

Portfolio Withdrawals for Taxable Investors in Retirement

March 18, 2010



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Presenter for Today's Session

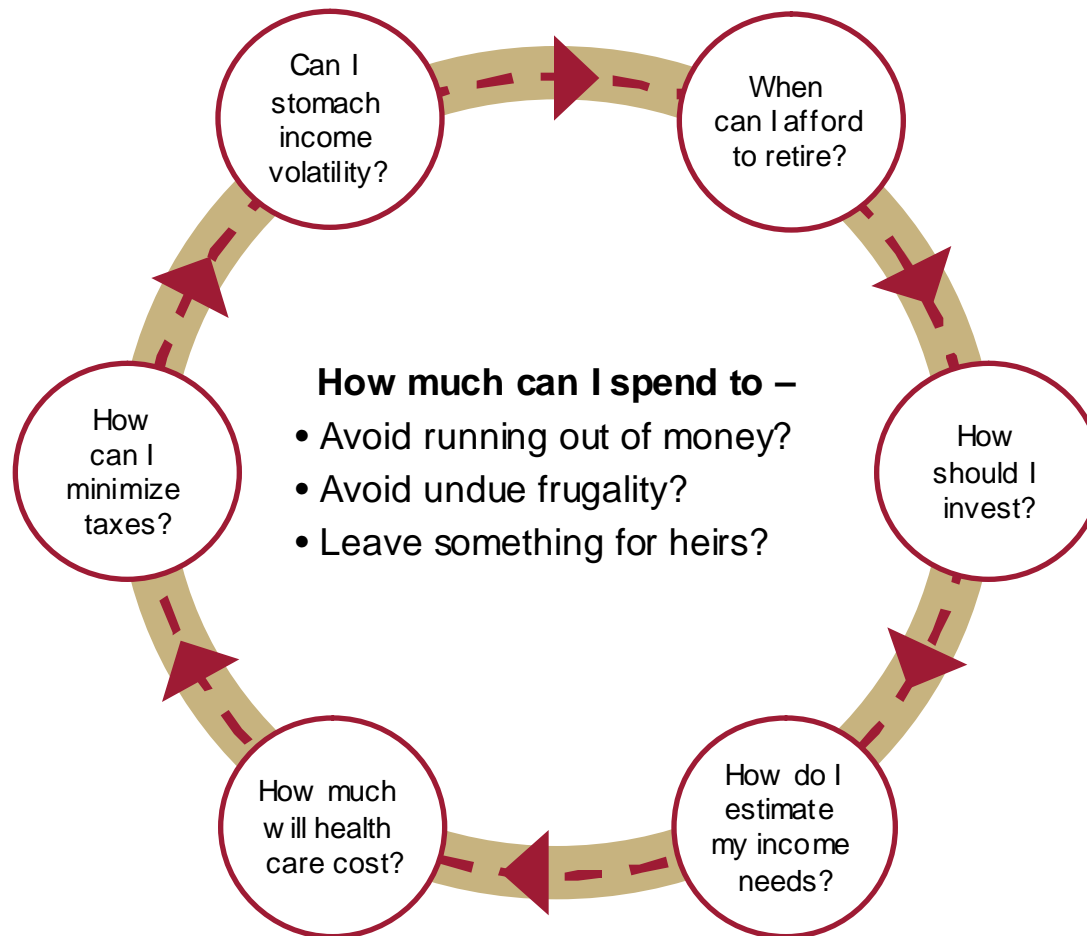


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Agenda

- Background
- Spending Strategies
- Sustainable Withdrawal Rates
- Withdrawal Order

For Many Retirees, Spending Is More Complicated Than Saving



Vanguard

In Addition...

- Many of the critical factors that impact sustainable withdrawal rates are completely out of the investor's control and are entirely unpredictable.
- Investors have no control over:
 - Returns of the investment markets.
 - Inflation.
 - Planning horizon (life expectancy).

Model Portfolio Nominal and Real Average Annualized Returns (1926 to 2009)

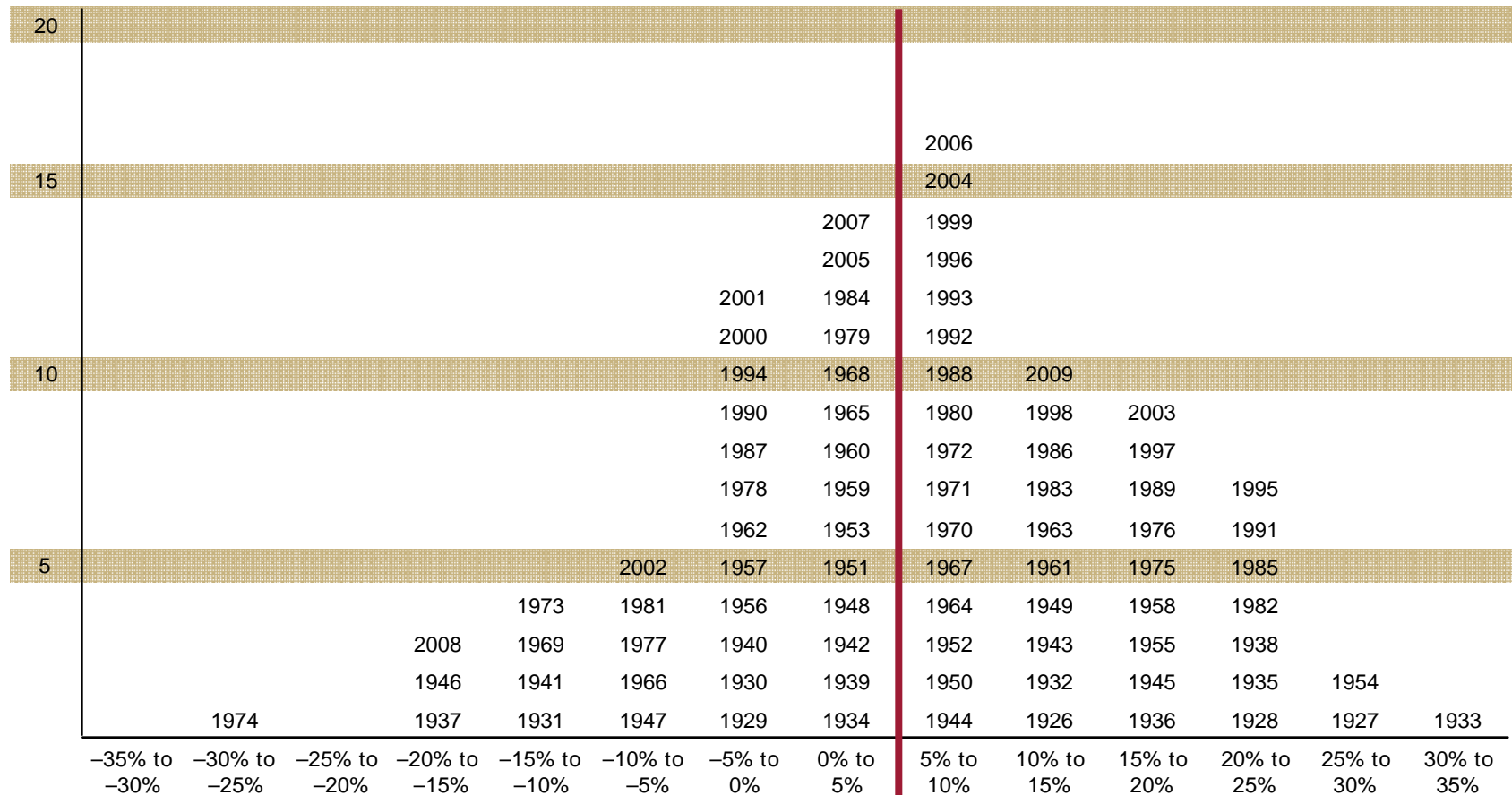
- Based on historical *average* return data, it appears that a 50% stock and 50% bond investor could spend 5% of their portfolio annually without depleting principal.

	Nominal	Real
100% Bonds	5.5%	2.4%
80% Bonds and 20% Stocks	6.7%	3.6%
70% Bonds and 30% Stocks	7.3%	4.1%
60% Bonds and 40% Stocks	7.8%	4.6%
50% Bonds and 50% Stocks	8.2%	5.1%
40% Bonds and 60% Stocks	8.7%	5.5%
30% Bonds and 70% Stocks	9.0%	5.9%
20% Bonds and 80% Stocks	9.4%	6.2%
100% Stocks	9.9%	6.7%

Note: For U.S. stock market returns, we use the Standard & Poor's 90 from 1926 to March 3, 1957; the Standard & Poor's 500 Index from March 4, 1957 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter. For U.S. bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman U.S. Long Credit Aa Index 1973 to 1975 and the Barclays Capital U.S. Aggregate Bond Index thereafter.

- However, average returns can be deceiving. In any given year, an investor does not receive the average return.

Annual Real Return Histogram 50% Stock and 50% Bond Portfolio (1926 to 2009)



Note: For U.S. stock market returns, we use the Standard & Poor's 90 from 1926 to March 3, 1957; the Standard & Poor's 500 Index from March 4, 1957 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter. For U.S. bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman U.S. Long Credit Aa Index 1973 to 1975 and the Barclays Capital U.S. Aggregate Bond Index thereafter.

Order of Returns Matters

- Once an investor begins spending from the portfolio, the timing of returns often matters as much, if not more than, the magnitude of the returns.
- Strong market returns in the early years of retirement (especially if spending from the portfolio) add far more value to the portfolio than those same returns much later.
- Conversely, poor market returns in the first few years of withdrawals can result in premature depletion of the portfolio.

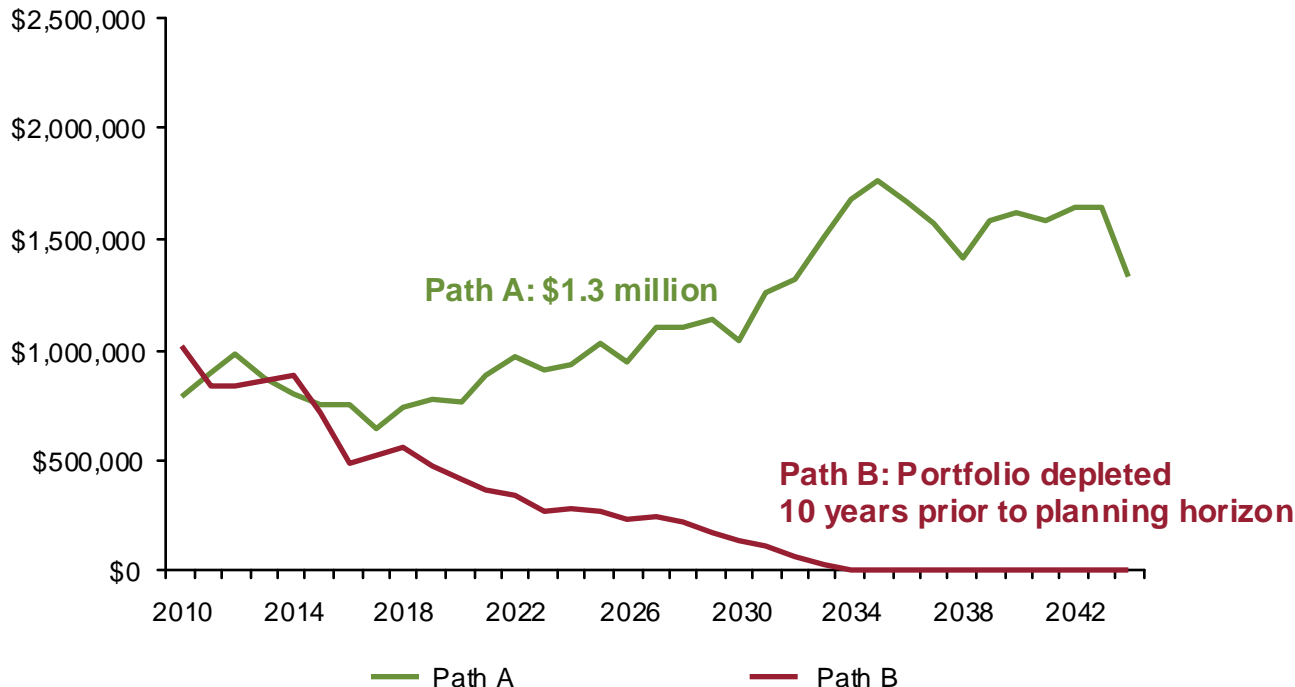
Example

Assumptions:

- \$1 million portfolio balance.
- Spending \$47,500 in year one, grown by inflation each year thereafter.
- No taxes—assumed to be paid from the \$47,500.
- 35-year time horizon.
- 50% stock and 50% bond asset allocation.

The Order of Investment Returns Matters

Inflation-Adjusted Ending Asset Balances



Note: For U.S. stock market returns, we use the Standard & Poor's 90 from 1926 to March 3, 1957; the Standard & Poor's 500 Index from March 4, 1957 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter. For U.S. bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman U.S. Long Credit Aa Index 1973 to 1975 and the Barclays Capital U.S. Aggregate Bond Index thereafter.

- The only difference between these two scenarios is the order of market returns on the portfolio. The average annualized return for each path over the 35-year period was approximately 9.6%.

Other Factors

- Inflation.
 - Inflation can erode the purchasing power of the portfolio.
 - Effects can be particularly damaging over long time horizons due to compounding.
- Time Horizon.
 - Difficult to estimate—may want to estimate on the longer side to reduce the possibility of prematurely depleting the portfolio.
 - Trade-off—may select an overly conservative spending strategy (spending too little) => may live below preferred standards.
- Each of these variables significantly impact how much an investor can “safely” withdraw from their portfolio.



So What Can Investors Do?

- Focus on the factors that they can, at least to some extent, control:
 - Annual spending from the portfolio.
 - Investment costs.
 - Taxes.
- Build flexibility into their spending strategy.

Step 1: Select a Spending Strategy

- Many spending strategies have been developed to help investors deal with these uncertainties.
 - Each strategy places a different emphasis on the competing goals that investors are trying to balance.
 - Which strategy an investor prefers depends on the importance they place on the trade-offs.
- Two common spending strategies:
 - Dollar amount plus inflation.
 - Percent of portfolio.



Dollar Amount Plus Inflation Spending Strategy (Constant Inflation-Adjusted Spending)

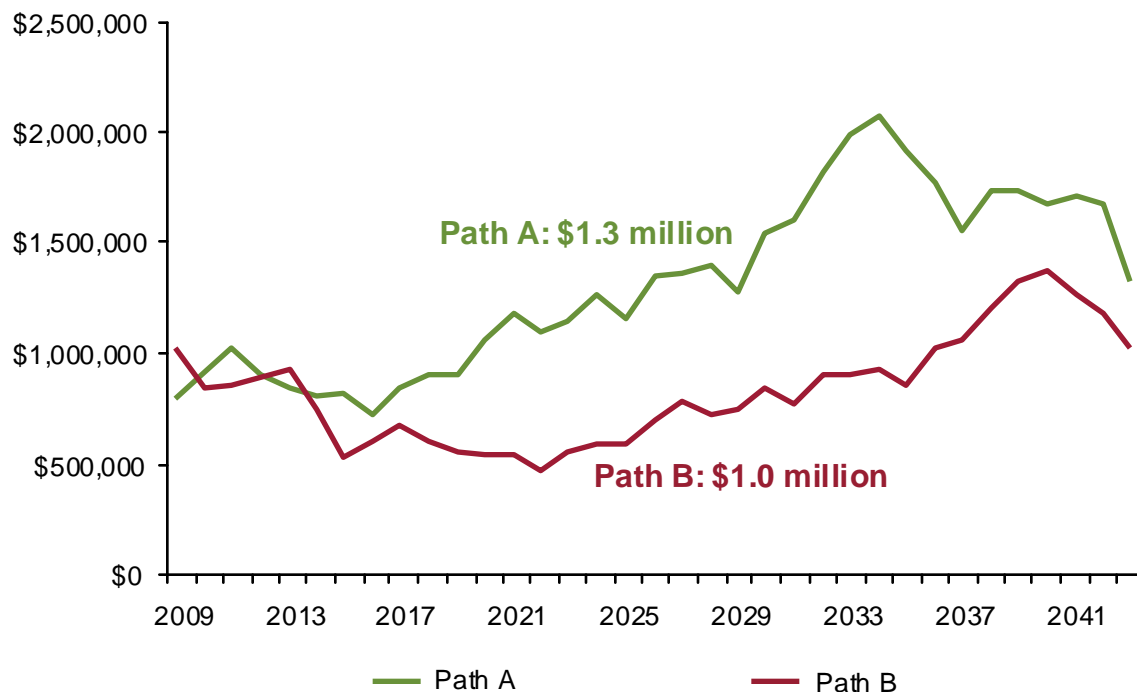
- A dollar amount of spending is calculated in the initial year of retirement and grown by an inflation factor (typically CPI) thereafter.
- This strategy is indifferent to the performance of the capital markets.
- Provides short-term spending stability; however, over the long-term, may result in large portfolio surpluses or premature portfolio depletion.

Percent-of-Portfolio Spending Strategy

- Annual spending is based on a stated portion of the portfolio value as of the end of the prior year.
- Strategy is highly responsive to the performance of the capital markets.
- In the short term, this strategy may result in significant fluctuations in annual spending amounts.
- Over the longer term, this strategy provides more consistent spending levels since the portfolio cannot be depleted.

Percent-of-Portfolio Strategy: Annual Spending Fluctuates Based on Capital Markets

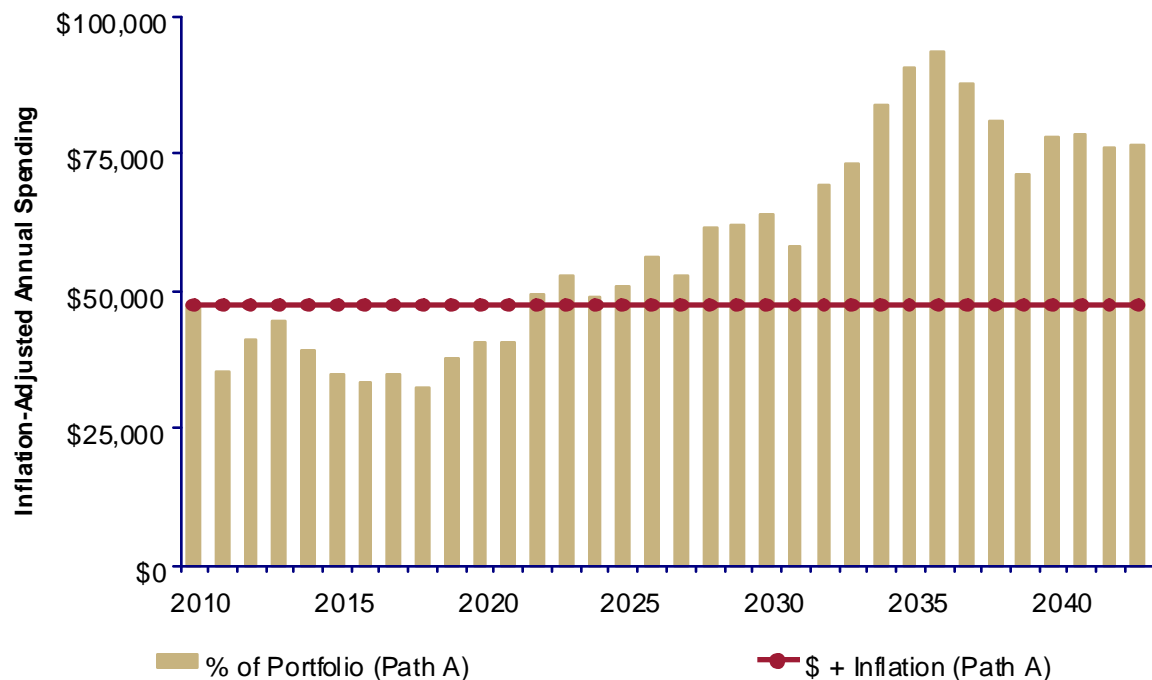
Inflation-Adjusted Ending Asset Balances



Note: For U.S. stock market returns, we use the Standard & Poor's 90 from 1926 to March 3, 1957; the Standard & Poor's 500 Index from March 4, 1957 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter. For U.S. bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman U.S. Long Credit Aa Index 1973 to 1975 and the Barclays Capital U.S. Aggregate Bond Index thereafter.



Path A: Inflation-Adjusted Annual Spending Comparison



Percent of Portfolio

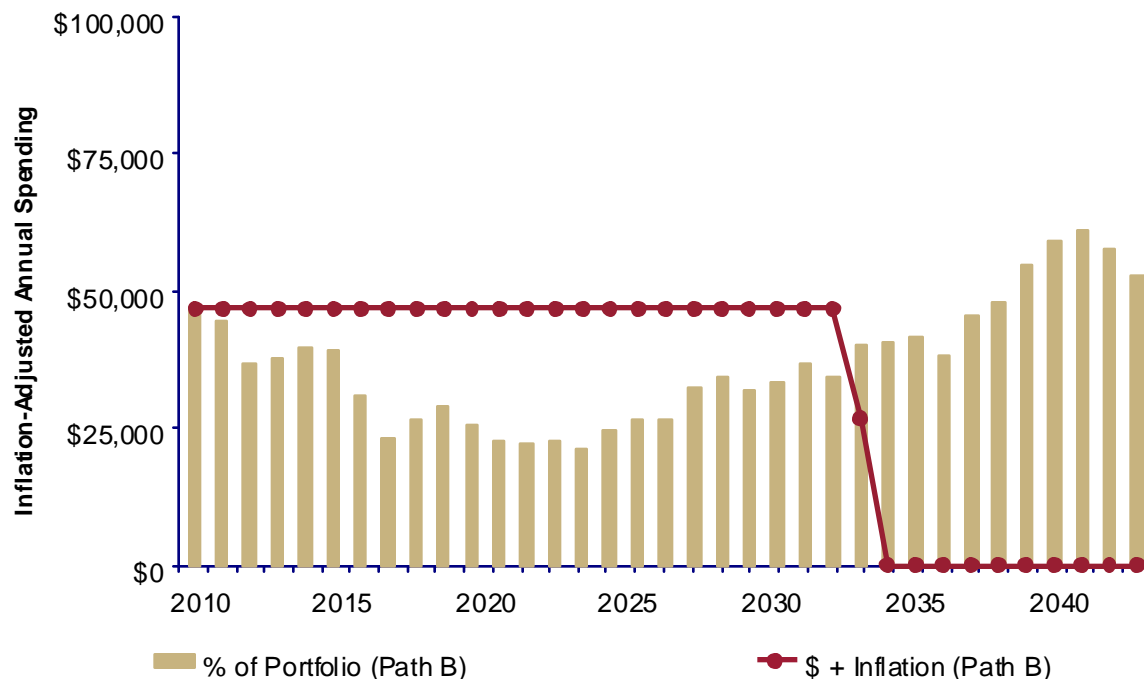
- Spending fell to a low of \$33,600 followed by a series of significantly higher spending amounts in later years.
- The annual spending amount fell within +/- \$5,000 of the \$47,500 initial annual spending amount in only 5 of the 35 years.

Note: For U.S. stock market returns, we use the Standard & Poor's 90 from 1926 to March 3, 1957; the Standard & Poor's 500 Index from March 4, 1957 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter. For U.S. bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman U.S. Long Credit Aa Index 1973 to 1975 and the Barclays Capital U.S. Aggregate Bond Index thereafter.

- Inflation-adjusted ending asset balances are approximately \$1.3 million under either method, but the annual spending amounts were quite different.



Path B: Inflation-Adjusted Annual Spending Comparison



Percent-of-portfolio method:

- Annual spending continually modified.
- Worst case, the annual inflation-adjusted spending fell to approximately \$21,700—less than half the desired spending.

Dollar-amount-plus-inflation strategy:

- Annual spending remained constant for 24 years, dropped to \$27,100 for the 25th year, and then to \$0 for the remaining 10 years.

Note: For U.S. stock market returns, we use the Standard & Poor's 90 from 1926 to March 3, 1957; the Standard & Poor's 500 Index from March 4, 1957 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter. For U.S. bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman U.S. Long Credit Aa Index 1973 to 1975 and the Barclays Capital U.S. Aggregate Bond Index thereafter.

- In either case, the investor would need to address the shortfall—either to reduce their annual expenditures (if possible) or identify additional sources of income.



Summary of Spending Over Each Path

Spending over each Path	Dollar amount + inflation		Percent of portfolio	
	Path A	Path B	Path A	Path B
Average	\$47,500	\$33,300	\$58,800	\$37,500
Cumulative	\$1,662,500	\$1,167,100	\$2,058,300	\$1,312,700

- While percent of portfolio strategy provided higher *average* spending over the entire period for each path, many investors may not be able to handle or afford the annual volatility in the spending stream.
- Dollar amount grown by inflation path B ran out of money 10 years prior to the planning horizon; hence the \$33,300 average over the entire path as well as the lowest cumulative spending.

Other Portfolio Drawdown Strategies

- Percent of portfolio with ceiling and floor.
- Spending based on age (e.g., 6% in your sixties, 7% in your seventies, etc.).
- There will be an upcoming white paper on this topic.

Step 2: Select a Withdrawal Rate

“Rules of Thumb”

- “The 4% Rule”—Bill Bengen (1994): Spend 4% of initial portfolio value at retirement, grown by inflation annually thereafter.
 - Based on specific assumptions: Moderate asset allocation balanced between stocks and bonds, 30-year time horizon.
 - Provides a predictable income stream that keeps up with inflation.
 - Does not provide a guarantee against the potential for running out of money.
- Vanguard’s general rule: 3.5% to 5.5% of initial portfolio balance.
 - This amount is grown by inflation each year thereafter.
 - Assumes: a time horizon of at least 30 years, asset allocation ranging from 100% bonds to 100% stocks, success rate of 75%—in other words, the chance of depleting the portfolio within the planning horizon is 25%.



Levers That Influence Spending Rates: Time Horizon, Asset Allocation, Likelihood of Success

- While the rules of thumb can be broadly applied, there are many factors unique to each investor that directly impact that individual's personalized spending rate.

Lower spending rate \longleftrightarrow Higher spending rate

Time horizon	Longer	Shorter
Asset allocation	More conservative	More aggressive
Degree of certainty required	Higher	Lower

Gross Withdrawal Percentages at Different Success Rates (Following the Dollar-Amount-Plus-Inflation Spending Strategy)

85% Success Rate

Portfolio	Planning horizon						
	10	15	20	25	30	35	40
Conservative	10.00	6.75	5.25	4.25	3.75	3.50	3.25
Moderate	10.50	7.25	6.00	5.25	4.75	4.50	4.25
Aggressive	10.00	7.00	6.00	5.25	4.75	4.75	4.50

75% Success Rate

Portfolio	Planning horizon						
	10	15	20	25	30	35	40
Conservative	10.50	7.25	5.75	4.50	4.00	3.75	3.50
Moderate	11.50	8.50	6.75	6.00	5.25	5.25	4.75
Aggressive	11.00	8.00	6.75	6.00	5.50	5.50	5.00

Note: For U.S. stock market returns, we use the Standard & Poor's 90 from 1926 to March 3, 1957; the Standard & Poor's 500 Index from March 4, 1957 to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter. For U.S. bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman U.S. Long Credit Aa Index 1973 to 1975 and the Barclays Capital U.S. Aggregate Bond Index thereafter.

Gross Withdrawal Percentages at Different Success Rates (Following the Dollar-Amount-Plus-Inflation Spending Strategy) (continued)

Assumptions:

- Spending equal to initial dollar amount grown by inflation.
- Does not consider taxes.
- Conservative (30% or less of the portfolio invested in equities), moderate (40% to 60% of the portfolio invested in equities) or aggressive (70% or more of the portfolio invested in equities).

Gross Withdrawal Percentages at Different Success Rates (Following the Percent-of-Portfolio Spending Strategy)

- Working on chart

Step 3: Determine Which Account to Spend From— General Guidelines

- RMDs (if applicable).
 - Taxable assets.
 - Tax-deferred assets or tax-free assets depending on tax-rate assumptions.
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- RMDs are given the highest priority since they are mandatory by law.
 - The remaining priorities maximize the tax-deferred or tax-free growth of the portfolio.

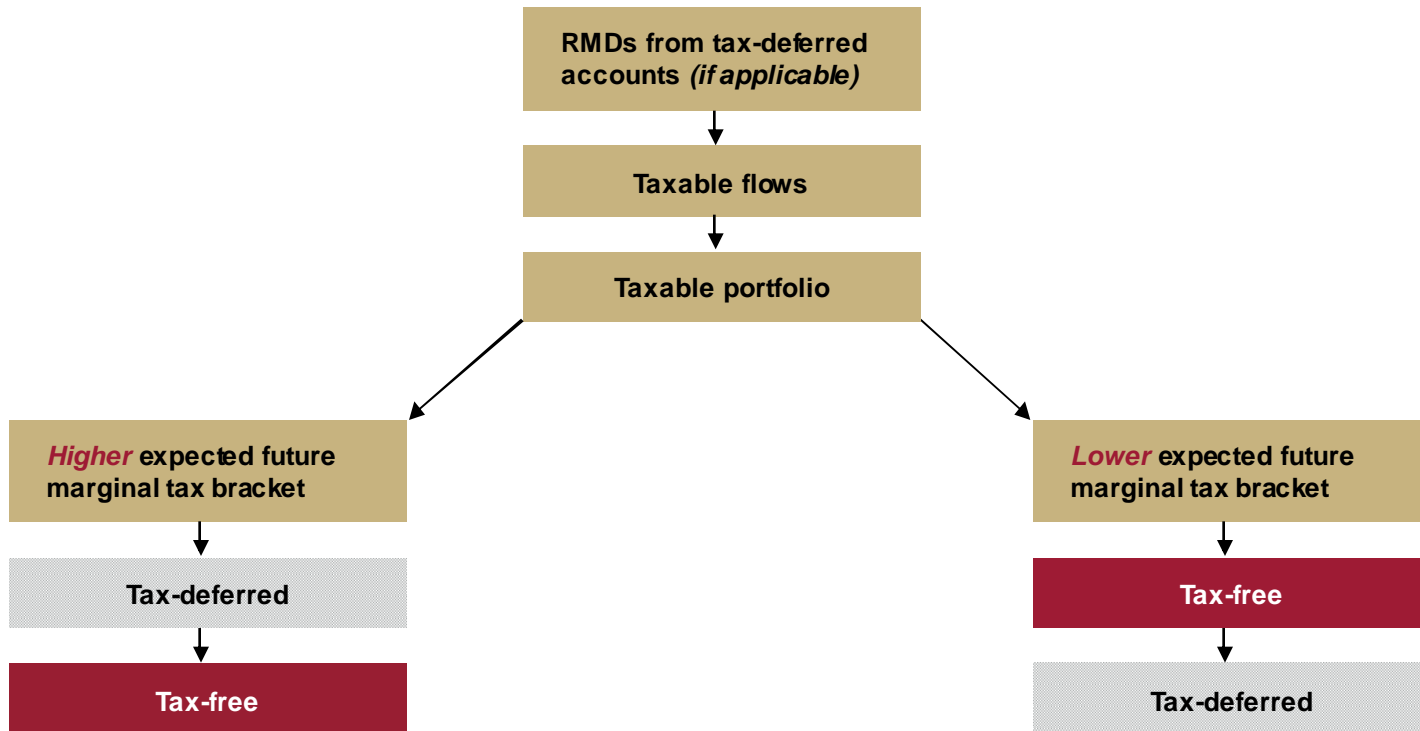
Within Taxable Accounts

- Portfolio cash flows including interest, dividends, and capital gains distributions.
 - Taxed regardless of whether spent or reinvested.
- If portfolio cash flows are insufficient:
 - Sell positions at losses.
 - Sell positions with no gain or loss.
 - Sell positions at gains.
- Remember to rebalance within tax-advantaged accounts to maintain your target asset allocation.

General Rules of Thumb: Taxable Versus Tax-Advantaged?

- Spend taxable accounts before tax-deferred accounts.
 - Most likely reduces current tax liability.
 - Larger distribution would be needed to net same spending amount.
 - Over time, the acceleration of income taxes and resulting loss of tax-deferred growth can result in lower terminal wealth and success rates.
- Spend taxable accounts before Roth (tax-free) accounts.
 - Most likely maximizes the long-term growth of overall portfolio.
 - Spending from tax-free first will reduce the amount of assets that have tax-free growth potential and result in lower terminal wealth and success rates.

Within Tax-Advantaged Accounts: Tax-Deferred or Tax-Free? It Depends on Tax-Rate Assumptions



Withdrawal Order Considerations

- Tax rates.
 - Current vs. future anticipated tax rates, but there are no guarantees.
- Time horizon.
 - The longer the anticipated time horizon, the greater the potential impact of tax-minimization strategies on the portfolio's overall durability.
- Asset allocation.
 - Should not be based solely on success rates.
 - While more aggressive portfolios may have led to higher success rates, portfolios are exposed to more market volatility.

Withdrawal Order Considerations (continued)

- Portfolio composition.
 - Most tax diversification opportunities when assets are balanced among account types.
- Spending rates.
 - Balance between current spending and the portfolio's longevity.
- Estate planning.
 - Tax structure—pay now or later.

Exceptions to the General Spending Order

- There may be situations where it may be advantageous to accelerate tax-deferred distributions.
 - Dynamic distribution program that maximizes full use of the lower tax brackets.
 - Retiree may be in an abnormally low tax bracket this year (perhaps due to deductions).
 - Large medical deductions may be anticipated later in retirement.
 - Retiree anticipates short time horizon and has low-basis stock (wants to take advantage of stepped-up basis).
- May provide additional benefit of reducing future RMDs.
- But managing a dynamic spending strategy can get tricky—most could benefit by working with tax advisor.



Assumptions

- Asset balances are determined using a real-path analysis that assumes that the investor begins investing at a specific point in history (for example, 1930 or 2000) and then applies the actual returns and inflation rates for each subsequent year to the investor's cash flow. Once the date reaches the present, the returns begin again per 1926 as an uninterrupted loop and continue to cycle until either the assets are depleted or the planning horizon has been attained.
- When determining which index to use and for what period, we selected the index that we deemed to be a fair representation of the characteristics of the referenced market, given the information currently available.



Assumptions (continued)

- For U.S. stock market returns, we use the Standard & Poor's 90 from 1926 to March 3, 1957; the Standard & Poor's 500 Index from March 4, 1957, to 1974; the Wilshire 5000 Index from 1975 to April 22, 2005; and the MSCI US Broad Market Index thereafter.
- For U.S. bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1926 to 1968, the Citigroup High Grade Index from 1969 to 1972, the Lehman U.S. Long Credit Aa Index from 1973 to 1975, and the Barclays Capital U.S. Aggregate Bond Index thereafter.

Assumptions (continued)

- A cash flow analysis that uses a constant annual rate of return can differ significantly from an analysis that uses returns that vary from year to year, even if the average annual returns for both analyses are exactly the same. The interplay among the specific paths of investment returns, inflation, and your withdrawal pattern can have a decided effect on the assets and the sustainability of income. Therefore, it is important to examine the portfolio under a variety of different return and inflation conditions.
- Note on Risk: 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. All investing is subject to risk. Investments in bond funds are subject to interest rate, credit, and inflation risk. Diversification does not ensure a profit or protect against a loss in a declining market.



Assumptions (continued)

- Spending and inflation. The analysis assumes an investor will increase the dollar amount of withdrawals annually by the rate of inflation. In other words, the analysis assumes total purchasing power will remain constant over time by increasing the dollar amount of spending each year at the rate of consumer price inflation.
- Asset allocation. The analysis assumes a constant asset allocation over the entire planning horizon by rebalancing the portfolio at the end of each year. (The analysis does not, however, model the tax consequences or other costs of rebalancing the portfolio.)

Assumptions (continued)

- Limitations. Except where specifically noted, this analysis does not calculate any state and federal taxes that you would owe on your withdrawal, nor does it calculate the required minimum distributions that the IRS mandates you to take from certain tax-deferred investments beginning in the year after the year in which you reach age 70½. In addition, the tool assumes that your asset allocation remains constant throughout retirement and does not become more conservative as you grow older. Outcomes produced by the tool are hypothetical, as the tool does not guarantee outcomes or future results.
- Results may vary with each use and over time.



Disclosures

Past performance, whether before or after taxes, does not guarantee future results.

The investment return and principal value of an investment will fluctuate, so an investor's shares, when redeemed, may be worth more or less than their original cost.

Your after-tax returns depend on your individual tax situation and, therefore, may differ from the returns presented here.

If a fund incurs a loss, which generates a tax benefit, the postliquidation after-tax returns may exceed the fund's other return figures.

As with any investment, there is risk. It is possible that the funds will not meet their objective of being tax-efficient.

Mutual funds are subject to risk.

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