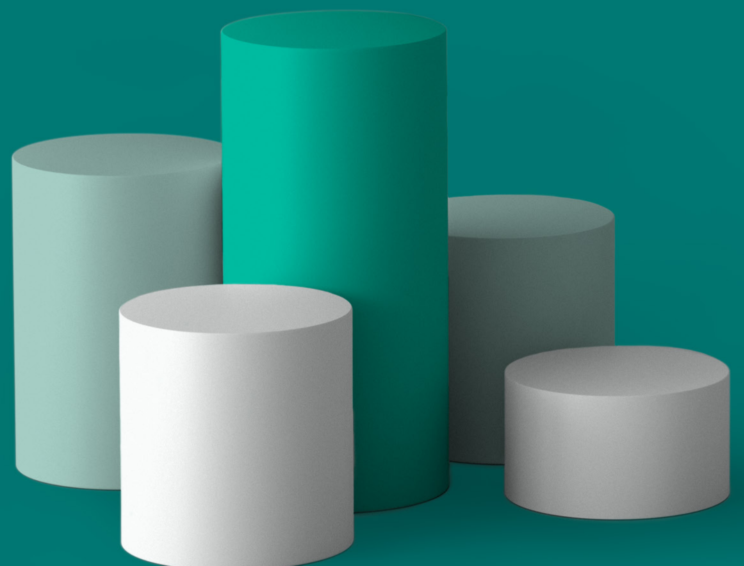
Vanguard® | Personalized Indexing

Benefits of personalized indexing

Improve after-tax investment outcomes for your clients



Vanguard Investment Advisory Research Center

Colleen M. Jaconetti, CPA, CFP®
Francis M. Kinniry Jr., CFA
Chris Tidmore, CFA
Jonathan Hudacko

EXECUTIVE SUMMARY

Vanguard Personalized Indexing

Maximizing after-tax returns is a critical investment objective for most high-net-worth investors

Creating a tax-efficient financial plan is a top objective for most high-net-worth investors and the advisors who manage their portfolios. Many advisors use both investment products and financial planning techniques to construct tax-efficient investment solutions for the clients they serve.

Personalized indexing (PI) provides a scalable tax-loss harvesting (TLH) solution for advisors and the clients they serve

PI, sometimes referred to as direct indexing, is an automated portfolio management solution that tracks a chosen benchmark for each investor. What separates PI from a traditional separately managed account is the ability to offer this customized solution to a wide range of investors. One of the primary benefits of PI is scalable TLH.

PI offers advisors an additional tool for building tax-efficient investment solutions

Pairing active equity funds and ETFs (or other tax-inefficient investments) in taxable accounts with PI that takes advantage of daily TLH is likely to result in higher after-tax wealth outcomes than if neither of these strategies was employed. As a result, advisors no longer need to limit the allocation to actively managed equity strategies to their clients' available "shelf space" in tax-advantaged accounts. This, in turn, significantly increases the investment opportunity set for assets that can be allocated to actively managed equity strategies, given that many high-net-worth investors are likely to hold the majority of their assets in taxable registrations. In addition, purchasing active strategies in taxable accounts allows advisors to continue to shelter taxable bonds in their clients' tax-advantaged accounts, thus maximizing after-tax returns.

Vanguard: Your partner for PI

Together, you and Vanguard share a singular focus: to improve the investment outcomes of your clients. This white paper outlines our PI offer, reviews which clients may benefit the most from PI, offers case studies that support its use, and shares considerations to keep in mind before implementing the strategy.

Personalized indexing (PI), sometimes referred to as direct indexing, is an automated portfolio management solution that tracks a chosen benchmark for each investor. What separates PI from a traditional separately managed account is the possibility to offer this customized solution to a wide range of investors at scale. While supporting a number of valuable use cases, the most common is TLH, which we will explore in detail in this paper. Subsequent papers will introduce other PI use cases in greater depth.

Improving after-tax returns via daily TLH when ongoing realized capital gains are expected

Most high-net-worth investors, and the advisors who manage their portfolios, are extremely tax-averse; therefore, getting to zero realized capital gains is a critical investment objective to maximize after-tax returns. Advisors can use both investment products and financial planning techniques to construct very tax-efficient investment solutions for the clients they serve, as described in *Putting a value on your value: Quantifying Vanguard Advisor's Alpha®*. Some of the most common techniques advisors employ are outlined in the callout to the right.

Common financial planning techniques advisors employ to construct tax-efficient investment solutions

1. **Asset location techniques.**
   - Evaluate all investments in taxable accounts on an after-tax basis.
   - In taxable accounts, use broad-based tax-efficient ETFs. If selecting active or alternative investments, evaluate their excess return or risk mitigation potential on an after-tax basis.
   - In taxable accounts for high-tax-bracket investors, use tax-exempt bonds rather than taxable bonds.
2. **Tax-efficient rebalancing techniques.**
3. **Tax-efficient drawdown techniques.**
4. **Avoidance of tactical allocation programs.**

Effective implementation of these techniques can often lead to a portfolio that is extremely tax-efficient and *realizes little or no recurring capital gains* on an annual basis. In this scenario, the TLH benefits relative to the frictions (portfolio ossification, portfolio concentration, higher costs, etc.) may make PI suboptimal, so the preferred investment vehicles might be Vanguard mutual funds and ETFs.

Having said that, it is important to recognize that implementing these financial planning techniques often places limitations on the optimal portfolio construction process. For example, many high-net-worth investors are likely to hold most of their assets in taxable registrations because of the annual IRS limitations on contributions and deferrals to tax-advantaged accounts. As a result, these investors may have limited "shelf space" in tax-advantaged accounts to purchase investments that have the potential to provide excess returns and/or reduce portfolio risks on a pre-tax basis because of the fact that these benefits are meaningfully reduced on an after-tax basis. Therefore, advisors seeking to maximize after-tax returns often must limit the allocation to actively managed equities (or other tax-inefficient investments) to the amount of assets held in tax-advantaged registrations as well as forgo holding taxable bonds, which would typically be purchased in those tax-advantaged registrations. Given Vanguard's strong conviction in, and record of successful active management historically,[1] we believe pairing a PI allocation with Vanguard active in taxable accounts can potentially create higher after-tax returns for high-net-worth investors.

Below are four common scenarios where implementing a TLH program is likely to improve after-tax investment outcomes. For these scenarios, PI represents a unique investment vehicle to potentially improve after-tax investment outcomes.

Common scenarios where implementing a TLH program is likely to improve after-tax investment outcomes

1. Advisors serving high-net-worth investors with a strong conviction in highly talented active equity offers and limited tax-advantaged shelf space.
2. Investors who own highly appreciated investments in taxable accounts whose objective is to reduce the position but only if they can offset taxes.
3. Advisors serving high-net-worth investors with a strong conviction in certain alternative investments such as private equity and other hedge-fund-like strategies.
4. Investors in the decumulation phase of investing whose distributions to meet annual spending needs create recurring realized capital gains.

1 Vanguard actively managed funds for the trailing 10, 20, and 30 years ended December 31, 2021, had an asset-weighted annualized excess return over their stated index benchmarks, net of fees, of 103 basis points (bps), 107 bps, and 120 bps, respectively. Source: Vanguard Investment Advisory Research Center and Vanguard Portfolio Review Department

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Clients who are likely to benefit from PI, include higher tax bracket investors with:

Significant, recurring realized capital gains that are expected to continue
Clients who hold tax-inefficient assets in taxable accounts (active equity, private equity, other hedge-fund-like strategies etc.) or who are retired and generate distributions when selling assets to meet their spending needs; to name a few.

Estate plans with charitable intent or an expected step-up in basis
Investors who own highly appreciated investments in taxable accounts whose objective is to eliminate taxes due to a step-up in basis or due to donating the investments to charity, since nonprofits don't owe federal income tax on gifts.

Portfolios holding highly appreciated, concentrated sector or style exposure
Investors who own highly appreciated investments in taxable accounts whose objective is to reduce the position but only if they can offset taxes.

Meaningful new contributions to the investment portfolio throughout the investment period
Clients who infuse meaningful new cash contributions into the portfolio through the duration of the investment period can help delay portfolio ossification.

One problem that can arise with systematically harvesting tax losses is that eventually the magnitude of stocks at a loss in the portfolio will diminish with time. Because of the potential capital gains that would result from selling those low-cost-basis stocks, switching to another investing strategy could be costly. For this reason, PI with TLH is more effective when there are meaningful new contributions to the investment portfolio throughout the investment period. These contributions will reduce the potential for cost basis ossification[2] (TLH decay), portfolio concentration (asymmetrical right skew of individual stocks), and portfolio staleness (ability to invest in next-generation companies that come to market) (see pages 8-12 for additional information).

2 Portfolio ossification does not occur at the fund level when employing a TLH strategy with mutual funds and ETFs as the fund is open to new investors who provide ongoing cash flow. However, at the client level, a fund will have limited TLH opportunities over time since markets tend to have positive returns. An investor will have exponentially fewer TLH opportunities in a mutual fund or an ETF than if they directly owned individual securities. So, for investors who have or wish to create realized capital losses to improve their pre-tax returns, pairing this approach with daily TLH via PI is the superior strategy.

PI can also help improve after-tax client outcomes for advisory practices

Advisory practices that have conviction in alpha/return-enhancing investments such as actively managed equity mutual funds and ETFs, private equity, hedge funds, and other alternative investments stand to benefit from using PI. Pairing these tax-inefficient investments in taxable accounts with direct ownership of individual securities that takes advantage of daily TLH is likely to result in higher after-tax wealth outcomes than if none of these strategies was employed. Practices that stand to benefit include those with:

Have a strong conviction in active management

Vanguard has a strong conviction in its active products. Our historical performance demonstrates the value created by world-class active talent at a reasonable cost.[3] And, PI is a perfect pairing for an advisory practice, with the same strong conviction in active management. As a result, investors and advisors no longer need to limit an allocation to actively managed equity strategies to the investor's available shelf space. This, in turn, significantly increases the investment opportunity set for assets that can be allocated to active strategies.

Have a strong conviction in accessing top managers in private equity or other alternative investments

Vanguard also has a conviction in alternative investments such as private equity and other hedge-fund-like strategies. Again, the conviction is dependent on the ability to identify, underwrite, select, or build "active talent," whether in public or private markets. PI is a perfect pairing for an advisory practice with a similar conviction in private equity, hedge funds, or other alternative investments. (See *The case for private equity at Vanguard*.)

As a result, investors and advisors can meaningfully reduce the tax drag resulting from investing in private equity, hedge funds, and other alternative investments, creating additional opportunities to allocate assets to these strategies.

3 Vanguard actively managed funds for the trailing 10, 20, and 30 years ended December 31, 2021, had an asset-weighted annualized excess return over their stated index benchmarks, net of fees, of 103 basis points (bps), 107 bps, and 120 bps, respectively. Source: Vanguard Investment Advisory Research Center and Vanguard Portfolio Review Department

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

PI implementation considerations

As just described, for the right clients, TLH via PI is a powerful strategy that can help improve after-tax investment outcomes. An important consideration for the implementation of such a strategy is the presence of meaningful new contributions to the investment portfolio (non-lump-sum investments) throughout the investment period. The lack of ongoing, meaningful new contributions is likely to lead to: (1) cost basis ossification (TLH decay), (2) portfolio concentration (asymmetrical right skew of individual stocks), and (3) portfolio staleness (inability to invest in next-gen IPO companies that come to market). As a result, it is important to understand, address, and potentially remedy each of these potential risks.

Portfolio ossification (TLH decay) is the natural decay of TLH opportunities given that securities in the equity markets have generally appreciated over time. Because the equity markets, and the securities that make up the markets, have generally provided positive returns more often than not, and the magnitude of positive-returning securities has increased with time, the ability to continually tax-loss harvest decays (decreases) over time; the level of decay is correlated with the duration of the holding period (in short, the portfolio no longer holds securities with losses to harvest). The level of decay is more pronounced for investors who make a one-time investment (lump sum) as opposed to those who make ongoing contributions to their investments over time (new cash contributions as well as reinvested dividends). As a result, in time, the portfolio for lump-sum investors will likely become "locked up," meaning there is little to no ability to produce meaningful TLH opportunities. Hence, these investors could potentially continue to pay a fee premium for a service they can no longer fully take advantage of.

Market volatility, both in the market and within the market, is a key driver behind the rate at which portfolio ossification occurs. For example, periods of market volatility—particularly on the downside—will extend the length of time it takes for the portfolio to become locked up. This is due to the fact that downside volatility frees up a meaningful amount of new TLH opportunities as more securities fall below their cost basis. As a result, there is not a set annual cash contribution percentage or dollar amount. Rather, this is an area where advisors can add value by managing the amount and allocation of ongoing contributions (new cash contributions as well as reinvested dividends).

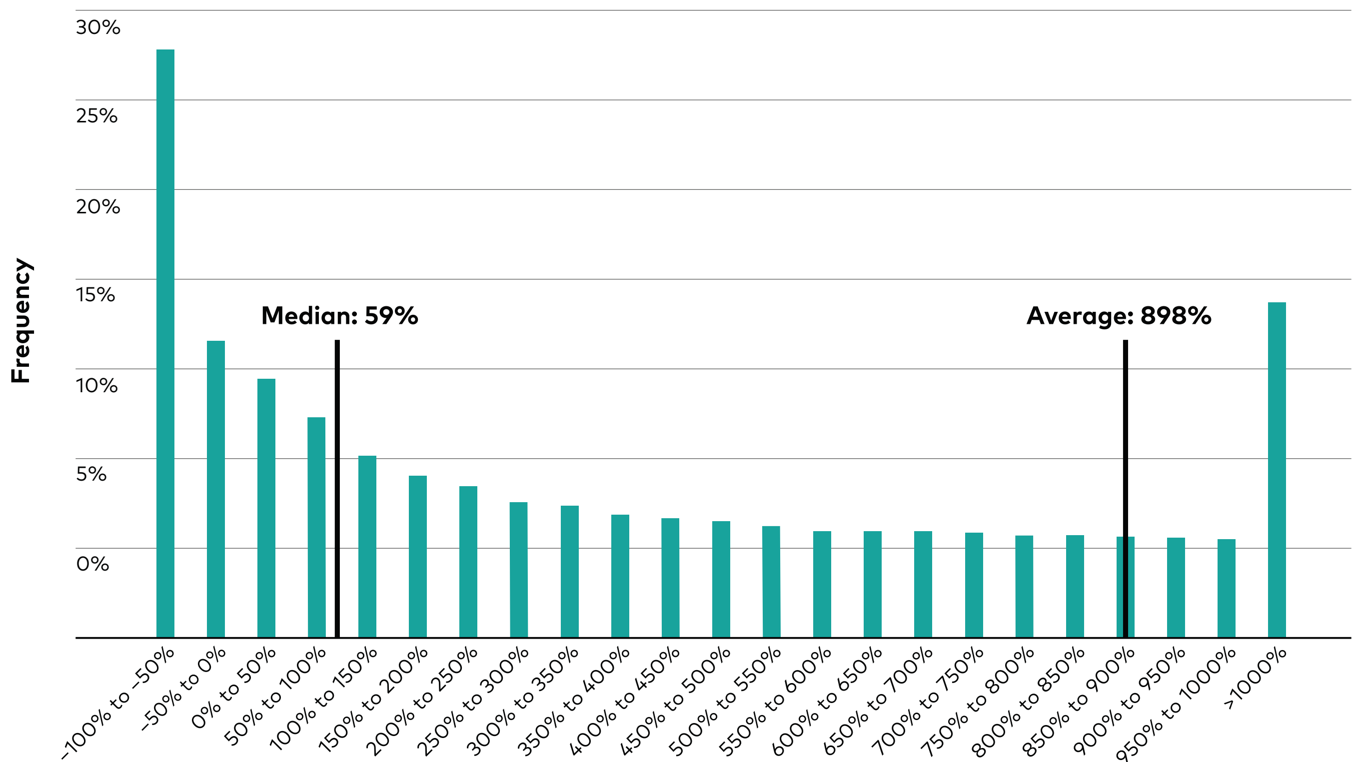
It is important to note that portfolio ossification is not unique to PI, and in fact, direct investing in individual securities relative to owning the bundled index (mutual fund or ETF) slows the rate of TLH decay for an individual investor. This is because investing in a mutual fund or an ETF results in a single NAV cost basis and therefore exponentially fewer TLH opportunities than direct ownership of the individual securities in the PI program.
At the mutual fund and ETF level, portfolio

ossification does not occur when employing a TLH strategy because of the frequency and magnitude of the ongoing cash flows from other investors. While the ETF or index mutual fund will not experience ossification, an individual investor who holds the ETF or mutual fund will likely experience ossification given that the markets can potentially rise—and at a much faster rate than a PI program—which limits the available losses in the portfolio. This relationship is exacerbated as the holding period increases.

Portfolio concentration over time

Over time, a TLH program implemented by PI in individual securities can be prone to security concentration. This is due to (1) the extreme right asymmetrical skew of the returns of a small subset of individual securities (see *How to increase the odds of owning the few stocks that drive returns*) and (2) insufficient TLH opportunities to fully diversify this subset of individual securities with 1000%-plus returns in a tax-efficient manner. **Figure 1** shows that approximately 60% of stocks over time have had positive returns, with an average return of 898%. Yet the median return was only 59%. This significant deviation between the average stock return and the median stock return is due to the fact that stocks can only lose 100%, while approximately 10% of stocks had returns above 1000%. It is that 10% of stocks that drives almost 100% of the returns for the entire market.

Figure 1. The high magnitude returns of a smaller number of stocks outweigh the lower—or even negative—returns of a larger number of stocks.



Sources: Vanguard Investment Advisory Research Center calculations of cumulative returns, based on Russell 3000 Index constituents' return data from FactSet, from January 1991 through December 2020.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Portfolio staleness over time

The final risk of employing TLH via personalized indexing—without meaningful annual cash flows into the portfolio—is that the portfolio could end up resembling the "winners" from the period when the portfolio was first initiated rather than the securities of the present—this is often referred to as a "stale" portfolio. There are several reasons for this. First, it is only a handful of stocks that are responsible for the majority of the return. Second, there is a continuous stream of new entrants into the markets through initial public offerings or IPOs (over the last two decades there have been nearly 4,700 IPOs). Without meaningful annual cash flows into the portfolio, there is no opportunity to participate in the IPOs as an open index or ETF does. Second, given innovation, technology, and creative destruction, many of the IPOs of the past 10–20 years have been material drivers to the returns of the markets. The inability for a PI program without material ongoing cash flow poses a risk that the portfolio will become stale, take on greater tracking error over time, and miss exposure to the new economy.

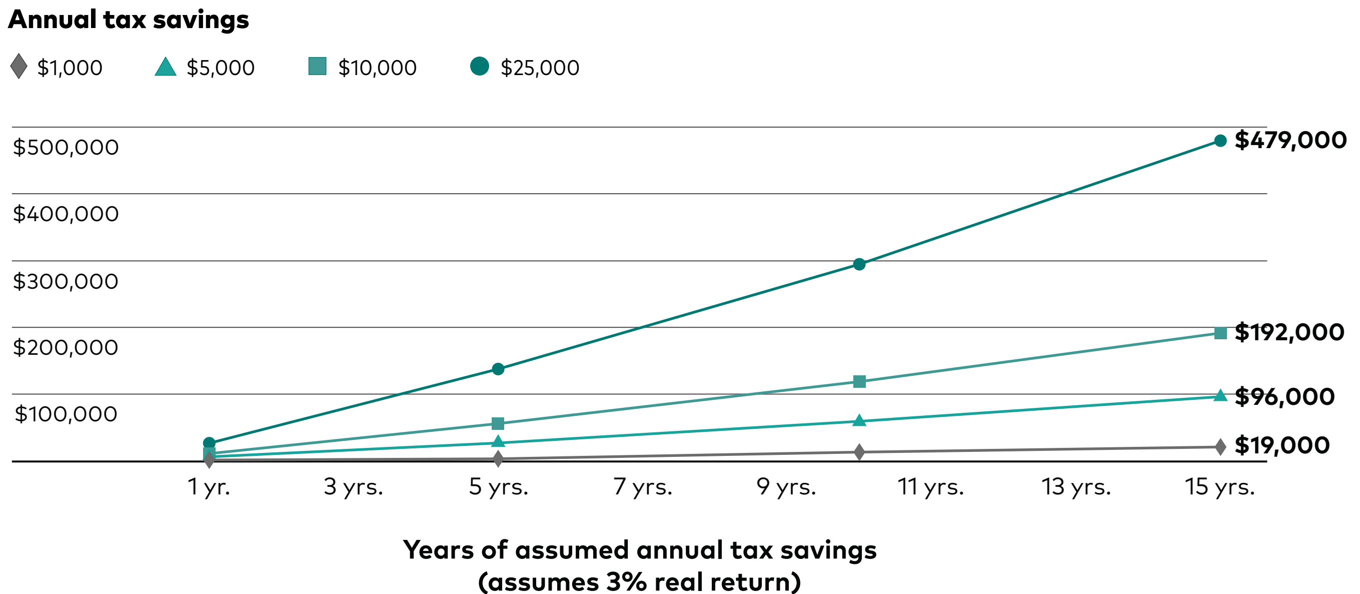
The good news is, advisors can mitigate these risks. One approach an advisor could take would be to make index ETFs and mutual funds the core of the portfolio and then pair satellite allocations to active equity, private equity, or other alternative investments, with an allocation to PI. By doing this, the overall portfolio should not be as concentrated or stale because of the fact that the amount allocated to the satellite PI program would be intentionally truncated, while having substantially more allocated to the core index ETF or mutual fund, which will remain diversified and current. It is only when the allocation to PI becomes too large that concentration and staleness become meaningful concerns.

Finally, while the ability to harvest future losses in the PI portfolio may diminish through time (ossification), the ongoing fee paid for a service that cannot be fully taken advantage of in later years may often be insignificant relative to the advantages. In many cases, given the time value of money, saving taxes early in the time series, keeping such savings invested, and the compounded future growth on the tax savings may exceed the premiums paid at the end of the time series, when the opportunity to harvest losses will have expired.

Possible scenarios

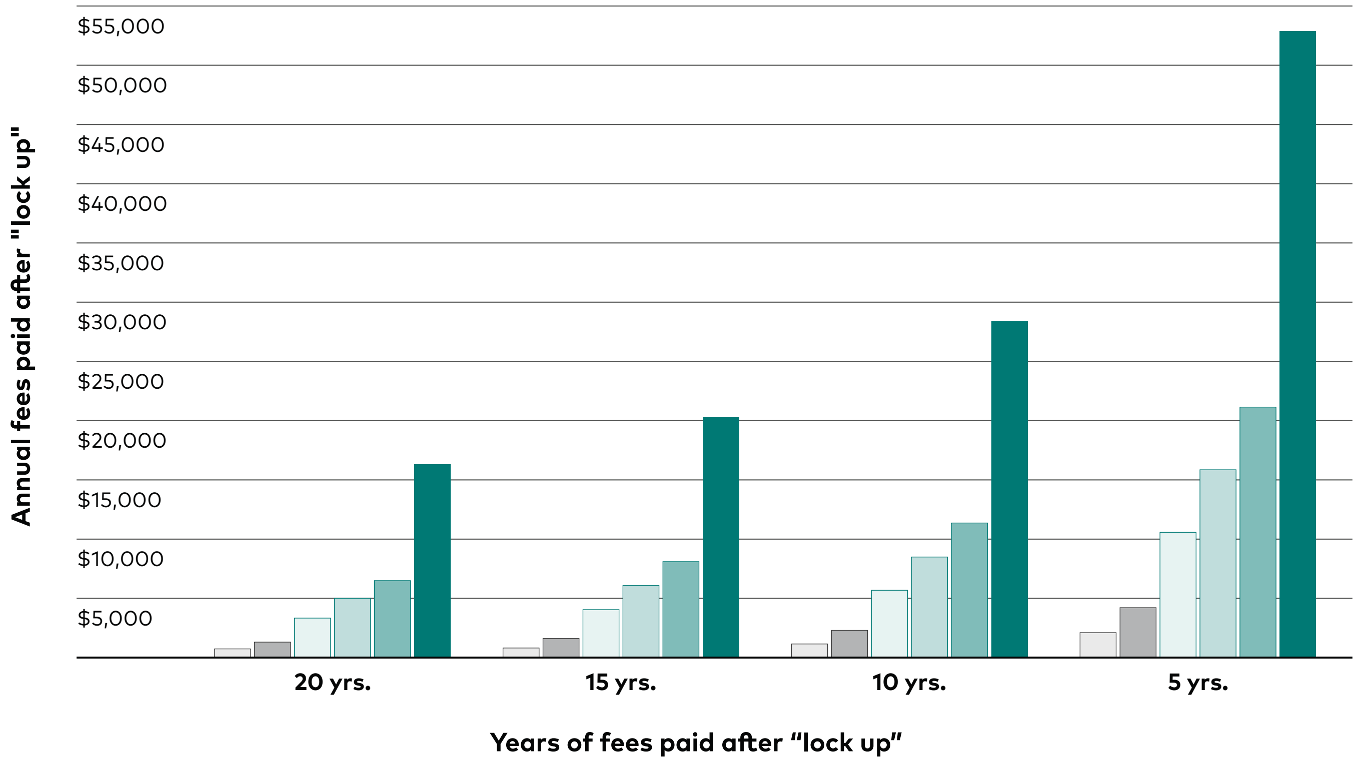
- If an investor saved $10,000 per year in taxes for the first 10 years, they would have an additional $118,078 assuming a 3% real annual return.
- If the account were locked at this point, the investor would still be better off assuming the annual fee was less than $13,400 for the following 10 years (breakeven would be a $13,400 fee for 10 years).
- Assuming an initial investment of $1 million grown at a 3% real return for 10 years, the investor would have $1,343,916. Adding in the $118,078 tax savings results in a $1,461,994 balance. Assuming a 25 bps annual fee for PI, the $118,078 would pay for 32 years worth of fees (assuming a constant fee of $3,655 per year).

Figure 2. Wealth created given an assumed level of annual tax savings from a PI program.



Note: This hypothetical illustration does not represent the return on any particular investment and the rate is not guaranteed.

Figure 3. The investor would still be better off as long as their annual fees paid are less than or equal to:



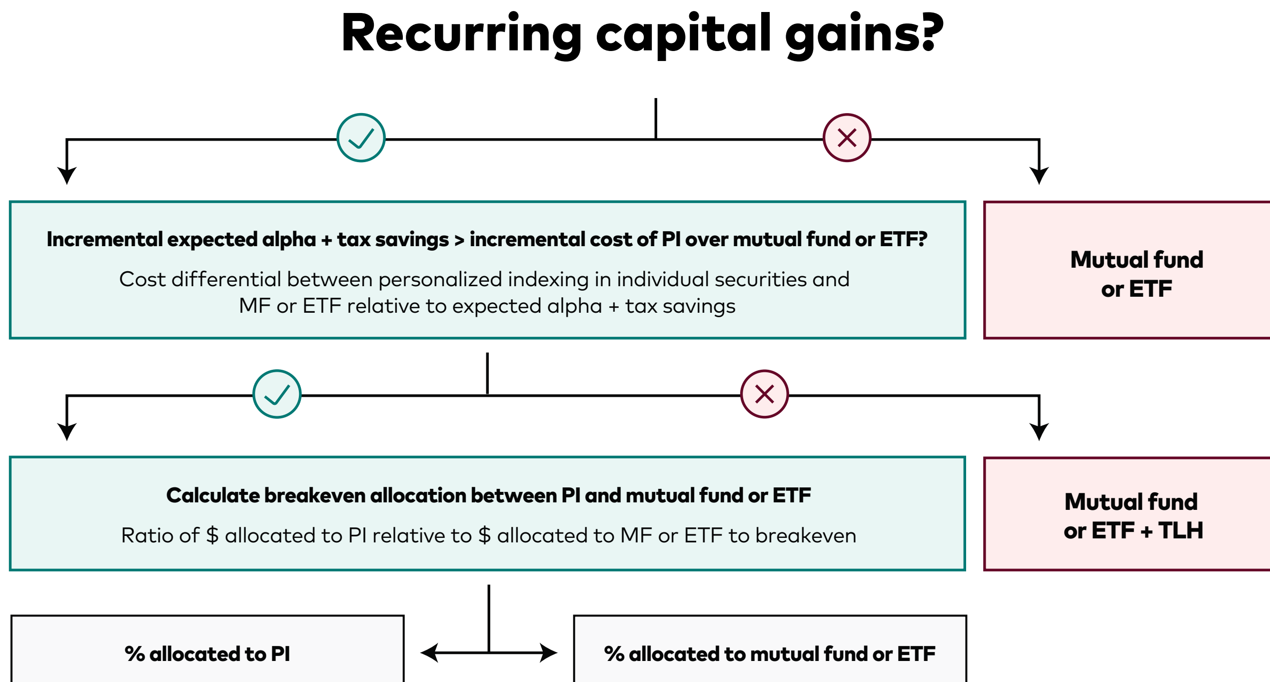
Putting PI to work for your clients

A TLH program can be implemented via PI using individual securities or Vanguard mutual funds and ETFs. There are several factors that advisors should consider when making the decision to implement a PI strategy on behalf of their clients (and what percentage of clients' portfolios should be used to implement the strategy) as opposed to holding mutual funds or ETFs. These factors include:

- The frequency and magnitude of recurring capital gains in the portfolio.
- The extent to which these gains can be offset by harvesting losses on assets held in taxable accounts.
- The expected alpha to be generated from holding preferred tax-inefficient investments (i.e., actively managed equities, private equity, or other alternative investments) in taxable accounts.
- The investor's capital gains tax rate and the relative cost differential between the PI in individual securities strategy and the alternative mutual fund or ETF.

Using these factors, an advisor can evaluate the differential between the potential after-tax outcomes provided by each option relative to the cost of implementation for each option. If the expected after-tax outcomes provided by PI in individual securities exceed the cost differential between PI and the Vanguard ETF®, then PI in individual securities is likely to be preferred—at least for a portion of the portfolio. **Figure 4** is a decision tree outlining the key decision points.

Figure 4. Decision tree for TLH program implementation.



Illustrative scenario analysis of the trade-offs of using PI relative to a mutual fund or an ETF

		SCENARIO 1	SCENARIO 2	SCENARIO 3
Portfolio value		$1,000,000	$1,000,000	$1,000,000
Incremental expected [see figure 4 and scenario 1 below] alpha		$0	$700	$2,000
Potential tax savings	Gains sheltered from taxation	$5,000	$4,000	$0
	Investor capital gains tax rate	20%	20%	20%
Estimated tax savings from PI TLH		$1,000	$800	$0
Expected alpha + tax savings		$1,000	$1,500	$2,000
Implementation costs (bps)	Cost of PI	25	25	25
	Cost of mutual fund or ETF	5	5	5
Cost differential (bps)		20	20	20

Estimated cost of PI TLH for the following % of portfolio that employs PI	10%	$200 (PI)	$200 (PI)	$200 (PI)
	25%	$500 (PI)	$500 (PI)	$500 (PI)
	50%	$1,000 (B)	$1,000 (PI)	$1,000 (PI)
	75%	$1,500 (ETF)	$1,500 (B)	$1,500 (PI)
	100%	$2,000 (ETF)	$2,000 (ETF)	$2,000 (B)

Personalized indexing (PI) Breakeven (B) Exchange-traded fund (ETF)

Note: In the scenario above, we assumed a portfolio value of $1 million, a 20-basis-point cost differential between Vanguard PI and the alternative mutual fund or ETF, and a 20% investor capital gains tax rate. The portfolio balances shown are hypothetical and do not reflect any particular investment. The rate is not guaranteed.

Scenario 1

In scenario 1, the incremental expected alpha from pairing active (or other tax-inefficient investments) with PI is assumed to be $0 and the investor has $5,000 of realized capital gains to be offset. For this investor, the expected alpha plus tax savings from implementing PI is $1,000. As a result, an advisor may consider implementing PI with up to 50% of the equity portfolio. At 50%, the expected alpha plus tax savings is equal to the estimated cost; implementing more than 50% of the equity portfolio would result in a cost that exceeds the expected alpha plus tax savings (so a mutual fund or an ETF would be preferred for that portion of the portfolio).

Scenario 2

Scenario 2 uses the same assumptions as scenario 1 except the incremental expected alpha from pairing active (or other tax-inefficient investments) with PI is assumed to be $700 and the investor has $4,000 of realized capital gains to be offset (increase in expected alpha and decrease in gains to be offset). For this investor, the expected alpha plus tax savings from implementing PI is $1,500. As a result, an advisor may consider implementing PI with up to 75% of the equity portfolio. At 75%, the expected alpha plus tax savings is equal to the estimated cost; implementing more than 75% of the equity portfolio would result in a cost that exceeds the expected alpha plus tax savings (so a mutual fund or an ETF would be preferred for that portion of the portfolio).

Scenario 3

Scenario 3 uses the same assumptions as scenario 2 except the incremental expected alpha from pairing active (or other tax-inefficient investments) with PI is assumed to be $2,000 and the investor has $0 of realized capital gains to be offset (increase in expected alpha and elimination of gains to be offset). For this investor, the expected alpha from implementing PI is $2,000. As a result, an advisor may consider implementing PI with up to 100% of the equity portfolio because the expected alpha is equal to the estimated cost.[4]

4 See PI implementation considerations section (pages 8–12) for additional guidance.

As these scenarios highlight, there is no one-size-fits-all allocation to PI. The allocation is highly dependent on several variables such as the expected magnitude and frequency of capital gains as well as the market environment. As expected, the larger the expected alpha and the amount of the gains to be offset, the greater the portion of the equity portfolio that would potentially benefit from Vanguard PI.

References

Francis M. Kinniry Jr., Colleen M. Jaconetti, Michael A. DiJoseph, David J. Walker, and Maria C. Quinn, 2022. *Putting a value on your value: Quantifying Vanguard Advisor's Alpha®*. Valley Forge, Pa.: The Vanguard Group.

Fran Kinniry, Ted Dinucci, Alex Green, and Liz Foo, 2021. *The case for private equity at Vanguard.* Valley Forge, Pa.: The Vanguard Group.

Chris Tidmore, Francis M. Kinniry, Giulio Renzi-Ricci, and Edoardo Cilla, 2019. How to increase the odds of owning the few stocks that drive returns. *The Journal of Investing* 29(1):43–60.

Connect with Vanguard®

vanguard.com • 800-997-2798

For more information about Vanguard funds and ETFs, visit vanguard.com to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.

Vanguard ETF Shares are not redeemable with the issuing Fund other than in very large aggregations worth millions of dollars. Instead, investors must buy and sell Vanguard ETF Shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

Vanguard Personalized Indexing Management, LLC ("Vanguard Personalized Indexing Management"), formerly Just Invest, LLC, an SEC registered investment adviser, is an independently operated wholly-owned subsidiary of The Vanguard Group, Inc. ("Vanguard"). Vanguard Personalized Indexing is an asset management technology that has been developed and is offered solely by Vanguard Personalized Indexing Management.

For more information on Vanguard Personalized Indexing Management and Vanguard Personalized Indexing, and to access Vanguard Personalized Indexing Management's Form CRS and Form ADV Part 2A disclosure brochure, please visit the Vanguard Personalized Indexing page.

The information contained herein does not constitute tax advice, and cannot be used by any person to avoid tax penalties that may be imposed under the Internal Revenue Code. Each person should consult an independent tax advisor about their individual situation before investing in any security.

All investing is subject to risk, including possible loss of principal. Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account. There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income. Diversification does not ensure a profit or protect against a loss.

Tax-loss harvesting involves certain risks, including, among others, the risk that the new investment could have higher costs than the original investment and could introduce portfolio tracking error into your accounts. There may also be unintended tax implications. Prospective investors should consult with their tax or legal advisor prior to engaging in any tax-loss harvesting strategy. Neither Vanguard Personalized Indexing Management nor Vanguard provide tax or legal advice.

Private investments involve a high degree of risk and, therefore, should be undertaken only by prospective investors capable of evaluating and bearing the risks such an investment represents. Investors in private equity generally must meet certain minimum financial qualifications that may make it unsuitable for specific market participants.

CFA® is a registered trademark owned by CFA Institute.

Certified Financial Planner Board of Standards Inc. owns the certification marks CFP®, CERTIFIED FINANCIAL PLANNER™, in the U.S., which it awards to individuals who successfully complete CFP Board's initial and ongoing certification requirements.

Vanguard Investment Advisory Research Center

© 2022 The Vanguard Group, Inc. All rights reserved.

U.S. Patent No. 6,879,964. Vanguard Marketing Corporation, Distributor.

FABENPI 092022