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Planning for spending volatility in retirement

In the Spotlight
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Key Insights

- Data show that spending generally decreases in retirement, but the path of decline can be choppy for many retirees.
- Nondiscretionary spending—housing in particular—is the primary source of spending variability in retirement, but this varies with income.
- Retirement income solutions should not only generate cash flows but also maintain liquidity and invest for growth to potentially enhance retirement outcomes.

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Retirees are likely to experience both increases and decreases in spending levels, i.e., volatility or fluctuations, during their retirement years. By planning for and being prepared to adjust to such volatility in spending, retirees can increase their odds of success in retirement.

As the defined contribution retirement savings system matures and emphasis slowly shifts from the accumulation phase to the spending phase, the next big problem for the retirement industry to solve is retirement income. To design successful retirement income solutions, providers need a better understanding of spending patterns during retirement.

While data have shown that spending generally decreases in retirement, the reality is that many retirees experience meaningful ups and downs in their spending over time versus a continuous decline. These fluctuations in spending have significant implications for potential income solutions; particularly, in determining factors such as the optimal liquidity and accessibility characteristics, the level of equity exposure, etc.

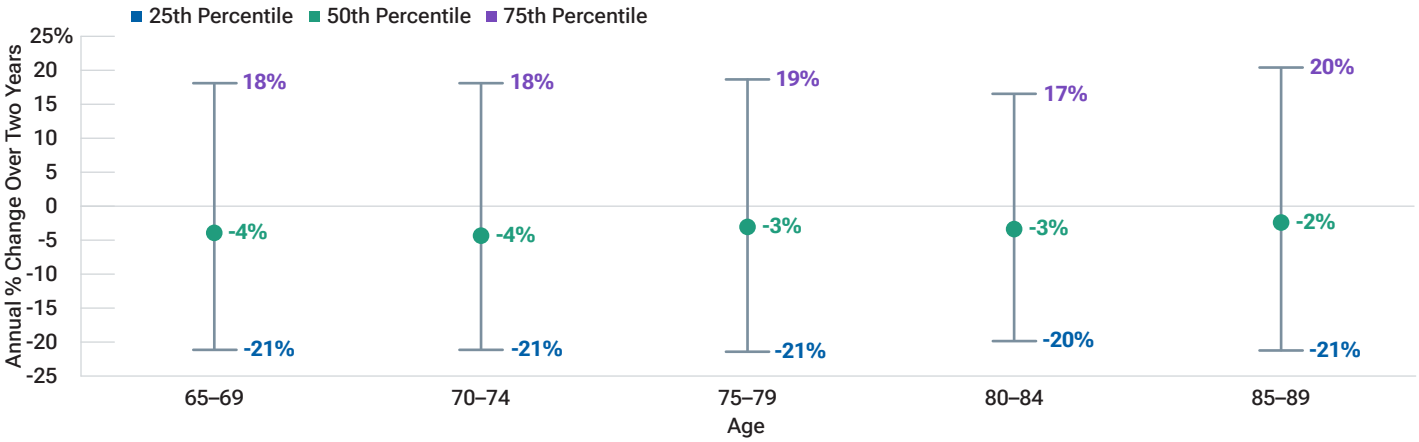
For this study, we analyzed data from the Health and Retirement Study (HRS) and its supplement, the Consumption and Activities Mail Survey (CAMS).[1] We found that, on average, annual household spending declined by about 2% during retirement.[2] But this decrease is not uniform for all retirees.

As outlined in Figure 1, our research found that spending can fluctuate greatly in retirement. On average, about 1 in 4 retirees experienced at least a 17%–20% increase in annual spending over a two-year period, while another

[1] Both the HRS and the CAMS are biennial studies conducted in even and odd years, respectively, by the Institute for Social Research (ISR) at the University of Michigan. Our sample followed a group of 1,306 households from 2005 to 2019 who were present in the 2005 CAMS, were between age 65 and 90, and have been surveyed in at least three consecutive waves of the CAMS. The most recent wave was released in August 2021, with 2019 data being the most recent available at the time of our analysis. Measurement or reporting error is a serious concern for studying volatility of spending, and we impose several restrictions (see Appendix A for details) on the sample to mitigate the effect of measurement error.
[2] T. Rowe Price estimates from the HRS (2005–2019). 2019 data is the most recent available data at the time of our analysis.

Moving beyond average spending

(Fig. 1) Fluctuations of per capita household expenses in retirement, annual % changes over a two-year period



Source: ISR, CAMS, 2005–2019. Data analysis by T. Rowe Price.

1 in 4 experienced at least a 20%–21% decrease in annual spending over a similar period. Moran, et al., reported similar levels of spending volatility across various groups during the transition into retirement.[3] Farrell and Greig also show that older families can experience higher expense volatility.[4]

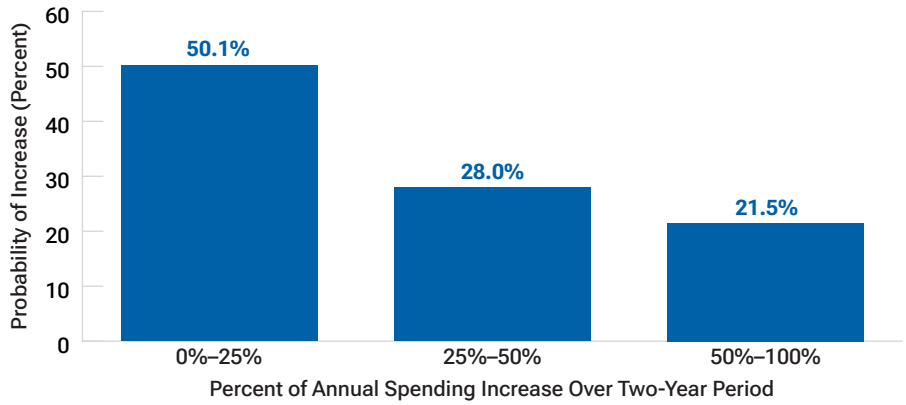
Based on our analysis, there is a considerable risk of experiencing large increases in spending at some point in retirement (Figure 2). Notably, 1 in 2 retirees (50.1%) experienced a spending increase of 0%–25% between ages 65 and 90. Further, over 1 in 4 (28%) households experienced a 25%–50% spending increase, and over 1 in 5 (21.5%) households experienced spending increases between 50% and 100% during retirement.

[3] Moran, Patrick, Martin O'Connell, Cormac O'Dea, and Francesca Parodi, 2021, "Heterogeneity in Household Spending and Well-being Around Retirement," Ann Arbor, MI, University of Michigan Retirement and Disability Research Center (MRDRC) Working Paper; MRDRC WP 2021-427. https://mrdrc.isr.umich.edu/publications/papers/pdf/wp427.pdf

[4] Farrell, Diana, and Fiona Greig, "Coping with Costs: Big Data on Expense Volatility and Medical Payments," JPMorgan Chase Institute, 2017.

Spending can vary greatly in retirement

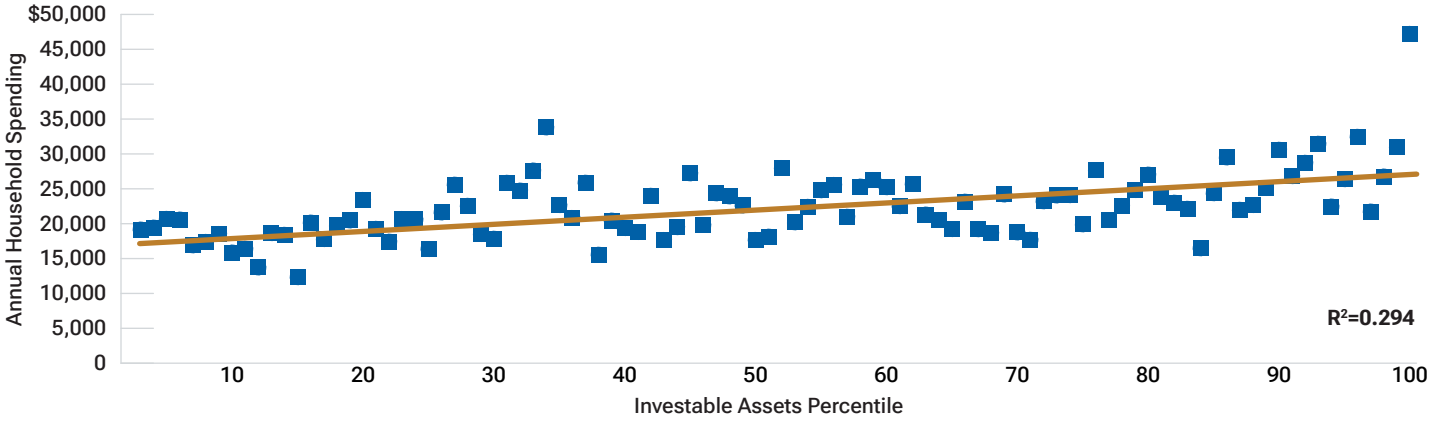
(Fig. 2) Probabilities of retiree households experiencing different degrees of increase in spending between age 65 and 90



Source: ISR, CAMS, 2005–2019. Data analysis by T. Rowe Price.
Actual outcomes may differ materially.

Average household spending increased with level of assets

(Fig. 3) Average annual per capita household spending across the distribution of investable assets



Source: ISR, CAMS, 2005–2019. Data analysis by T. Rowe Price.

* R-squared (R^2) is a statistical measure that represents the proportion of the variance for a dependent variable that's explained by one or more independent variables in a regression analysis. A higher R^2 means that the set of independent variables explain higher variation in the dependent variable.

Given the range of possible variations in spending increases, the amount of liquid assets retirees should hold in their portfolios to address any potential shortfall will vary. Generally, it will depend on personal factors such as income, expected expenses, health status, family situation, risk preference, etc.

Does spending volatility change?

Although spending levels were highly correlated to investable assets or household income, spending volatility was not. While average spending increased as investable assets increased (Figure 3), the average change in household spending (measured in absolute value) did not fluctuate based on investable assets (Figure 4). The same held true for household income levels.

This means that retirees with any level of investable assets or income can face a high level of spending volatility, and they need to plan and prepare accordingly.

Are spending increases temporary?

While an isolated one-time spending increase may be absorbed with minimal impact, spending upticks that persist for a longer period can cause greater concern and may warrant additional planning. Our analysis showed that a significant number of retirees experienced sizable, long-lasting spending increases (Figure 5). For instance, 15% of households that experienced spending increases of 25% or higher were still spending at the same elevated level (or even higher) after four years.

If substantially increased spending levels persist, retirees may need to reevaluate their investment portfolio and adjust their withdrawal strategy. For example, if members of a retired household annuitize part of their assets to cover ongoing expenses and invest the rest in long-term securities, they might need to liquidate those securities prematurely if a spending increase persists.

For some retirees, lifestyle changes could also be necessary to meet new spending needs and minimize the risk of depleting their nest egg.

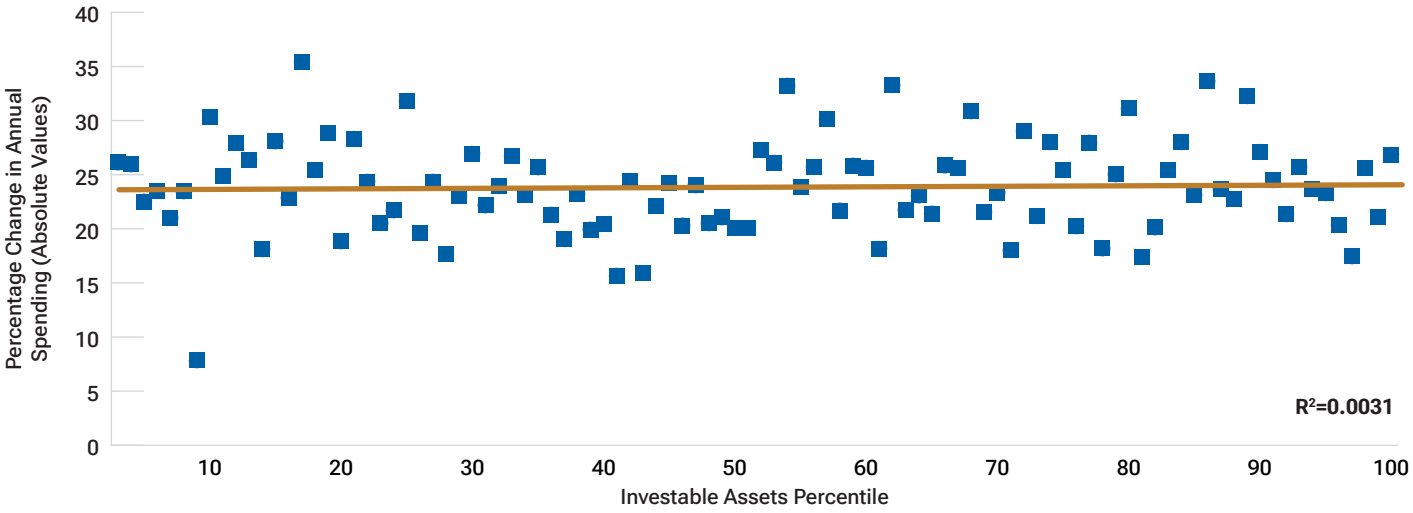
Causes of spending volatility

Generally, some level of spending volatility is expected in retirement and may even be desirable. For example, if the variability is due to discretionary spending decisions—such as taking a long-planned trip, making a dream purchase, or donating to a favorite charity—the spending increase would be

> “...a significant number of retirees experienced sizable, long-lasting spending increases.

No correlation between spending volatility and level of assets

(Fig. 4) Average absolute change in annual per capita spending across the investable assets distribution



Source: ISR, CAMS, 2005–2019. Data analysis by T. Rowe Price. Retired households between age 65 and 90.

less of a liquidity concern, although it could still have other important implications, as we will discuss later.

On the other hand, if volatility arises from unplanned increases in nondiscretionary or essential spending, then it could become a true liquidity event and a cause of concern.

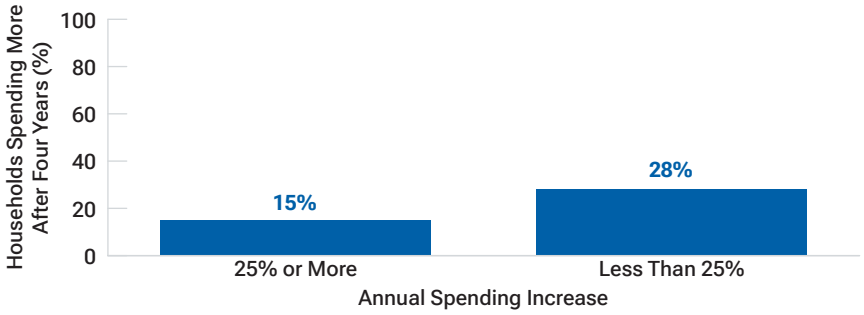
In our study, a larger share of the variation in total spending for retirees was due to changes in nondiscretionary or essential spending (Figure 6). Overall, categories such as home and home-related expenses accounted for the largest share of the variation, distantly followed by health-related expenses and transportation.

A more interesting story emerged as we examined spending fluctuations across different income groups. While for most retirees—those with annual incomes of less than $150,000—overall spending volatility was largely due to changes in nondiscretionary spending, for retirees with income levels above $150,000, the lion's share of volatility was due to changes in discretionary spending (Figure 7).

Increased spending on nondiscretionary expenses might require immediate cash. If retirees have insufficient liquid assets to address these needs, they may be forced to take untimely distributions from their longer-term investment portfolios. This, in turn, could lower their chances of enjoying a successful retirement.

Spending increases could persist

(Fig. 5) Probability that spending increases could last for more than four years



Source: ISR, CAMS, 2005–2019. Data analysis by T. Rowe Price.
Actual outcomes may differ materially.

As illustrated in Figure 7, the share of spending volatility attributable to changes in discretionary spending increased with income. This implies that the ability to generate higher incomes in retirement could translate into higher discretionary spending for these retirees—a desirable outcome.

Discretionary spending improves financial satisfaction

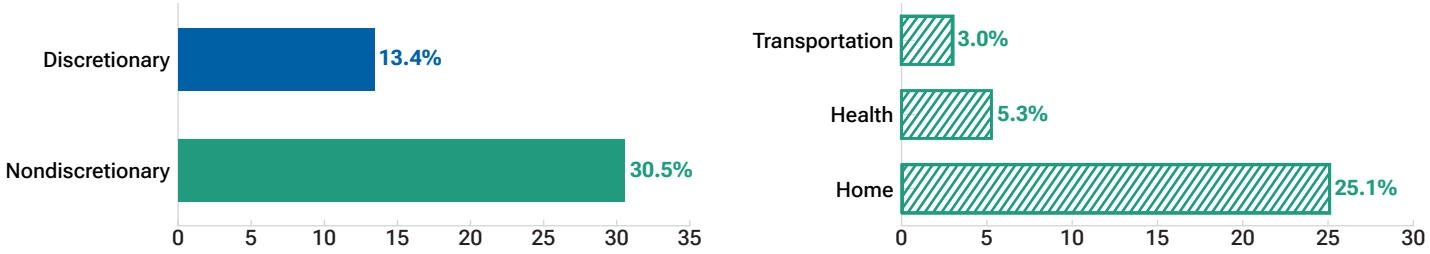
In 2019, CAMS asked respondents how their level of satisfaction with their financial situation had changed in the past six years. We estimated how retiree spending on discretionary and nondiscretionary items had changed between 2013 and 2019 and how those changes correlated with the reported change in financial satisfaction (Figure 8). We used simple linear probability to test the strength of this correlation.[5]

We found minimal correlation between nondiscretionary spending changes and financial satisfaction. Those who reported that they were "much less satisfied" and those who reported that they were "much more satisfied" both experienced a drop of 5%–7% in nondiscretionary spending between 2013 and 2019.

[5] See Appendix C for details.
Correlation measures how one individual group may be related to another. A perfect positive correlation means that the correlation coefficient is exactly 1. This implies that as one variable moves, either up or down, the other variable moves in lockstep, in the same direction. A perfect negative correlation means that two variables move in opposite directions, while a zero correlation implies no relationship at all.

Spending volatility was driven by nondiscretionary expenses

(Fig. 6) Variation in annual total spending explained by spending changes in different categories*



As of August 2021.
Source: ISR, CAMS, 2005–2019. Data analysis by T. Rowe Price.
* We used panel regressions to estimate the variation in total spending that can be explained by different components of spending (see Appendix B for details).

Spending Categories

Discretionary Spending
Trips and vacations; household furnishings and small equipment; charitable and political contributions; cash or gifts to family or friends; dry cleaning and laundry services; home cleaning services; supplies and services for gardening and yard; personal care products and services; tickets to movies, sporting events, and art performances; gym and other sports activities; hobbies and leisure equipment; dining out and takeout food.

Nondiscretionary (Essential) Spending
Mortgage, rent, utilities, homeowners' or renters' insurance, property taxes, home repairs and maintenance, housekeeping supplies, auto payments, auto insurance, auto maintenance, clothing and apparel, health insurance (including supplemental insurance), prescription and nonprescription medication, health care services, medical supplies, food and beverages (excluding dining out), and gasoline.

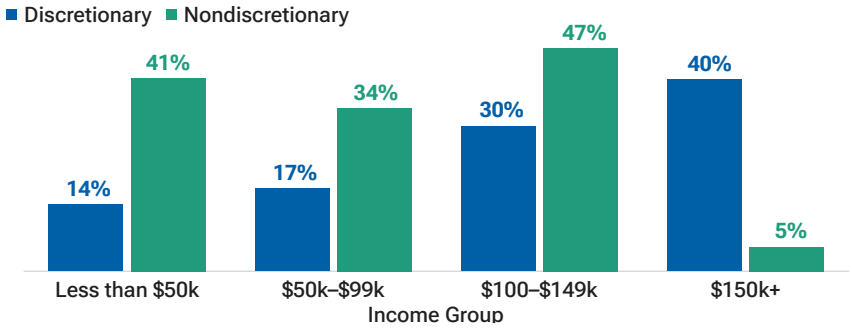
Home: Mortgage, rent, utilities, homeowners' or renters' insurance, property taxes, home repairs and maintenance, housekeeping supplies, household furnishings and small equipment, dry cleaning and laundry services, home cleaning services, and supplies and services for gardening and yard.

Health: Health insurance (including supplemental insurance), prescription and nonprescription medication, health care services, and medical supplies.

Transportation: Auto payments, auto insurance, auto maintenance, and gasoline.

Spending volatility due to discretionary expenses increased with income

(Fig. 7) Percentage of overall annual spending variation explained by variation in discretionary and nondiscretionary spending, by income group



Source: ISR, CAMS, 2005–2019. Data analysis by T. Rowe Price.

However, increased satisfaction was associated with higher discretionary spending. Those who were "much less satisfied" in 2019 reported a 32% drop in their discretionary spending, while those who were "much more satisfied" had a 7.4% increase. It can, therefore, be argued that increased discretionary spending is beneficial.

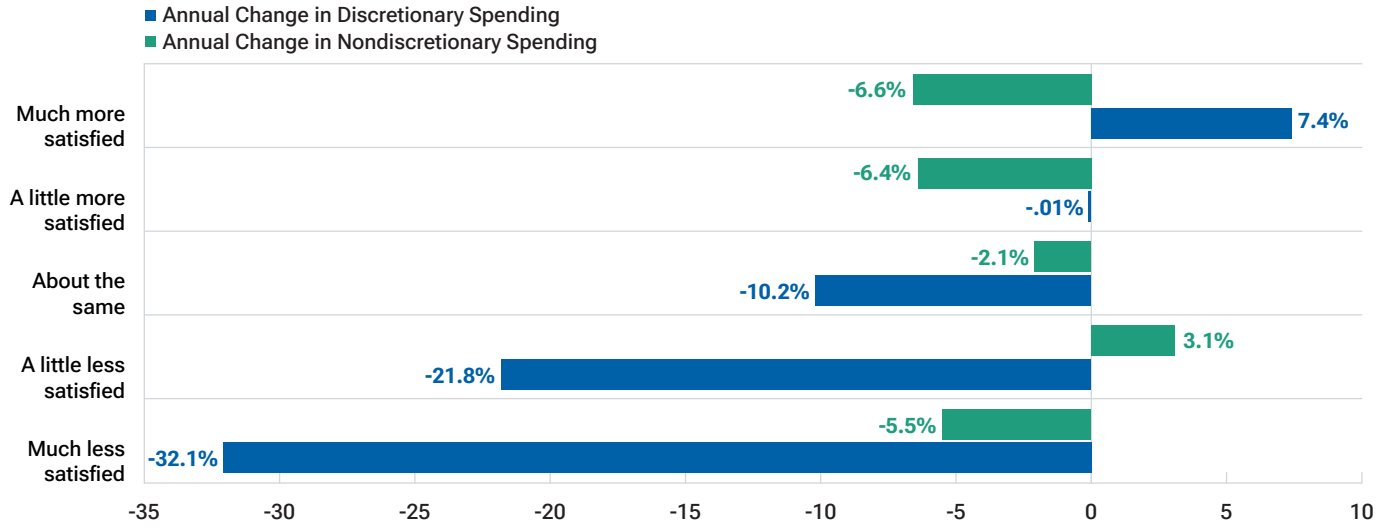
Spending volatility and retirement income solutions

Our findings show that retired households experienced variability in their spending, and many adjusted to these fluctuations. Therefore, non-guaranteed retirement income products that can accommodate some level of volatility might be well aligned with retirees' behavior if they fulfill other retirement income and savings goals.

Our research also shows that many retirees experience "liquidity events"—i.e., sudden large increases in spending—and need to have enough easily accessible liquid assets to meet these needs. In recent years, discussions about how to generate a steady cash flow from retirement savings have taken center stage, but in our view, not enough attention has been paid to the liquidity problem. To the extent that there are trade-offs involved in choosing between seeking a guaranteed income

Increase in discretionary spending was associated with higher financial satisfaction

(Fig. 8) Relationship between changes in financial satisfaction and discretionary and nondiscretionary spending



Source: ISR, CAMS, 2005–2019. Data analysis by T. Rowe Price.

Considerations for plan sponsors and advisors

Solutions should address liquidity and growth	Significant volatility in spending can occur at any point in retirement, and spending increases could persist. Sufficient allocations to liquid assets can help alleviate financial stress during periods of heightened spending. An allocation to growth investments which could provide higher returns might increase discretionary spending, which can, in turn, boost financial satisfaction for retirees. Strategies that can incorporate different levels of assets or income requirements, as well as personal risk tolerance, could help address individualized needs.
Retirement journey is not a set and forget	The accumulation phase of retirement savings has benefited greatly from auto features—including auto-enrollment, auto-escalation and the creation of qualified default investment alternatives, among others—but given the high probability of fluctuating expenses, most retirees may not have a one-dimensional goal of systematic withdrawals. The retirement journey spans multiple years and there could be surprises along the way. Retirees need strategies for both income generation and spending risk mitigation.
Housing is the largest contributor to spending volatility	Although health-related costs are typically the top concern when it comes to retirement expenses, data show that housing is both the largest contributor to spending volatility and, by far, the largest spending category before and throughout retirement.* Advisors can help retirees mitigate spending volatility in this category by suggesting strategies that minimize unexpected home expenses in retirement, including completing extensive repairs before retirement or right-sizing to a newer home.

*Consumer Expenditure Survey, Table 1300, 2021.

stream and preserving liquidity, we need a better understanding of liquidity needs.

Our findings draw attention to the personal nature of spending. Based on our research, while overall spending volatility didn't change across income levels, the *source* of that volatility tended to shift from nondiscretionary spending to discretionary spending as income increased. Because changes in discretionary spending were correlated with changes in financial satisfaction, it can be argued that volatility arising from increased discretionary spending is beneficial.

To this end, managing spending volatility could be a two-pronged issue. On one hand, we should try to mitigate the effects of volatility arising from nondiscretionary spending, but on the other hand, we should also aim to generate higher income and/or investment returns, which can help boost discretionary spending. This might boil down to personal asset allocation strategies that can accommodate different levels of assets (or income requirements) and varying risk tolerance.

Final thoughts

Employees typically have three basic financial objectives during their working careers: generating income for day-to-day expenses, maintaining liquidity (readily accessible savings for emergencies), and growing their assets. Those same objectives still apply in retirement. While replacing the income from employment is the primary goal, the other objectives—maintaining liquidity and growing assets—do not disappear.

Accordingly, the retirement industry should pay attention to these objectives as they transition retirees from the accumulation phase of retirement to a successful drawdown phase.

Appendix A

Change in spending across waves can be exaggerated in the presence of reporting or measurement error (the survey follows a group of households from 2005 to 2019 that were present in the 2005 CAMS, were at least 65 years old, and have been surveyed in at least three consecutive waves of the CAMS). The most recent wave was released in August 2021. We took several steps to mitigate the effect of measurement error in the analysis. First, we dropped all observations (household wave) that were in the top and bottom 1% of the spending distribution. Second, some spending categories were split in the early waves of the CAMS. The CAMS recorded 39 spending categories consistently between 2005 and 2019. So, we restrict our data between 2005 and 2019. Third, we restrict our sample to households that have been observed for at least three consecutive waves of the CAMS. Finally, we excluded observations with inter-wave change in total household spending exceeding 150% (in absolute terms).

Appendix B

To estimate how much of the variation in total spending is explained by different components of spending (as shown in Figures 6 and 7), we used panel regressions with household fixed effects. In particular, the reported R^2s are within the household variation across time explained by each component of spending. For each regression, the only explanatory variable used is the component of spending for which the R^2s are reported. In other words, no other covariates such as demographic controls were used as the primary interest is only on the percentage of overall variation explained by each component of spending rather than any point estimates.

Appendix C

To estimate the correlation between change in financial satisfaction and change in different types of spending, first we created a binary variable. Those who reported that they were either "a little less satisfied" or "much less satisfied" were grouped as "unsatisfied." Everyone else was put in the other (base) category. This binary variable was used as the outcome variable in a linear probability model to estimate the correlation between change in satisfaction and change in types of spending (discretionary and nondiscretionary). Additional demographic controls used were gender, race, age, change in marital status, and change in financial wealth between 2012 and 2018.

Actual outcomes may differ materially from estimates and probabilities provided in this Insights. Altering data inputs of the analysis shown in this Insights could yield different results.

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