CHIEF INVESTMENT OFFICE

Determining sustainable retiree spending rates

Beyond the 4% rule

January 2024

All data, projections and opinions are as of the date of this report and subject to change.

The industry view

Many in the industry advocate the “4% rule,” which states that clients can realistically afford to spend 4% of their wealth each year. We find this rule overly simplistic. What we believe is more nuanced guidance regarding the rate at which a retiree can sustainably spend. This is critically dependent on a client’s age and risk tolerance. Thus, we believe there is no one-size-fits-all guidance for spending rates.

The analysis

The Chief Investment Office (CIO) analysis assumes that the client sets an initial spending level, which then grows with inflation, irrespective of the portfolio’s performance. Just as the key to accumulating assets is saving enough, the key to securing retirement is to avoid overspending. Spending in moderation potentially reduces clients’ risk of outliving their wealth and may increase their future bequests. But excessive thrift has a downside: It can needlessly prevent clients from enjoying their wealth.

The guidance

To help assuage concerns of outliving assets, we believe clients should rely on analytical measures tied to the client’s needs rather than on the “4% rule.” Accordingly, we seek to show the results of our analysis and what we believe to be the probability of success that an individual will not deplete their assets given the individual's age, available spending rate and corresponding equity allocations. On the following page, we share the assumptions that underpin this analysis.

[1] The systematic withdrawal rate is the maximum initial share of wealth that we believe a client can spend while attaining a desired “probability of success.” The probability of success measures the likelihood that a retiree will be able to spend according to plan without exhausting her wealth. Spending is assumed to rise each year with inflation. The equity allocation is the allocation that we believe supports the systematic withdrawal rate.

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		Systematic Withdrawal Rates[1]		
Probability of success		**95%**	**90%**	**75%**
Level of confidence		**High**	**Moderate**	**Low**
Age	**55**	3.27%	3.73%	5.07%
	60	3.44%	3.88%	5.20%
	65	3.73%	4.14%	5.44%
	70	4.06%	4.44%	5.71%
	75	4.52%	4.86%	6.10%
	80	4.99%	5.31%	6.50%
	85	5.61%	5.92%	7.06%

		Equity Allocations[1]		
Probability of success		**95%**	**90%**	**75%**
Level of confidence		**High**	**Moderate**	**Low**
Age	**55**	40%	75%	99%
	60	40%	75%	99%
	65	40%	58%	99%
	70	24%	58%	99%
	75	24%	40%	99%
	80	24%	40%	99%
	85	24%	40%	99%

Source: Calculations by Chief Investment Office.
For illustrative purposes only.

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ASSUMPTIONS

Capital market assumptions

Asset Class	Geometric Return (%)	Arithmetic Return (%)	Arithmetic Volatility (%)
U.S. Large Cap Growth	9.4%	11.1%	19.5%
U.S. Large Cap Value	10.2%	11.5%	17.3%
U.S. Small Cap Growth	10.5%	13.4%	26.2%
U.S. Small Cap Value	10.9%	12.9%	21.6%
International Developed Equity	7.6%	9.3%	19.2%
Emerging Markets	7.6%	10.1%	24.0%
U.S. Government	4.0%	4.1%	4.9%
U.S. Mortgages	4.1%	4.3%	5.7%
U.S. Corporates	4.7%	4.9%	6.6%
U.S High Yield	6.2%	6.6%	8.5%
International Fixed Income	4.3%	4.4%	3.4%
Cash	3.3%	3.3%	0.4%
Inflation	2.4%	2.4%	1.2%

Note: The arithmetic mean, a simple average, provides an unbiased estimate of an uncertain variable such as future returns. If, however, we seek to estimate future compound returns, the more appropriate measure is the geometric mean return. This is the return that, when compounded over the period of time in question, produces the actual realized cumulative return. The arithmetic return of a variable will always be greater than or equal to its geometric return. The greater the volatility, the wider the gap between the arithmetic and geometric returns. Volatility, which reflects future return expectations, is measured as the standard deviation of annual returns. Standard deviation is a common statistical measure that conveys the deviation of a variable (such as asset returns) around its mean.

Source: Global Wealth & Investment Management Investment Strategy Committee (GWIM ISC). Effective January 1, 2024. For illustrative purposes only. The Capital Market Assumptions are estimates for a 25-year planning horizon of a set of asset classes that are broadly representative of the investment universe. Because returns to risky assets are, by their very nature, impossible to forecast precisely, future realized returns will inevitably differ from today's expected return estimates.

Strategic asset allocations

Asset Class	All Fixed Income	Conservative	Moderately Conservative	Moderate	Moderately Aggressive	Aggressive	All Equity
Equity	**0%**	**24%**	**40%**	**58%**	**75%**	**91%**	**99%**
U.S. Large Cap Growth	0%	7%	12%	17%	22%	27%	29%
U.S. Large Cap Value	0%	8%	14%	20%	26%	31%	34%
U.S. Small Cap Growth	0%	1%	1%	2%	3%	4%	4%
U.S. Small Cap Value	0%	1%	1%	2%	3%	4%	4%
International Developed Equity	0%	5%	8%	11%	14%	16%	18%
Emerging Markets	0%	2%	4%	6%	7%	9%	10%
Fixed Income	**99%**	**71%**	**59%**	**41%**	**24%**	**8%**	**0%**
U.S. Government	28%	17%	17%	13%	8%	3%	0%
U.S. Mortgages	24%	12%	13%	10%	3%	0%	0%
U.S. Corporates	26%	17%	16%	13%	11%	5%	0%
U.S High Yield	5%	3%	3%	2%	1%	0%	0%
International Fixed Income	16%	22%	10%	3%	1%	0%	0%
Cash	**1%**	**5%**	**1%**	**1%**	**1%**	**1%**	**1%**

Source: Global Wealth & Investment Management Investment Strategy Committee (GWIM ISC). Effective January 1, 2024. For illustrative purposes only.

Planning horizon

Age	55	60	65	70	75	80	85
Time horizon	41.6	37.1	32.9	28.8	24.8	21.2	18.1

Note: Planning horizon assumptions.
Source: IRS single life expectancy table + 10 years. Department of the Treasury, Internal Revenue Service, Federal Register / Vol. 85, No. 219, pages 72477-8 (Table 1) [PDF pages 667-8/741] (Table in Appendix B in publication Federal Register / Vol. 85, No. 219 Rules and Regulations / page 45.) Time horizon is measured in years.

Asset Class Disclosures and Index Definitions

U.S. LargeCap Growth/Russell 1000 Growth Total Return measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

U.S. Large Cap Value/Russell 1000 Value Total Return measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower expected growth values.

U.S. Small Cap Growth/Russell 2000 Growth Total Return measures the performance of the broad growth segment of the U.S. equity universe. It includes those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

U.S. Small Cap Value/Russell 2000 Value Total Return measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 2000 companies with lower price-to-book ratios and lower expected growth values.

International Developed Equity/The MSCI World ex USA Index captures large- and mid-cap representation across 22 of 23 developed markets (DM) countries—excluding the United States. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

Emerging Markets/The MSCI Emerging Markets (EM) Index captures large- and mid-cap representation across 23 EM countries and targets coverage of approximately 85% of the free float-adjusted market capitalization in each country.

U.S. Government/The ICE BofA U.S. Treasury & Agency Index tracks the performance of U.S. dollar-denominated U.S. Treasury and non-subordinated U.S. Agency debt issued in the U.S. domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch). In addition, qualifying securities must have at least one year remaining term to final maturity, at least 18 months to maturity at time of issuance, a fixed coupon schedule, and a minimum amount outstanding of $1 billion for sovereigns and $250 million for agencies.

U.S. Mortgages/The ICE BofA U.S. Mortgage Backed Securities Index tracks the performance of U.S. dollar-denominated fixed rate and hybrid residential mortgage pass-through securities publicly issued by U.S. agencies in the U.S. domestic market. 30-year, 20-year, 15-year and interest-only fixed rate mortgage pools are included in the Index provided they have at least one year remaining term to final maturity and a minimum amount outstanding of at least $5 billion per generic coupon and $250 million per production year within each generic coupon.

U.S. Corporates/The ICE BofA U.S. Corporate Index tracks the performance of U.S. dollar-denominated investment grade corporate debt publicly issued in the U.S. domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of $250 million.

U.S. High Yield/The ICE BofA U.S. Cash Pay High Yield Index tracks the performance of U.S. dollar-denominated below-investment grade corporate debt, currently in a coupon paying period, that is publicly issued in the U.S. domestic market.

International Fixed Income/The ICE BofA Global Broad Market Excluding U.S. Dollar Index tracks the performance of investment grade debt publicly issued in the major domestic and eurobond markets, including sovereign, quasi-government, corporate, securitized and collateralized securities, excluding all securities denominated in U.S. dollars.

Cash/For the IA SBBI U.S. Treasury Bill Index, the CRSP U.S. Government Bond File is the source from 1926 to 1976. Each month a one-bill portfolio containing the shortest-term bill having not less than one month to maturity is constructed. (The bill's original term to maturity is not relevant). The ICE BofA U.S. 3-Month Treasury Bill comprises a single issue purchased at the beginning of the month and held for a full month. At the end of the month, that issue is sold and rolled into a newly selected issue. The issue selected at each month-end rebalancing is the outstanding Treasury Bill that matures closest to, but not beyond, three months from the rebalancing date. To qualify for selection, an issue must have settled on or before the month-end rebalancing date.

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Asset allocation does not ensure a profit or protect against loss in declining markets.

No investment program is risk-free, and a systematic investing plan does not ensure a profit or protect against a loss in declining markets. Any investment plan should be subject to periodic review for changes in your individual circumstances, including changes in market conditions and your financial ability to continue purchases.

Investments have varying degrees of risk. Some of the risks involved with equity securities include the possibility that the value of the stocks may fluctuate in response to events specific to the companies or markets, as well as economic, political or social events in the U.S. or abroad. Small cap and mid cap companies pose special risks, including possible illiquidity and greater price volatility than funds consisting of larger, more established companies. Investing in fixed-income securities may involve certain risks, including the credit quality of individual issuers, possible prepayments, market or economic developments and yields and share price fluctuations due to changes in interest rates. Bonds are subject to interest rate, inflation and credit risks. Municipal securities can be significantly affected by political changes as well as uncertainties in the municipal market related to taxation, legislative changes, or the rights of municipal security holders. Income from investing in municipal bonds is generally exempt from federal and state taxes for residents of the issuing state. While the interest income is tax-exempt, any capital gains distributed are taxable to the investor. Income for some investors may be subject to the Federal Alternative Minimum Tax. Investments in high-yield bonds (sometimes referred to as "junk bonds") offer the potential for high current income and attractive total return, but involves certain risks. Changes in economic conditions or other circumstances may adversely affect a junk bond issuer's ability to make principal and interest payments. Treasury bills are less volatile than longer-term fixed income securities and are guaranteed as to timely payment of principal and interest by the U.S. government. Mortgage-backed securities are subject to credit risk and the risk that the mortgages will be prepaid, so that portfolio management may be faced with replenishing the portfolio in a possibly disadvantageous interest rate environment. Investments in foreign securities (including ADRs) involve special risks, including foreign currency risk and the possibility of substantial volatility due to adverse political, economic or other developments. These risks are magnified for investments made in emerging markets. Investments in a certain industry or sector may pose additional risk due to lack of diversification and sector concentration. Investments in real estate securities can be subject to fluctuations in the value of the underlying properties, the effect of economic conditions on real estate values, changes in interest rates, and risk related to renting properties, such as rental defaults. There are special risks associated with an investment in commodities, including market price fluctuations, regulatory changes, interest rate changes, credit risk, economic changes and the impact of adverse political or financial factors.