aperio

ETF Solutions

CHALLENGE

Aperio helps advisors decide how to transition appreciated equity securities into separately managed accounts (SMAs) in order to manage risk and minimize taxes. But unlike most equity securities, exchange-traded funds (ETFs) historically have been managed outside of Aperio accounts or liquidated. These options present three distinct challenges for advisors: managing portfolio risk, processing cash flows, and improving tax efficiency.

SOLUTION

Aperio now offers the ability to integrate ETFs into its accounts. We analyze the ETF in the context of the portfolio's strategy and collaborate with advisors to determine the best ETF solution.

Liquidate	Integrate into an Aperio SMA	Hold in Non-Aperio Account
Recommended if the ETF has appreciated by less than 40% • Immediate tax hit is weighed against future loss-harvesting potential • Monte Carlo simulation forecasts time to offset capital gains from sale	*Recommended if tax efficient, risk-controlled account is required* • Incorporates ETF exposures into management of overall portfolio • May liquidate gradually depending on market environment and client preferences	*Recommended if aggregate risk exposure is achievable by using a different benchmark* • Requires alternative benchmark for assets held in SMA to maintain strategy objective • Minimizes fees

We help narrow the choice by answering three key questions:

- Can Aperio's system model the ETF?
- Is the ETF compatible with the portfolio's strategy?
- How appreciated is the ETF?

BENEFITS

Integrating into an Aperio SMA

- ✓ May manage risk through inclusion of the ETF in portfolio optimization and risk modeling
- ✓ May simplify and improve the tax efficiency of cash flows
- ✓ May enable Aperio to monitor the ETF for potential liquidation opportunities in certain market environments

COSTS

Investor pays dual fees—ETF and Aperio management fees.

LIMITATIONS

Aperio ETF management is not appropriate for every portfolio. Certain conditions make liquidating fully—even if capital gains are generated—or managing externally a better option. Incorporating into an Aperio SMA is not ideal if:

- The ETF is not modeled in Aperio's system.
- The ETF is actively managed.
- The portfolio has factor or SRI tilts.
- The portfolio has sector or geographic constraints.
- The ETF's exposure is not fully encompassed in the portfolio's benchmark (e.g., an international equity ETF cannot be added to a US equity strategy).

CASE STUDY #1

Integrate ETF into Aperio SMA

Situation	Recommendation
A new investor has a significant amount of long- and short-term gains and could benefit from Aperio's tax-loss harvesting strategy in a US Total Market portfolio benchmarked to the Russell 3000. The investor's equity exposure is in individual securities and a semiconductor ETF. The advisor is considering selling the ETF to reduce the exposure to semiconductors. However, the ETF has a cost basis to market value of 20% and will generate significant capital gains if fully liquidated immediately. The advisor is considering managing the ETF in an account separate from the investor's other equity assets. This option may have a drawback—the Aperio US Total Market portfolio does not take the semiconductor exposure into account, which can result in additional exposure to the industry.	Manage the ETF in the Aperio SMA. The benefits are twofold: • **Portfolio Optimization:** The investor's entire equity exposure is better aligned with the Russell 3000, taking into account the semiconductor ETF exposure. • **Advisor Operational Ease:** The advisor no longer needs to monitor and manage the ETF. If a withdrawal is needed, Aperio determines the optimal trade-off between tax efficiency and risk in deciding whether to liquidate the ETF or other securities in the portfolio.

CASE STUDY #2

Hold ETF Externally

Situation

An investor is seeking to increase his equity allocation and shift his exposure from US-only to global. Currently, most of the client's equity exposure is expressed with a Russell 1000 ETF. However, this ETF has a cost basis to market value of 30% and will generate a large capital gain if fully liquidated immediately.

Recommendation

Given the substantial tax burden associated with liquidating the Russell 1000 ETF, the client should hold the ETF externally. The Aperio portfolio will utilize an MSCI ACWI ex US benchmark and use the additional cash to increase the equity allocation. With this implementation, the client may:

- Achieve desired geographic exposures.
- Limit taxes.
- Avoid paying fees on both the ETF and Aperio portfolio.

Contact your Aperio relationship manager to explore a customized ETF solution.

Disclosure

The information contained within this presentation was carefully compiled from sources Aperio believes to be reliable, but we cannot guarantee accuracy. We provide this information with the understanding that we are not engaged in rendering legal, accounting, or tax services. In particular, none of the examples should be considered advice tailored to the needs of any specific investor. We recommend that all investors seek out the services of competent professionals in any of the aforementioned areas.

With respect to the description of any investment strategies, simulations, or investment recommendations, we cannot provide any assurances that they will perform as expected and as described in our materials. Past performance is not indicative of future results. Every investment program has the potential for loss as well as gain.

Due to the complexity of tax law, not every single taxpayer will face the situations described herein exactly as calculated or stated; i.e., the examples and calculations are intended to be representative of some but not all taxpayers. Since each investor's situation may be different in terms of income tax, estate tax, and asset allocation, there may be situations in which the recommendations would not apply. Please discuss any individual situation with tax and investment advisors first before proceeding. Taxpayers paying lower tax rates than those assumed or without taxable income would earn smaller tax benefits from tax-advantaged indexing or even none at all compared to those described.

Hypothetical portfolios are not based on actual Aperio Group portfolios and are being shown for illustrative purposes only. It should not be assumed that clients who invest in an Aperio portfolio will have the same results reflected above. This information is presented solely as an example and should not be considered investment advice. Aperio has the benefit of hindsight when putting together a hypothetical portfolio, and there is no guarantee that the firm will make the same selections when putting together a similar portfolio for a client. This selection did not take into account any client's overall investment objectives or restrictions that may be imposed.

Aperio's portfolio construction process relies upon an optimization framework built and designed by MSCI Barra. The framework utilizes an objective function that seeks to minimize the combination of active risk (i.e., forecast tracking error), estimated transaction costs, and, when appropriate, the estimated tax liability on realized gains, all while also meeting the constraints presented by a series of simultaneous equations, the values of which are, in part, populated by data based upon the securities being analyzed. With respect to measuring potential equity risk in the process of portfolio management and analysis, Aperio also uses and relies upon MSCI Barra risk models. Please note that such use and reliance of these models in portfolio management and analysis present model risk, which is defined as the potential for adverse consequences from decisions based on incorrect or misused model outputs and reports. Model risk can lead to financial loss.

The model may have fundamental errors and may produce inaccurate outputs when viewed against the design objective and intended business uses. The mathematical calculation and quantification exercise underlying any model generally involves application of theory, choice of sample design and numerical routines, selection of inputs and estimation, and implementation in information systems. Errors can occur at any point from design through implementation. In addition, shortcuts, simplifications, or approximations used to manage complicated problems could compromise the integrity and reliability of outputs from those calculations. Finally, the quality of model outputs depends on the quality of input data and assumptions, and errors in inputs or incorrect assumptions will lead to inaccurate outputs. The model may be used incorrectly or inappropriately. Even a fundamentally sound model producing accurate outputs consistent with the design objective of the model may exhibit high model risk if it is misapplied or misused. Models by their nature are simplifications of reality, and real-world events may prove those simplifications inappropriate.

The MSCI ACWI ex US is an equity benchmark for international stock performance. The index includes approximately 2,100 stocks from 22 developed-market countries and 26 emerging-market countries.

The Russell 3000® Index is an equity benchmark for US stock performance. It is a capitalization-weighted index covering the largest 3,000 publicly traded US stocks. The index represents approximately 98% of the total market capitalization of the US stock market.

The Russell 1000 ETF seeks to track the investment results of an index composed of large- and mid-capitalization US equities.

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