain Before Dividends	-191,600	208,400	Ending MV Before Dividends - Beginning MV
Realized Gain (Loss)	-728	792	Unrealized Gain Before Dividends x Turnover of 0.38%
Dividends	850	850	Beginning MV x Pre-Tax Dividend Return of 0.17%
Dividend Tax	202	202	Dividends x Tax Rate of 23.8%
Capital Gains Tax	-173	188	Realized Gain x Tax Rate of 23.8%
Total Tax	29	391	
Pre-Tax Return	1.85%	1.85%	Given
After-Tax Return	1.84%	1.77%	Pre-Tax Total Return - Total Taxes/Beginning MV
"Tax Drag"	-0.01%	-0.08%	After-Tax Return - Pre-Tax Return

Source: Parametric. This hypothetical benchmark example is provided for illustrative purposes only. It does not represent the actual experience or returns of any client or investor and it may not be relied upon for investment decisions. Hypothetical benchmark returns do not reflect the deduction of fees or expenses, which would adversely affect the results shown. All investments are subject to potential loss of principal. Please refer to the Disclosures for additional information.

Dividends received are the same for each simulated benchmark, but Benchmark 1 realizes a loss and Benchmark 2 realizes a gain. This is calculated by multiplying the turnover figure for the period by the end-of-period unrealized gain or loss position, since we assume the simulated benchmark is a single security and the turnover is applied equally across all of the lots.[2] This produces a tax drag of only 0.01% for Benchmark 1 compared to 0.08% for Benchmark 2.

Summary

After-tax benchmarks are necessary to put after-tax client portfolio performance in perspective and help isolate the value of active tax management. Essentially, it allows us to compare the value of our tax management against the tax experience of a passive, single-security investment in an index, tailored for certain client-specific aspects. This is to ensure that the after-tax benchmark provides the best estimate of the manager's ability to improve after-tax performance, given the particular characteristics of the client portfolio.

[2] Although we assume only long-term lots in our example, our simulated benchmark methodology does allow for short-term and long-term tax lots. Reinvested turnover, received dividends, and cash inflows are placed in short-term lots and moved to long-term lots after 12 months. Security inflows will be marked as short-term or long-term depending on how long they were owned before the transition and will be moved to long-term 12 months after the original date of purchase.