



Decision Risk and the Desirability of Protected Income

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Introduction

For decades, retirement planning has been viewed primarily as a problem of managing market-related financial risks. Efforts to identify and mitigate the threats posed by share price volatility, inflation, interest rate variability, and sequence-of-returns risk have dominated both industry research and product development. In this framework, achieving retirement security is treated as an optimization exercise, one that can be addressed largely through better modeling and more sophisticated product design.

The retirement landscape, however, is evolving. Powerful demographic, economic, and technological trends are reshaping the character, definition, and scope of “retirement.” Longer life spans, advances in medical research, and the growth of AI hold out the promise of more fulfilling later years, but also introduce new sources of risk, ones that originate from outside the domain of market fluctuations, macroeconomic swings, or Federal Reserve actions.

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Exacerbated by declining pension income and growing uncertainties around Social Security, the rising costs of healthcare, long-term care, and caregiving constitute a new class of non-market, health-related, financial risks. Their emergence has elevated the significance of effective retirement planning, especially the importance of sound retirement decisions. What was once a relatively short and contained planning horizon has become a challenging, often decades-long journey into mostly uncharted waters. Over longer time periods, even small uncertainties compound, the range of possible future states widens, and the consequences of suboptimal decisions can be swift — and devastating.

Decision risk does not replace market risk but operates alongside it. In many cases, the two interact. A well-diversified portfolio can be undermined by panic selling during volatility, and a technically optimal withdrawal strategy may fail if it proves too complex to execute. But decision risk can also arise independently of market conditions. Poor judgment, caused by emotional volatility, personal biases, cognitive decline, or other behavioral factors, can expose older adults to significant financial losses unrelated to market performance. Decision risk can surface at almost any time and influence virtually every aspect of retirement planning.

This paper explores the threats to retirement security posed by suboptimal decision making, especially cognitive decline and other age-related behavioral changes that can affect decision quality and timing. It further examines the case for protected income solutions as a way to mitigate the risk associated with financial decision making later in life.

The Imperfect Nature of Financial Decision Making

Since the 1970s, behavioral economists such as Kahneman, Tversky, and Thaler have demonstrated that financial decisions are rarely made in the rational manner assumed in traditional microeconomic textbooks. Rather than carefully evaluating probabilities and optimizing outcomes, individuals frequently rely on heuristics, rules of thumb, and other cognitive shortcuts when navigating complex financial choices. While these strategies can simplify decision making, they also make individuals vulnerable to systematic biases and emotional influences.¹ A large body of research has documented predictable patterns of behavior — including framing effects, inertia, overconfidence, and loss aversion — that cause financial decisions to diverge from what classical economic models would predict.² Behavioral economics has effectively reframed financial decision making as a process shaped not only (or at all) by information and incentives, but by psychological factors and the structure of the choices that individuals face.³

An additional and increasingly important source of suboptimal financial decision making arises from age-related cognitive decline. Unlike behavioral biases, which influence how individuals interpret information and evaluate choices, cognitive decline impairs the ability to process financial information altogether. Age-related changes in memory, attention, and executive function can reduce an individual's capacity to understand financial concepts, evaluate tradeoffs and their potential consequences, or manage complex financial tasks.⁴ Because financial decision making relies heavily on these cognitive abilities, declining capacity can make individuals increasingly vulnerable to mistakes, poor investment decisions, and financial exploitation.

These risks are particularly important in the context of retirement planning. Financial decision-making responsibilities often increase late in life, precisely when cognitive capacity begins to deteriorate. In fact, the ability to manage finances is now recognized as one of the first skills to decline. Older adults need to oversee investment portfolios, monitor financial accounts, make withdrawal decisions, and protect themselves from fraud, often while coping with declining physical and cognitive health. In this sense, cognitive decline represents not merely another behavioral bias but a more fundamental threat to financial decision-making capacity itself.

Taken together, the behavioral economics literature and emerging research on cognitive decline suggest that financial outcomes depend not only on market performance or economic conditions, but also on the quality of the decisions individuals make. Behavioral biases and cognitive decline represent two

distinct sources of what might be described as *decision-making risk*, i.e., the risk that financial outcomes are adversely affected by limitations in human decision-making capacity. Recognizing decision-making risk as a meaningful determinant of retirement outcomes has important implications for financial planning strategies, particularly around retirement savings and income.

In short, this decision-making risk perspective shifts the focus of retirement planning from managing assets alone to managing the risks associated with (suboptimal) financial decisions.

Decision-Making and Retirement Security

The complex nature of retirement planning in the U.S., especially when compared to other developed nations, places a much higher premium on safe and efficacious decision making. Unlike countries where public institutions play a large role in providing retirement income and healthcare security, in the U.S., outside basic support from Social Security benefits, the responsibility to manage retirement planning and financing rests largely with individuals. Households must navigate a fragmented landscape of public and private programs, institutions, and products while coping with uncertain lifespans, inevitable health events and costs, complex estate plans, and the possibility of significant long-term care expenses.

The interaction of these financial, medical, and legal considerations creates a planning environment characterized by substantial risk, uncertainty, and complexity. In these situations, retirement security depends not only on market outcomes or portfolio performance, but also on the quality of the financial decisions individuals make over time. Because many of these decisions must be made late in life, retirement planning places a heavy burden on decision-making abilities that behavioral economics and cognitive decline research suggest are imperfect — and often deteriorating.

Cognitive Decline and Decision-Making Capacity

In previous generations, cognitive decline posed less of a threat to financial decision making simply because fewer people lived long enough to experience it. Today, advances in medical care mean that many individuals live decades beyond the age at which decline typically begins. An estimated 11 percent of adults over age 65 in the United States are living with Alzheimer's disease, the most common form of dementia, and an additional 3 percent suffer from related conditions such as vascular or frontotemporal dementia. In total, roughly 14 percent of adults over 65 have dementia.⁵

Many older adults also experience what clinicians refer to as mild cognitive impairment (MCI), a condition that involves measurable decline in cognitive capacity beyond normal aging but does not yet meet the clinical threshold for dementia. Approximately 15 percent of adults over 65 are estimated to have MCI. Taken together, these figures suggest that nearly 30 percent of adults over 65 may be experiencing some form of diminished cognitive capacity. Because the likelihood of both dementia and MCI⁶ increases with age, the prevalence of diminished decision-making capacity rises significantly among individuals in their late 70s and 80s.

Importantly, cognitive decline is not the only age-related factor that can impair financial decision making. Research also documents other kinds of behavioral changes that can compromise financial decision making. For example, studies have found that while general self-confidence declines with age, confidence in financial knowledge often does not decline at the same pace as cognitive ability, suggesting that overconfidence is a risk factor.⁷ Social causes may also play a role. Loneliness and social isolation have been linked to diminished decision quality, increased susceptibility to financial exploitation, and greater difficulty evaluating complex choices.^{8,9} Finally, emotional influences may affect financial behavior differently in older adults. Experimental evidence suggests that emotional states such as excitement or anger can increase the likelihood that older individuals (but not younger ones) will purchase misleading or fraudulent products, even when they express doubts about the credibility of the offer.¹⁰

Together, these findings suggest that age-related changes in both cognition and behavior may significantly increase the risk of suboptimal financial decision making later in life.

The Financial Consequences of Cognitive Decline

There is growing evidence that cognitive decline can impose significant and often under-recognized costs for many older adults in the U.S. Because financial management is one of the first skills to deteriorate, financial difficulties often emerge *several years before a formal dementia diagnosis*. Research conducted by the Federal Reserve Board finds that individuals who later develop dementia begin missing bill payments and experiencing other indicators of financial distress as much as six years prior to diagnosis.¹¹ Similarly, a study by the Federal Reserve Bank of New York finds that credit scores begin to deteriorate and payment delinquencies increase several years before clinical recognition of the disease.¹² Together, these findings suggest that many individuals remain responsible for making complex financial decisions during a lengthy period when their decision-making capacity is already deteriorating.

Importantly, these declines in financial decision-making capacity often begin well before the traditional age of retirement. A widely cited study examining errors in consumer credit decisions found that financial decision making follows an inverse U-shaped pattern across the life cycle, with performance peaking around age 53 and gradually declining thereafter.¹³ Other research finds similar patterns for financial knowledge and numeracy, including the ability to calculate percentages and perform basic financial calculations.^{14,15} These findings suggest that many individuals experience declining financial decision-making ability *well before age 65*, and often prior to the onset of clinically recognized cognitive impairment.

Cognitive decline can also increase a person's vulnerability to financial exploitation.¹⁶ Older adults are frequent targets of fraud, scams, and other forms of financial abuse, particularly when declining cognition makes it more difficult to evaluate complex offers or detect deception. One widely cited study by True Link Financial estimates that older Americans lose approximately \$36.5 billion annually to financial exploitation.¹⁷ The same research finds that roughly 37 percent of older adults experience some form of financial exploitation over a five-year period, indicating that the problem is both widespread and persistent.

The cumulative financial consequences of declining decision-making capacity can be substantial. Missed bill payments, credit card delinquencies, declining credit scores, payments to fraudulent individuals or organizations, impulsive spending, and poorly organized personal finances can gradually erode household wealth. Recent research using data from the Health and Retirement Study estimates that households managed by individuals who later develop dementia experience a decline in net worth of approximately \$124,000 over the six years preceding diagnosis, or roughly one quarter of total household assets.¹⁸

These losses are striking when compared with the market risks that typically dominate discussions around retirement security. Since 2000, the S&P 500 has declined by 25 percent or more only three times — following the dot-com crash, during the 2008 financial crisis, and during the COVID market collapse — and nine times since 1929, or roughly once per decade. In effect, households experiencing cognitive decline often face their own “once-in-a-decade” financial shock independent of movements in financial markets. Unlike market downturns, however, losses resulting from poor financial decisions, fraud, or financial disorganization are rarely recovered and may compound over time through lost investment opportunities.

In this sense, cognitive decline introduces a form of financial risk that operates independently of markets but can be equally damaging to retirement security.

Protected Income as Cognitive Insurance

The paradox of retirement planning is that individuals are often responsible for managing the largest pool of assets they will ever own and making some of the most consequential financial decisions of their lives precisely when their capacity to make sound financial decisions may be deteriorating.

As the evidence presented earlier suggests, cognitive decline can impair a wide range of financial behaviors, from routine tasks such as paying bills and monitoring accounts to more complex decisions involving investments, spending, and financial planning. One way to mitigate these risks is to reduce the number of consequential financial decisions that need to be made later in life. Almost any financial transaction, whether it's selling an asset, reallocating a portfolio, choosing an investment product, or just paying a bill, creates an opportunity for mistakes, impulsive actions, or financial exploitation. Simplifying financial accounts and placing as many household financial decisions as possible on "safe autopilot" can therefore play an important role in protecting retirement security.

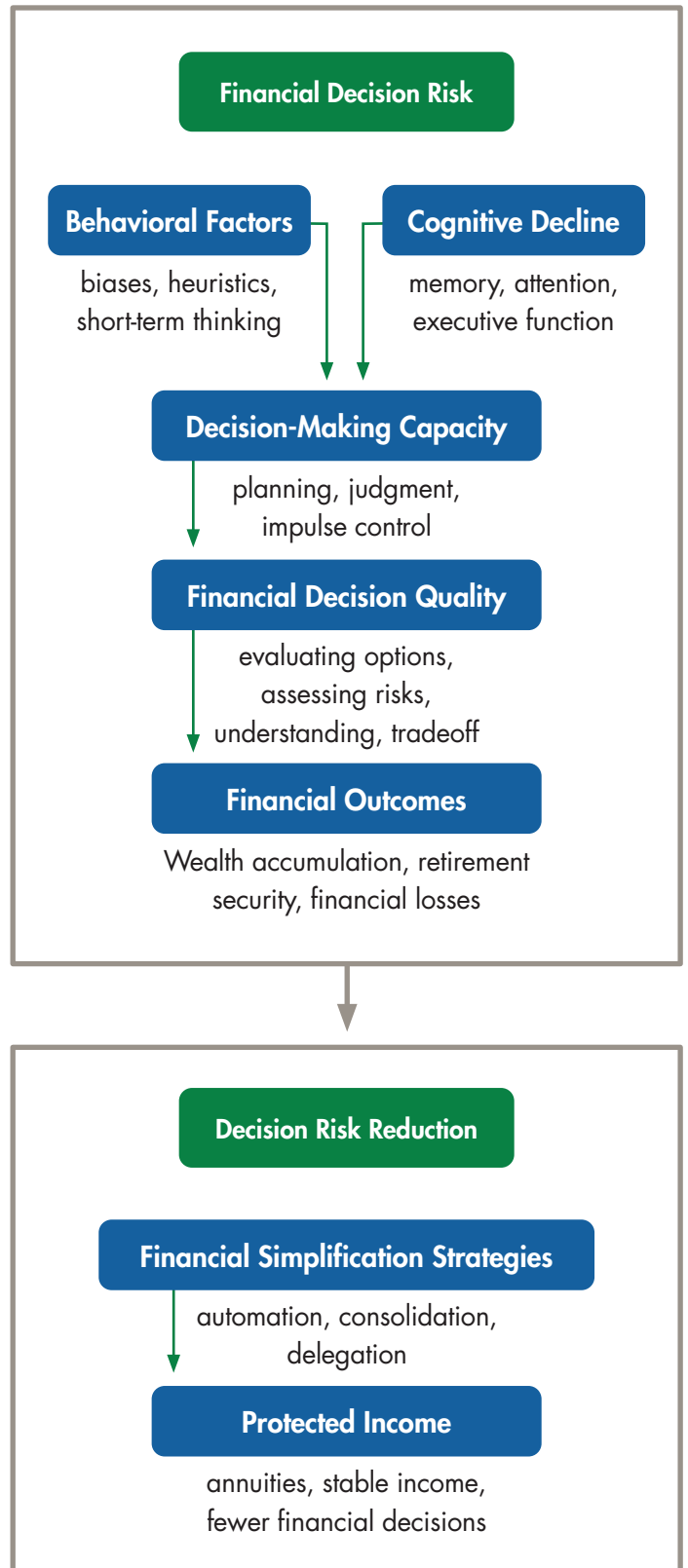
Reducing the number of consequential financial decisions required in later life is therefore best understood as a strategy for managing *decision-making risk*.

Protected income strategies such as annuities can provide a particularly effective form of this protection. By converting a portion of household wealth into a predictable stream of income, annuities reduce the need for ongoing investment, portfolio management, and withdrawal decisions throughout retirement. In effect, protected income products substitute a stable contractual income stream for a sequence of potentially risky financial decisions. This can help shield retirees and their families from the financial consequences of declining cognitive capacity while simultaneously addressing other major retirement risks, including longevity, market volatility, and unexpected health-related expenses.

This perspective is also consistent with insights from behavioral economics. A large body of research demonstrates that individuals often benefit from mechanisms that simplify complex decisions and reduce reliance on ongoing self-regulation. In this sense, annuities function as a form of financial commitment device, enabling individuals to pre-commit to a stable income strategy earlier in life while avoiding the need to repeatedly make difficult portfolio and withdrawal decisions later in retirement, precisely when decision-making abilities may be in decline.

Figure 1 — Decision Risk and the Role of Protected Income

Behavioral factors and cognitive decline can reduce decision-making capacity and financial decision quality, influencing retirement outcomes. Financial simplification strategies and protected income can help mitigate these risks.



Another way to understand the role of protected income is to view annuities as a form of *cognitive insurance*. Traditional discussions about annuities emphasize their ability to hedge longevity risk by ensuring that individuals do not outlive their financial resources. Yet annuities also protect against another increasingly important risk: declining financial decision-making capacity. By reducing the need for ongoing financial

management, annuities help insulate retirees from the possibility that deteriorating cognition, unwanted behavioral changes, or financial exploitation could undermine their financial security.

In this sense, annuities insure not only against the risk of living too long, but also against the risk that, at some point in retirement, individuals may no longer be able to safely and reliably manage their own financial decisions.

¹ Kahneman, D., & Tversky, A. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157), 1124–1131.

² Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux.

³ Thaler, R. H. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior & Organization*, 1(1), 39–60.

⁴ Weiner, A, Heye, C, Baer, L, Fava, M, and Sherman, J. (2017) "Cognitive Function as A Proxy of Financial Decision Making in Older Primary Care Adults," *Alzheimer's & Dementia*, Volume 13, Issue 7, Supplement, Pages P1558–P1560.

⁵ Alzheimer's Association. (2019). 2019 Alzheimer's disease facts and figures. Alzheimer's Association.

⁶ American Academy of Neurology. (2018). Practice guideline update summary: Mild cognitive impairment.

⁷ Shin, S., & Hanks, A. (2019). Effects of overconfidence on asset holdings among older adults. *Proceedings of the Academic Research Colloquium for Financial Planning and Related Disciplines*.

⁸ Stewart, C. C., Yu, L., Glover, C. M., Mottola, G., Bennett, D. A., Boyle, P. A., & Wilson, R. S. (2020). Loneliness interacts with cognition in relation to healthcare and financial decision making. *Journal of Aging and Health*, 32(7–8), 648–658.

⁹ Cacioppo, J. T., & Hawkey, L. C. (2009). Perceived social isolation and cognition. *Trends in Cognitive Sciences*, 13(10), 447–454.

¹⁰ Kircanski, K., Notthoff, N., Shadel, D., Mottola, G., Carstensen, L., & Gotlib, I. H. (2018). Emotional arousal may increase susceptibility to fraud in older and younger adults. *Psychology of Aging*, 33(2), 325–337.

¹¹ Hsu, J. W., et al. (2020). Dementia harms household finances years before clinical recognition. Federal Reserve Board, FEDS Notes.

¹² Gresenz, C. R., Nicholas, L. H., & others. (2021). The financial consequences of undiagnosed memory disorders. Federal Reserve Bank of New York Staff Report.

¹³ Agarwal, S., Driscoll, J. C., Gabaix, X., & Laibson, D. (2009). The age of reason: Financial decisions over the life cycle and implications for regulation. *Brookings Papers on Economic Activity*, 2009(2), 51–117.

¹⁴ Lusardi, A., & Mitchell, O. S. (2006). Financial literacy and planning: Implications for retirement wellbeing. DNB Working Paper No. 078.

¹⁵ Lusardi, A., & Mitchell, O. S. (2007). Financial literacy and retirement preparedness: Evidence and implications for financial education. *Business Economics*, 42, 35–44.

¹⁶ Boyle, P. A., Yu, L., Wilson, R. S., Gamble, K., Buchman, A. S., & Bennett, D. A. (2012). Poor decision making is a consequence of cognitive decline among older persons without Alzheimer's disease or mild cognitive impairment. *PLoS ONE*, 7(8).

¹⁷ DeLiema, M., Deevy, M., Lusardi, A., & Mitchell, O. S. (2017). The True Link report on elder financial abuse 2015.

¹⁸ Li, McGarry, Nicholas & Skinner (2026), *Dementia and Long-Run Trajectories in Household Finances*, NBER Working Paper 34659.

Author



Chris Heye, Ph.D., is the CEO and founder of Whealthcare Solutions Inc., and Whealthcare Planning LLC. Dr. Heye is a technology entrepreneur, writer, researcher, and speaker in fields residing at the intersection of physical, behavioral, and mental health and financial well-being. After confronting dementia in his own family and witnessing elder financial abuse in friends, he decided not enough was being done to protect older adults. He helped to design and manage a clinical study conducted at the Massachusetts General Hospital that investigated the behavioral and cognitive underpinnings of sound financial decision making. The results of the study serve as the foundation for the first-of-its-kind cloud-based application that enables adults and their families to more effectively identify, manage, and mitigate health- and longevity-related financial risks.

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Additional Information

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