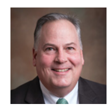
T. ROWE PRICE INSIGHTS
ON RETIREMENT

How to Make Your Retirement Account Withdrawals Work Best for You

These approaches can extend the life of your portfolio and preserve assets for heirs.



Roger Young, CFP®
Thought Leadership Director

KEY INSIGHTS

- There are alternatives to the conventional strategy of drawing on a taxable account first, followed by tax-deferred, and then Roth accounts.
- Many people can take advantage of income in a low tax bracket or tax-free capital gains.
- If planning to leave an estate to heirs, consider which assets will ultimately maximize the after-tax value.

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Many people will rely largely on Social Security benefits and tax-deferred accounts—such as individual retirement accounts (IRAs) and 401(k) plans—to support their lifestyle in retirement. However, a sizable number of retirees will also enter retirement with assets in taxable accounts (such as brokerage accounts) and Roth accounts. Deciding how to use that combination of accounts to fund spending is a decision likely driven by tax consequences because distributions or withdrawals from the accounts have different tax characteristics (see Figure 1 and Appendix 1).

A commonly recommended approach, which we'll call "conventional wisdom," is to withdraw from taxable accounts first, followed by tax-deferred accounts and, finally, Roth assets. There is some logic to this approach:

- If you draw from taxable accounts first, your tax-advantaged accounts have more time to grow tax-deferred.
- Leaving Roth assets until last provides potential tax-free income for your heirs.
- It is relatively easy to implement.

Unfortunately, the conventional wisdom approach may result in income that is unnecessarily taxed at high rates. In addition, this approach does not consider the tax situations of both retirees and their heirs.

This paper considers three objectives retirees may have:

- Extending the life of their portfolio
- More after-tax money to spend in retirement
- Bequeathing assets efficiently to their heirs

"Investors with more than one type of account for retirement can usually do better than following the "conventional wisdom."

— **Roger Young, CFP®**
Thought Leadership Director

(Fig. 1) Tax Characteristics of Different Assets

The tax treatment varies significantly by type of account.

	Income tax on earnings	Income tax on distribution or liquidation	Tax treatments for heirs
Tax-Advantaged Accounts			
Tax-deferred IRA or 401(k)	Deferred	Ordinary rate	Beneficiary's RMDs; ordinary rate
Roth IRA or 401(k)	Deferred	Contributions tax-free; earnings tax-free if qualified[1]	Beneficiary's RMDs; tax-free if qualified (need to meet the 5-year rule)
Taxable Accounts			
Appreciation	None until liquidated	Return of cost basis tax-free; gains at capital gains rates	Step-up in basis, so gains during life of original owner are tax-free
Ordinary income-generating (e.g., interest)	Ordinary rate		
Qualified dividend	Qualified dividend rate		

Legend: Potentially tax-free (green); Likely to benefit from lower capital gains and qualified dividend rates (yellow); Taxed at ordinary rates (red)

The first two go hand in hand: If your goal is to have more money to spend in retirement, a strategy that extends the life of the portfolio can also meet that need.[2] In both cases, the focus is on the retiree, not the heirs. For people focused on the third objective—leaving an estate—the withdrawal strategy can include techniques to minimize taxes across generations.

So what can investors do, and how can advisors navigate these conversations? We evaluated different withdrawal strategies for a variety of situations and summarized the key techniques for three general scenarios (types of people). Our evaluation was based on assumptions (page 16), key among them:

- Because the results depend so heavily on federal taxes, we took into account tax rules on Social Security benefits, qualified dividends, long-term capital gains (LTCG), and ordinary income. See Appendix 1 for further discussion of how these tax effects are interrelated.
- The household uses the married filing jointly status and standard deduction.[3] State taxes and federal estate tax are not considered.
- All taxable investment account earnings are either qualified dividends or long-term capital gains.[4]

[1] Generally, the owner will be over age 59½ and the Roth account will have been open at least 5 years.
[2] Because these goals are similar, our analysis focuses on the longevity of the portfolio. Note, however, that the percentage improvement in spending capacity may be lower than the improvement in longevity.
[3] We used the new rates effective January 1, 2022. While federal tax rates are scheduled to revert to pre-2018 levels after 2025, those rates are not reflected in the calculations.
[4] This essentially assumes the account is invested in stocks or stock funds, an approach recommended in research on asset location, including: Dammon, Robert M., Chester S. Spatt, and Harold H. Zhang. "Optimal Asset Location and Allocation With Taxable and Tax-Deferred Investing." (2004). *The Journal of Finance* 59 (3): 999–1037. Use of this assumption for withdrawal strategy research was employed in: DiLellio, James, and Dan Ostrov. "Constructing Tax Efficient Withdrawal Strategies for Retirees." (2018). Pepperdine University, Graziadio Working Paper Series. Paper 5.

- All accounts earn the same constant rate of return before taxes.
- All amounts are expressed in today's dollars.

Scenario 1: Retirees With Relatively Modest Income

Goal: Meet their spending needs (or generate extra income) without running out of money

Strategy: Spread out tax-deferred distributions to take full advantage of income at a very low (or even zero) tax rate

Many people—including a good number with household incomes above the U.S. median—may be in a low tax bracket in retirement. They are probably more concerned about outliving their money than with leaving an inheritance. Those who have done a solid job of saving in different accounts can probably do better than the conventional wisdom.

When following conventional wisdom, you start by relying on Social Security and taxable account withdrawals. Since some of that cash flow is not taxed, you may find yourself paying little or no federal income tax early in retirement before required minimum distributions (RMDs). That sounds great—but you may be leaving some low-tax income "on the table." And then after RMDs kick in, you may be paying more tax than necessary.

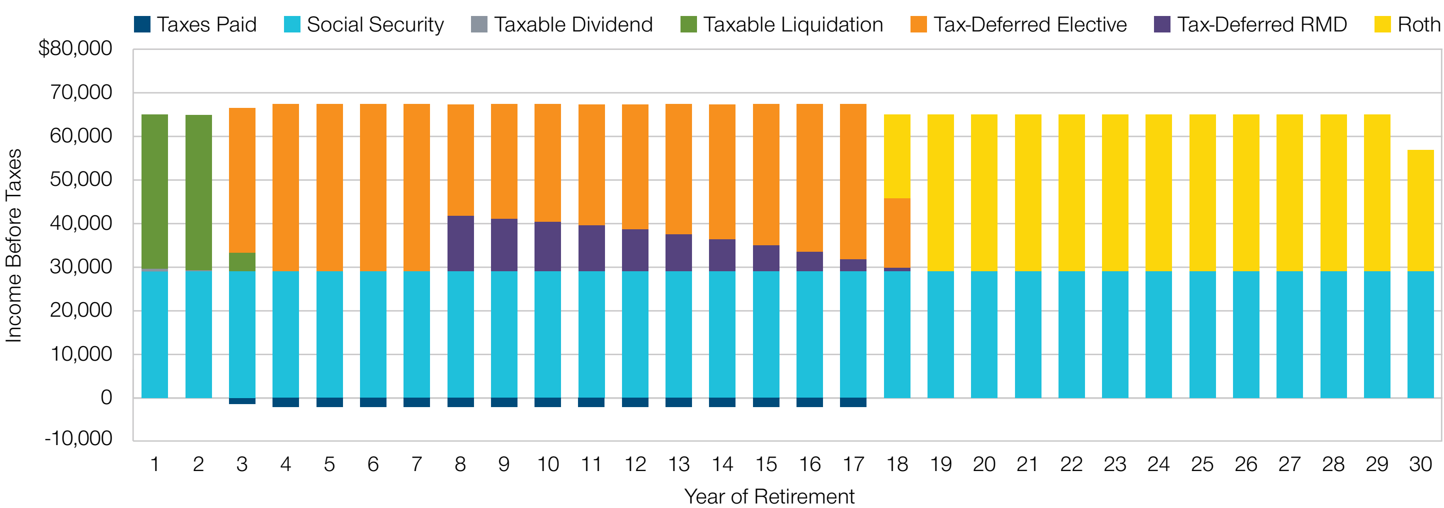
A better approach is to "fill up" a low tax bracket with ordinary income from tax-deferred account distributions. For example, this income could fill the "0% bracket," where income is less than deductions, or the 10% bracket. Any spending need above those distributions and Social Security can be met with taxable account liquidations, followed by Roth distributions.[5]

To illustrate this, Example 1 is a married couple who can maintain their lifestyle by spending $65,000 per year (after taxes). They receive $29,000 in annual Social Security benefits. Their retirement portfolio of $750,000 includes 10% in taxable accounts, 60% in tax-deferred accounts, and 30% in Roth accounts.

> Some retirees with a mix of retirement accounts may not have to pay any federal income tax—even if they did while they were working.
>
> — **Roger Young, CFP®**
> *Thought Leadership Director*

(Fig. 2) Sources of Retirement Income for Example 1, Under Conventional Wisdom Method

This approach results in unnecessary taxes during years 3 through 17.



[5] This sequence has been advocated by several researchers, including Geisler, Greg, and David Hulse. "The Effects of Social Security Benefits and RMDs on Tax-Efficient Withdrawal Strategies." (2018). *Journal of Financial Planning* 31 (2): 36–47.

Figure 2 shows how this couple would meet their spending needs using the conventional wisdom approach. Taxes paid are shown as negatives in dark blue. Throughout this paper, we will use these graphs to help explain strategies and show the tax impact.

The couple first exhausts the taxable account (primarily green), then the tax-deferred account (orange and purple), and then the Roth account (yellow). In the first two years, they have negative taxable income and pay no federal tax. In years four to 17, they pay around $2,400 per year in federal taxes (dark blue).

If they follow the principle of filling up the 0% bracket, the graph in Figure 3 looks quite different. By spreading out tax-deferred distributions, the couple pays no federal income tax.

How do they manage not to pay income tax?

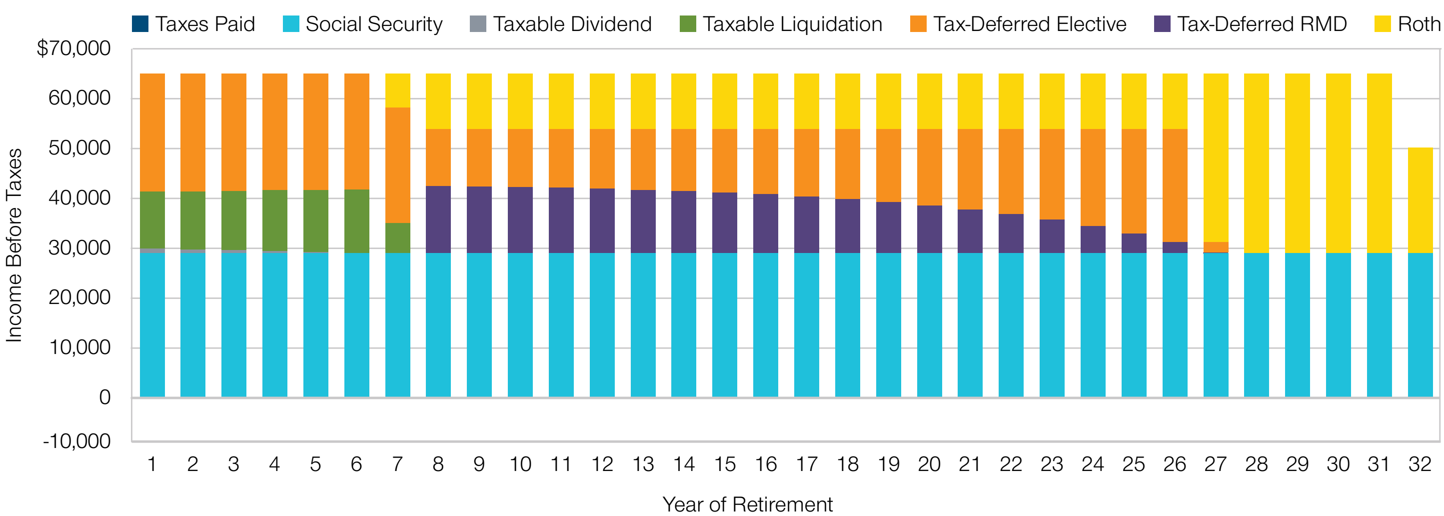
- Drawing consistently from either Roth accounts (tax-free) or taxable accounts (with the cost basis portion tax-free) limits the tax-deferred distributions needed each year.
- Combined income (including capital gains) is low enough that only a small portion of Social Security benefits are taxable.
- As a result, ordinary income is below the standard deduction.
- The household's income is also well below the threshold for taxes on capital gains.

As a result, the household's portfolio lasts nearly two years longer (31.6 years as opposed to 29.8 years under the conventional method). That's an improvement of 6%. If both spouses die between ages 80 and 95, their heirs would receive between $19,000 and $63,000 more after-tax value than with the conventional method. See the assumptions and results for all examples in Appendix 2.

Key Insight: Moderate-income people with multiple types of accounts may want to draw down Roth and/or taxable assets along with tax-deferred accounts to consistently stay in a low marginal bracket (0% or 10%).[6]

(Fig. 3) Sources of Retirement Income for Example 1, Under Bracket-Filling Method

By leveling out tax-deferred distributions, the household pays no federal income taxes.



[6] Higher-income households could also benefit from filling higher brackets. In some circumstances, people may benefit from converting tax-deferred assets to Roth rather than using the distributions for current consumption—see Appendix 4.

> Selling taxable investments in low-income years could take advantage of untaxed capital gains.
>
> — **Roger Young, CFP®**
> *Thought Leadership Director*

Scenario 2. Affluent People With Significant Taxable Accounts

Goals: Avoid running out of money, and leave an estate if possible

Strategy: Consider using untaxed capital gains

People in this category are affluent but not necessarily so wealthy that the estate is their top priority.[7] Taxable accounts represent a sizable portion of their assets, perhaps from an inheritance, bonuses, or savings above retirement plan contribution limits. They probably have higher Social Security benefits than people in our first scenario, which could prevent them from using the 0% bracket strategy.

In this situation, you should consider taking advantage of capital gains below the threshold for taxation. There are only three tax rates for LTCG and qualified dividends: 0%, 15%, and 20%.[8] The taxable income[9] threshold where you start paying taxes is much higher than for ordinary income ($83,350 for married couples filing jointly). It's important to note that taxable income for this calculation is after deductions, so this strategy is feasible for more people today than before the standard deduction increased in 2018.

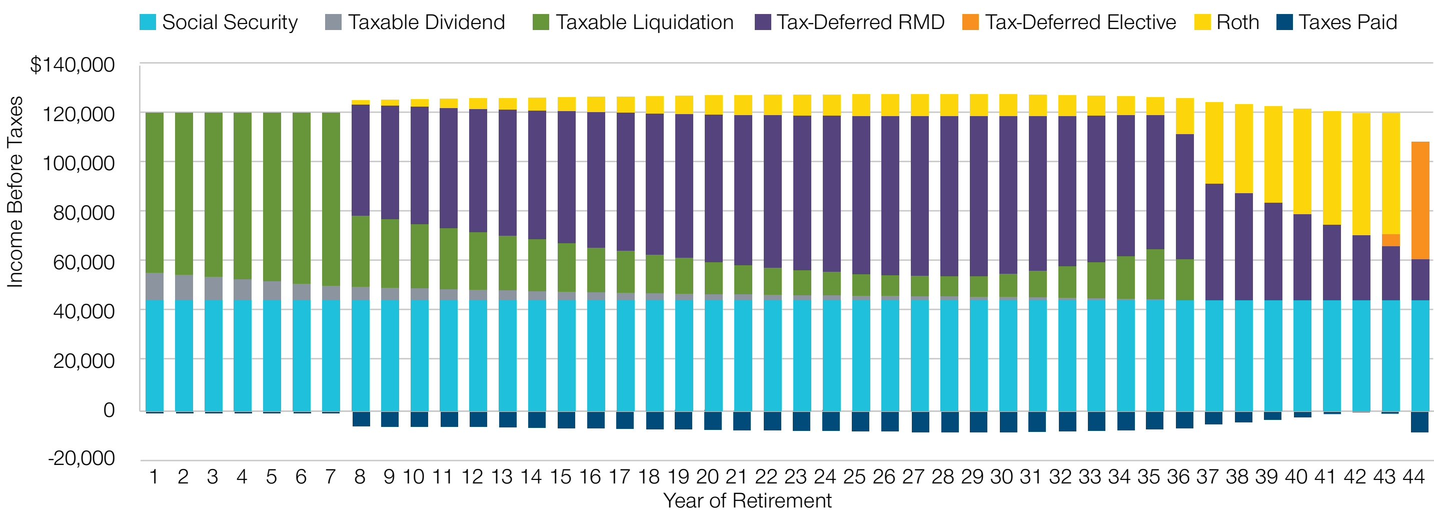
Consider Example 2, a couple with $2 million in assets, 40% of which is in taxable accounts. We'll assume that the taxable accounts have a low cost basis—25% of the value—and, therefore, liquidations result in significant capital gains. Their spending needs and Social Security benefits are higher than in the first scenario.

The best result we found used Roth distributions after RMDs begin to limit taxable income, taking full advantage of untaxed capital gains. This strategy is depicted in Figure 4.

Using Roth distributions keeps taxable income below the threshold for capital gains taxation. This prevents taxes on capital gains or qualified dividends for the first 36 years, saving over $53,000 in

(Fig. 4) Sources of Retirement Income for Example 2, Utilizing Untaxed Capital Gains

This strategy relies on carefully choosing the size of Roth distributions.



[7] Throughout the paper, we discuss estimated life of the portfolio assuming constant investment returns. This intentionally ignores sequence of returns risk. Readers should not assume that a portfolio theoretically lasting 40+ years has no risk of running out.
[8] This income could also be subject to the 3.8% net investment income tax, which uses a threshold based on a different definition of income.
[9] See description in Appendix 1.

taxes in those years compared with the conventional method. In this case, the impact of lower taxes early in retirement outweighs the higher taxes in later years (when the conventional method would be primarily using Roth income). This method also generated better results than filling the 10% ordinary income bracket, which would incur more taxes early in retirement.

As a result, portfolio longevity improves by 2% and estate value[10] by 3% (at age 95), compared with the conventional method. Therefore, this method was beneficial for both types of goals. See Appendix 2 for further details.

Key Insight: Retirees who can't take advantage of the 0% bracket may still be in a position to generate cash flow from taxable accounts without paying capital gains taxes.

Scenario 3. People Who Expect to Leave an Estate

Goals: Maximize the after-tax inheritance for heirs while meeting lifetime spending needs

Strategies: Consider your heirs' tax situation to help prioritize tax-deferred or Roth distributions; consider preserving taxable assets for the step-up in basis.

People who have accumulated significant assets may have confidence that they are unlikely to run out of money. Therefore, they can plan a strategy with their heirs in mind. These people aren't necessarily ultra-wealthy, but they have been strong savers relative to their income or spending. While these households may have a relatively small portion of assets in Roth accounts, any Roth assets they do have can be beneficial in planning.

> People leaving an estate should consider holding taxable assets so their heirs get the step-up in basis (and tax-free gains).
>
> **— Roger Young, CFP®**
> *Thought Leadership Director*

The first new strategy to employ involves choosing between Roth and tax-deferred distributions. When accumulating assets, it usually makes sense to choose between Roth and pretax contributions based on whether you think your tax rate will go up or down in retirement. Similarly, to leave your heirs the largest after-tax inheritance, consider their potential tax rate. If it's higher than yours, it's better to leave them Roth assets and draw on tax-deferred assets for your own spending.

Of course, there are some challenges with implementing this approach. First, it can be difficult to predict your heirs' taxes 30 years down the road. Second, your own marginal tax rate can change over the course of your retirement. That said, if your heirs' tax situation is even somewhat predictable, it can be a factor to consider.

The second strategy to consider is preserving taxable assets. Under current tax law, the cost basis for inherited investments is the value at the owner's death. This is known as a "step-up" in basis, and it effectively makes gains during the original owner's lifetime tax-free for heirs. This can be a major benefit for people with wealth that won't be spent in retirement.

There are four major factors that determine the attractiveness of holding taxable assets for the step-up compared with preserving Roth assets:[11]

- Cost basis, as a percentage of value (lower basis favors holding the taxable investment),
- The tax rate on capital gains and dividends (higher rate favors holding),

[10] The percentage improvement in estate value depends largely on how close the portfolio is to running out. For example, the percentage improvement after 30 years could be very large if the portfolio will run out by the end of 31 or 32 years. We show the percentage only if there is significant portfolio life left, as in this case.

[11] DiLellio and Ostrov. See Appendix 3 for details of this analysis, including how to evaluate a comparison with tax-deferred assets.

- Life expectancy of the owner (holding becomes more attractive closer to the end of life), and
- The investment dividend rate (lower dividend favors holding).

One tricky part about this decision is that the capital gains tax rate depends on your taxable income. Therefore, it can change based on how you use different accounts to meet spending needs. As we discussed in the second scenario, some people can take advantage of untaxed capital gains, especially before RMDs. To the extent gains are untaxed, there is no benefit in holding those assets for the step-up. Another caveat is that we assume the same investment returns for all accounts; if your low-basis taxable investment has lower growth potential or higher risk, holding it obviously becomes less attractive.

For Example 3a, a couple with $2.5 million in assets, we assume the heirs' tax rate is 10%—lower than the couple's marginal rate in most years. Because the heirs' tax rate is lower than the couple's, we aren't in a hurry to drain the tax-deferred account. We especially don't want to take tax-deferred distributions if they push the couple into the 22% bracket. Instead, the best method we found (shown in Figure 5) uses Roth distributions in the early retirement years.

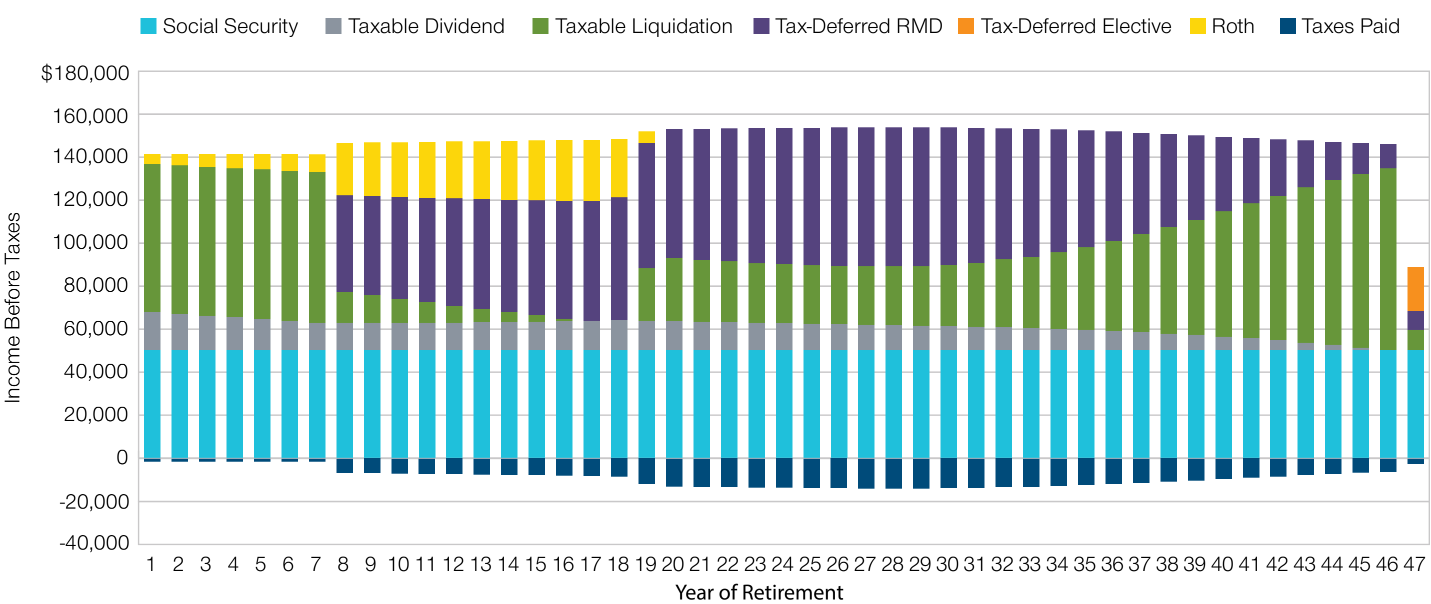
This illustrates three techniques, including one from the second scenario discussed earlier.

- At the beginning, Roth distributions are used in combination with taxable liquidations to keep taxable income below the threshold for capital gains taxes.
- After RMDs begin, it is preferable to meet remaining spending needs with Roth distributions, instead of elective tax-deferred distributions, because of the low heir tax rate.
- At that point, we also had another decision—whether to preserve taxable assets for the step-up. It turned out that drawing down the Roth account to preserve taxable assets was favorable. However, after the Roth account was depleted, it was better to liquidate taxable assets than to take elective tax-deferred distributions.

This method reduces taxes in the first 19 years of retirement (until the Roth account is depleted) by over $48,000

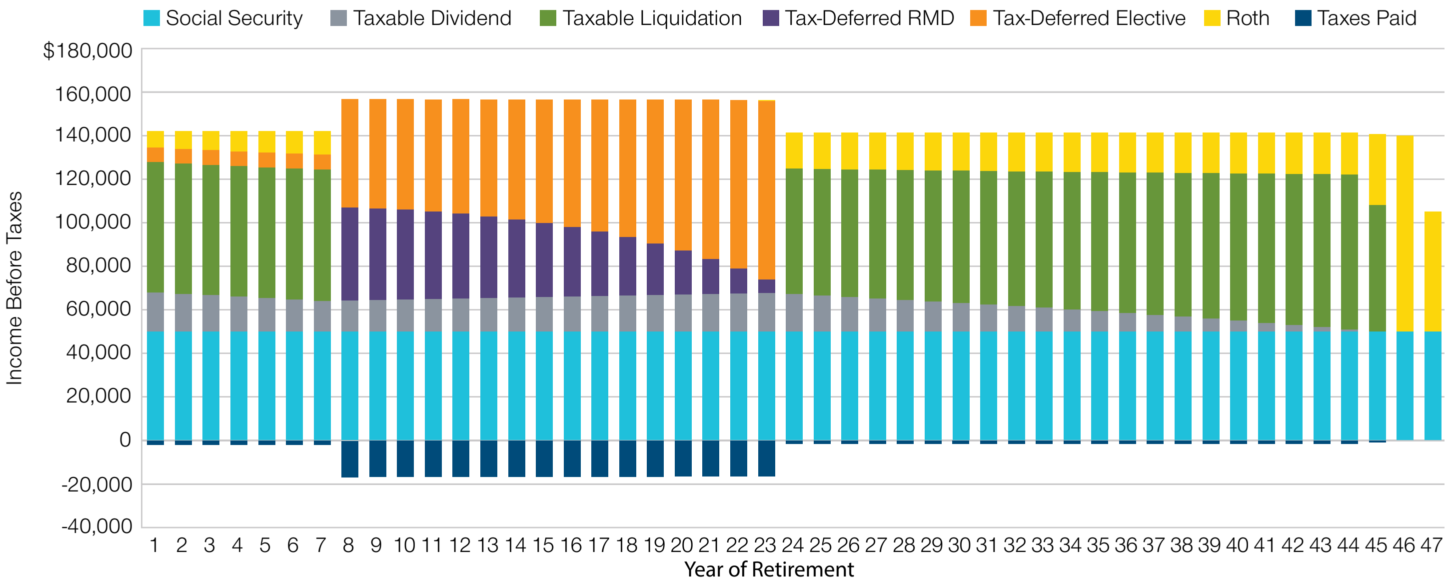
(Fig. 5) Sources of Retirement Income for Example 3a, Prioritizing Roth Distributions

If heirs will have a low tax rate, it's preferable to leave them tax-deferred assets.



(Fig. 6) Sources of Retirement Income for Example 3b, Prioritizing Tax-Deferred Distributions

Heirs with a high tax bracket benefit from inheriting Roth assets.



> Drawing down tax-deferred assets now can help your highly taxed heirs later. But proceed with caution.
>
> **— Roger Young, CFP®**
> *Thought Leadership Director*

compared with the conventional method. As a result, the household's portfolio lasts about 2% longer, with a 5% improvement in estate value at age 95. (See Appendix 2.)

For Example 3b, we will use the same assumptions except that we now expect the heirs to have a 24% tax rate, which is higher than the couple's top rate. For this couple, it makes sense to draw on tax-deferred assets sooner, as shown in Figure 6.

This strategy develops in three stages:

- As in the previous two examples, we found that taking advantage of untaxed capital gains in the early years was beneficial. Taking tax-deferred distributions to fill the 10% ordinary tax bracket also had a small positive impact.
- However, because of the high tax rate on heirs, we then shifted to tax-deferred distributions after RMDs push taxable income above the capital gains taxation threshold.
- Then, after the tax-deferred account was depleted, we returned to a combination of Roth distributions and taxable liquidations (until the Roth account is depleted). The level of Roth distributions was chosen to keep taxable income below the threshold for capital gains taxation, so those gains are untaxed.

The key is that this method preserves Roth and taxable assets for the highly taxed heirs. It improves on the conventional method by 2% for portfolio longevity and by 7% for value to heirs at age 95.

You'll notice that this method incurs significant taxes in years eight through 24. That suggests a few caveats about using the approach this aggressively:

- You want to be highly confident you're not going to run out of money.
- You should also be pretty sure your heirs will really be in the higher bracket.
- There are good reasons to keep some tax-deferred assets in reserve. For example, if you incur large, deductible medical expenses later in life, you can use those deductions to offset tax-deferred distributions.[12]

[12] Cook, Kirsten A., William Meyer, and William Reichenstein. "Tax-Efficient Withdrawal Strategies." (2015). *Financial Analysts Journal* 71 (2):16–29.

> It's important to plan before RMDs limit your flexibility.
>
> — **Roger Young, CFP®**
> *Thought Leadership Director*

In Examples 3a and 3b, there are years when it makes sense to hold on to taxable assets for the step-up, but there are also years when selling some taxable assets is preferable. The examples differ in how they fund spending with other accounts during the years when taxable assets are preserved.

Key Insight: Techniques to optimize your heirs' after-tax inheritance are not simple to evaluate, but they're worth considering if you expect your heirs will have a significantly different tax rate than yours.

Withdrawal Planning After the SECURE Act

The Setting Every Community Up for Retirement Enhancement (SECURE) Act of 2019 made several changes to retirement savings, including two that significantly affect withdrawal strategies:

- The starting age for RMDs has been extended from 70½ to 72 (if you reach 70½ on or after January 1, 2020).
- The ability to stretch distributions from Inherited IRAs and retirement plan accounts over time has been limited. Rather than taking RMDs over their expected lifetime, most beneficiaries will need to draw down the account fully within 10 calendar years of the original owner's death. This does not apply to some beneficiaries, such as spouses and those who are less than 10 years younger than the original owner.

The new RMD age gives retirees more flexibility in developing a strategy. In cases where a Roth conversion strategy makes sense, there is now additional time before RMDs to convert more assets at a reasonable tax rate.

The limitation of "stretch" distributions may have a more significant effect on withdrawal strategies. A large inherited tax-deferred account is more likely than before to push a beneficiary into a higher tax bracket. Therefore, it is increasingly important to understand the tax situation of potential beneficiaries. This information can help you coordinate an estate plan and withdrawal strategy to meet your goals:

- Consider leaving different types of accounts to different beneficiaries (e.g., Roth or taxable accounts to higher-income children and tax-deferred assets to others).
- Dividing retirement accounts among several beneficiaries can reduce the risk of higher taxes due to the 10-year rule.
- If higher tax rates for beneficiaries are hard to avoid, factor those tax rates into your withdrawal strategy. As a result of the SECURE Act, more households may benefit from a Roth conversion strategy or one prioritizing tax-deferred distributions (as illustrated in Figure 6).

Each example in this paper assumes a fixed income tax rate for heirs. Therefore, the best strategies we identified did not change from previous versions as a result of the SECURE Act. However, the SECURE Act may have a significant effect on beneficiaries' taxes that should be taken into consideration.

Other Observations and Considerations

The examples we've shown highlight the benefits of strategies for specific situations. In addition to these examples and techniques, retirees should consider the following:

- If you have a significant portion of assets in tax-deferred accounts (as in all of our examples), RMDs significantly limit your flexibility after age 72 (if you reach age 70½ on or after January 1, 2020). There are several plausible examples (not shown in this paper) where RMDs and Social Security benefits completely meet retirees' spending needs. As a result, retirees need to plan early and take advantage of the pre-RMD years for any of these strategies to have a significant impact.

- While we assumed retirement (and Social Security claiming) at age 65, the claiming decision should be evaluated along with the withdrawal strategy. There are benefits to delaying claiming, including the fact that the higher benefits are at least 15% untaxed. Taxation is one of many factors to consider, but life expectancy and risk management are generally far more important.
- The results and strategies in these examples are sensitive to specific assumptions, including asset level, account mix, and spending needs. Relatively small changes in those assumptions could make the best strategy different.
- We assumed all accounts have the same investment return. In real life, it is important to consider asset allocation and location across the accounts. Using the tax-deferred or Roth accounts for rebalancing or allocation changes, if possible, may minimize tax-triggering events in the taxable account.
- We assumed a fairly tax-efficient taxable account composed of stocks or stock funds. If your taxable account includes investments such as bonds that generate ordinary income, you generally want to liquidate those investments sooner. That makes the point above about managing asset allocation particularly important.
- State income taxes should also be considered, but they may not be a driving factor in your decision. Most states exclude Social Security income, and some exclude at least a part of pension benefits or retirement account distributions. Those provisions could put you in a low state tax bracket in retirement. That would make it slightly more preferable for you to take tax-deferred distributions if your heirs will be subject to higher rates.
- Taxes on different types of retirement income are complicated and interrelated. Therefore, we highly recommend consulting with a tax advisor or financial planner with appropriate software. The software could be specifically designed for this purpose, but general tax software can also help you evaluate the strategies.
- A surviving spouse may face higher tax rates as a single filer than the couple did. Couples should consider health factors, age differences, and expected income to assess this risk. If the survivor's tax burden could be significant, bracket-filling strategies early in retirement may be advantageous.
- Remember that statutory rates can also change and that the ordinary tax rates we discuss in this paper are scheduled to revert to pre-2018 levels after 2025. The higher standard deduction significantly improves the feasibility of the 0% bracket and untaxed capital gains strategies.
- We assumed constant spending (in today's dollars). To deal with major changes in spending, such as major purchases or medical expenses, a borrowing source such as a home equity line of credit may be useful. That liquidity may enable you to avoid large distributions or withdrawals that would increase your tax rate.
- An advisor who can help you improve upon the conventional wisdom method is certainly adding value through financial planning. However, we'd characterize the improvement we found in these examples as incremental, not life-changing.

Conclusion

Retirees with solid savings and a mix of investment account types are well positioned to take advantage of the tax code. Rather than settling for the straightforward conventional wisdom, they can benefit from one or more of these strategies:

- Drawing from tax-deferred accounts to take advantage of a low (or even zero) marginal tax rate, especially before RMDs
- Selling taxable investments when income is below the taxation threshold for long-term capital gains (often supplementing with Roth distributions to meet spending needs)
- Considering heirs' tax rates when deciding between tax-deferred and Roth distributions (if you're confident there will be an estate)
- Evaluating whether to hold taxable assets until death to take advantage of the step-up in basis (again, only if the assets won't be needed for spending in your lifetime)

Appendix 1: Federal Taxation of Retirement Income

To create a withdrawal strategy, it's important to understand how different types of retirement income are taxed (for federal income tax).

Between 0% and 85% of Social Security benefits (SSB) are included in ordinary income. The percentage is based on a calculation of income (sometimes referred to as "combined income" or "provisional income"): generally, adjusted gross income (before SSB), plus nontaxable interest, plus half of SSB. For a married couple filing jointly, if that number is below $32,000, benefits are not taxable. If combined income is between $32,000 and $44,000, the portion of SSB that is taxable equals 50% of the combined income over $32,000 (but limited to half of SSB). If combined income is over $44,000, 85% of the excess is added to the amount from the 50% range to arrive at the total SSB that are taxed. (In total, it can't exceed 85% of SSB.)

For example, suppose a 65-year-old couple has $24,000 of SSB, $25,000 of ordinary income from tax-deferred distributions, and $10,000 of long-term capital gains. Their combined income is $47,000: $25,000 + $10,000 + ½ of $24,000. Note that capital gains are included, even though they are not ordinary income. The taxable portion of SSB is calculated as follows:

- 50% of combined income between $32,000 and $44,000 = $6,000 (since it's less than 50% of $24,000)
- 85% of combined income over $44,000 = ($47,000 – $44,000) × 85% = $2,550
- Total = $6,000 + $2,550 = $8,550 (since it is less than 85% of $24,000)

In total, this couple would have $33,550 of ordinary income before deductions ($25,000 + $8,550). After subtracting the $28,700 standard deduction, their ordinary taxable income is $4,850. Since that's in the lowest (10%) bracket, their tax on ordinary income is simply 10% × $4,850, or $485. (In higher brackets, the calculation includes a base amount, plus a percentage of income over the bracket floor. The base and floor are both zero for the lowest bracket.)

While this couple is in the 10% bracket, additional income is effectively taxed at a higher rate because it makes more of SSB taxable. In the example above, suppose tax-deferred distributions are $1,000 higher, or $26,000. Now $9,400 of SSB is taxable, an increase of $850. Therefore, ordinary income and taxable income increase by $1,850: $1,000 + $850. In the 10% bracket, taxes increase by $185 to $800. So the incremental $1,000 of income really has an 18.5% marginal tax rate (10% + 10% × 85%). This is sometimes referred to as the "tax torpedo." You don't necessarily have to avoid it (like you would a real torpedo!), but the total marginal rate is what you should consider when evaluating withdrawal strategies.[13] This helps explain why a household that is eventually in the 22% bracket may not benefit much from filling the 10% bracket early in retirement—it really has an 18.5% marginal rate for much of that bracket-filling income.

Another key element of taxation for retirees is the separate calculation for qualified dividends and LTCG. This income is subject to rates of 0%, 15%, or 20% (or a combination). The bracket depends on taxable income: essentially, ordinary income (including taxable SSB) plus the gains and dividends minus deductions. In the first example above, this would be $33,550 + $10,000 – $28,700 = $14,850. This is well below the $83,350 maximum for the 0% rate, so the couple has no capital gains tax, and their total federal income tax is $485.

However, an additional $1,000 of LTCG would still result in additional tax. Again, the reason is that more SSB become taxable. In this case, ordinary income only increases by $850, and taxes by $85. So the effective marginal rate on these gains is 8.5%. That's small enough that it may not dissuade us from taking advantage of long-term gains not directly subject to tax, especially early in retirement.

In summary, the parts are interrelated: Tax-deferred distributions and LTCG affect SSB taxation, while taxable SSB and tax-deferred distributions affect taxes on LTCG.

This complexity does not appear to be fully reflected in prior academic literature on withdrawal strategies. This also helps explain why we describe our guidance using techniques and examples, rather than an algorithm. (We also do not claim the strategies in this paper are necessarily optimal.) And it's why we recommend consulting with a tax advisor or financial planner using appropriate software.

[13] Geisler and Hulse.

Appendix 2: (Fig. 7) Summary of Example Assumptions and Results (Rounded)

	Example 1	Example 2	Example 3a	Example 3b
Assumptions				
Portfolio value at retirement	$750,000	$2,000,000	$2,500,000	$2,500,000
Annual spending need (after taxes)	$65,000	$120,000	$140,000	$140,000
Annual Social Security benefits (gross)	$29,000	$45,000	$50,000	$50,000
Account mix (percent taxable/deferred/Roth)	10/60/30	40/50/10	50/40/10	50/40/10
Heirs' marginal tax rate	12%	12%	10%	24%
Initial percentage of taxable account in cost basis	75%	25%	25%	25%
Memo: approximate preretirement gross income (not directly used in analysis)	$100,000	$210,000	$250,000	$250,000
Description of withdrawal strategy	Fill 0% ordinary bracket with tax-deferred distributions	Early Roth distributions to fully utilize untaxed capital gains	Prioritize Roth distributions to enable untaxed capital gains and to leave tax-deferred distributions to heirs	Prioritize tax-deferred distributions; in other years, use Roth distributions to enable untaxed capital gains
Results (and improvement over conventional wisdom strategy)				
Portfolio longevity	31.6 years (+6%)	43.8 years (+2%)	46.4 years (+2%)	46.6 years (+2%)
After-tax value to heirs based on assumed age at death				
Age 95	$57K[14]	$851K (+3%)	$1,228K (+5%)	$1,169K (+7%)
Range of improvement over conventional wisdom, ages 80–100	$19K–$63K[15]	$3K–$42K	$26K–$73K	$35K–$74K
Federal taxes paid[16]	$0 ($35K or +100%)	$181K (+19%)	$252K (+16%)	$290K (+3%)

Appendix 3: Determining Whether to Preserve Taxable Investments for the Step-Up in Basis

In their working paper, "Constructing Tax Efficient Withdrawal Strategies for Retirees," DiLellio and Ostrov describe formulas to compare the desirability of using an account type for consumption in retirement. The formulas are based on an objective of after-tax value to heirs. The key variables are (using my notation):

t_g, t_d, t_m, and t_h = Tax rates on capital gains, dividends, marginal ordinary income, and heirs' income, respectively

b = Cost basis of the taxable investment as a percentage of value

y = Estimated years until death

d = Taxable investment dividend rate

a = Relative value of a taxable investment to a Roth investment for heirs

The relative desirability of using an account equals $(1 - t_g (1 - b))/a (1 - t_d d)^y$ for taxable; 1 for Roth; and $(1 - t_m)/(1 - t_h)$ for tax-deferred. Therefore, if the taxable desirability above is greater than 1, it is preferable to liquidate taxable investments rather than take Roth distributions. If it is less than 1, it is better to hold the taxable investment for the step-up in basis. This is consistent with the intuitive factors

[14] Percentage improvement is not meaningful.
[15] Ages 80–95 in this case because the portfolio runs out before age 100.
[16] For 30 years of retirement, to age 95 (or the last full year under the conventional wisdom method, if shorter). A positive change in parentheses reflects reduction in taxes paid (an improvement).

discussed in Scenario 3 on page 6. Additional observations on this concept:

- The value of "a" depends primarily on how quickly an heir will liquidate a Roth account. DiLellio and Ostrov estimate that under typical circumstances, a > 0.75, and they use values between 0.89 and 1 for the cases they evaluate. (The maximum value is 1, when the Roth is immediately liquidated by heirs.) We have used a value of 0.95. This attempts to reflect a value to ongoing tax-exempt growth without overestimating the investment taxes for heirs. It is also appropriate to use a value closer to 1 than to 0.75 after the SECURE Act, which forces most beneficiaries to draw down the account within 10 years instead of over their lifetime.
- If the investment does not pay a dividend, the person's life expectancy does not affect the decision.
- If the tax rate on gains and dividends is 0%, the desirability of using a taxable investment equals 1/a. Consistent with intuition, this means it can't be preferable to use Roth assets in that situation.
- The tax rates on gains and dividends are not fixed—they depend on taxable income, which depends heavily on whether Roth assets are used to meet spending needs. Therefore, even within a year, the desirability calculation can change. This explains why we found that it can make sense to use taxable assets until they start generating gains taxed at 15%, then switch to drawing on Roth assets.

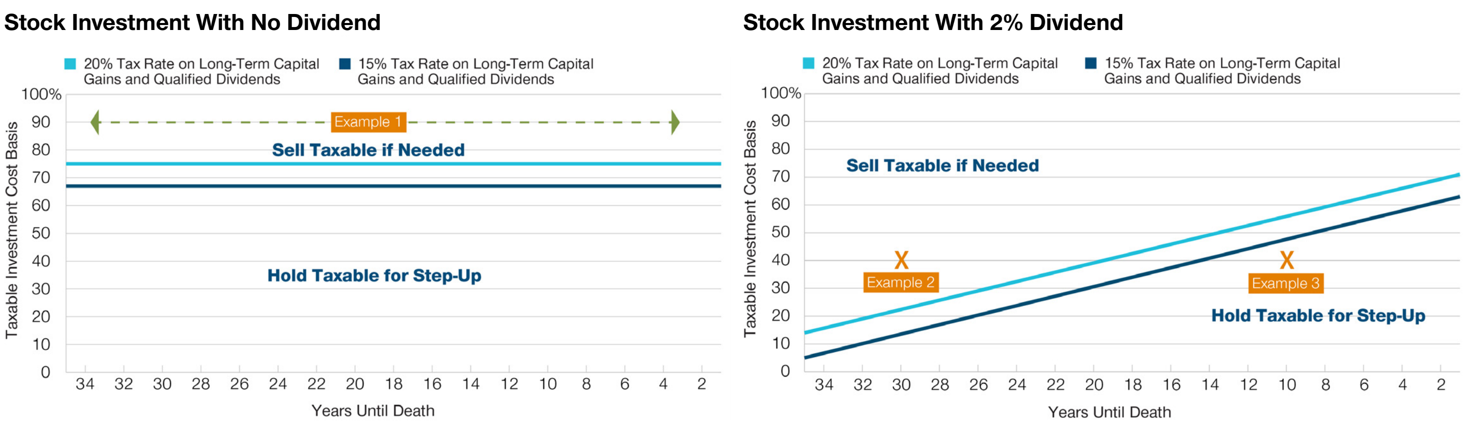
We can use break-even cost basis percentage graphs to help with this decision. Consider three examples in reference to these charts (Figure 8). If your taxable account cost basis percentage (cost basis divided by the current value) is above the lines in the graph, it's better to sell the taxable investment than to liquidate assets in a Roth account.

Example 1: Suppose you have a stock investment worth $10,000 with a $9,000 cost basis (90% of the value). We'll also assume you will face capital gains taxes (at least 15%) on any gains you realize in your lifetime. Looking at the graph below, 90% is above the break-even lines for both capital gains tax rates. That means if you need money for expenses, you should sell that taxable investment and hold on to any Roth accounts.

Example 2: Now suppose the investment has a $4,000 cost basis (40%) and pays a 2% annual dividend. If you're 55 and think you'll live another 30 years, that 40% cost basis is above the lines on the second graph. So, you'd still want to sell the investment instead of taking a Roth distribution.

Example 3: But if you're 85 and figure your life expectancy is under 10 years, that moves your 40% cost basis to the right and below the lines on the second

(Fig. 8) Break-Even Cost Basis Percentage



graph. That means it makes sense to hold on to the investment for the step-up, and use your Roth account to fund your expenses instead.

Appendix 4: Roth Conversions

If you expect to leave an estate, you may consider converting tax-deferred assets to Roth. Because you pay ordinary tax on the conversion, prior research has shown that the strategy is most advantageous when the tax rate in the year of conversion is significantly lower than the rate upon distribution from tax-deferred accounts.[17] Conversions early in retirement can reduce RMDs later and improve your tax diversification. Our earlier research on conversions found that the benefit may also depend on the tax efficiency of the account being used to pay the taxes on the converted amount.[18] If the taxable account is fairly tax-efficient, the benefit is smaller than if that account generated significant ordinary income.[19]

In the scenarios we evaluated (including many not discussed in this paper), Roth conversions were sometimes beneficial, but not overwhelmingly so. At lower income levels, the potential benefit of a conversion at a low tax rate is largely negated by higher taxation of Social Security benefits. (See discussion of the "tax torpedo" in Appendix 1.)

Conversions may be more beneficial at higher income levels (e.g., reducing unneeded RMDs taxed at 24% via Roth conversions taxed at 12%). To a lesser extent, the modest benefit of a Roth conversion reflects the fact that we assume a relatively tax-efficient taxable account. In addition, to implement a Roth conversion strategy early in retirement, you need significant taxable assets to pay the conversion tax and fund spending.

Legislative changes since late 2017 have affected the Roth conversion decision:

- Since tax rates were reduced but are scheduled to increase after 2025, conversions may be attractive in the next few years.
- Limitations on stretch IRA strategies may make Roth conversions appealing to reduce taxes on beneficiaries.
- However, remember that you can no longer recharacterize ("undo") a Roth conversion.

In general, you should consider Roth conversions early in retirement if:

- You expect to leave an estate,
- You can comfortably afford the taxes and fund your spending with cash or a taxable account,

[17] Cook, Meyer, and Reichenstein.
[18] Young, Roger. "Can You Save Money by Converting Assets to a Roth IRA?" (2021). T. Rowe Price white paper.
[19] Tax efficiency of an account can be improved in multiple ways. These include taking advantage of low rates on long-term capital gains and qualified dividends, as well as the step-up in basis at death.

- Your unneeded RMDs will likely be taxed at a much higher rate than the one you'll pay upon conversion, and
- Your heirs' tax rate won't be significantly lower than yours.

Assumptions (Unless Otherwise Noted)

- All accounts earn the same 3% constant real rate of return before taxes.
- All amounts are expressed in today's dollars. This assumes tax brackets adjust with inflation. (We recognize that this is not true of Social Security taxability thresholds and Medicare income-related premium adjustments, but we do not believe this significantly affects the results or insights.)
- Taxes are based on rates effective January 1, 2022. While federal tax rates are scheduled to revert to pre-2018 levels after 2025, those rates are not reflected in the calculations.
- The household uses the married filing jointly status and standard deduction. Both spouses are the same age, retire at 65, and die at the same time.
- While there are other potentially tax-exempt sources, such as health savings accounts and municipal bond interest, our analysis only considers Roth distributions (which are assumed to be qualified).
- State taxes and federal estate tax are not considered.
- All taxable investment account earnings are either qualified dividends or long-term capital gains.
- Gains upon liquidation of taxable investments are based on the average cost basis for the account. Because taxable gains are calculated based on nominal returns (including inflation) rather than real returns, we adjust the cost basis for an assumed 3% inflation rate each year.
- Taxable investments pay a 1.5% dividend annually as part of the real return. Taxable account dividends are used for spending and are not reinvested.
- All account withdrawals to meet spending needs are at the beginning of each year.
- Spending requirements remain constant (in today's dollars) throughout retirement.
- The couple has no additional sources of income beyond Social Security and investments.
- All RMDs are fulfilled, and any RMDs not needed for spending are invested in the taxable account. RMDs are based on the new Uniform Life Table effective in 2022.
- For purposes of valuing the estate, a fixed heirs' tax rate is applied to tax-deferred assets. Taxable accounts are valued at 95% of the value of Roth accounts, as noted in Appendix 3.
- Scenarios were intended to reflect reasonable Social Security benefits relative to assets and spending needs. In addition, scenarios were built assuming that households with lower preretirement income would have relatively lower taxable portfolios, whereas higher-income households would have limited ability to build Roth assets prior to retirement.

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