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The Four Percent Rule Revisited

The time-tested retirement withdrawals guideline makes sense as a starting point, but watch out for the impact of taxes and shifting spending needs.

In 1994, the *Journal of Financial Planning* published an article by William P. Bengen in which he endeavored to answer an important question for investors: How much could safely be withdrawn from their portfolios over the course of retirement? Looking at the growth of a hypothetical portfolio of 50% stocks and 50% bonds over 30-year periods with start dates from 1926 – 1963, he found that limiting annual withdrawals to 4%, adjusted for inflation, was effective in keeping the portfolio from depleting for the entire 30 years.[1] Bengen's study helped establish the "four percent rule," an influential guideline for investors and their advisors in setting portfolio withdrawals.

Since then, however, some have questioned the four percent rule's value, saying that the 4% figure is based on a unique return period, and arguing by turn that it may be either too high or too low, and that the whole framework is too simplistic. Are they right? In today's environment has this "rule" outlived its usefulness?

What's Changed

To get started on our assessment, let's consider what may have changed since the study. First, the investment environment is very different from the 1990s. Market interest rates were much higher then, before the global financial crisis and the age of quantitative easing. Today, it's widely expected that bond yields will stay lower for longer, hampering the income generation of retirement portfolios. At the same time, relatively slow economic growth rates, along with comparatively full valuations, are contributing to lower outlooks for equity markets.

This is especially important if one considers the issue of return sequencing. A bear market early in retirement can have a particularly detrimental effect, as weak results when combined with spending deplete the assets needed for future portfolio growth.[2] This may warrant tweaking the four percent rule. Assuming you anticipate subpar medium-term results, you may prefer to have a slightly lower withdrawal rate in the first few years of retirement, or hold more assets in cash to avoid realizing losses in a down market.

Second, life expectancy has increased. Today, a 65-year-old man will likely live to 84, a woman to nearly 87. One in four 65-year-olds will probably live to 90 or beyond.[3] Those who are retiring early or have longevity in their families may need to save for more than the 30 years assumed in the 1994 study.

A third change is that the universe of available assets has greatly increased, moving beyond traditional stocks and bonds, to include hedge funds, private equity and options strategies. These additional choices may help counteract the negative portfolio impacts of lowered return outlooks and increased longevity.

What Remains the Same

Beyond that, much of the calculus remains the same. To create a withdrawal plan, you need to estimate expenses realistically (unfortunately not an easy task given shifts in spending as retirees age), and then offset your expected non-portfolio income (pension, Social Security, rentals, etc.) to come up with a net expense figure.

Naturally, you should create an appropriate portfolio mix. Bengen's study used a portfolio of 50% common stocks and 50% intermediate-term Treasuries. A portfolio with fewer equities would likely be "safer" but could not be expected to provide as much capital appreciation over time; a portfolio with more equities would of course be more volatile. The addition of various subsectors, as well as alternatives, would come with their own risk/reward relationships.

In addition, it's crucial to consider taxes, something that is seldom discussed with regard to the four percent rule. A retiree's savings will often include both taxable and qualified retirement assets, and it's critical to anticipate the federal and state taxes that may be due as a result of withdrawal. Concretely, if the retiree requires a 4% distribution, that may need to be grossed up to a higher amount to meet expenses after taxes. If there's a hard limit of 4% on withdrawals, she may need to trim spending.

Naturally, tax liability varies depending on the type of account. A distribution from a taxable account with a cost basis close to current market value will incur minimal tax, while a distribution from the sale of low basis stock could incur significant capital gains taxes. Distributions from a qualified retirement plan such as a 401(k) or 403(b) are fully taxable as ordinary income.

Testing the Four Percent Rule

To assess the potential success of a 4% withdrawal rate we decided to run our own Wealth Simulation Analysis, known in the industry as a Monte Carlo simulation. Beth, our hypothetical investor, has a portfolio with an initial value of $2 million. She lives in New York and is 66 years old at the start of the 30-year investment period. Similar to Bengen, we used an asset allocation of 50% all-cap stocks and 50% investment-grade bonds. Unlike Bengen, who used historical data, we employed Neuberger Berman's forward-looking capital market assumptions, which we believe better capture the return outlooks for various asset classes. In our case, the "expected" compound return of the portfolio was 4.45%. Note that this is best described as a weighted mean around which any number of return permutations could develop in real markets. In our study we took into account both stronger and weaker potential environments, out to two standard deviations, to develop our observations.

The results, in broad terms, are in accord with the four percent rule, with the portfolio surviving for 30 years in roughly four-fifths of return scenarios (see scenarios 1 and 2 in display). Still, we think it's important to highlight the impact of taxes on liquidity. In Scenario 1, we assume the withdrawals come from a taxable account where the initial cost basis approximates the market value, allowing Beth to hold onto nearly all the proceeds. In contrast, the $80,000 withdrawal from a tax-deferred account in Scenario 2 triggers ordinary income taxed at 20.2% in the first year, for a more than $12,000 difference in available cash. This creates a very real question of whether the account is throwing off enough liquidity to meet all of Beth's needs. A possible solution is to simply increase her payouts, which we try in Scenario 3 to reach the same after-tax cash level as Scenario 1. Unfortunately, the resulting 4.9% withdrawal rate puts considerable pressure on the portfolio, leaving it with just a 51% success rate over a 30-year period.

It's worth noting that while most financial planners believe an 80% success rate is an appropriate hurdle, some actually prefer a more conservative 90% bogey or higher in planning for retirement. In our simulations, it was necessary to reduce the withdrawal rate to 3.5% in order to meet the 90% threshold. As mentioned, today's available investments are much broader than 22 years ago, and the use of alternatives or options strategies may adjust the risk/reward profile of a portfolio.

THINK OF IT MORE AS A GUIDELINE

Hypothetical 50% Stock/50% Bond Portfolios over a 30-Year Time Frame

	Hypothetical **Scenario 1**	Hypothetical **Scenario 2**	Hypothetical **Scenario 3**
Account Type	Taxable Account	Qualified Retirement Account	Qualified Retirement Account
Distribution in Year 1	$80,000	$80,000	$98,300
Estimated Tax in Year 1	$3,600	$16,300	$21,900
Net Available for Expenses	$76,400	$63,700	$76,400
Withdrawal Rate	4%	4%	4.9%
Probability of Success	80%	81%	51%

IMPORTANT: The projections and other information generated by the Wealth Simulation Analysis investment analysis tool regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results and are not guarantees of future results. For illustrative purposes only. Results do not reflect the fees and expenses associated with managing a portfolio. Investing entails risks, including possible loss of principal.

Flexibility Is Crucial

Since 1994, many industry pros have come up with their own variations on Bengen's guideline. One popular approach is to use the four percent rule as a starting point, but to increase or decrease the withdrawal percentage from year to year depending on market returns. Others, as noted above, suggest that investors curb withdrawals initially to limit the portfolio impact of market declines early in retirement.

Moreover, although it's tempting to assume that spending needs will be relatively stable, in reality that often is not the case. Many retirees travel frequently early in retirement but slow down later, while health costs typically increase. The sale of a home could free up capital, while a purchase could have the opposite effect. A move to a higher- or lower-taxing state could affect the level of available spending money. All of these influences should be considered in estimating future retirement needs.

In our view, guidelines such as the four percent rule can be very useful when not taken too literally. Various factors may go into a retiree's decisions on portfolio withdrawals, and rigidly following a "rule" doesn't equate to meaningful planning. That being said, our work has shown that the four percent rule does remain relevant as a starting point for investors. Those wishing to be more conservative may choose to employ a lower rate, or follow a more flexible approach in which withdrawals fluctuate with the ebb and flow of the stock market. In any case, remaining thoughtful and flexible will be cornerstones of a successful retirement strategy.

[1] William P. Bengen, "Determining Withdrawal Rates Using Historical Data," *Journal of Financial Planning*, October 1994.

[2] In a 2012 article, Bengen suggests that high inflation in the early years following retirement may have as detrimental an effect on the portfolio as do poor returns early in retirement. Bill Bengen, "How Much is Enough," *Financial Advisor Magazine*, May 1, 2012.

[3] https://www.ssa.gov/planners/lifeexpectancy.html.

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