

Retirement by the Numbers

How participant behavior and glide path design can drive stronger retirement outcomes





About *Retirement by the Numbers*

How are participants interacting with their defined contribution (DC) retirement plans, and what are the implications for target date fund (TDF) glide path design? For more than two decades, J.P. Morgan Asset Management has closely examined this question, analyzing real-world saving and spending patterns to provide actionable insights into how to help more people achieve the retirement they've earned.

In this report, we have once again updated our popular *Retirement by the Numbers* study, building on nearly a quarter century of proprietary research into real-world DC participant behaviors and quantifying how these behaviors interact with plan investments to shape retirement outcomes. We have also expanded our research to incorporate linked out-of-plan financial behaviors, providing an even more holistic view of participants' overall financial wellness.

This year also marks the 20-year anniversary of the JPMorgan SmartRetirement® TDF series. Since its introduction in 2005, SmartRetirement has combined participant behaviors with rigorous market analysis to deliver a glide path designed around the realities of long-term retirement investing. A key part of this work is continuously testing our glide path against how people actually use their DC plans, evaluating how effectively it supports our goal of getting as many participants as possible safely over the retirement finish line with sufficient, sustainable income.

20

years of researching
and tracking participant
saving and withdrawal
patterns

12

years of researching
and tracking retirement
household spending
patterns

30

years of insights
from J.P. Morgan Asset
Management's
Long-Term Capital
Market Assumptions
that help apply realistic
investment expectations
to portfolio modeling

50+

years of experience
designing and
managing multi-asset
class, outcome-oriented
portfolio solutions

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Foreword

Retirement by the Numbers offers a unique view of how participants save, invest and spend throughout their working lives and retirement. This research is designed to help plan sponsors deepen their understanding of realistic participant behaviors and provides a practical lens to assess the type of target date portfolio design best positioned to stand up to the stresses of real-life saving and spending.

This report brings together our latest findings on participant saving patterns, loan and withdrawal behaviors, household spending (including insights from de-identified Chase credit card and banking data¹) and market trends to provide a comprehensive view of the factors shaping retirement outcomes. It is organized into three sections: *Saving and borrowing patterns*, *Spending and withdrawal behaviors* and *Evaluating glide path design*. Each of these offers data-driven insights to help support participants along the retirement journey.

Behind every target date glide path is a human story—people managing the realities of their financial lives, navigating employment changes and simply hoping they can one day retire without fear of running out of money. As DC plans continue to serve as the primary retirement vehicle for most working Americans, the challenge is about more than both short-term and relative performance alone; it is about designing outcome-oriented solutions that support individual needs. This research reflects our commitment to that mission: continually testing, learning and refining our glide path to help as many participants as possible retire with confidence and sustainable income.

This year's research benefits from our unique data resources and our ongoing collaboration with the Employee Benefit Research Institute. Together, we create a more complete financial picture of U.S. households, leveraging JPMorgan Chase & Co. (Chase) consumer banking transactions and credit card data to examine spending behaviors across life stages, and using J.P. Morgan Retirement LinkSM record-kept participant data to analyze cash withdrawals and required minimum distributions (RMD).² We are constantly analyzing various data sources for new insights, and this integrated view enables insights into participant behavior that are not available anywhere else in the industry. (For more information on the history of our research efforts, please see *Celebrating 20 years of SmartRetirement*.)

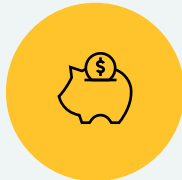
We hope that you find this year's report useful in helping to put more participants on an appropriate retirement saving and spending path.

¹ Source: Chase data including select de-identified Chase credit and debit card, electronic payment, ATM withdrawal and check transactions for the data used.

² J.P. Morgan Retirement Link is a full-service small to mid-market retirement plan recordkeeping and administration solution. For more information, please visit <https://am.jpmorgan.com/us/en/asset-management/adv/investment-strategies/retirement-solutions/retirement-link/>.

Research methodology

This year's Retirement by the Numbers leverages a range of robust data sources:³



In-plan saving behaviors—draws from the saving, loan and withdrawal patterns of more than 12 million participants across over 16,000 DC plans from Employee Benefit Research Institute participant databases.



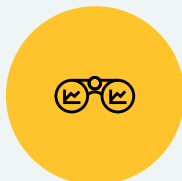
Retirement income replacement and spending patterns—tracks the annual spending of more than 5 million de-identified households that primarily bank with Chase, providing an insightful view of their total financial picture.



In-plan loan and out-of-plan debt trends—examines plan loan usage, out-of-plan credit card utilization and related household spending patterns for participants included in both groups above.



Plan withdrawal data—shows both pre-retirement and post-retirement cash and rollover withdrawal behaviors for 59,000 participants from J.P. Morgan Retirement Link.



Projected retirement outcomes based on 10,000 Monte Carlo portfolio simulations incorporating the range of identified participant behaviors and a wide array of potential market scenarios that might be experienced over a lifetime of investing. These projections provide a distribution of anticipated account balances at retirement compared to realistic retirement savings targets for the average participant.

³ Time periods reviewed: Employee Benefit Research Institute and Chase data joint analysis reviews observed behaviors from 2021 to 2022 (includes in-plan savings behaviors and in-plan loans); income replacement analysis was completed in 2024 with data from 2016 to 2023; plan withdrawal data covers observed behaviors from 2021 to 2024. Select de-identified Chase credit card data 2016-2024.

In brief

Five key takeaways

- 1 *Savings shortfall: Too many participants are saving too little.***

Average participant contribution rates remain low, starting below 5% and peaking around 8%, leaving many workers, especially early in their careers, falling short of the 10% or more typically recommended for adequate retirement funding. More than half do not raise their contribution rates from one year to the next. While employer matches help, the most effective strategy is to encourage earlier and higher automatic increases to help enhance long-term retirement outcomes through compound investment growth.
- 2 *Financial health matters: Financial pressures outside the plan directly affect retirement saving behavior and outcomes.***

Nearly one in five participants has an outstanding plan loan, and the amounts are large, 17% of account balance, on average. Nearly half carry credit card debt⁴ across all observed age ranges, and participants with high credit card balances are more likely to take a loan. High credit card debt also often coincides with lower contributions and smaller account balances, reducing retirement readiness by up to 40%, on average, for older participants.

⁴ Source: Select de-identified Chase credit card data 2016–2024.

3 ***One size doesn't fit all: Retirement spending and income needs vary widely.*** Chase household data show that average retiree spending gradually declines by more than 30% between ages 60 and 85. Spending can also fluctuate dramatically from year to year, with 60% of new retirees experiencing annual changes of 20% or more. Further, average income replacement needs can vary widely depending on pre-retirement salaries and Social Security benefits received. These findings underscore the importance of flexible, personalized retirement solutions and challenge conventional thinking around static income replacement rate assumptions.

4 ***Leaving early or staying late: Retirement withdrawals tend to cluster at two major points.*** Two-thirds (67%) withdraw their entire account balances within the first three years after retiring. Of those that remain, most wait until RMD rules require action. These patterns suggest that DC plans may be potentially underutilized for managing retirement income for many participants, even though most participants would welcome in-plan support: 80% say they would likely leave their savings in the plan if offered an option that helps generate monthly retirement income from their savings.⁵

5 ***SmartRetirement remains true to its stated approach: Incorporating real-world participant behaviors into glide path design leads to stronger outcomes.*** Retirement outcome projections using actual participant behaviors across a broad range of market conditions show that the SmartRetirement glide path once again positions more participants to reach the retirement finish line, the savings needed to fund a sustainable retirement income, compared to the average TDF design. For two decades we have employed the following approach in pursuit of securing retirement readiness for as many participants as possible, by: 1. Prioritizing risk-aware capital growth that optimizes compounding potential early and mid-career; 2. Prudently derisking as participants approach retirement, when they are most vulnerable to losses; and 3. Emphasizing capital preservation and maintaining spending power post retirement.

⁵ Source: J.P. Morgan Asset Management 2024 Defined Contribution Plan Participant Survey Findings.

1

Saving and borrowing patterns

By the numbers

85%

Participants who never reach a commonly recommended 10% contribution rate or higher

\$84,000

Potential gain in average retirement savings by increasing contributions just 1% starting at age 25, enough to fund nine years of average Medicare-related expenses

17%

Participants with outstanding plan loans

40%

Average decrease in retirement account balances for Baby Boomers with high credit card utilization versus those without



Understanding how participants save within their DC plans provides critical insight into retirement readiness across the workforce. While market performance and plan design both influence outcomes, another critical driver of long-term account growth is participant behavior, particularly savings rates, consistency and timing.

This year's research shows that:

- **Most participants are still saving too little**, with contribution rates that start too low and increase too slowly over time.
- **Money borrowed or withdrawn for non-retirement purposes (also known as plan leakage) remains a persistent challenge**, potentially undermining a sizable number of participants' retirement security.
- **Financial strain is closely tied to retirement outcomes**, with high debt, low emergency savings and plan loans suppressing both contribution rates and long-term account growth.

Together, these findings reveal actionable insights to help better position participants for stronger retirement outcomes. Strategies to consider include setting higher default contribution rates with ongoing escalation, targeted communications and financial wellness initiatives, such as education programs and emergency savings accounts.

Salaries

Salary remains a fundamental driver of retirement incomes, shaping participants’ ability to save during their working years and framing the standard of living that needs to be replaced once participants retire. It influences DC plan contributions, which are typically tied directly to salary, as well as future Social Security benefits, both in size and in the proportion of pre-retirement income they are expected to replace in retirement.

Average participant salaries in this year’s report start at \$50,000 at age 25 and peak at around \$80,000 at midlife between 45 and 50. Naturally, the ranges behind these averages can be substantial, with gaps that grow in both percentage and dollar terms as participants reach peak earning years.

Contributions

This year’s report shows that average contribution rates start below 5%, peaking at roughly 8% among Baby Boomers. While contributions generally rise with age and income, far too few participants appear to be saving enough to comfortably meet their retirement funding needs, even among higher-income workers nearing retirement (see **Exhibit 1**).

Conventional guidance recommends saving at least 10% of salary for retirement, beginning as early as possible, in order to be able to retire comfortably with greater certainty. Yet only 15% of participants overall reach that benchmark. Even among the top third of earners, just 22% get to a double-digit saving rate.

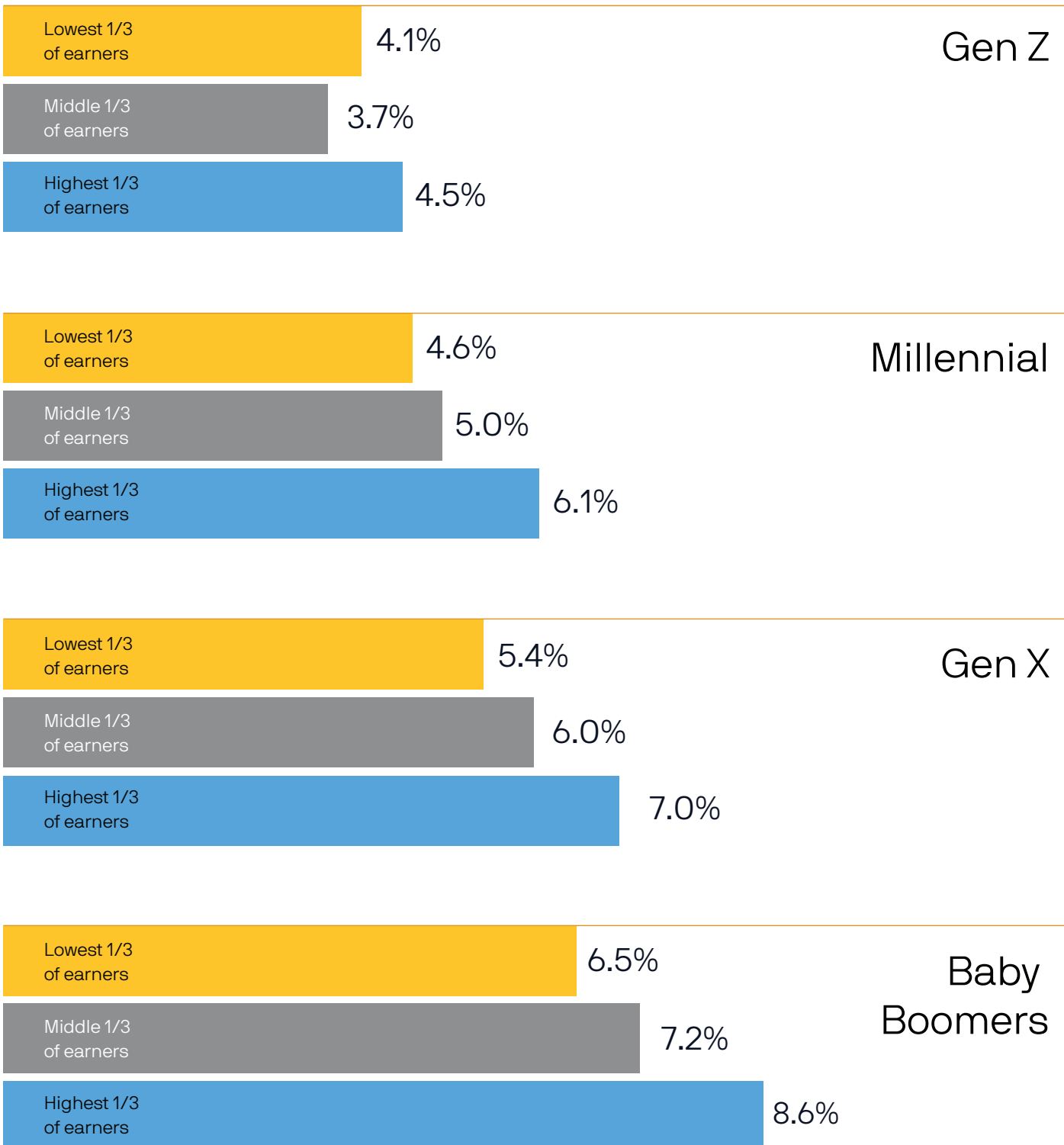
While these figures reflect participant contributions only, it is clear that many participants seem to be undersaving. This shortfall is especially pronounced in the early earning years when lower salaries and competing financial pressures may often limit saving capacity. Ultimately, the only way to be certain of achieving adequate retirement funding is to save enough. Fortunately, 78% of plans in this year’s research offer an employer contribution or match benefit, averaging 3.2%. One-quarter provide 1.4% or less, while another quarter offer 4.4% or more, with little variation by plan size. This added support can offer a meaningful boost to total retirement savings but needs to be coupled with increases in participant savings as well.

Salary dispersions by generation

Gen Z	Millennials	Gen X	Baby Boomers
One-third earn less than \$28,000, and one-third earn more than \$45,000.	One-third earn less than \$43,000, and one-third earn more than \$71,000.	One-third earn less than \$47,000, and one-third earn more than \$80,000.	One-third earn less than \$40,000, and one-third earn more than \$70,000.
See page 22 for a more detailed examination of how salary levels and retirement spending behaviors influence realistic income replacement rates.			

**Average contribution rates start below 5%,
peaking at roughly 8% among Baby Boomers**

EXHIBIT 1: AVERAGE CONTRIBUTION RATES BY GENERATION AND SALARY TERCILE



Source: Where Are Households Spending Their Defined Contribution Plan Loans: An Examination of Private-Sector Participants, Employee Benefit Research Institute and J.P. Morgan Asset Management, 2025. Data 2021–2022.

Participants want help: Participants know they are not saving enough. In our *2024 Defined Contribution Plan Participant Survey Findings*, 63% say they need to save more to achieve a financially secure retirement. To help address this gap, plan design features such as modestly higher default starting contribution rates and automatic escalation programs are proven strategies that enable participants to increase their savings with minimal effort. Notably, 35% of participants indicate that automatically increasing contributions by 1% a year (with an option to cancel any time) would be the best way to motivate them to contribute more, aside from salary increases. Additionally, 89% of participants who are in automatic escalation programs express satisfaction with their experiences.

Even small differences in contribution rates can have a powerful impact over time, especially when made early, thanks to the power of investment compounding.

Exhibit 2 illustrates the hypothetical long-term benefits of increasing contributions by just 1% at various ages and time periods, based on the observed and peak salaries and contribution rates described above. Maintaining that 1% increase over a 40-year career could generate a potential \$84,000 in additional retirement savings—enough to cover approximately

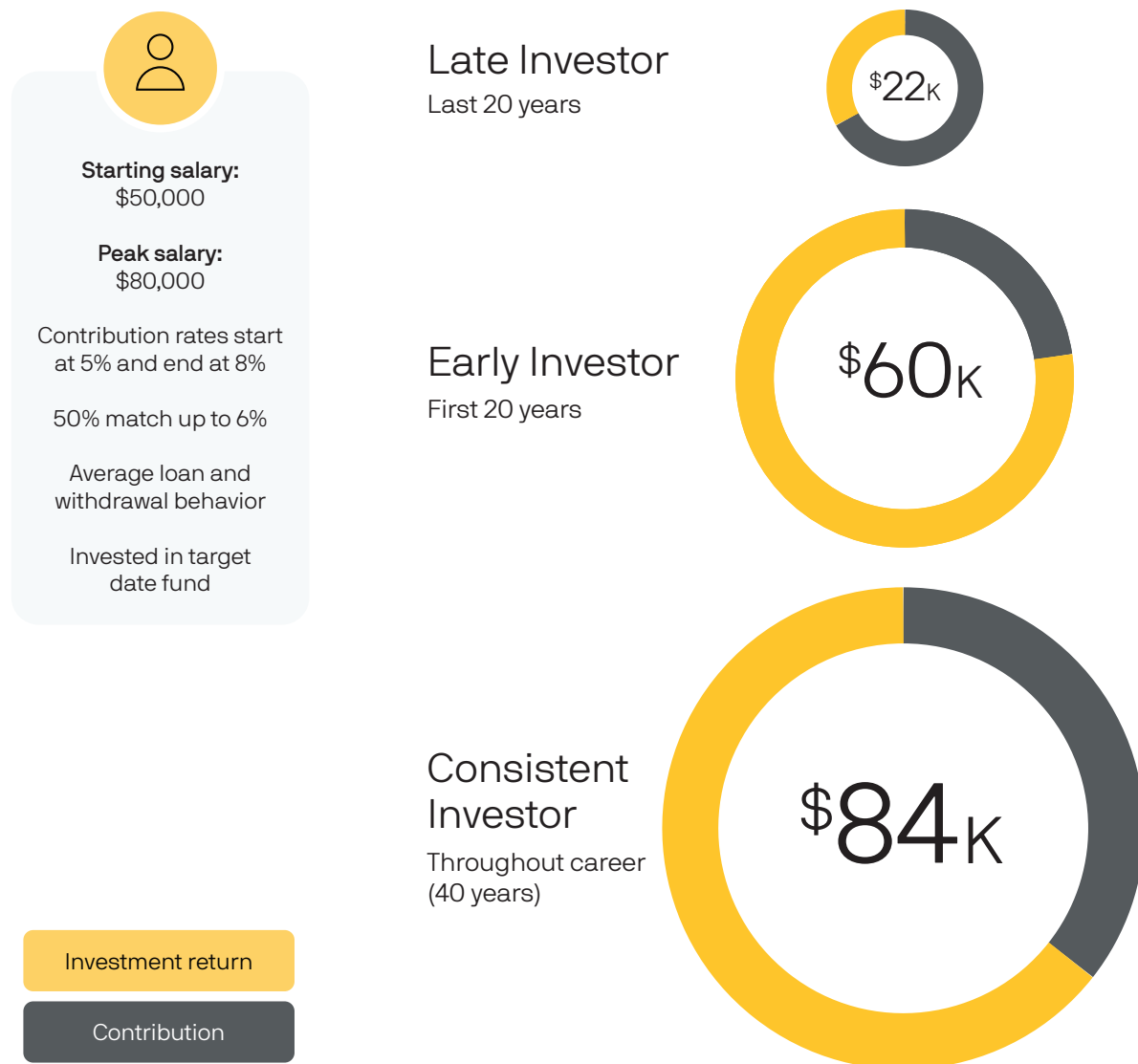
nine years of average Medicare-related expenses.⁶ Making the same 1% increase for just the first 20 years still delivers a much larger projected outcome than waiting to age 45 to make the increase for the last 20 years of a career. Same timeframe, same 1% percent, but sharply different incomes: an additional \$60,000 versus just \$22,000, due to investment compounding.

Many are not taking action: However, half of participants (50%) in their mid-to-late 20s do not raise their contribution rates from one year to the next, despite contributing less than 5% on average. That share declines slightly to 46% among participants in their late 30s and to about 40% for workers over 40. This points to the need for even older workers, particularly job changers, to benefit from higher automatic enrollment default contribution rates and automatic escalation to help stay on track toward building adequate savings.

⁶ Includes assumed inflation and age-related increases for someone who is 65 today.

Impact of a 1% increase in contributions on retirement balance

EXHIBIT 2: SMALL CONTRIBUTION RATE INCREASES EARLY CAN ADD UP TO MEANINGFUL DOLLARS



Source: J.P. Morgan Asset Management retirement research as of October 2025. Modeling uses Equilibrium Long-Term Capital Market Assumptions, which are projected returns based purely on economic forecast, and not starting point prices (current valuations and corporate margins). Based on 10,000 portfolio simulations using the range of identified participant behavior applied to a broad mix of market scenarios.

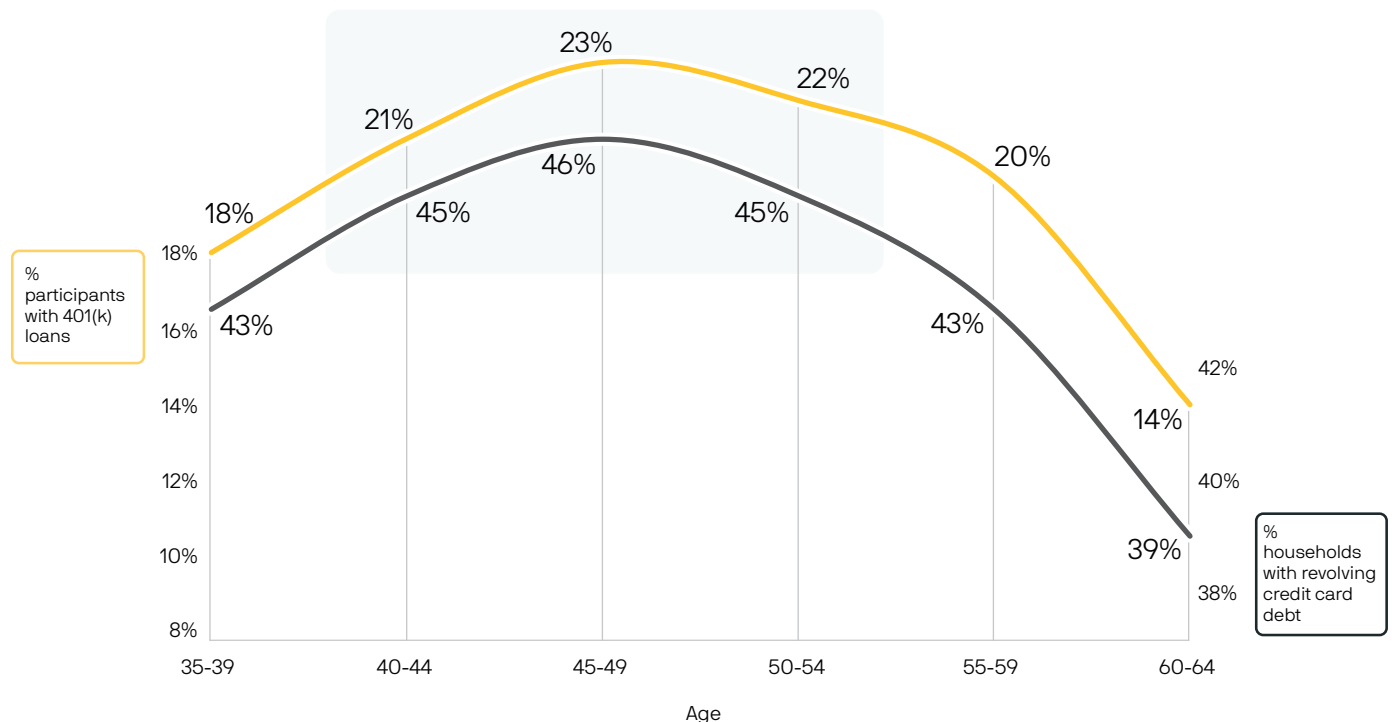
Loans and financial pressures on retirement plan behaviors

Many DC plans allow participants to borrow from their account balances, providing a potential source of short-term financial flexibility. While plan loans can help participants manage expenses, they also may reduce long-term investment growth potential and undermine retirement readiness when used frequently or in large amounts by taking savings out of the account. In addition, many participants may also stop making contributions while repaying loans and miss any company matches.

Nearly one in five participants have an outstanding plan loan, with usage peaking in midlife between ages 40 and 55. A similar midlife pattern is seen among participants carrying revolving credit card debt, though the magnitude is much higher, affecting nearly half. This underscores how midlife financial pressures can extend well beyond retirement accounts, affecting participants' broader financial stability.

Liquidity needs peak at midlife, with one in five participants holding plan loans and almost half carrying revolving credit card debt

EXHIBIT 3: PERCENTAGE OF PARTICIPANTS WITH 401(k) LOANS OR CREDIT CARD DEBT



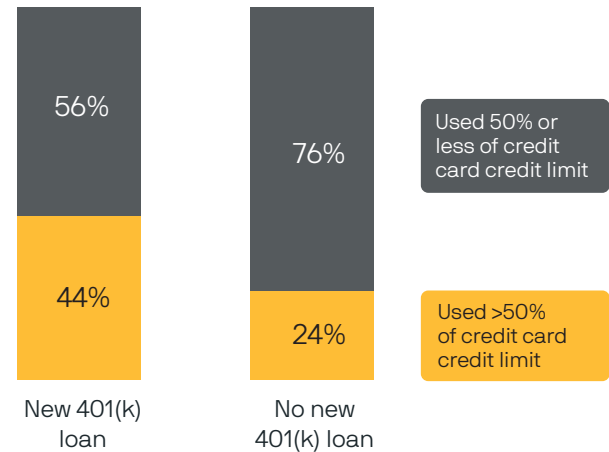
Source: Percentage of people with 401(k) loans is based on Employee Benefit Research Institute (2021–2022 trends); percentage of people with credit card revolving debt is based on data from 2016 to 2024 internal select credit card data from JPMorgan Chase Bank, N.A. and its affiliates (collectively “Chase”). Information that would have allowed identification of specific customers was removed prior to the analysis.

Plan loans tend to be relatively large: As shown in Exhibit 4, average loan amounts tend to represent large portions of borrowers' account balances. Younger participants generally borrow smaller dollar amounts, on average, but these loans generally constitute much larger portions of their overall balances. For example, the average loan for Gen Z participants removes 24% of their account, declining to 21% for Millennials, 17% for Gen X and 13% for Baby Boomers. Relative to the account balance, loan amounts are significant for all generations.

Impact of credit card debt: Notably, plan loans often coincide with other forms of debt, compounding financial strain. Consider that among participants taking a new plan loan in the past 12 months, 44% also exhibit high credit card utilization (over 50% of their credit limits), compared to 24% of employees without a new loan.

Those with a 401(k) loan are more likely to have a high credit card balance

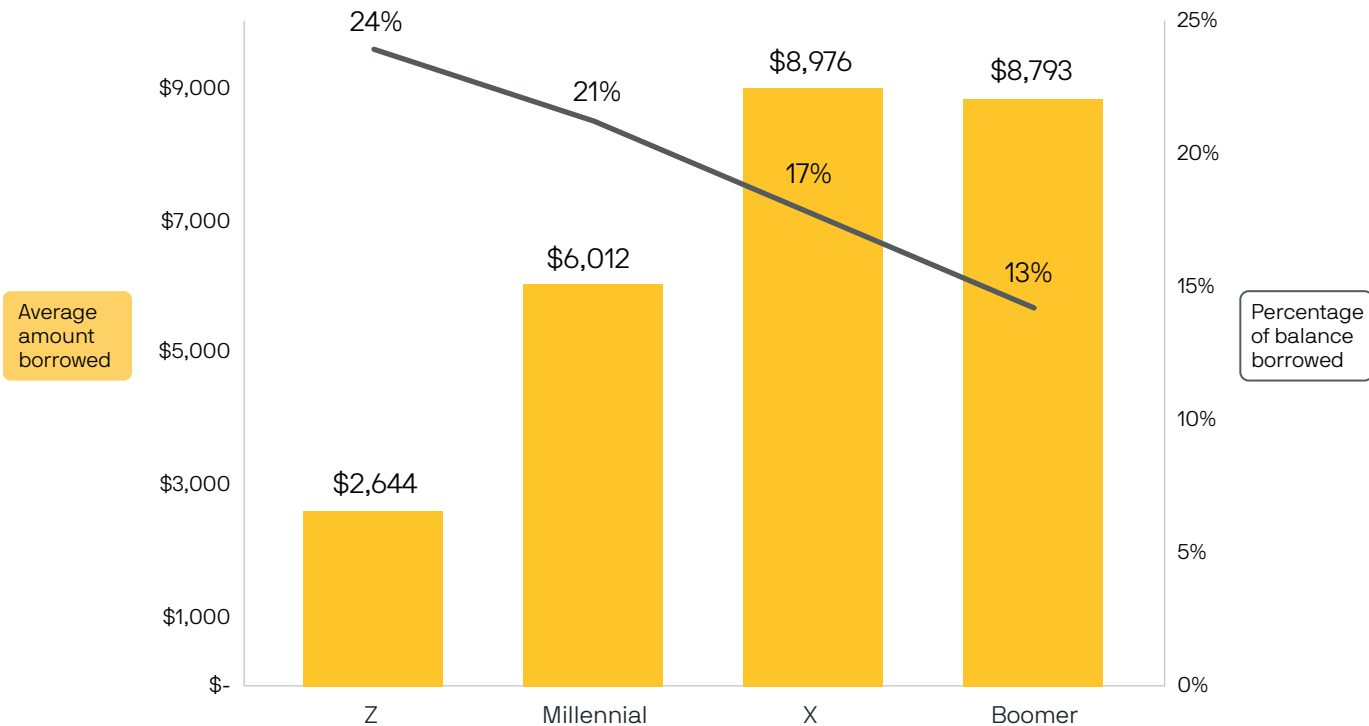
EXHIBIT 5: PERCENTAGE OF PARTICIPANTS WHO USE MORE THAN HALF OF THEIR CREDIT CARD DEBT LIMIT BY NEW PLAN LOAN STATUS



Source: Employee Benefit Research Institute and J.P. Morgan Asset Management, 2025 analysis. Data 2021–2022.

Average loan amounts are a significant percentage of account balances

EXHIBIT 4: AVERAGE AMOUNT BORROWED AND PERCENTAGE OF BALANCE BORROWED BY GENERATION



Percentage of account balance borrowed calculated using balance amount prior to the loan being taken. Source: Where Are Households Spending Their Defined Contribution Plan Loans: An Examination of Private-Sector Participants, Employee Benefit Research Institute and J.P. Morgan Asset Management, 2025.

Participants with high credit card utilization also generally contribute less to their plans and have much lower account balances, on average (see **Exhibit 6**). This effect is even more pronounced in later working years. In fact, the average retirement account balance for Baby Boomers with high credit card utilization is 40% lower than the average account balance for Baby Boomers without high credit card utilization.

Unfortunately, a sizable number of participants rely on high credit card utilization, regardless of age. It is most prevalent among younger participants, with 30% of Gen Z carrying debt exceeding 50% of their credit limits, drifting only slightly lower to 27% of Millennials, 26% of Gen X and 21% of Boomers.

These findings align with our joint research with Employee Benefit Research Institute showing how overall lack of financial security can weigh on plan participation and long-term retirement outcomes (please see: *Spending spikes can put retirement readiness at risk*).

4 in 10⁷ Participants lack basic emergency savings of at least three months of living expenses.

9 in 10⁸ Experience household spending spikes of 25% or more above the prior 12 months' median.

1 in 3⁸ Cannot absorb these spikes with current income and cash reserves, often turning to credit card debt (48%), plan loans (17%) or contribution decreases (13%).

⁷ Source: J.P. Morgan Asset Management 2024 Defined Contribution Plan Participant Survey Findings.

⁸ Spending spikes can put retirement readiness at risk. J.P. Morgan Asset Management, 2023.

This pattern highlights the value of financial wellness programs that provide practical tools and resources to help participants manage their financial pictures holistically, reduce financial stress and build economic confidence. These often focus on debt management, emergency savings and informed decision making to support long-term retirement security. Encouragingly, many participants show interest in solutions that help enhance financial resilience when presented to them. For example, seven in 10 (69%) find the idea of an employer-sponsored emergency savings account appealing.⁹

Pre-retirement withdrawals

Beyond plan loans, pre-retirement withdrawals represent another notable point of plan leakage that can reduce participants' long-term savings potential. These withdrawals tend to occur at two key junctures for non-retired participants: younger job-changing participants and older participants approaching retirement while remaining with their companies.

Among the younger group, 15% of participants who leave their companies between ages 20 and 29 in a given year take a cash withdrawal, with 94% of those withdrawing 100% of their balances. Some are likely mandatory plan force-outs, as nearly one-third are less than \$1,000. Either way, the risk is that these participants may not take the necessary steps to reinvest or roll over these funds into another tax-deferred account, leading to permanent savings loss early in their careers. Over time, repeated small cash-outs across job changes can meaningfully erode long-term savings potential, underscoring the importance of participant education.

Cash withdrawals among participants who continue to work for their companies are generally low overall but become increasingly likely in the years leading up to retirement, suggesting that some are drawing large amounts from their accounts at a time when they should be focused on continuing to save. In any one year, 5% of participants in their 50s who are still working withdraw an average of 76% of their balances in cash, despite potential tax penalties; 12% of those in their 60s withdraw an average of 63%; and 23% of those in their 70s withdraw an average 41%.

⁹ Source: J.P. Morgan Asset Management 2024 Defined Contribution Plan Participant Survey Findings.

Participants with high credit card debt tend to have lower contribution rates and account balances

EXHIBIT 6: CONTRIBUTION RATES AND ACCOUNT BALANCES BY CREDIT CARD UTILIZATION



Credit card debt means they did not pay off their balance in full. Source: Where Are Households Spending Their Defined Contribution Plan Loans: An Examination of Private-Sector Participants, Employee Benefit Research Institute and J.P. Morgan Asset Management, 2025.

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Spending and withdrawal behaviors

By the numbers

81%

Income replacement need for the average participant with a peak salary of \$80,000

44%

Average portion of retirement income that needs to be funded by savings for that participant

60%

Percentage of new retirees who experience an annual spending fluctuation exceeding 20%

67%

Percentage of participants who completely withdraw plan assets within three years



Retirement outcomes reflect a continuum of interconnected behaviors, spanning saving and investing during accumulation to spending and withdrawal decisions during decumulation, with both phases shaping and informing one another across the retirement lifecycle. Understanding how participants draw down and spend their DC assets provides critical insights into how to translate savings into sustainable replacement income effectively, while navigating the complexities of lifestyle, longevity and market sequence risks.

This year's research shows that:

- Retirement spending tends to be dynamic, not fixed, fluctuating over time and underscoring the need for flexible, adaptive solutions.
- Realistic income replacement needs can vary significantly by pre-retirement salary, based on real-world retiree behavior.
- Plan withdrawals generally fall into two behavioral patterns: most participants take their assets shortly after retiring, while a smaller group defers until RMD rules mandate action.

With more than 4 million Americans reaching retirement age each year, most without access to traditional defined benefit (DB) post-career income, DC plan sponsors are increasingly recognizing the need to support participants beyond the accumulation phase. Understanding how participants actually spend in retirement can offer meaningful perspective into delivering practical solutions designed to help balance replacement income security, flexibility and individual needs.

Dynamic nature of retirement spending

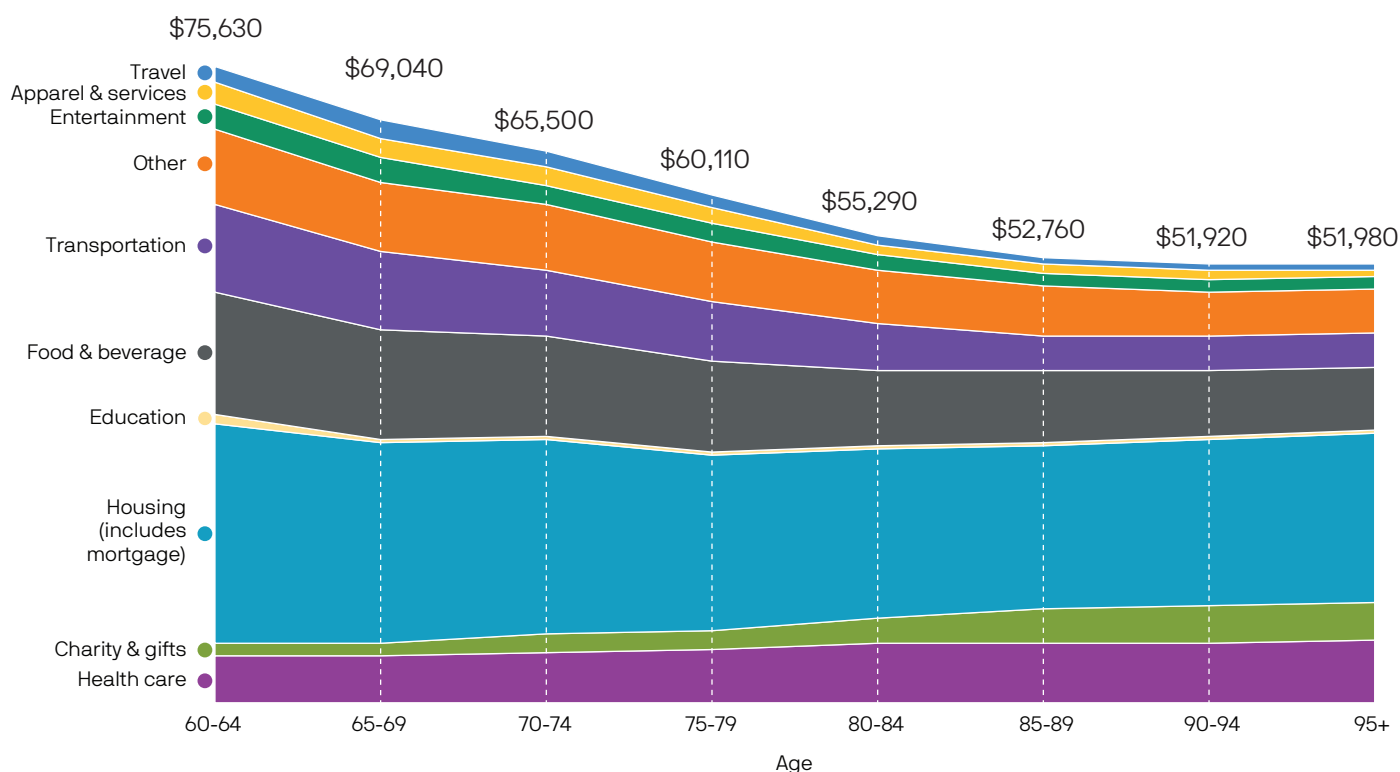
Analyzing participants' real-world spending behaviors as they enter and move through retirement provides valuable insight into the evolving nature of decumulation needs over time. Based on patterns drawn from more than 4.7 million households, average total spending typically starts higher early in retirement and steadily trends down by roughly 5%–8% every five years, leveling off as participants reach their late 80s and into their 90s. (Keep in mind that this analysis is based on a snapshot in time comparing households of different ages, rather than tracking the same household through time or using projections.)

This contrasts with many standard modeled industry assumptions that often take a static base spending rate and apply annual inflation increases to it.

These findings can have significant implications for setting more realistic accumulation targets and more efficient decumulation models. **Exhibit 7** illustrates actual spending for the average household, segmented by categories. Most contract to a degree as participants age, with the exception of health care and charitable contributions and gifts. (For more detail into retirement spending patterns, please see *Three new spending surprises: Additional insights into retirement spending behaviors*.)

Retirees' spending tends to decline over time, on average

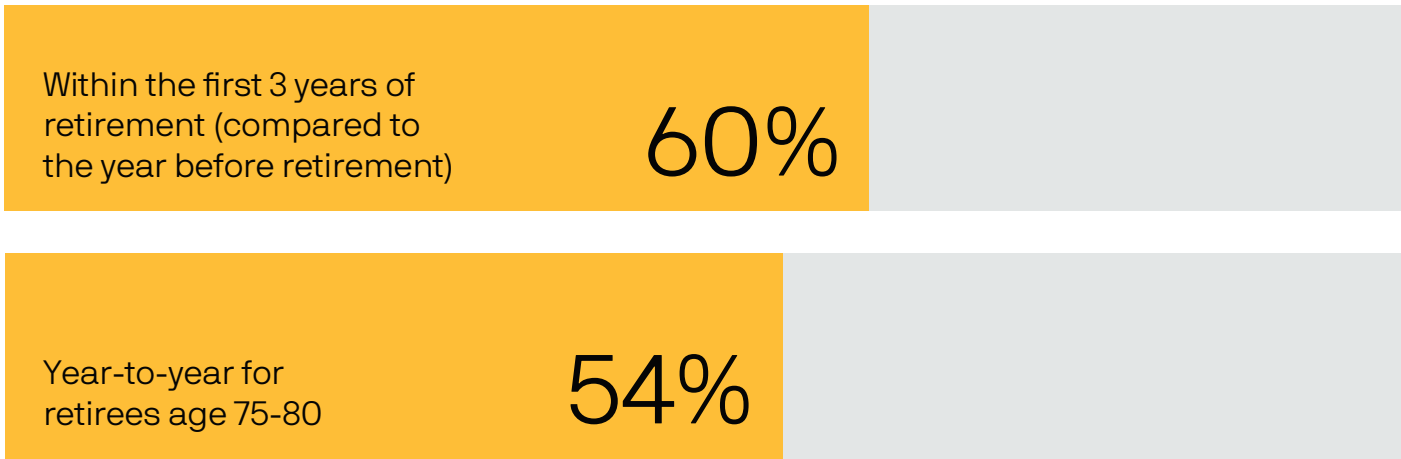
EXHIBIT 7: ANNUAL AVERAGE HOUSEHOLD SPENDING BY AGE, PARTIALLY AND FULLY RETIRED HOUSEHOLDS, \$250K–\$750K INVESTABLE WEALTH



Source: J.P. Morgan Asset Management, based on internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, credit and debit card and electronic payment transactions from 1/1/2017 to 11/30/2024. Check and cash distribution: 2021 CE Survey; J.P. Morgan Asset Management. Information that would have allowed identification of specific customers was removed prior to the analysis. Other includes tax payments, insurance, gambling, personal care and uncategorized items. Asset estimates for select de-identified and aggregated households supplied by IXL, an Equifax Company for data from 2017 to 2023 and Windfall for data from 2024. Estimates include all investable assets except employer-sponsored plans, home equity and other non-portable assets. Additional information on J.P. Morgan Asset Management's data privacy standards is available at <https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/>. Retired households receive retirement income only, including Social Security, pension and/or annuity payments.

Spending fluctuates more than 20% per year for a significant number of retirees

EXHIBIT 8: PERCENTAGE OF RETIREES WHO EXPERIENCE A 20% OR MORE ANNUAL SHIFT IN SPENDING



Source: J.P. Morgan Asset Management, based on internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, credit and debit card and electronic payment transactions from 2016 to 2024. Inflation-adjusted to 2024. Information that would have allowed identification of specific customers was removed prior to the analysis. Additional information on J.P. Morgan Asset Management's data privacy standards is available at <https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/>.

Spending can also fluctuate dramatically from year to year. Six in 10 (60%) new retirees¹⁰ experience annual spending fluctuations exceeding 20% within the first three years of retirement compared to the year before retirement, a pattern that persists, with half (54%) of 75- to 80-year-olds continuing to face this level of year-to-year spending volatility (see **Exhibit 8**). These findings underscore the need for flexible retirement income solutions that can adapt to spending shocks and provide stability when expenses shift unexpectedly.

¹⁰ Based on individuals who retired between ages 60 and 69, tracked from one year prior to retirement through three years after.

Income replacement needs

Income replacement is often cited as a single number for all participants. However, segmenting retirement spending behaviors by pre-retirement income reveals distinct patterns that offer a more nuanced view of realistic replacement needs across households.

A key factor in determining how much of this spending must be funded from savings is understanding how much households actually receive in Social Security benefits. Analyzing deidentified Chase banking data shows that Social Security payouts can be up to 20% to 35% lower, on average, than typical industry calculation models might suggest, a gap that peaks for household pre-retirement incomes between \$70,000 and \$100,000. The reality is that many households may fall outside standard model assumptions; some are single

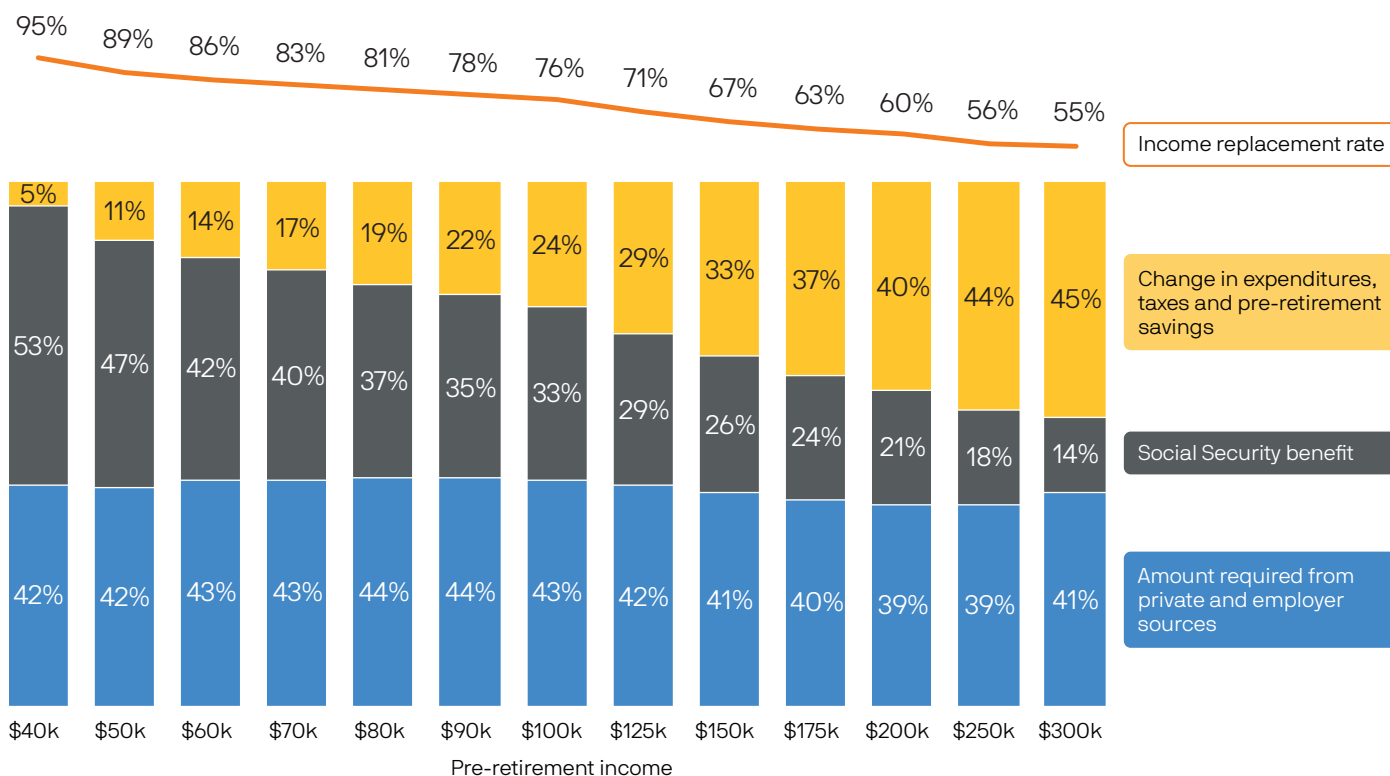
earners, while others have spousal benefits. Some may have fewer than 35 years of work history or limited wage growth, all of which can reduce benefits.

Using these two inputs reveals a clear pattern: average income replacement percentages steadily decline as pre-retirement income rises (see **Exhibit 9**). Much of this stems from the significantly larger reductions in expenditures, including taxes and savings when higher-earning households transition into retirement.

Interestingly, higher earners replace a substantially smaller share of their replacement income with Social Security. Yet the proportion that must be funded from savings remains remarkably steady across pre-retirement income levels, ranging between 39% and 44%, even though the actual dollar amounts are much higher for top earners.

Income replacement needs vary by pre-retirement income, but the share that needs to be funded from savings remains fairly consistent

EXHIBIT 9: REPLACEMENT RATE DETAIL BY HOUSEHOLD INCOME



Source: Longitudinal Chase data (2016–2023), inflation adjusted. Chase data includes internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, cash, credit and debit card and electronic payment transactions from 1/1/2016 to 12/31/2023. Additional information on J.P. Morgan Asset Management's data privacy standards is available at <https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/>. Social Security benefit is based on observed Chase household inflows. Percentages and values may not sum due to rounding. J.P. Morgan Asset Management, 2025.

Plan withdrawals in retirement

How do retired participants actually draw down their plan assets, given the spending backdrop above? There appear to be two major points of action. Most withdraw their full balances soon after they stop working, while a smaller, yet still notable group, defers action until RMD rules mandate it.

As shown in **Exhibit 10**, within the first three years after retiring:

67% Two-thirds of participants exit the plan quickly, fully withdrawing their balances, 35% as rollovers, 26% as cashouts and 6% as a combination.

10% Take partial cash withdrawals, among the one-third (33%) who remain in the plan.

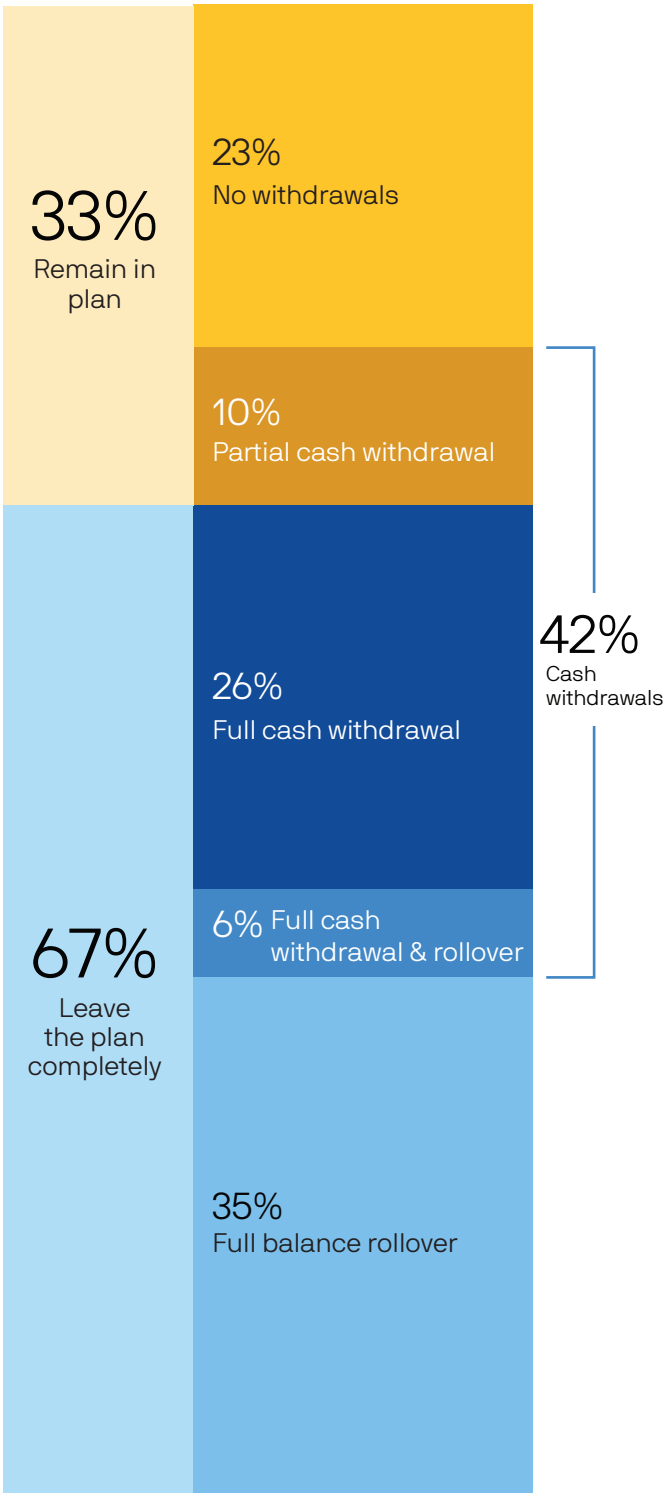
23% Take no action.

Of note, 42% of recent retirees take cash out soon after they stop working, either withdrawing all or a portion of their balances. These amounts are often not insubstantial: 27% exceed \$25,000, and 14% are greater than \$50,000. If these cashouts are not needed for living expenses, taking them as a lump sum and not re-investing in a timely manner may expose them to reinvestment risk and the potential loss of tax-advantaged status.

For the smaller group remaining in the plan (both active and terminated employees), most appear to delay withdrawals until reaching mandatory RMD starting age. **Exhibit 11** shows the percentage of participants still in plan who withdraw cash each year, with a clear spike occurring at the RMD start age. This pattern is further highlighted by the shift in withdrawal behavior following SECURE 2.0's increase in RMD age from 72 to 73.

The majority of participants quickly leave the plan

EXHIBIT 10: ACTIONS OF PARTICIPANTS AGE 60 AND OLDER WITHIN THREE YEARS OF LEAVING THEIR EMPLOYER



Source: Select de-identified data provided by JPMorgan Invest Holdings LLC (Retirement Link) as of August 2025. Data from 2021 to 2024.

These patterns suggest that DC plans may be potentially underutilized for managing retirement income for many participants, even though many participants would welcome options to generate steady, predictable payouts from their accounts.

Moreover, eight in 10 plan sponsors believe their plans should offer investments that help participants generate income in retirement, underscoring alignment between sponsor intent and participant interest in in-plan income solutions.

The emphasis on more predictable sources of income in retirement is key, as it appears to make retirees more comfortable with their spending. Using Chase data, we find that retirees with similar total wealth can exhibit very different spending behaviors depending on the composition of that wealth.

90%

of participants say they would be interested in an option on their plan's menu that would provide guaranteed retirement income.¹¹

76%

are comfortable keeping savings in plan after retiring and using it as a vehicle for drawing income.¹¹

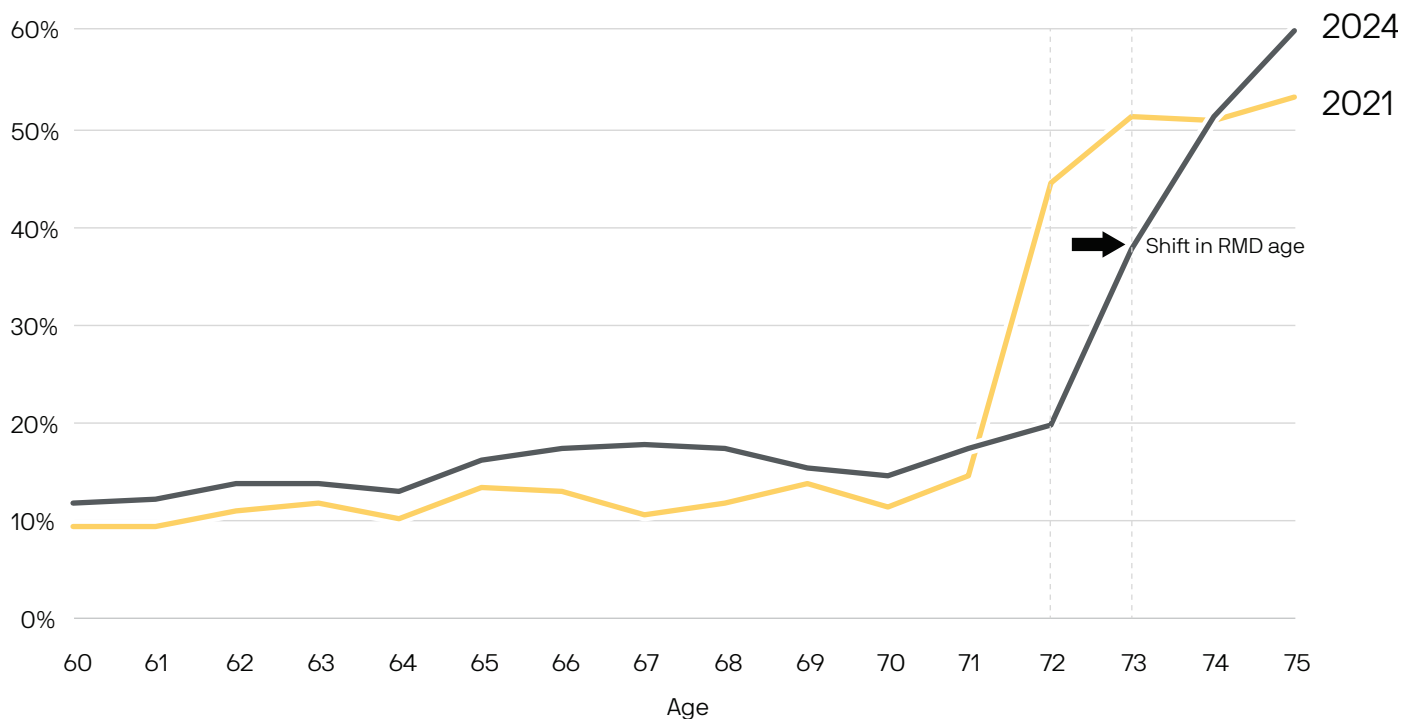
80%

would be likely to leave their savings in plan if offered an option that used savings to help generate monthly retirement income.¹¹

¹¹ Source: J.P. Morgan Asset Management 2024 Defined Contribution Plan Participant Survey Findings.

For those who remain in plan, many wait for RMDs

EXHIBIT 11: PERCENTAGE WHO MAKE A CASH WITHDRAWAL PER YEAR



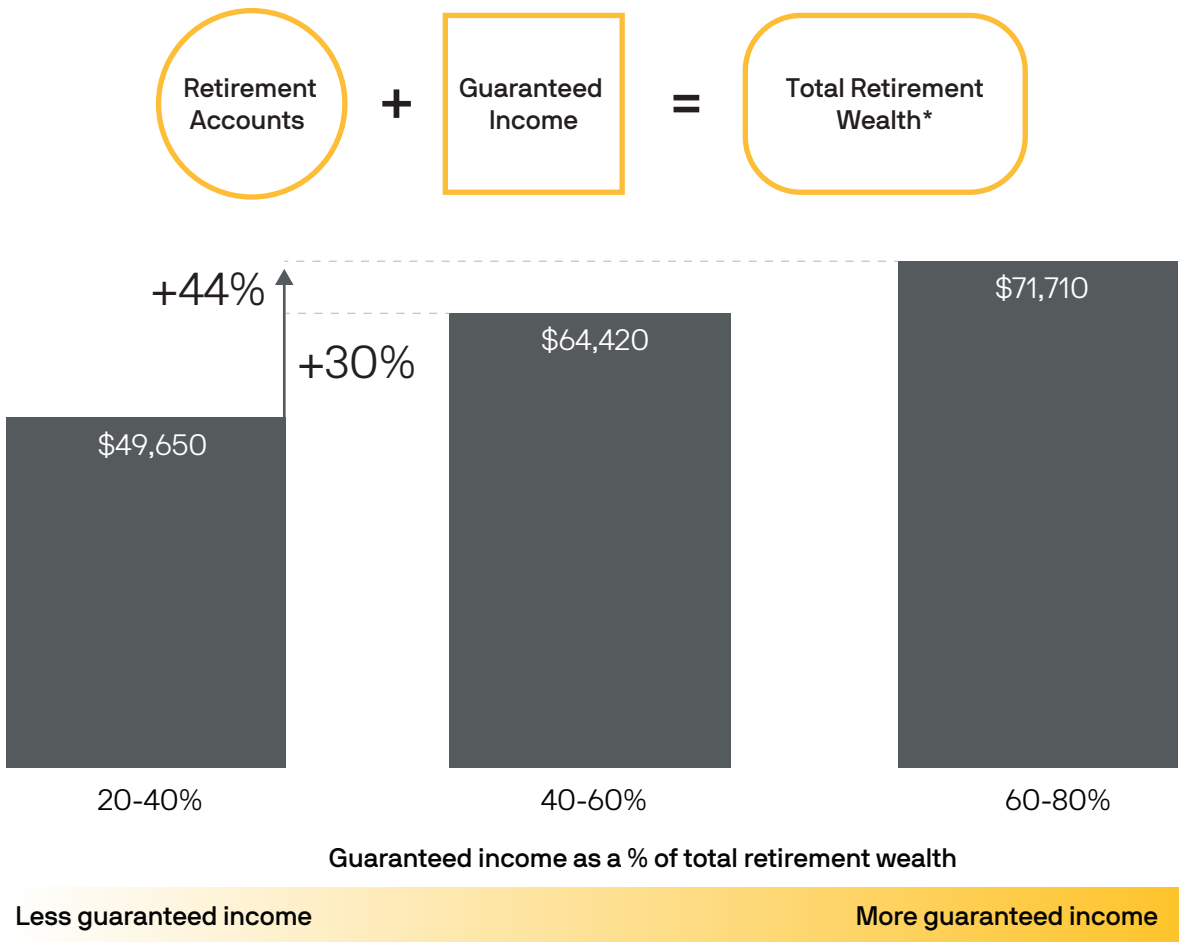
Source: Data provided by JPMorgan Invest Holdings LLC (Retirement Link) as of August 2025. Data from 2021 to 2024.

Exhibit 12 illustrates average spending for retirees with \$1 million to \$3 million in total retirement wealth. While this range might initially sound higher than a typical participant’s savings balance, this amount includes all savings, brokerage, retirement accounts and, importantly, the current projected financial value, in present value terms, of all guaranteed income sources, such as Social Security, annuities and pensions.

Retirees whose wealth includes a higher proportion of guaranteed income spend more, on average. Compared to those with 20%–40% of their total retirement wealth represented by guaranteed income sources, those with 40%–60% spend 30% more per year, and those with 60%–80% spend 44% more. These findings suggest that higher proportions of guaranteed income sources seem to help reduce spending fears and support more comfortable standards of living, highlighting the potential value of in-plan solutions designed to generate predictable retirement income.

Greater proportions of predictable retirement income seem to help reduce spending fears

EXHIBIT 12: MEDIAN ANNUAL SPENDING BY SHARE OF GUARANTEED INCOME (TOTAL RETIREMENT WEALTH \$1M–\$3M)



*Total retirement wealth includes retirement accounts (employer plans, IRAs, brokerage and savings) and the present value of future guaranteed income payments. Source: Chase data including select Chase credit and debit card, electronic payment, ATM withdrawal and check transactions in 2023–2024. Information that would have allowed identification of specific customers was removed prior to the analysis. Asset estimates for select de-identified and aggregated households supplied by Windfall Data Inc. Total retirement wealth is the sum of investable wealth and the present value of observed retirement income sources including Social Security (inflated), pensions and annuities (both not inflated) until age 90. Inflation rate assumption is 2.5%. Observed guaranteed income sources are adjusted to pre-tax values to be consistent with investable wealth.



3

Evaluating glide path design

Participant behaviors are critical in shaping retirement outcomes, but they are only part of the equation. Nearly 70% of DC participants are invested in TDFs, underscoring how much retirement success is also influenced by the design and discipline of the glide paths guiding those investments.¹²

Since their introduction in 2005, millions of participants have relied on JPMorgan SmartRetirement Funds as part of their retirement investing.¹³ Soon after, we published our first detailed analysis of how participant behaviors can interact with glide path design to help quantify retirement outcome potential based on real-world usage. We have periodically updated this research over the past two decades, and this year we once again put the SmartRetirement glide path to the test based on our updated behavior findings.

This year's research once again reconfirms past findings:

- **Consistency across market cycles matters more than short-term and relative performance alone** since glide paths must support a lifetime of investing, accommodating diverse accumulation behaviors and the full range of market environments participants may encounter over decades.
- **The true measure of retirement outcomes is how many participants are on track to accumulate assets sufficient to support adequate retirement income**, with the goal of maximizing success across the participant population.
- **Decumulation solutions need to be flexible and adaptive** to support a wide range of post-retirement income needs and behaviors.

TDFs, by their nature, must serve a diverse population, navigating varying behaviors and investment climates, and the glide path should be structured to help increase the odds that as many participants as possible are positioned for retirement funding success.

¹² According to the Investment Company Institute (ICI), 68% of 401(k) participants in its database held TDFs at year-end 2022 (ICI, April 2024, page 30). With approximately 70 million participants in 401(k) plans (ICI, 401(k) Resource), this equates to over 40 million people invested in TDFs.

¹³ Source: J.P. Morgan Asset Management. As of 10/31/2025.

SmartRetirement: Focused on getting more participants over the retirement finish line

Leveraging decades of multi-asset-class portfolio management expertise, SmartRetirement applies outcome-based modeling to help increase the odds that as many participants as possible reach retirement savings targets that generate a sustainable level of income, their “retirement finish line.” The glide path is built on real-world participant insights and J.P. Morgan Asset Management’s forward-looking Long-Term Capital Market Assumptions, carefully managing risk and return exposures across participants’ retirement journey (see **Exhibit 13**).

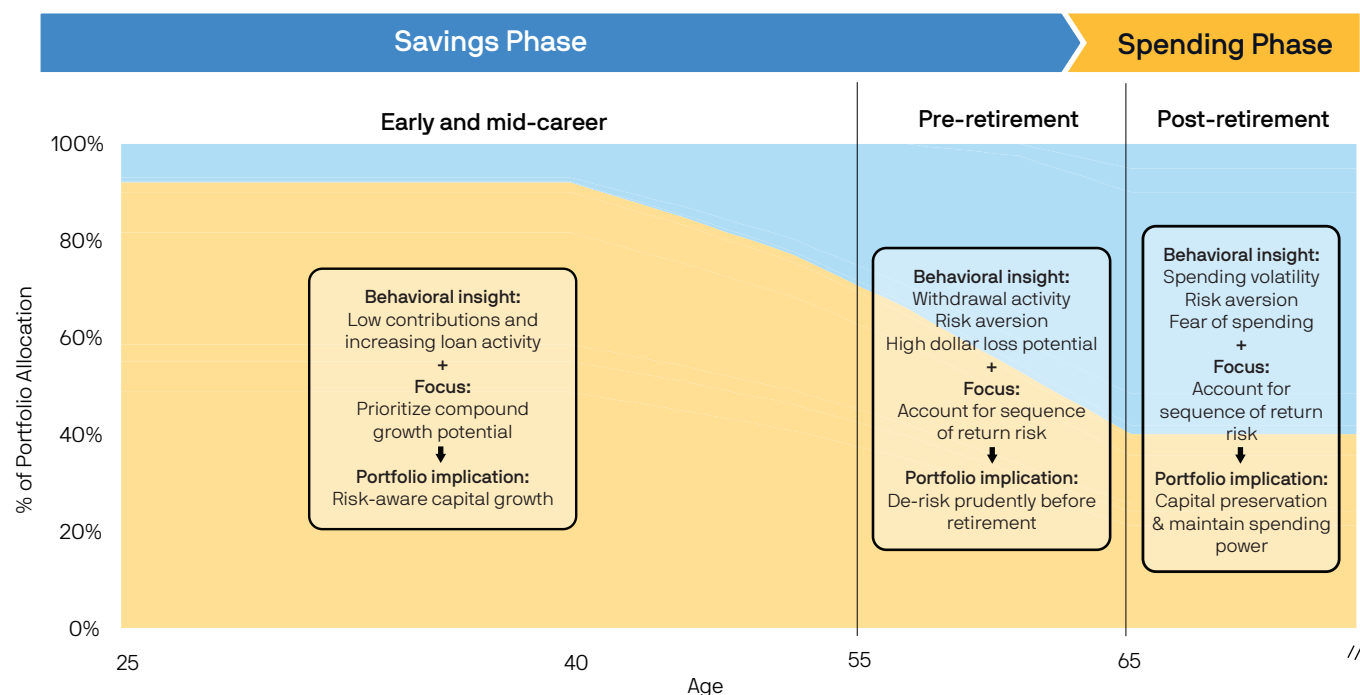
Early and mid-career: At this stage, prioritize long-term growth to optimize compounding potential over time and help offset less constructive saving and loan behaviors as much as possible.

Pre-retirement: At this stage, prudently de-risk in the critical years as participants near retirement. This is a period when participants may be most vulnerable to losses, with limited time to recover. Further, with balances nearing their peak, the risk of absolute dollar loss is significantly greater, making recovery through increased savings alone difficult. **Exhibit 14** illustrates the potential impact of a market loss at this point of the glide path, showing average projected balances for a participant based on the observed salary, contribution behaviors and retirement spending patterns presented earlier and our Long-Term Capital Market Assumptions. Compare how a 10% market decline could translate to a \$2,317 loss at age 30 versus \$71,472 at age 65, a substantial number for someone about to retire.

Post-retirement: At this stage, emphasize capital preservation while maintaining spending power, accommodating diverse withdrawal behaviors and supporting potential integration of flexible retirement income solutions.

Our glide path is built around participant insights and Long-Term Capital Market Assumptions

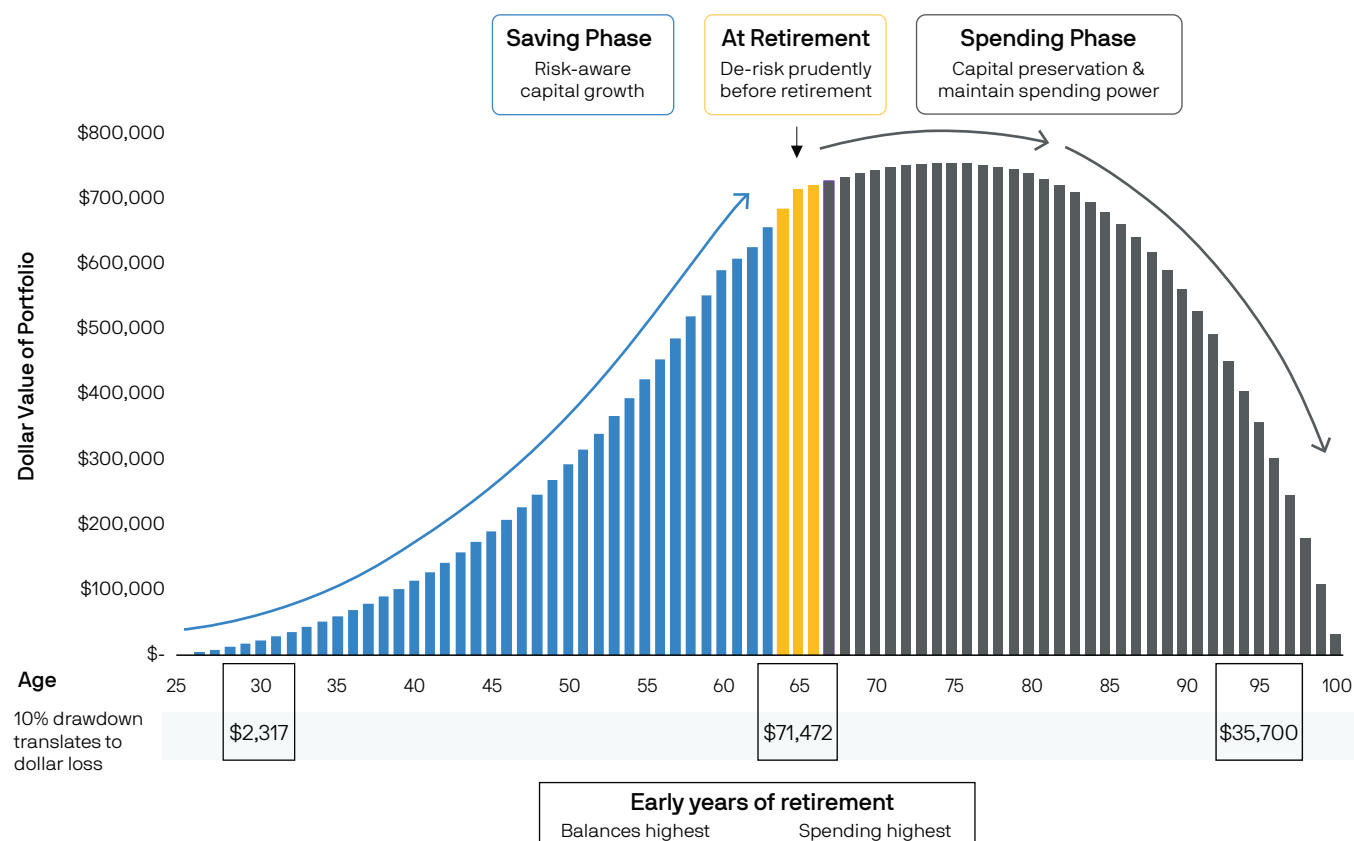
EXHIBIT 13: SMARTRETIREMENT’S GLIDE PATH CONSTRUCTION



Note: Yellow: Equity; Blue: Fixed income. The glide path depicts targeted asset allocation weights based on J.P. Morgan’s internal analysis. Glide path effective date is February 1, 2024. The Fund’s actual allocations may differ due to changes to these strategic allocations or due to active asset allocations. Diversification and asset allocation do not guarantee investment returns and do not eliminate the risk of loss. Past performance does not guarantee future results. Source: J.P. Morgan Asset Management.

Risk of absolute dollar loss is highest at retirement

EXHIBIT 14: PROJECTED ACCOUNT BALANCES BASED ON AVERAGE PARTICIPANT SALARY, CONTRIBUTION BEHAVIORS AND RETIREMENT SPENDING BEHAVIORS



Source: J.P. Morgan Asset Management. Hypothetical return scenarios are for illustrative purposes only and are not meant to represent an actual asset allocation.

Projected retirement outcomes

Inputs: To assess the effectiveness of the SmartRetirement glide path, we projected retirement outcomes using 10,000 portfolio simulations. We applied the full range of observed, real-life participant patterns, from optimal to poor, interacting with a diverse array of investment cycles that might be experienced over a career, from strong markets to extreme downturns. Results were then compared to the S&P Target Date Index, the most commonly used industry benchmark. Collectively, these simulations provide a robust view of how SmartRetirement's disciplined design performs under a wide range of real-world conditions.

Quantifying retirement saving targets: the typical observed spending needs used in our projections represent the total account balance the average

participant needs to accumulate by retirement to fund an adequate replacement income to maintain pre-retirement lifestyle—the retirement finish line. The target used in our analysis is based on the average salary peak of \$80,000 (see page 22) and the corresponding average initial replacement income level of 81% noted at this wage level, inclusive of Social Security (see **Exhibit 9**).

Results: The resulting box-and-whiskers chart illustrates the distribution of potential outcomes using these inputs. The line inside each box marks median outcomes, and the whiskers show the 5th (best case) and 95th (worst case) percentile results, highlighting both typical performance and extreme cases.



As shown in **Exhibit 15**, SmartRetirement consistently offered stronger outcomes, delivering a greater number of participants over the retirement finish line. The projections show that the glide path:

- Helps more participants reach their replacement income goals
- Outperforms when participants exhibit more constructive saving behaviors and/or experience more favorable market conditions (5th percentile)
- Provides greater protection to participants who exhibit poorer saving behaviors and/or experience more difficult investment conditions (95th percentile)

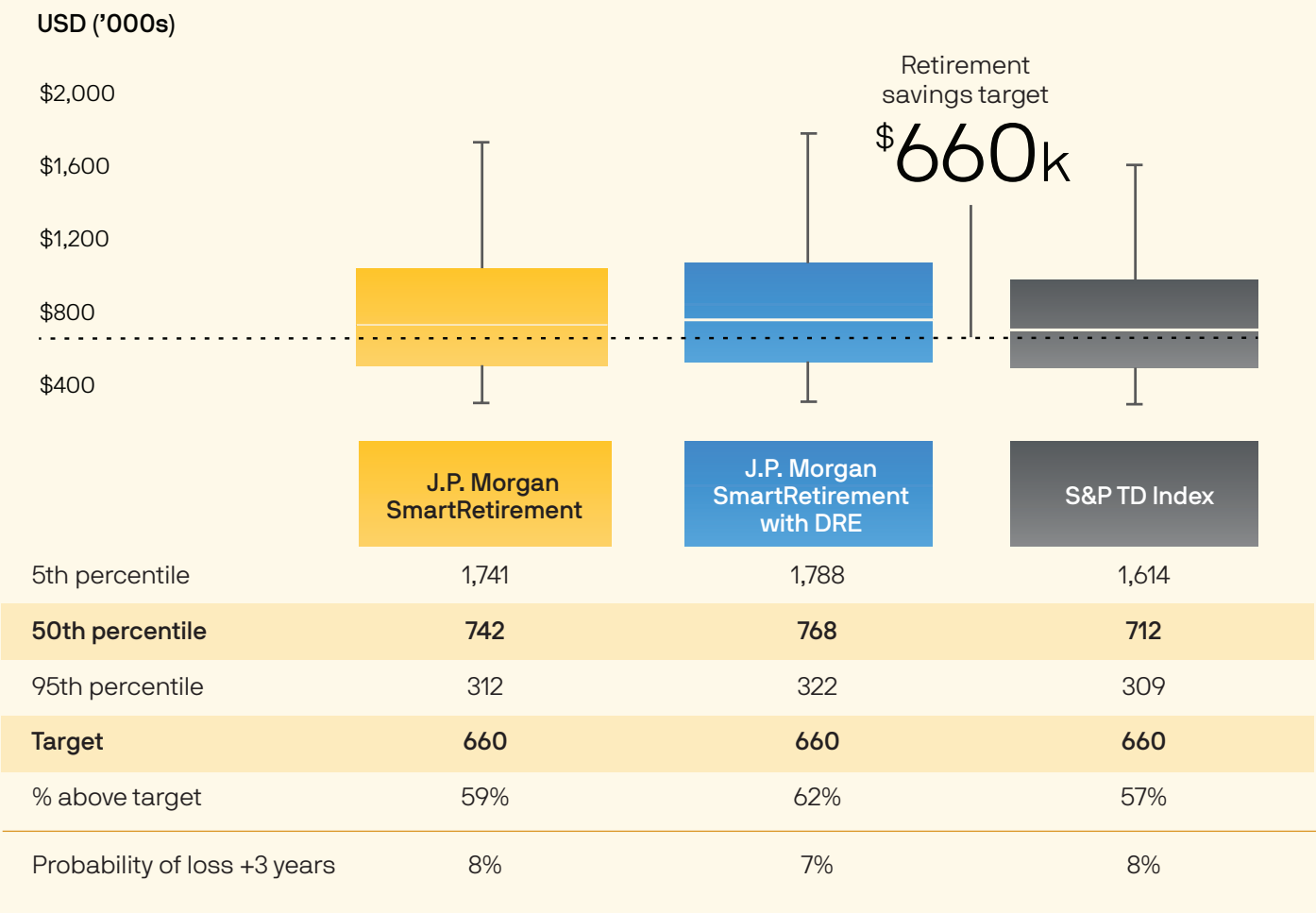
It also provides, on average, nearly a full additional year of retirement spending through the increased retirement plan balances.

The SmartRetirement glide path is also available with a direct real estate (DRE) allocation, and this year, we included this version in the evaluation, reflecting the growing focus on private assets in retirement portfolios and recognizing J.P. Morgan was the first to incorporate private assets via direct real estate into a glide path design 20 years ago. The potential for stronger retirement outcomes is even more pronounced with this series across all outcomes. It also delivers, on average, roughly 1.5 years of additional retirement spending through higher balances. (For more insight into our thoughts about private investments in DC plans, please see *From complexity to clarity: A measured approach for evaluating private investments in DC plans*.)

These projections continue to demonstrate the resiliency of the SmartRetirement glide path. At the same time, they highlight that investment design cannot fully compensate for low savings rates, underscoring the importance of plan design in supporting participants' long-term outcomes. Encouraging higher savings that start earlier in participants' careers can meaningfully improve potential retirement results. While investment strategy plays a vital role, it achieves its greatest impact when paired with disciplined saving behavior and thoughtful plan design.

SmartRetirement continues to deliver more participants across the retirement finish line

EXHIBIT 15: RANGE OF EXPECTED ACCOUNT BALANCES AT RETIREMENT VERSUS S&P TARGET DATE INDEX

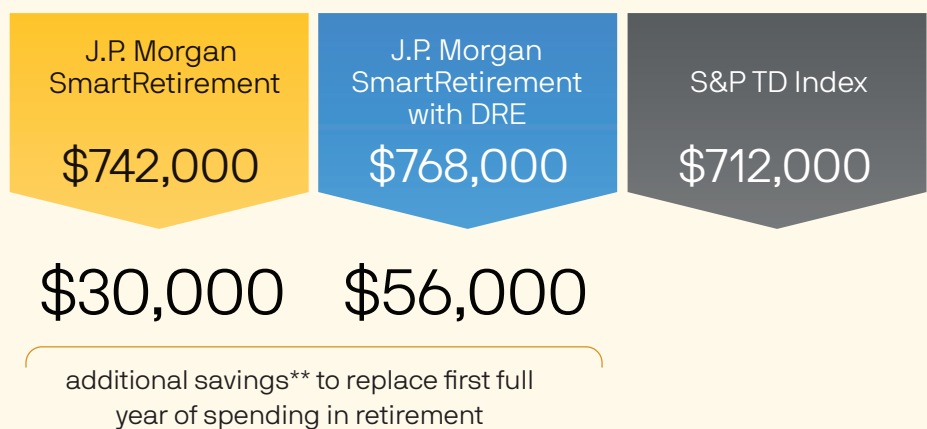


Savings needed

Someone who earns a peak salary of **\$80,000** needs **\$660,000** in retirement savings to be able to replace a comparable lifestyle in retirement

Retirement outcome

Median account value at age 65*



Source: J.P. Morgan Asset Management retirement research as of October 2025. Note: Modeling uses Equilibrium Long-Term Capital Market Assumptions, which are projected returns based purely on economic forecast, and not starting point prices (current valuations and corporate margins). *Based on 10,000 portfolio simulations using the range of identified participant behavior applied to a broad mix of market scenarios. **When compared to S&P Target Date Index. The information above is shown for illustrative purposes only. It is being presented to demonstrate some of the research behind the SmartRetirement investment process. It should not be interpreted as past or expected performance of any SmartRetirement strategy. Investment decisions should not be made based on the information above.

Conclusion

This year's research reinforces a clear message: Participant behaviors, Long-Term Capital Market Assumptions and glide path design are inseparable. Savings remain too low, financial pressures continue to weigh on contribution decisions and retirement spending is more dynamic than static spending assumptions suggest.

These insights underscore why glide path design must reflect real life. SmartRetirement continues to deliver stronger retirement outcome projections by integrating the full spectrum of participant behaviors with forward-looking capital market expectations. The result is a disciplined approach that seeks to grow assets when it matters most, protect them when participants are most vulnerable and support flexible decumulation choices throughout retirement.

Translating these findings into actionable strategies, plan sponsors can consider steps such as:

- ***Boosting earlier participation and higher contribution rates*** through active default auto-enrollment and auto-escalation strategies.
- ***Connecting these decisions to broader financial wellness strategies***, such as targeted communication strategies, educational initiatives and emergency savings and debt support.
- ***Evaluating glide path design closely***, especially around critical points on the retirement journey, such as the years leading into retirement.
- ***Recognizing retirement income as the next frontier in DC plan innovation***, integrating thoughtful, flexible solutions to help participants navigate sustainable decumulation more efficiently.

None of these levers operate in isolation. They are deeply interdependent. Done well, they create a true win-win. Participants can achieve greater long-term security, and employers can benefit from a more engaged and productive workforce, less distracted by financial or emotional stress, while capturing improved cost efficiencies as assets grow and persist through retirement.

As we look ahead, we remain deeply committed to continuing to provide plan sponsors and their advisors with insightful DC research and ongoing product innovation. By understanding the numbers driving retirement outcomes, we can all help increase the odds that participants are able to achieve the replacement income they need to retire securely, when and how they want.

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