Vanguard

Financial Planning Perspectives

Your mileage may vary: Setting realistic tax-loss harvesting expectations

In recent years, tax-loss harvesting (TLH) has been aggressively advertised as a near-certain way to increase after-tax returns by anywhere from 100 basis points to 200 basis points—in some cases even 300!—annually. (A basis point is one-hundredth of a percentage point.) As a result, many investors and advisors consider TLH to be one of the few "free lunches" that remain in investing. We do not disagree with this assessment for the "right" investors—those (usually very wealthy) investors who have frequent and sizable capital gains (often generated from taxable investments held in active or nonpublic equities). But many individual investors do not fit this mold or should first focus on other more valuable options such as investing in tax-advantaged accounts. These investors will eventually be disappointed with the size of their TLH benefit if they set their expectation at 100 to 200 basis points.

In this paper, we explore the potential of tax-loss harvesting for all investors. Much of the success in TLH comes from knowing how it works and what drives the outcomes, which we cover first. We then bring this understanding to bear on how to customize a TLH strategy so investors get the most from their tax-loss harvesting experience. After all, there is a role for TLH in most affluent investors' portfolios. The key question is how big this role can be. We explore this question in a case study that illustrates how the benefit from a TLH strategy can vary greatly from individual to individual.

- **How tax-loss harvesting works**
  The two main sources of value from TLH are 1) the potential to lower overall taxes by deferring a tax liability to a point in the future when the investor is subject to lower tax rates; and 2) the ability to invest today's tax savings for further capital growth into the future.

- **Why outcomes can vary**
  The value from TLH varies considerably across market environments, investment horizons, cash contribution profiles, and investor tax situations. We show when and for whom TLH may be most valuable as an enhancement to current wealth management strategies.

- **When to implement TLH**
  Using a case study, we discuss the relevance of TLH for everyday investors based on their goals and savings capacity. The potential benefit depends on the investor's tax profile and level of offsettable income.

U.S. investors can use harvested losses to reduce their tax bill.

How tax-loss harvesting works

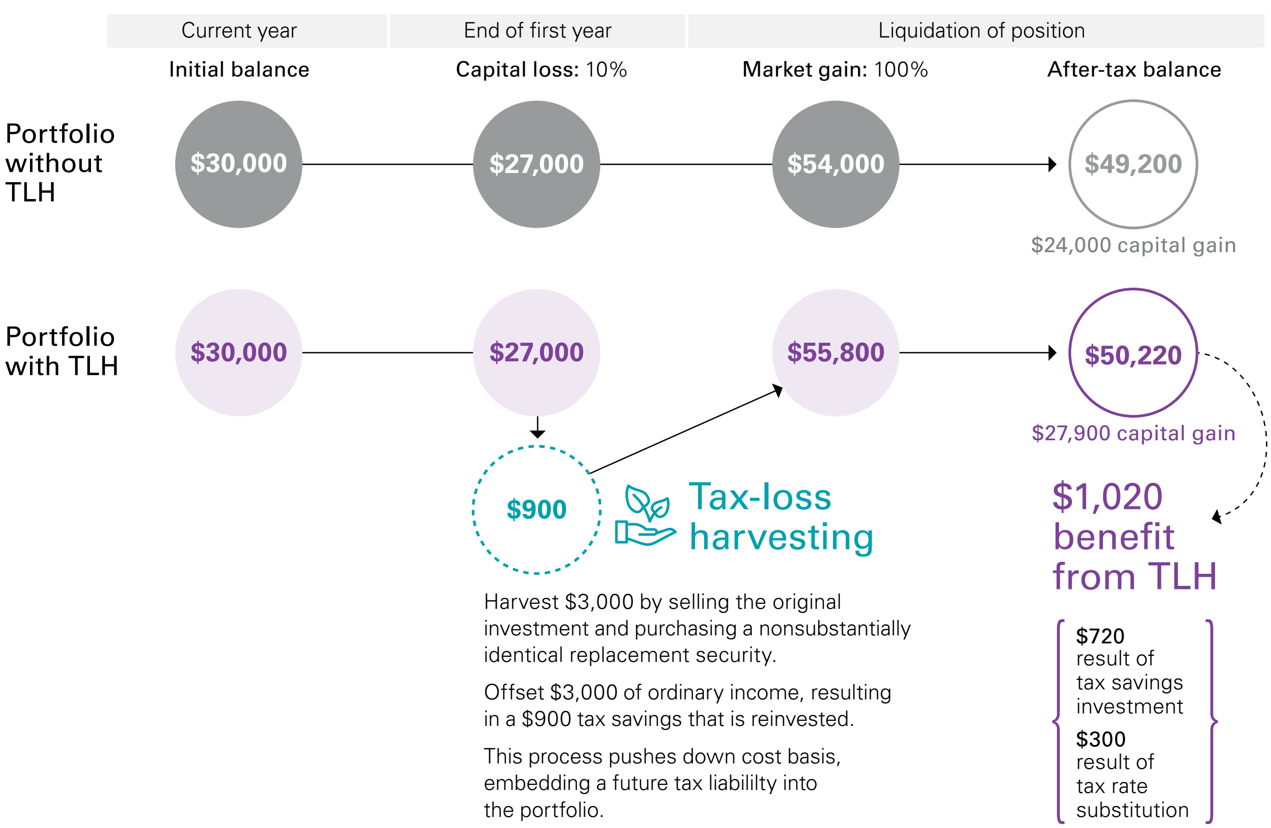
TLH is a strategy for boosting after-tax returns in taxable accounts. Generally, investors pursue TLH with their equity holdings in taxable accounts because equities' high volatility creates opportunities to sell these securities at a loss. Under federal tax law, U.S. investors can use harvested losses—investments sold at a loss relative to the cost basis—to offset realized capital gains and up to $3,000 of ordinary income each year to reduce their tax bill. This helps the investor in two main ways: tax rate substitution and growth of invested tax savings.

Tax rate substitution refers to the tax savings an investor generates by shifting a tax liability from today to sometime in the future with a (hopefully) lower tax rate. By investing the tax savings generated today, investors can add capital growth with their deferral of taxes. (We can also think of it as investing an interest-free loan from the IRS in the stock market.)

Let us show how this works in practice with a simple example in **Figure 1**.

In the first case (Portfolio without TLH), a $30,000 investment grows to $54,000 over several years with no intervening transactions, and is liquidated for an after-tax value of $49,200 (we assume a long-term capital gains tax rate of 20%: $54,000 – 20% capital gains tax x $24,000 capital gain).

Figure 1. TLH adds value through tax rate substitution and increased market exposure



Source: Vanguard.

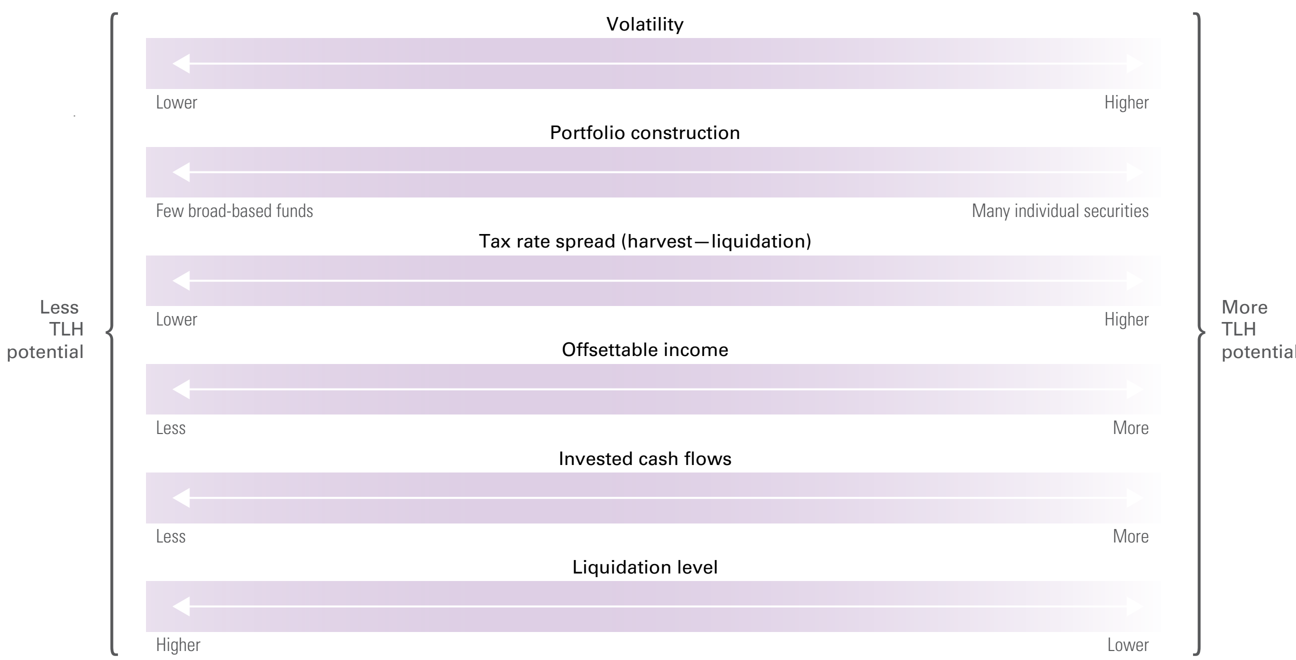
In the second case (Portfolio with TLH), we see the effects of tax-loss harvesting. At first, the original $30,000 position decreases in value to $27,000. If the investor sells and reinvests this position, the $3,000 loss can offset an equivalent amount of gains or income and associated taxes due that year. We assume that this investor is subject to 30% income taxes and is able to reduce taxes by $900 with a $3,000 harvest. After reinvesting this $900 of tax savings, the resulting $27,900 grows to a final value of $55,800, or $50,220 once liquidated ($55,800 – 20% capital gains tax rate x $27,900 capital gain). Through this process, this investor increased the after-tax return by $1,020. Three hundred dollars of the $1,020 was the result of tax rate substitution: This investor was able to substitute paying a 30% income tax at the end of the first year with paying a 20% long term-capital gains tax at liquidation ($3,000 x (30% income tax – 20% capital gains tax)). The remaining $720 is from the growth of the invested tax savings: By increasing the amount invested in the market by $900 early on, the investor achieved extra growth ($900 x 100% return x (1 – 20% capital gains tax)).

The value of TLH is a function of timing and the amount of tax savings an investor can generate.

Why outcomes can vary

As we show in the example above, the value of TLH is a function of the timing and amount of tax savings that an investor can generate by harvesting losses. (Please see "The tax-loss harvester's how-to guide" on page 6.) Historically, TLH outcomes have varied significantly from investor to investor based on their market environment, investment profile, and personal tax situation. In *Tax-Loss Harvesting: A Portfolio and Wealth Planning Perspective* (Khang, Paradise, and Dickson, 2020), we identified primary drivers of the efficacy of TLH. We show how these key drivers affect TLH outcomes in **Figure 2**.

Figure 2. Core drivers of TLH benefit



Source: Vanguard.

Volatility

The greater the volatility in the market, especially shortly after an investment is made, the greater the opportunity to harvest losses. This typically leads to a greater TLH benefit, as long as the market rebounds after the high-volatility period. From this standpoint, the 2000s and 2010s represented ideal conditions for tax-loss harvesting. There were two highly concentrated harvesting opportunities in the form of the dot-com bust of the early 2000s and the global financial crisis of 2008; both were followed by extended periods of strong market growth. If more stable markets prevail in the future, as they did in the 1980s and 1990s, we may not see the same potential for TLH benefit.

Number of portfolio securities

Unfortunately, the market environment that awaits investors is entirely out of their control. That said, one lever TLH investors do have is the number of portfolio securities. Holding individual securities instead of pooled-investment funds enables investors to capture losses even in bull markets with low volatility. This ability to generate losses even in an overall low-volatility environment is an attractive feature for TLH-minded investors with excess capital gains.

Tax situation

The higher today's tax rate is relative to the future tax rate, the greater the benefit from tax rate substitution. But some investors may not benefit much from TLH because their tax rates today are already low relative to their likely future rates. Two examples are those just starting out in their accumulation phase who expect higher levels of income in the future and those who experience a dramatic increase in marginal tax rate (especially on long-term capital gains) in the future because of legislative changes.[1]

Offsettable income

For many diligent tax-loss harvesters, the limiting factor in achieving a greater TLH benefit may not be the lack of losses. Instead, it is the lack of income (capital gains and up to $3,000 of income) to consume the losses. This income determines how much of the loss harvests eventually turn into tax savings and reinvestment. Without capital gains, TLH is less valuable, because all it can do is reduce taxable income by, at most, $3,000 every year. While this $3,000 can be a significant portion of the portfolio for lower taxable balances, it can become trivial for larger account balances.

This is why we believe the nature and (eventual) size of capital gains are central to a smart use of TLH for many mass affluent and high-net-worth investors. For advisors and investors alike, it is mission-critical to understand whether you can expect capital gains of material magnitude from other parts of the portfolio. If you have significant investments in real estate or private equity, or you own a business, you are likely a prime candidate for tax-loss harvesting. If your portfolio largely holds liquid publicly traded securities, which tend to be more tax-efficient, you are likely to benefit far less from TLH.

Cash flows

Good investment behavior can often complement TLH. Investors who regularly save and contribute to their portfolio, creating more frequent and larger cash flows, will diversify the cost bases of their tax lots (shares of a security that are purchased in a single transaction), creating more harvesting opportunities in volatile markets. In addition, investors who integrate TLH with their rebalancing process, using harvest proceeds to rebalance their portfolios, will have lower transaction costs than they would if they had kept these processes separate.

1 U.S. marginal tax rates are set to increase on December 31, 2025.

Liquidation level

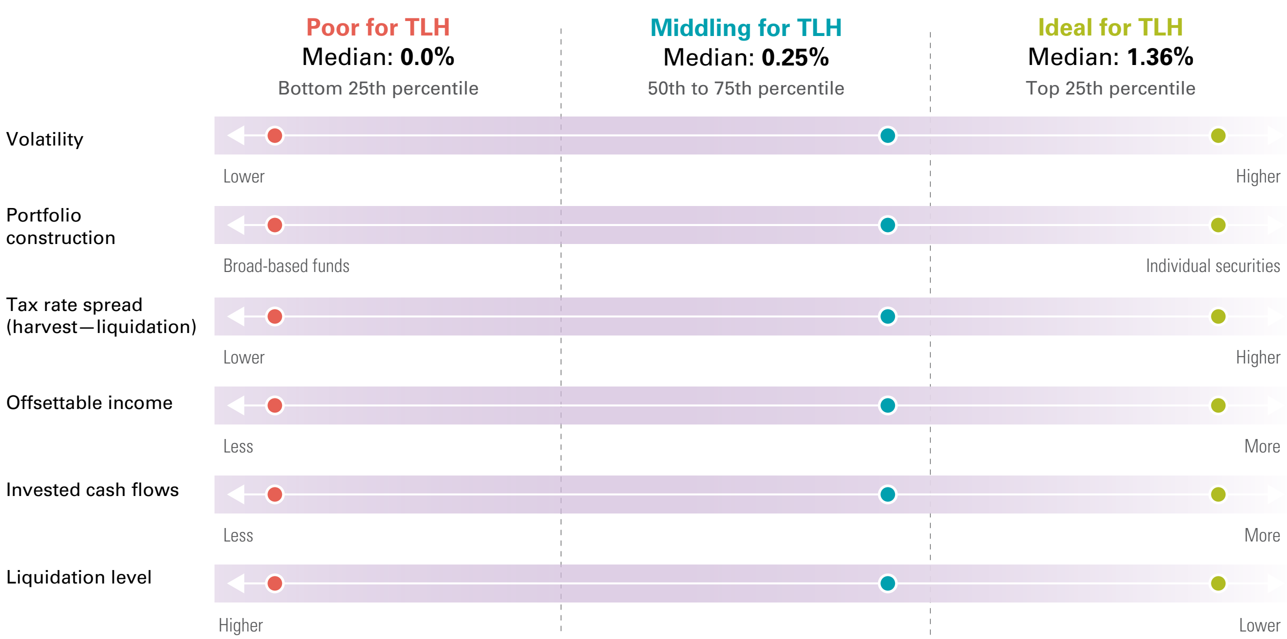
TLH can also be a complementary strategy for those planning to make charitable contributions during their lifetime or bequeath a portion of the portfolio to heirs. In these cases, TLH can permanently reduce taxes in both the short and the long term as depressed cost bases receive a step-up. (Cost bases are reset to their price level at the time that assets are passed as a bequest, eliminating the built-in capital gains.)

Putting it all together

How do these drivers affect the TLH outcome? To show the drivers at work, we simulated thousands of TLH scenarios, varying the core drivers over 15-year periods during 1982 through 2017. We organized the empirical outcomes into three groups, represented in **Figure 3**.[2] The first (orange) represents scenarios where all drivers are in the bottom 25% of what we would consider ideal for TLH—in other words, low volatility, low tax rate spread, low offsettable income, low cash flows, and a high liquidation (selling assets during the investor's lifetime rather than passing them on to heirs or charities). In the next group (blue), we consider instances where all drivers are in the 50th to 75th percentile. The final group (green) represents scenarios where all drivers are in the top 25%. From Figure 3 below, we can see that the median benefits of these groups were 0, 25, and 136 basis points, respectively, though each group showed diverse results. For a sizable TLH benefit, it is important that all (or most) drivers are working together; missing out on a few of the drivers may leave investors with little to no TLH benefit even if the other conditions are ideal.

Last, but not least, if you are an investor considering TLH for your portfolio, we recommend that you first maximize investing in tax-advantaged accounts even if it leaves a smaller taxable portfolio for TLH opportunities. It is true that TLH will likely generate a positive benefit (though with widely varying range) for many individual investors. That said, for investors who save primarily for retirement, TLH should not come at the expense of using tax-advantaged accounts. As Paradise and Kahler (2020) show, investing in tax-advantaged accounts is likely to add more value than anticipated by even our highest TLH projections.

Figure 3. Relationship of key drivers with TLH benefit



Notes: Empirical data include TLH simulations over eight overlapping equally spaced 15-year periods from 1982 through 2017. The 25th, 50th, and 75th percentiles of volatility correspond to 14%, 15%, and 17% annualized, respectively; –16%, 0%, and 16% for tax rate spread; 1%, 2.5%, and 4% of taxable equity balance for offsettable income availability; 2%, 5%, and 8% of initial portfolio balance for cash flows invested quarterly; and 20%, 50%, and 80% for liquidation at the end of the 15-year period.

Source: Vanguard calculations using data from Axioma.

2 We refer interested readers to our companion paper Khang, Paradise, and Dickson (2020) for details on this analysis and how we model and create predictive distributions of TLH benefits for the future, incorporating all key drivers.

The tax-loss harvester's how-to guide

When to harvest

It can be challenging to determine when to begin the tax-loss harvesting process, when to sell, and for how much of a loss. Losses can be ephemeral, often quickly erased, because of volatility. When abundant losses are available, an investor should take advantage of them by selling the investments because the losses can be carried forward indefinitely to offset income and capital gains. At the same time, whenever an investor harvests a loss, tracking error relative to the originally planned portfolio increases because of the wash sale rule. (This rule prevents an investor from repurchasing a "substantially identical" security within 30 days of the sale. More on this below.) Ideally, an investor strikes the right balance: capturing losses while they last but not acting too quickly and missing out on further depreciation.

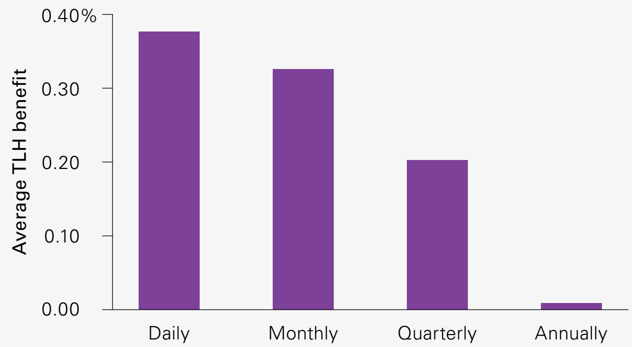
It seems that rules-based harvesting (e.g., harvesting a loss in excess of a threshold) can generally deliver a set of similar results so long as the harvesting threshold is not too ambitious—generally, anything below 10% yields similar results. On the margin, investors may also be able to harvest more by screening for losses on a daily basis rather than a monthly or quarterly basis. **Figure 4** shows that by checking for losses on a daily basis, the resulting TLH benefit would have been about 6 and 18 basis points greater than with monthly and quarterly screening.

One last pitfall to be aware of when timing harvests is that gains are taxed within calendar years. This argues for booking sound losses in advance. If a loss is harvested after year end or washed through a premature purchase of the same security sold for a loss, the gains that otherwise could have been offset in the calendar year are an opportunity lost forever.[3]

What to harvest

It is also important to consider which tax lots to sell when harvesting losses. The ideal situation is to sell lots that generate the greatest loss per dollar of proceeds from the sale.[4] In order to do this, investors should select the specific tax lots of a given security with the highest cost basis (this is called highest-in-first-out accounting, a.k.a. "HIFO"). Dickson, Shoven, and Sialm (2000) and others have shown that TLH with HIFO generally increases after-tax returns of by approximately 5 to 9 basis points a month depending on net cash flows.

Figure 4. TLH benefit by harvesting frequency



Notes: Figure 4 depicts the average TLH benefit for 15-year rolling periods, from the period starting in 1982 to the period starting in 2005 and concluding in 2019. The frequency indicates how often the portfolio was scanned for harvesting opportunities, which were identified as tax lots with at least a 10% loss relative to cost basis. This analysis assumed quarterly cash flows of 5%, capital gains availability of 3% of the portfolio value, an eventual liquidation of 50%, a harvest tax rate of 40%, a liquidation tax rate of 25%, fund-level harvesting, and a relative transaction cost of 10 basis points.

Source: Vanguard calculations using data from Axioma.

Navigating the wash sale rule

After harvesting a loss, investors typically purchase a similar investment to maintain consistent portfolio performance. When replacing the position, an investor must be mindful not to violate the IRS wash sale rule. This rule prohibits taking a tax loss if a substantially identical security is purchased 30 days before or after the loss transaction. If the transaction violates this provision, the capital loss is disallowed and is added to the cost basis of the newly purchased security.[5] Unfortunately, the IRS has provided limited guidance on what constitutes "substantially identical." The goal is to select a replacement that you expect to perform similarly enough that you do not introduce excessive tracking error into your portfolio, but that is different enough that you do not run afoul of the wash sale rule.

3 In extreme cases, excessive trading of a security can create large amounts of realized capital gains and unrealized losses. If the continual sale and repurchase of the security washes those losses so that they continue to be unrealized beyond year end, the gains will be taxable and the investor will be unable to retroactively offset them. For a further examination of this issue, see Macqueen (2021).

4 One twist to this strategy is to separate harvestable tax lots into two groups—short-term losses and long-term losses—and to sell lots in this order. This strategy prioritizes the harvesting of short-term losses, as they are subject to income tax rates. If both short-term and long-term gains exist, losses of the same category are used first to offset like gains (i.e., short-term losses against short-term gains), making short-term losses potentially more valuable than long-term losses.

5 The holding period of the new security is also adjusted to include the holding period of lots that were sold to create the capital loss. For securities that are repurchased in a retirement account, losses are permanently disallowed and the basis of the replacement security is not adjusted. See IRS *Revenue Ruling 2008-5* for additional information.

Case study: When to implement TLH

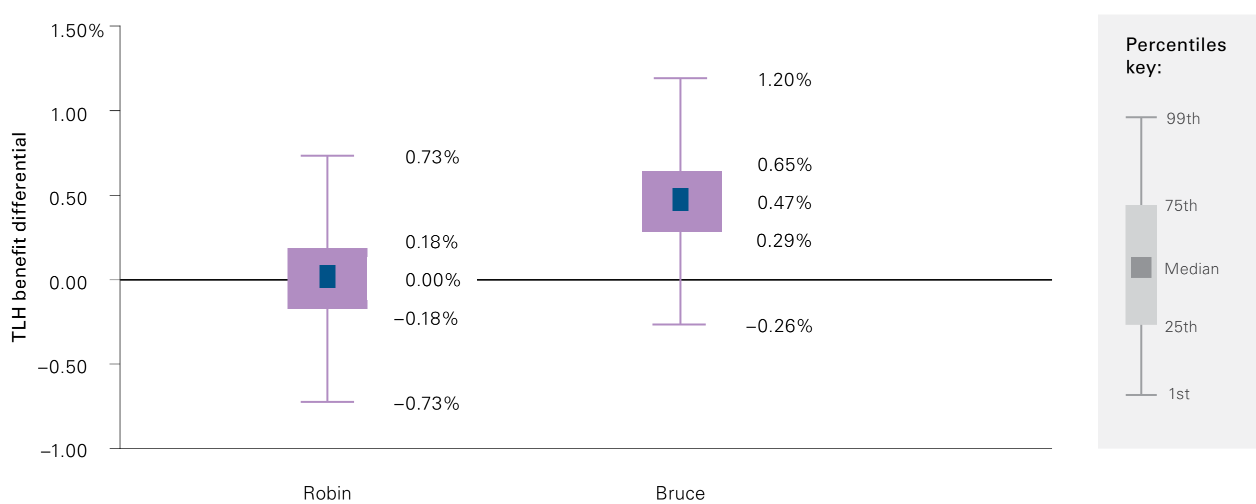
Armed with these lessons and guidelines, when should one put TLH into practice? We use the example of two hypothetical investors—Robin and Bruce—to show how to make an appropriate use of TLH, paying attention to differing opportunity costs and capital gains profiles.

Robin is a doctor in her early 30s and is saving primarily for retirement. She is currently in the 22% income tax bracket. But after she finishes her residency in two years, she expects to spend most of her career in the 32% bracket or (ideally) a higher bracket. Robin prioritizes saving in her 401(k) retirement account and her 529 educational savings account. The modest balance in her taxable brokerage account is invested in passive index funds, so she doesn't expect to generate significant capital gains in the near future. Given her expectations for a rising tax rate and low expectations for capital gains, Robin is unlikely to benefit much from TLH. In fact, by potentially deferring taxes to a time when she is in a higher income tax bracket, she may end up subtracting value if she harvests losses today.

Bruce, on the other hand, is in his late 50s. He is a partner at a large consulting firm that is still growing at a healthy pace; he regularly realizes capital gains when new partners buy into the partnership every few years. He is currently in the 35% bracket, but, based on his plans for a frugal retirement lifestyle, he aims to be in the 24% income tax bracket throughout retirement. In addition, he is planning to sell his partnership interest in the next seven years and expects the sale to generate capital gains of around $4 million. Given Bruce's shrinking tax rate expectations and sizable capital gains projections, he is a prime candidate for TLH.

What are Robin's and Bruce's TLH benefit expectations? Given these two profiles (and using the same framework we used for distributions in Khang, Paradise, and Dickson, 2020), we can predict Robin's and Bruce's expected TLH benefit distributions. As anticipated, Robin's expected benefit is just as likely to be negative as positive. But Bruce, with his favorable tax rate spread and the very large capital gains he expects in the near future, is estimated to receive a much greater annualized TLH benefit of 47 basis points. Based on this, there may not be a strong case for Robin to tax-loss harvest, relative to other tax-advantaged opportunities that still may be available to her. Bruce, on the other hand, is much more likely to benefit from proactive TLH.

Figure 5. Personalized projections of TLH benefit



Notes: These projections are made considering a 15-year period. The inputs for creating Robin's projected distribution are 22%, 32%, 1%, 5%, and 75% for harvest tax rate, liquidation tax rate, capital gains, cash flows, and liquidation amount, respectively. The inputs for Bruce's projected distribution are 35%, 24%, 6%, 5%, and 25%.

Source: Vanguard.

In tax-loss harvesting, one size does not fit all.

Conclusion

When it comes to tax-loss harvesting, one size does not fit all. Investors who expect to have lower future tax rates and have significant losses, which they can use to offset significant capital gains, should expect to benefit from TLH. Those who are fortunate enough to also benefit from strong market performance after their harvests will likely benefit even more.

For investors who don’t fit this description or who have yet to contribute the maximum amount to their tax-advantaged accounts, TLH might not move the needle. By understanding their personal potential, individual investors working with their advisors can develop a TLH strategy best suited for them, without introducing uncompensated risks or operations into their portfolio.

References

Dickson, Joel M., John B. Shoven, and Clemens Sialm, 2000. Tax Externalities of Equity Mutual Funds. *National Tax Journal* 53(3): 607–628.

Khang, Kevin, Thomas Paradise, and Joel M. Dickson, 2020. *Tax-Loss Harvesting: A Portfolio and Wealth Planning Perspective.* Valley Forge, Pa.: The Vanguard Group.

Paradise, Thomas, and Jonathan R. Kahler, 2020. *What to Do With Your Next Dollar: A Quantitative Framework.* Valley Forge, Pa.: The Vanguard Group.

Macqueen, Alexandra, 2021. *Can You Owe $800k Tax on a Profit of $45k?* Morningstar, Inc., March 26; available at https://www.morningstar.ca/ca/news/210709/can-you-owe-$800k-tax-on-a-profit-of-$45k.aspx.

Connect with Vanguard® > vanguard.com

Vanguard research authors

Thomas Paradise
Kevin Khang, Ph.D.
Joel M. Dickson, Ph.D.

All investing is subject to risk, including the possible loss of the money you invest. We recommend that you consult a tax or financial advisor about your individual situation.

ISGTLHE 072021