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Taking Distributions from Your Retirement Savings: Is The 4% Rule Reliable?

The 4% Rule: Bengen's Observation. The 4% rule has long been relied upon by retirees to determine how much of their nest egg they can spend each year without depleting their savings. It was based on the observation by William P. Bengen in 1994 that every individual retiring in 1926 through 1976 could have withdrawn 4% of his or her pre-distribution balance each year without exhausting the assets in the account for at least 33 years. Bengen assumed that each account was invested 50% in bonds and 50% in stocks and adjusted the withdrawal amounts for inflation. Actual historical returns were used for each year through 1992. Returns were extrapolated for 1993-2026.

Because the rule is easy to apply, its usage has become widespread. The retiree simply multiplies the pre-distribution balance (the value of the account before the first yearly withdrawal) by .04 to determine the base withdrawal amount. This same amount, adjusted for inflation, is withdrawn from the retirement account every year. So at the end of each year, the base withdrawal amount is multiplied by the inflation rate to get the inflation adjustment, which is added to the base amount to get the total to withdraw from the account.

But is the rule sound? Bengen himself raised questions about his use of extrapolated average returns for stocks and bonds for the years after 1992. But even stripping away the extrapolated data and relying only upon actual returns from 1926 through 1992, the case for 4% withdrawals seems convincing. Assuming a post-retirement period of 33 years, none of the retirement accounts was exhausted by the 4% withdrawals during the 35 periods that could be tested. (The first 33-year retirement period in the study ended in 1958 and the last one in 1992.) Moreover, using only the actual returns, the 4% rule worked even better when the portfolio was more aggressively invested at 75% stocks, 25% bonds.

Does It Still Work? Since the study was published, many analysts have wondered how the 4% rule would hold up if future investment returns do not mimic or at least closely parallel the returns relied upon in Bengen's observations. This question seems especially appropriate given the lower stock and bond market returns of the recent past. The annualized real (after inflation) return for stocks in the years covered by Bengen's study was around ***7%***. Over the last 15 years, however, the annualized real return of stocks (as measured by the S&P 500) is just ***2%***. If equity returns continue at this depressed pace, will 4% withdrawals pre-maturely deplete retirement savings?

It is theoretically possible for 2% annualized portfolio returns (we assume bonds will also continue to generate 2% returns) to sustain 4% withdrawals for 33 years. For example, if the portfolio returns 2%--no more, no less-- each and every year, the nest egg will last for 34 years. The problem, of course, is that a portfolio with a 2%

annualized return over 33 years will not generate a 2% return each year--some years will produce much higher returns and some years less. If you are a retiree who withdraws an inflation-adjusted fixed amount each year from your savings, you want the higher return years to be early in your retirement and the low or negative return years to be later. *Poor returns early in the retirement withdrawal period will deplete a portfolio more quickly than the same poor returns later in the withdrawal period. (See the box below.)*

In other words, when equal fixed dollar amounts are withdrawn from an account, as required by the Bengen rule, the sequence of the returns matters. A retiree who has the misfortune of beginning his withdrawals at the onset of a bear market runs a much greater risk of depleting his account than a retiree who begins her withdrawals at the onset of a bull market *even if the two accounts register identical average returns during the retirement periods*.

Athavale and Goebel: Beware the 4% Rule. The most sophisticated study seeking to quantify the risk taken by individuals who rely upon Bengen's 4% Rule assumed that the retirement portfolio would return 5.1% annually after adjusting for inflation, considerably higher than the recent real returns of stock and bond markets but in line with Bengen's assumption of 7% yearly increases for stocks and 3% for bonds. The authors, Athavale and Goebel, did not assume a normal bell-shaped distribution but instead evaluated the returns under 10 different types of statistical curves in an attempt to mirror the real-life distribution of stock market returns. Their conclusion was that implementing the 4% Rule entails substantial risk: even with 5.1% annual real returns, a retiree following the 4% Rule has an 18% chance of depleting his or her portfolio before 35 years. The safe withdrawal rate, they found, was 2.5%, not 4%.

If the 2% annual real return produced by the stock market during the last 15 years continues into the future, of course, the rate of portfolio depletions experienced by retirees applying the 4% rule will be much higher than 18%. Retirees should be cautioned against assuming that expected annual returns will cluster tightly around the mean and consider that a string of poor annual returns at the outset of their retirement could lead to a pre-mature depletion of their retirement portfolios. Given the current market environment, withdrawing 4% of the pre-distribution value yearly seems particularly risky.

The Sequence Matters. As a general rule, of course, the order of an account's yearly returns has no bearing on its end value. So, an account with a beginning value of $1,000,000 that posts sequential returns of +50%, +10%, and -20% will have the same ending value as an account beginning with $1,000,000 and returning, in sequence, -20%, +10%, and +50%. And this will continue to be the case even if equal percentage withdrawals are made at the end of each year.

But this is not the case when the same *amount* of real dollars, as opposed to the same *percentage*, is withdrawn from an account each year. When equal dollar amounts are withdrawn each year, negative returns that occur *early* in retirement will accelerate the account's depletion (because the fixed withdrawals will constitute larger and larger percentage decreases as the account loses value). Conversely, when greater-than-average returns are generated early during the withdrawal period, the date of the account's depletion is pushed further into the future.

In the example above, $5000 withdrawals following yearly returns of +50%, +10%, and -20% will produce an ending value of $1,186,000. The same $5000 annual withdrawal with the sequence reversed (-20%, +10%, and +50%) will produce an ending value of $1,112,500.