

When and how asset location matters

- Relative to asset location, asset allocation is the primary driver of long-term returns and portfolio risk.
- Asset location can enhance the effectiveness of your allocation by strategically placing assets across account types to improve after-tax outcomes and increase tax efficiency.
- Asset location can add up to about 0.3% annually in after-tax returns when investors have a balanced asset allocation, meaningful balances in both taxable and tax-advantaged accounts, and enough time for the benefits to compound.
- With the right asset allocation and account mix, a few broad principles—like placing less tax-efficient assets in tax-advantaged accounts—can help simplify asset location decisions.

Introduction

When talking to clients, it may be helpful to present investing as a journey.

If you were setting out on a long voyage at sea, you would want a stable point to orient your direction amidst the flux of the ocean. We can think of this North Star as the client's asset allocation. It is the chosen mix of stocks, bonds, and other assets that reflects both their tolerance for risk and their desire for return, providing the anchor for decision making over time even as markets fluctuate.

A long sea voyage may require carrying some cargo (assets) that will need to be stowed. Think of the ship's compartments as the client's account types, and the placement of the cargo as asset location. Some

compartments (account types) have special features—secure storage or climate control—just as some account types offer tax deferral or tax-free growth. The placement of a client's assets across these account types can materially impact after-tax outcomes.

Asset allocation and asset location are often conflated because clients tend to focus on the result (accumulated wealth) rather than the distinct roles each decision plays. Yet, they are different levers: asset allocation determines the risks a client takes to earn returns, while asset location determines how efficiently their returns are retained over time. Ensuring clients understand both asset allocation and asset location is essential to helping them build and preserve long-term wealth.

FIGURE 1
Benefits and impact of asset allocation and asset location

	Asset allocation	Asset location
Primary benefit	Aligns risk-return profile	Improves after-tax returns
Magnitude of impact	High (dominates outcome)	Moderate (up to 0.3% per year)*
Key driver	Equity/bond mix versus client risk tolerance	Placement across account types

* The ~0.3% annualized after-tax benefit reflects Vanguard simulations showing that asset location across taxable and tax-advantaged accounts can add up to 30 bps of return, depending on investor characteristics (Padmawar & Jacobs, 2022; 2023).

Source: Vanguard.

How does asset location create value for your clients?

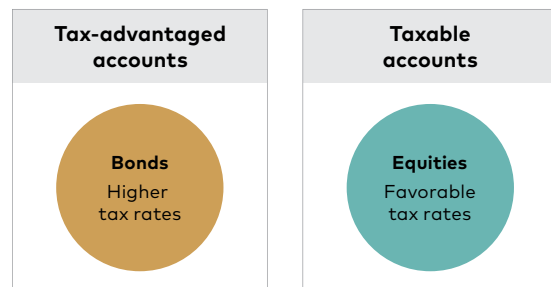
An asset's *tax efficiency* refers to the relative tax burden it generates compared with other assets in an investor's portfolio—specifically, how much of its return is taxed, how frequently taxes are incurred, and at what rate.

To extend the ship analogy, some cargo (assets) are more perishable (taxable) and therefore should be stored in the safest (most tax efficient) part of the ship first. Said differently, assets whose returns are most exposed to taxation should be preferentially placed in tax-advantaged accounts first to preserve more return.

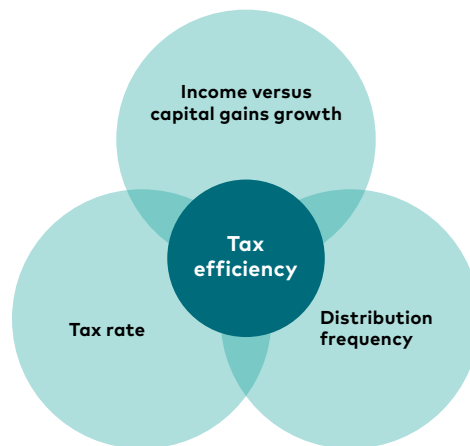
This helps explain the widely accepted view that **taxable bonds should be prioritized in tax-advantaged accounts (Figure 2a)**. Compared with equities, bonds generate a larger share of their total return through interest income, which is distributed regularly, cannot be deferred in the same way as capital gains and is generally taxed at an investor's full marginal income tax rate rather than the typically lower rates that apply to qualified dividends and capital gains (Figure 2b).

FIGURE 2
Tax considerations in asset location

a. Tax rates and asset placement



b. Determinants of tax efficiency



Source: Vanguard.

If a client's portfolio contained only one asset type, asset location strategy wouldn't enhance after-tax returns as all assets would have the same tax efficiency. This highlights the first prerequisite for asset location to create value: **the portfolio must contain assets with different tax efficiencies.**

With assets that have different tax efficiencies, a client must have the opportunity to place their assets strategically. This is the second prerequisite: **the client must have at least one tax-advantaged account and one taxable account.** Without both account types, there is no opportunity to place assets strategically.

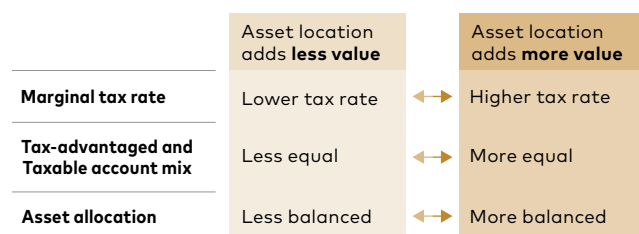
Once these prerequisites are in place, we can begin evaluating how much value asset location can add and what factors increase or diminish that benefit.

The magnitude of value asset location delivers depends upon the interaction and influence of the three factors shown in **Figure 3.**

Asset location adds the greatest value when there's a balanced asset and account mix. That value falls sharply as portfolios become more concentrated and/or account types are limited, as it limits the potential influence of asset location.

Ultimately, asset location has the potential to add the most value for a client when accounts are similar in size and asset allocation is purposefully executed based upon the client's asset types.

FIGURE 3
How asset location matters



Source: Vanguard.

Case Studies: When asset location matters

To help illustrate how account mix and asset allocation affect the added value of asset location, consider these hypothetical examples.

Alex is 25 and early in his career. Most of his savings are in a 401(k), with a much smaller balance in a taxable brokerage account. To simplify the example, we will assume that Alex makes no future contributions to either account.

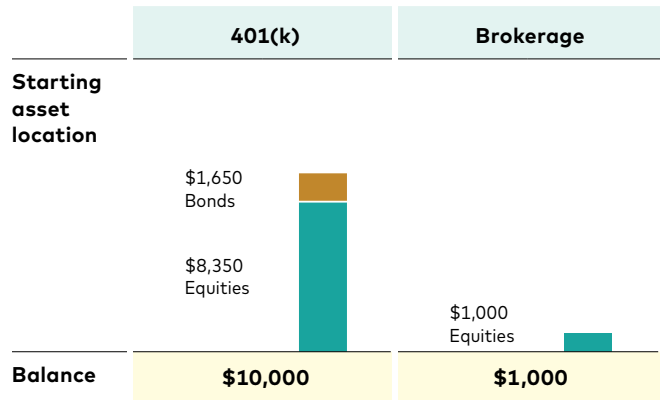
Figure 4 shows the starting asset location for Alex and how his asset allocation changes over 40 years of accumulation. Alex's portfolio is heavily equity-weighted, and his savings are concentrated in the 401(k). He holds stocks in both accounts and bonds in the 401(k). Even if he reversed his asset-location strategy—placing bonds in the taxable account first—he would still need to hold both asset classes inside the 401(k).

Using the Vanguard Capital Markets Model™ (VCMM) to simulate the above glidepath, we find that the value-add of the appropriate asset location versus the reverse strategy adds 6.1 basis points (bps) annualized in after-tax return for the median path.¹ Asset location does add value, but the impact is small.

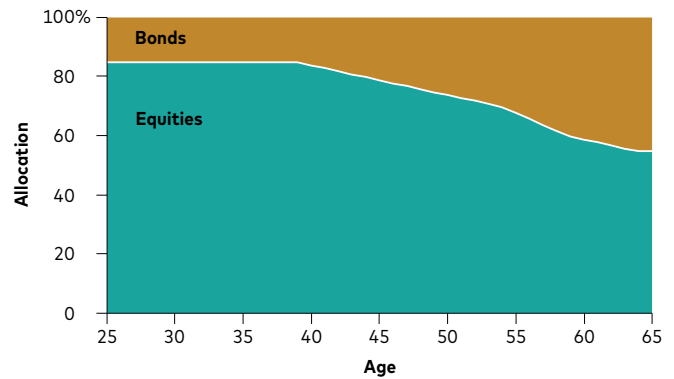
If Alex's account balances become more evenly split or his asset allocation becomes more balanced, the potential benefit of asset location could increase. Importantly, however, any meaningful value would be driven primarily through compounding.

FIGURE 4
Example #1: Alex's starting asset location and asset allocation

a. Alex's starting asset location



b. Alex's glidepath



Note: Glidepath based on Vanguard's calculations.

Source: Vanguard, 2026.

¹ We assume a 32% marginal tax rate and 15% dividend rate for both examples.

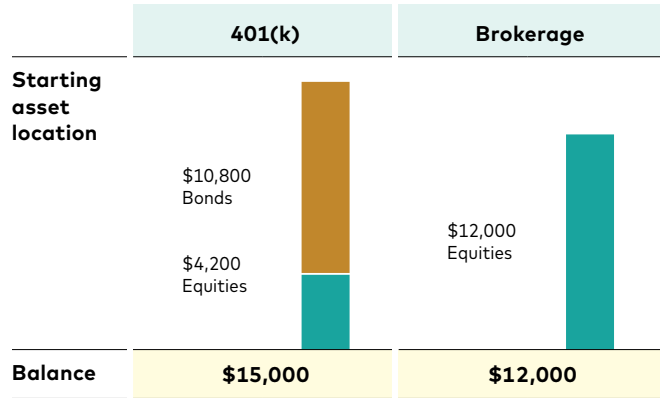
Allison's case illustrates this point. She is also 25 and early in her career but has a more balanced asset allocation and a more evenly distributed set of accounts. Again, we assume she makes no future contributions.

Figure 5 shows Allison's accumulation phase over 40 years. With this structure, following an asset-location strategy tends to concentrate each asset in a single account. Repeating the same analysis as before, we find that for the typical outcome (the median path), using an asset-location strategy increases after-tax returns by about 13.3 bps per year. For much of her glidepath, Allison holds most or all her bonds (and possibly some stocks) in her 401(k), while holding most or all of her stocks in her brokerage account. In addition, she maintains this balanced structure for more of her accumulation phase, allowing the asset location benefits to compound.

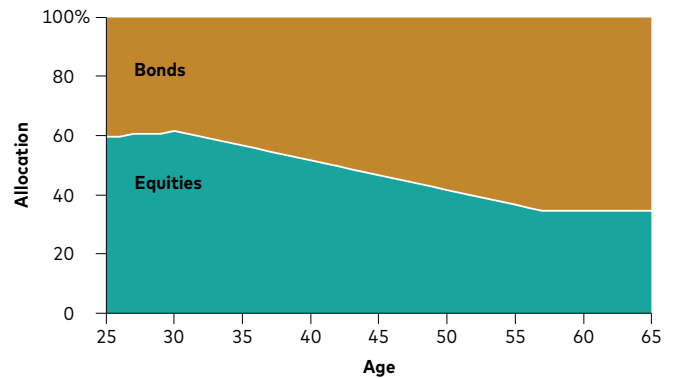
Taken together, Alex's use case shows why asset location early in accumulation often adds little value, while Allison's use case demonstrates how additional value emerges when both assets and accounts are balanced and time allows for compounding.

FIGURE 5
Example #2: Allison's starting asset location and asset allocation

a. Allison's starting asset location



b. Allison's glidepath



Note: Glidepath based on Vanguard's calculations.

Source: Vanguard, 2026.

Special case of tax-advantaged accounts only

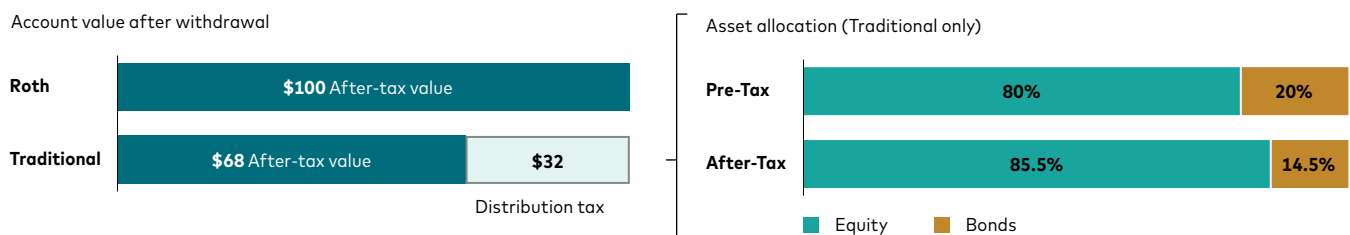
- When all assets are held in tax-advantaged accounts, differences in location strategy outcomes are derived from different after-tax equity exposure, not asset location.²
- Asset location does not create tax advantages in this case because taxation is determined at the account level. The relative tax-efficiency of assets does not play a role when an investor has only tax-advantaged accounts.
- Placing higher-growth assets in Roth accounts can still be advantageous. Roth assets are not subject to required minimum distributions (RMDs) and therefore allow growth to remain sheltered for longer. This is particularly valuable for long-horizon clients or those planning to leave assets to heirs.
- Diversifying across tax-advantaged account types (e.g., traditional vs. Roth) can still be valuable, but for reasons unrelated to asset location (Brown et al. 2017)—such as managing uncertainty around future tax rates and withdrawal rules, as well as mitigating RMDs from traditional accounts.
- When locating across only tax-advantaged accounts, differences in the outcome of strategies reflect only after-tax risk asset allocation. When taxable accounts are included, differences between strategies also arise from the tax efficiency of assets, because taxable accounts incur ongoing tax drag and taxes when gains are realized.

Figure 6 depicts the effect of withdrawal taxation on an investor's asset allocation. As can be seen, the after-tax risk exposure

(the asset allocation) is different than the allocation held up until the withdrawal.

FIGURE 6

Locating bonds in Traditional accounts and equities in Roth accounts: taxes change the after-tax allocation



Note: Based on Vanguard's calculations using a 32% tax bracket.

Source: Vanguard.

² See, for example, Reichenstein (2007) and Reichenstein & Meyer (2013) for a distinction between "tax alpha"—the improvement in after-tax returns due to tax-efficient strategies—and changes in after-tax risk exposure, or "beta."

Selecting municipal bonds

- Municipal bonds generate tax-exempt income and are therefore most valuable for high-tax clients with limited tax-advantaged space who must hold bonds in taxable accounts.
- The benefit from municipals is greatest for investors in higher tax brackets, where tax-exempt yields compare most favorably with taxable bond alternatives on a tax-equivalent yield basis.
- If all bonds can be accommodated in tax-advantaged accounts, the incremental value of municipal bonds is limited.
- As with any fixed income exposure, municipals should be sized and selected in line with the client's overall asset allocation and risk and diversification framework (see Zilbering et al., 2025).

Conclusion

Meeting a client's asset allocation and asset location needs is likely simpler than it seems. As you work with your clients to help them invest more tax efficiently, remember to keep these best practices in mind:

Advisor checklist

- **Stay on target:** A client's strategic asset allocation is the North Star. Deviating from rebalancing targets is far more damaging to long-term outcomes than imperfect asset location.
- **Next dollar matters:** Vanguard research (Felton and Paradise 2023) has shown that investors should invest their next dollar in tax-advantaged accounts first, subject to liquidity needs and time horizons.
- **Move from general to particular:** Once the target asset allocation is established and the client holds accounts with differing tax treatments, asset location becomes relevant. The largest potential gains come from appropriately locating major asset classes—namely, stocks versus bonds.
- **No magic pill, but incremental opportunities:** After addressing allocation and major asset-class location, additional tax efficiency may still be available at the margin. For example, a client could substitute taxable bonds with municipal bonds in taxable accounts. Vanguard research shows that subclass-level asset location can add value in specific cases, but the value is small relative to the value of major asset-class location (Padmawar & Jacobs, 2023).

References

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Appendix

All investing is subject to risk, including the possible loss of the money you invest.

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.

Bond funds are subject to the risk that an issuer will fail to make payments on time, and that bond prices will decline because of rising interest rates or negative perceptions of an issuer's ability to make payments.

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federal penalty tax, or both. (A separate five-year period applies for each conversion and begins on the first day of the year in which the conversion contribution is made.)

Municipal bond fund distributions, including any market discount recognized by the Fund's investments, may be taxable as ordinary income or capital gains. A majority of the income dividends that you receive from the Fund are expected to be exempt from federal income taxes. However, a portion of the Fund's distributions may be subject to federal, state, or local income taxes or the federal alternative minimum tax. You should consult your own tax advisor with respect to any particular U.S. or non-U.S. tax consequences of your investment in the Fund.

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