

BEYOND THE 4% RULE

**RECENT J.P. MORGAN RESEARCH
FOCUSES ON THE POTENTIAL
BENEFITS OF A DYNAMIC RETIREMENT
INCOME WITHDRAWAL STRATEGY.**

Over the past decade, retirees have been forced to navigate the dual investment challenges of extremely low interest rates and elevated market volatility. Many have relied on the popular 4% rule to draw down their portfolio assets. This rule assumes that individuals withdraw each year a fixed dollar amount, adjusted for inflation, based on 4% of their initial portfolio at retirement. This approach has been increasingly called into question, however, in terms of providing a truly sustainable retirement income stream.

GIVEN THE SHORTCOMINGS OF THE 4% RULE, J.P. MORGAN BEGAN TO EXPLORE HOW INVESTORS MIGHT BETTER SATISFY THEIR RETIREMENT INCOME NEEDS. OUR RESEARCH SUGGESTS THAT INVESTORS AND THEIR FINANCIAL ADVISORS SHOULD LOOK BEYOND THE STATIC RULES OF THE PAST WHEN SEEKING TO ACHIEVE STRONGER RESULTS FROM THEIR RETIREMENT INCOME WITHDRAWAL STRATEGIES.

Based on our findings, a more dynamic approach to withdrawal rate and asset allocation modeling appears better structured to provide the flexibility and customization necessary for sustainable retirement funding. This approach? The J.P. Morgan Dynamic Withdrawal Strategy, a carefully constructed withdrawal framework that is much more adaptive to the dynamic aspects of post-retirement decision making and the uncertainty of financial markets.

Setting the right goals

Most people would agree that the primary focus of a prudent withdrawal approach is to maintain a careful balance between managing lifestyle risk and longevity risk—two critical, if at times conflicting, goals. The key is to generate enough retirement income to avoid the uncertainty of running out of money, while, at the same time, withdrawing enough from retirement savings to finance expenses at a level that maintains a sustainable post-retirement standard of living.

But there is an emotional value to retirement income, as well as a monetary one. As such, we recommend adding a third goal to this list: *maximizing how much utility value, or satisfaction, investors receive from their withdrawals*. This offers a more holistic perspective around withdrawal planning. For example, the risk of running short of money is easy to grasp, but pulling out too little may also be problematic. Setting aside specific bequests and legacy aspirations, excess untapped wealth at death may represent assets that could have been utilized to enhance the richness of an individual's retirement experience, perhaps significantly. Hence, J.P. Morgan believes the aim of a withdrawal strategy should be to exhaust retirement assets in the most efficient manner possible, while mitigating the risks of premature portfolio depletion.

Expected lifetime utility: A better quantifier of success

The J.P. Morgan Dynamic Withdrawal Strategy is unique in the sense that it has been specifically built around the concept of *maximizing expected lifetime utility*. Utility essentially refers to the level of satisfaction retirees receive from their portfolio withdrawals. Though arguably somewhat subjective, this measure draws from well-established microeconomic principles that offer important insights into the emotional aspects of investing. Focusing on how much satisfaction retirees derive from portfolio assets represents a significant paradigm shift that evaluates the maximum potential utility value that can be received each year, while accounting for the probability that a retiree will live long enough to actually obtain it.

This new approach provides a framework that can be tailored to an individual's unique circumstances, preferences and appetite for risk. "The research that has gone into this strategy is specifically designed to help optimize the drawdown of each retiree's assets, enabling him or her to adjust withdrawal amounts and asset allocations in response to changing market conditions, personal circumstances and preferences," says Katherine Roy, J.P. Morgan Asset Management's Chief Retirement Strategist.

J.P. MORGAN DYNAMIC WITHDRAWAL STRATEGY

WHAT IT IS

The strategy actively adapts withdrawal rates and asset allocations in response to changes in market conditions and personal circumstances.

WHAT IT DOES

A potentially more sound balance is achieved between generating income for retirement and withdrawing enough from portfolio assets to maintain sustainable post-retirement living standards, while avoiding the risk of running out of money.

HOW IT WORKS

The strategy shifts the focus to how much satisfaction, or utility value, retirees derive from their withdrawals, resulting in the potential to achieve broader investment success across the entire retirement horizon.

A customized solution designed for market realities

Unlike the 4% rule or the required minimum distribution (RMD) approach, the J.P. Morgan Dynamic Withdrawal Strategy accounts for a wide variety of personalized factors, such as age, wealth, lifetime income, life expectancy and risk preferences (as shown in Exhibit 1). These key inputs help determine the appropriate asset allocation strategy and resulting withdrawal rate that can be realistically supported. This dynamic strategy also accounts for a broad range of possible market scenarios, including periods of severe market declines, where other withdrawal approaches have broken down in the past.

Optimizing a post-retirement withdrawal solution

We identified five key factors as we developed our decumulation model. Each can have a significant impact on optimizing a post-retirement withdrawal solution.

FACTOR 1: Individual preferences for magnitude and timing of withdrawals. Research shows that retirees get less satisfaction from each additional dollar of income withdrawn above a certain point. There is also a time preference for withdrawals made earlier in retirement, whereby income received earlier (e.g., today) is more attractive than income received in the future (e.g., tomorrow).

FACTOR 2: Levels of wealth and lifetime income. Retirees with higher initial wealth

are better able to withstand negative shocks. Similarly, significant lifetime income lowers the risk of poorer outcomes by securing an income baseline even in scenarios of high longevity and/or poor financial market returns. Thus, downside risk is greater for those with less initial wealth and lower or no lifetime income, relative to those with greater wealth and higher levels of lifetime income.

FACTOR 3: Current age and life expectancy. Withdrawal utility at a given age is weighed by the probability of survival to that age. For example, a 65-year-old couple's survival-weighted utility for \$1 projected to be withdrawn at age 75 is higher than that of \$1 projected to be withdrawn at age 120. There is a 96 percent chance that at least one spouse will survive to age 75, but the odds are close to zero percent that at least one spouse will still be alive at age 120.

FACTOR 4: Market randomness and extreme events. To capture future market uncertainty, the J.P. Morgan Dynamic Withdrawal Strategy applies a forward-looking simulation that generates 10,000 equity, bond and inflation scenarios, based on J.P. Morgan 2013 Long-Term Capital Market Assumptions and J.P. Morgan's proprietary Non-Normal Framework.

FACTOR 5: Dynamic nature of the decision-making process. To help account for the dynamic nature of post-retirement withdrawal planning and to improve strategy efficiency (compared with more static approaches), retirees can change both their asset allocations and

their withdrawal rates at the end of each year in response to their actual experience over the course of that year.

Putting it all together: Framework methodology

The J.P. Morgan Dynamic Withdrawal Strategy combines these five factors into a single, cohesive framework that arrives at customized recommendations through the complex, integrated analysis of the retiree's specific investment profile. It then calculates optimal asset allocation and withdrawal rate solutions at each age, with the goal of maximizing expected lifetime utility, achieved through a backward induction process, beginning at age 120 and working to age 60 (as shown in Exhibit 2).

Implications of a utility-based framework

Our model output helps draw meaningful—if, at times, counterintuitive—conclusions about how isolating changes in age, lifetime income and wealth levels may affect utility, holding all other factors constant (as shown in Exhibit 3).

1. IMPACT OF AGING

For a given level of wealth and lifetime income, older retirees may have a higher withdrawal rate recommendation than younger retirees, as there is less time remaining to spend retirement savings. Older retirees should be more conservative in their asset allocations, with higher allocations to fixed income, as there is less time to

EXHIBIT 1: OVERVIEW OF VARIOUS RETIREMENT INCOME WITHDRAWAL APPROACHES

| STRATEGY | PRIMARY BENEFIT | CUSTOMIZED TO INDIVIDUAL | ACCOUNTS FOR MARKET UNCERTAINTY | SETS WITHDRAWAL RATE | SETS ASSET ALLOCATION |
|---|---|--|---------------------------------|----------------------|-----------------------|
| 4% rule | Strives to preserve purchasing power | No | No | Yes | No |
| RMD | Strives to avoid depleting portfolio assets prematurely | Age only | No | Yes | No |
| J.P. Morgan Dynamic Withdrawal Strategy | Strives to maximize expected lifetime utility | Age, wealth, lifetime income, risk profile | Yes | Yes | Yes |

Source: J.P. Morgan Asset Management. For illustrative purposes only.

EXHIBIT 2: J.P. MORGAN DYNAMIC MODEL

KEY INPUTS

- Define utility function parameter values to describe retiree preferences
- Define life expectancy from 60 onwards
- Set levels of retirement wealth and lifetime income
- Generate 10,000 simulations that account for non-normal financial market returns

CALCULATION

Solve for optimal asset allocations and withdrawal rates at each age to maximize expected lifetime utility

DYNAMIC OUTPUT

Customized asset allocation and withdrawal rate considerations based on age, wealth, lifetime income, gender, marital status and risk profile

recoup any potential portfolio losses to finance future withdrawals. *Bottom line: Increasing age allows retirees to increase their withdrawal rates and decrease their equity allocations.*

2. IMPACT OF LIFETIME INCOME

For a given age and wealth level, withdrawal rates at higher lifetime income levels should be greater than at lower levels, because the higher secured income floor reduces the likelihood of extremely poor outcomes due to excessive withdrawals. Retirees with higher lifetime income should be more aggressive with larger equity allocations, as a higher proportional part of their overall income is protected from potential negative equity returns. *Bottom line: Greater lifetime income allows retirees to increase both their withdrawal rates and equity allocations.*

3. IMPACT OF WEALTH

For a given age and level of lifetime income, withdrawal rates at higher wealth levels should be less than at lower wealth levels, since the actual dollar amount is substantially higher and a smaller proportion must be spent on basic necessities. Incremental spending on non-essentials, such as travel and entertainment, does not generally rise in direct proportion to increases in wealth.

Utility theory also suggests that reducing withdrawals by a certain dollar amount carries more pain than the pleasure obtained from increases of a similar amount. This effect is more pronounced for wealthy retirees, as a specific percentage decline leads to a larger dollar and utility reduction when compared with less wealthy retirees. This is distinct from the *financial ability* of wealthier retirees to weather volatility in terms of securing minimum baseline living essentials, and it solely focuses on the greater *emotional pain* of experiencing larger dollar losses. As such, wealthier retirees

should be more conservative in their asset allocations, with larger fixed income allocations, since poor portfolio returns carry greater pain than commensurate upside performance and will result in a higher dollar loss for a larger portfolio compared with a smaller portfolio. *Bottom line: Higher initial wealth suggests that retirees lower their withdrawal rates and reduce their equity allocations.*

Multidimensional aspects of model output

Of course, it is important to understand how our model adapts withdrawal rates and asset allocations when more than one factor changes at the same time, since this is how individuals typically experience retirement. To evaluate how this output might stand up to the rigors of real-world retirement funding, we developed a range of investor case studies to compare the customized recommendations of the J.P. Morgan Dynamic Withdrawal Strategy to the static output of the 4% rule and RMD model, assuming a fixed asset allocation of 60 percent equities and 40 percent bonds across retirement for the latter two approaches. This analysis applied 250,000 simulations across the entire retirement horizon until death. For each simulation, the market return each year drew from the 10,000 possible equity, bond and inflation scenarios, covering the gamut from strong rising periods to severe declines.

Key findings:

- **The 4% rule** generally provided a steady stream of income during the early years of retirement, but this stability began to break down around age 92 due to skewing factors such as survivorship bias calculated

EXHIBIT 3: SUMMARY OF HOW INDIVIDUAL FACTORS MAY AFFECT WITHDRAWALS AND ASSET ALLOCATIONS

| FACTOR | WITHDRAWAL RATE | EQUITY EXPOSURE |
|-----------------------------|-----------------|-----------------|
| Increasing age | ▲ | ▼ |
| Higher lifetime income | ▲ | ▲ |
| Higher initial wealth level | ▼ | ▼ |

by the model. Indeed, the probability range of potential consumption streams became surprisingly wide in later years, though the median payout remained relatively stable. The real issue with this approach, however, became apparent with the range of potential portfolio values. There were significant risks of excess wealth accumulation in the median case and the likelihood of premature depletion of assets in worse-case scenarios. In fact, in the 5th percentile case, retirees could exhaust assets by age 85, an unacceptably high probability, as there is a significant chance that at least one spouse will survive to that age.

- **The RMD approach** was much more effective at managing payouts than the 4% rule, reducing the likelihood of excess wealth accumulation or premature depletion of portfolio assets. This was because it incorporates portfolio experience and longevity, increasing payouts with age and increasing wealth. Similar to the 4% rule, however, the RMD withdrawal rate is based largely on portfolio value, which can be volatile depending on actual experience.
- **The J.P. Morgan Dynamic Withdrawal**

Strategy was also much more effective at managing the risk of excess wealth accumulation and premature depletion of portfolio assets, compared with the 4% rule. Although payouts were more variable than with the 4% rule, they were also more consistent than with the RMD approach. This is because, unlike the RMD model, the J.P. Morgan Dynamic Withdrawal Strategy actively adapts asset allocation and incorporates risk aversion through a utility function, both of which serve to smooth payouts due to fluctuations in portfolio value over time. In addition, consumption streams received a significant boost in the earlier years of retirement, offering the potential for greater payouts when retirees were most likely to be able to enjoy them.

All in all, the J.P. Morgan Dynamic Withdrawal Strategy offered the most balanced withdrawal solution, providing significantly less risk of both prematurely running out of money and leaving too much wealth untapped, compared with the 4% rule. It also offered a more reliable stream of retirement income compared with the RMD approach, an important consideration for retirees dependent on a steady payout (as

shown in **Exhibit 4**).

This research suggests that a dynamic retirement income withdrawal model can help investors develop more robust solutions to their post-retirement income and asset allocation needs. Working with their financial advisors, retirees can apply this framework and incorporate their unique circumstances and risk profiles into a withdrawal strategy specifically designed to secure their income needs and better weather the constantly evolving nature of the financial markets. **J**



Visit jpmorganfunds.com/retirement to access the **Breaking the 4% Rule** report and executive summary, or contact your J.P. Morgan representative for more information.

EXHIBIT 4: ASSESSMENT OF BENEFITS/RISKS UNDER DIFFERENT WITHDRAWAL STRATEGIES

| STRATEGY | RISKS | | | BENEFITS |
|---|---------------------------------------|----------------------------|---------------------------|---|
| | Variability of income | Excess wealth accumulation | Premature asset depletion | Consumption stream |
| 4% rule | ▲ Steady | ▼ Significant risk | ▼ Significant risk | ▲ Steady |
| RMD approach | ▼ High | ▲ Low risk | ▲ Low risk | ▲ Variable, but generally higher than 4% rule |
| J.P. Morgan Dynamic Withdrawal Strategy | ▲ Lower than RMD; higher than 4% rule | ▲ Low risk | ▲ Low risk | ▲ Variable, but with odds of higher payouts earlier in retirement than RMD approach |

Source: J.P. Morgan Asset Management. For illustrative purposes only.

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