Dismal Decade Offers Cautionary Lessons for Retirees

Retirees should have a sound financial strategy for sustaining their income throughout retirement. But as the last decade has shown, the stock market is capable of upending even the best-laid plans.

Those who retired in 2000 appeared to have perfect timing. Over the prior two decades, the stock market had achieved an annualized return of 17.8%, including double-digit gains in excess of 20% each year from 1995 through 1999.

While more modest returns were expected for the next decade, few could have predicted an actual loss in value—it's only occurred about 5% of the time over rolling 10-year periods since 1926. However, that rarity became reality when 2000–2010 proved one of the worst decades in history, featuring two ferocious bear markets.

Those who initially may have felt fortunate were now faced with the misfortune of watching the market decimate the nest eggs it had helped them create.

How could retirees have coped better with such a dismal decade?

T. Rowe Price has conducted a new study to examine various strategies for coping with such challenges. The study illustrates the importance of retirees:

Options When Retiring Into Bear Markets

The chart below outlines four options for handling a 30-year retirement account, starting January 1, 2000, with an account balance of $500,000 invested in a 55% equity, 45% bond portfolio. In this hypothetical example, the retiree withdraws 4% (or $20,000) the first year and increases the annual withdrawal amount by 3% each year to keep up with inflation. Actual returns for stocks and bonds are used for the period January 1, 2000, through December 31, 2010, and returns thereafter are based on 10,000 simulations of possible future market scenarios. (See explanation on page 18.)

The four options below assume the investor retired on January 1, 2000. The table reflects the impact of the two major bear markets over the past decade on the investor's chance of not running out of money over a 30-year retirement—as well as the impact of marking certain adjustments to compensate for the misfortune of retiring into a dismal decade for equity investing. *Past performance cannot guarantee future results.* This chart is for illustrative purposes only and does not represent the performance of any specific security.

Account Status	Portfolio Value	Monthly Withdrawal Amount	Odds of Success*	Odds of Success After Bear Market Ended March 2009
At retirement on January 1, 2000	$500,000	$1,667	89%	
Results as of December 31, 2010, Assuming Four Different Strategies:				
OPTION 1: *Continue withdrawals as planned*	$334,578	$2,307	29%	6%
OPTION 2: Best Outcome *Reduced withdrawals by 25% for three years after each bear market bottom*	386,113	1,493	84	43
OPTION 3: *Take no annual inflation adjustments for three years after each bear market bottom*	352,367	1,990	69	26
OPTION 4: Worst Outcome *Switched to 100% bond portfolio after first bear market bottom on October 1, 2002*	270,669	2,307	0	0

Source: T. Rowe Price Associates.

*Represents the percentage of total simulations in which the investor does not run out of money during a 30-year retirement period. The odds of success on January 1, 2000, reflect the initial investment and withdrawal assumptions. The odds of success at the various stages of the options reflect historical return data and any changes in the investment or withdrawal assumptions and projections thereafter. For historical returns, the S&P 500 Index is used for stocks and the Barclays Capital U.S. Aggregate Index is used for bonds. For simulations, stocks are expected to return 10% overall with a standard deviation of 15% and fees of 1.211%; bonds are expected to return 6.5% with a standard deviation of 5% and fees of 0.726%. Portfolios are rebalanced monthly, and withdrawals are made monthly. This example does not take into account taxes or required minimum distributions from retirement plans.

- Periodically revisiting their strategy and making adjustments when market downturns significantly increase their odds of outliving their savings.
- Focusing on what they can control—mainly how much they spend each year and how they allocate their investments.

"Our research shows that retirees who take a 'set it and forget it' approach to their retirement income strategy do so at their own peril, particularly when hit by a bear market," says Christine Fahlund, a senior financial planner with T. Rowe Price. "The last decade has shown that they must remain engaged and sometimes temporarily reduce their expenses in order to maintain a successful withdrawal strategy."

Options for Bear Markets

The new study tracked the portfolios of four hypothetical retirees from 2000–2010 and their odds of not outliving their assets over 30 years, based on actual market returns for the first decade and on returns thereafter using a sophisticated methodology of 10,000 simulated portfolio outcomes. (See page 18 for an explanation of this analysis.)

The study assumed that each investor retired on January 1, 2000, with a $500,000 portfolio invested 55% in equities and 45% in bonds and withdrew 4% of portfolio assets ($20,000) the first year, with that amount increasing 3% annually for inflation.

Based on the initial probability analysis, these investors had an 89% chance of sustaining these withdrawals over 30 years. However, the 2000–2002 and 2007–2009 bear markets wreaked havoc on their potential success.

By the end of the first bear market in September 2002, for example, the odds of sustaining withdrawals over the balance of the retirement period had fallen to just 46%.

Those odds were largely restored by the five-year bull market that followed but then fell again to only 6% after the financial crisis inflicted another severe bear market from October 2007 to March 2009.

As shown in the table on page 16, this analysis examined four different strategies:

1) Continue withdrawals as planned throughout the decade.

2) Temporarily reduce withdrawals by 25% for three years after each bear market bottom (from 2002–2005 and again from 2009–2012).

3) Take no inflation increases for three years after each bear market bottom (from 2002–2005 and again from 2009–2012).

4) Switch to a 100% bond portfolio at the end of the first bear market in September 2002.

The disciplined retiree able to tighten her belt when times got tough (Option 2) fared the best. By the end of 2010, her odds of sustaining withdrawals over the remainder of the retirement period had reached 84%.

Taking no inflation adjustment for three years after each bear market (Option 3) was perhaps a more achievable option for some retirees. This restored the odds of sustaining withdrawals to 69% by the end of the decade.

Switching to 100% bonds produced the worst outcome, leaving this investor with a virtual certainty of running out of money in retirement.

The complacent retiree who ignored both bear markets now only has a 29% chance of not running out of money. Perhaps favorable markets

will bail her out in the coming years, as they did temporarily after the five-year bull market from 2002–2007.

"But passively allowing the markets to whipsaw your chances of having a successful retirement is not advisable," Ms. Fahlund says. "And fleeing to bonds was certainly no panacea. Those investors, who locked in their equity losses, missed the ensuing market rebounds."

No Silver Bullet

Admittedly, there was no foolproof strategy for getting completely back on track while enduring such an unusually poor decade for equity investing, especially right after retiring. Even the retiree who was able to substantially reduce income for a few years has a ways to go before restoring her odds of success at the start of retirement.

"The past decade really shows the importance of revisiting your retirement income strategy regularly and making adjustments if necessary," Ms. Fahlund says. 🐾

Retirement Checkup

Investors interested in seeing if their retirement plans are on track can use the T. Rowe Price Retirement Income Calculator, available at *troweprice.com/ric*. The free calculator estimates how much income investors will have in retirement.

Users can immediately see the effect on retirement income of changing various factors, such as: the amount being saved; retirement age; number of years in retirement; asset allocation strategy; and, for retirees, their monthly spending amount.

New features let users personalize the experience by offering the option to log in and save their information.

Additionally, T. Rowe Price customers can now use their account logins to automatically enter their investments in the calculator.

Explaining Monte Carlo Analysis Used in Retirement Study

The following is an explanation of the Monte Carlo simulation analysis used in the retirement article on pages 16 and 17. Information in brackets applies only to the Retirement Income Calculator sidebar on page 17.

Monte Carlo Simulation

Monte Carlo simulations model future uncertainty. In contrast to tools generating average outcomes, Monte Carlo analyses produce outcome ranges based on probability—thus incorporating future uncertainty. In the study, savings data are based on average outcomes and retirement income data on Monte Carlo analysis.

Material Assumptions Include:

• Underlying long-term expected annual returns for the asset classes are not based on historical returns, but on estimates, which include reinvested dividends and capital gains.

• Expected returns—plus assumptions about asset class volatility and correlations with other classes—are used to generate random monthly returns for each class over specified periods.

• These monthly returns are then used to generate 10,000 scenarios, representing a spectrum of possible performance for the modeled asset classes. Success rates are based on these scenarios. [Success rate is defined as the percent of market simulations that result in a positive balance at the end of the time horizon.]

• Taxes aren't taken into account, nor are early withdrawal penalties. But fees—average expense ratios for typical actively managed funds within each asset class—are subtracted from the expected annual returns.

• [Required minimum distributions (RMDs) are included in the calculator. In the simulations, if the RMD is greater than the planned withdrawal, the excess amount is reinvested in a taxable account.]

Material Limitations Include:

• Extreme market movements may occur more often than in the model.

• Some asset classes have relatively short histories. Expected results for each asset class may differ from our assumptions—with those for classes with limited histories potentially diverging more.

• Market crises can cause asset classes to perform similarly, lowering the accuracy of projected portfolio volatility and returns. Correlation assumptions are less reliable for short periods.

• The model assumes no month-to-month correlations among asset class returns. It does not reflect the average periods of "bull" and "bear" markets, which can be longer than those modeled.

• Inflation is assumed constant, so variations are not reflected in our calculations.

• The analysis does not use all asset classes. Other asset classes may be similar or superior to those used. [The analysis assumes a diversified portfolio, which is rebalanced monthly.]

Model Portfolio Construction and Initial Withdrawal Amount

In the study, we used two hypothetical portfolios for illustrative purposes only. One was composed of 55% large-cap stocks and 45% investment-grade bonds. The other was composed of investment-grade bonds only. The underlying long-term expected annual return assumptions (without fees) are 10% for large-cap stocks and 6.5% for investment-grade bonds. Net-of-fee expected returns use these expense ratios: 1.211% for large-cap stocks and 0.726% for investment-grade bonds.

[In the Retirement Income Calculator, the underlying long-term expected annual return assumptions (without fees) are 10% for stocks, 6.5% for bonds, and 4.75% for short-term bonds. Net-of-fee expected returns use these expense ratios: 1.211% for stocks, 0.726% for bonds, and 0.648% for short-term bonds. The portfolio is either determined by the user or based on preconstructed allocations that shift in 5% increments throughout the retirement horizon (as displayed in the calculator graphic "Why should I consider this" in the Asset Allocation section of the Web tool).]

The initial withdrawal amount is the percentage of the initial value of the investments withdrawn on the first day of the first year. In subsequent years, the amount withdrawn grows by a 3% annual rate of inflation. Success rates are based on simulating 10,000 market scenarios and various asset allocation strategies. [Success rates for the calculator are based on simulating 1,000 market scenarios and various asset allocation strategies.]

IMPORTANT: The projections or other information generated by the T. Rowe Price Investment Analysis Tool and the T. Rowe Price Retirement Income Calculator regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. The simulations are based on assumptions. There can be no assurance that the projected or simulated results will be achieved or sustained. The results present only a range of possible outcomes. Actual results will vary with each use and over time, and such results may be better or worse than the simulated scenarios. Clients should be aware that the potential for loss (or gain) may be greater than demonstrated in the simulations.

The results are not predictions, but they should be viewed as reasonable estimates. Source: T. Rowe Price Associates, Inc. 🐾

Charts and examples are for illustrative purposes only and do not reflect the performance of any T. Rowe Price fund or security.