

Investigating Factors that Affect Saving Behavior

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Abstract

The standard economic view of saving for retirement assumes that all individuals calculate how much they will earn over their lifetime, figure out how much they will need when they retire, and save enough to enjoy a comfortable retirement. This view of every individual as economically diligent is unrealistic. This study explores why individuals in the United States do not save enough and whether the concept of mental accounting and the issue of present bias play a factor in saving behavior in the United States. Through the analysis of consumer financial data and examination of case studies focused on saving behavior, this study seeks to narrow in on why saving for retirement is an issue in the United States from a behavioral economics perspective.

Introduction

Traditional economic theory proposes that first: all people are rational, second: individual choices coincide with expected utility theory or the idea that in any circumstance an individual will choose the act with the highest expected utility, and third: individuals will correctly update their opinions, beliefs, and choices based upon new information they receive. The theory assumes that every individual is economically conscientious and makes rational choices aimed at maximizing their economic well-being including saving for retirement. Behavioral economics, a field that combines the use of psychology with economic and financial modelling to understand why individuals make certain decisions and mistakes in decision making, turns away from this assumption that every individual is rational in their economic decision-making. My research builds off this uncertainty of traditional economic theory and the rational economic individual that Daniel Kahneman, Amos Tversky, and Richard Thaler developed and cultivated beginning in 1979. I want to investigate why do individuals not save enough? Why do individuals outweigh the value of money when spending it on immediate pleasures versus spending money on investments for future benefit and comfort?

Background

Addressing the issue of saving for retirement, we must first establish that it even is an issue. Looking specifically at saving in the United States in Richard Thaler's seminal book *Nudge: Improving Decisions About Health, Wealth, and Happiness*, he identifies that "in 2005 the personal savings rate for Americans was negative for the first time since 1932 and 1933 – the

Great Depression years.”¹ This means on average American households spent more than they earned and borrowed more than they saved. The personal savings rate equals the income left over after individuals spend money and pay taxes divided by total income.²

$$\text{Personal Savings Rate} = \frac{\text{Disposable Income} - \text{Personal Expenditures}}{\text{Disposable Income}}$$

Figure 1

In economic study, the personal savings rate represents the choice to forego some current consumption in favor of increased future consumption, so it represents a rate of time preference. Even the average for the cumulative personal savings rate for the United States over the last 20 years including 2005 has been at a low of approximately 6.61%.³ Furthermore, Annamaria Lusardi emphasizes “a large percentage of workers have not thought about retirement, even when retirement is only five to ten years away. Consistent with the evidence on lack of planning, half of the older workers know little about their pensions and the rules governing Social Security benefits.”⁴ This combination of a consistently low personal savings rate and inadequate financial literacy suggests that saving for retirement is an issue, and the traditional economic view of individuals is too unrealistic.

¹ Richard Thaler, *Nudge: Improving Decisions about Health, Wealth, and Happiness*, (Yale University Press, 2008), 103

² Figure 1

³ Bureau of Economic Analysis, Released November 24, 2021.

⁴ Annamaria Lusardi, “Household Saving Behavior: The Role of Financial Literacy, Information, and Financial Education Programs,” (National Bureau of Economic Research, 2008), 2

Included in the traditional economic theory of individuals is the standard economic view of saving for retirement. As defined by Thaler, Kahneman, and Tversky, this view of saving for retirement includes three distinct and central assumptions: “people are assumed to calculate how much they are going to earn over the rest of their lifetime, figure out how much they will need when they retire, and then save up just enough to enjoy a comfortable retirement without sacrificing too much while they are working.”⁵ Two main problems exist with these assumptions: first, it speculates that every individual can solve a complicated math problem with multiple factors in order to approximate how much to save. The second problem is the assumption that individuals will follow their plan and have the discipline to always carry out their plan.

Focusing in on the second problem with the standard economic view of saving for retirement, the problem reflects Thaler’s concept of mental accounting and the established problem of present bias within economics and psychology. Starting with mental accounting, Thaler defines it as “the system that households use to evaluate, regulate, and process their home budget. Almost all of us use mental accounts, even if we’re not aware that we’re doing so.”⁶ Money is not supposed to have labels or additional values, contexts, or considerations tacked on. Individuals value money differently when they receive money from varying sources and spend money on different items or expenses. One examples of this concept is how individuals prioritize their expenditures and divvy up their income. Individuals will section off their rent, tax, and other important bill expenditures out of their monthly income at the get go and never touch that money again because it is too important. Then they will turn to other necessary items like food,

⁵ Thaler, *Nudge: Improving Decisions about Health, Wealth, and Happiness*, 104

⁶ Nudge, *Nudge: Improving Decisions about Health, Wealth, and Happiness*, 50

hygiene products, clothes, and other items to satiate their immediate satisfaction. Lastly, they will most likely spend their remaining income on investments or save it for their retirement. This example shows that individuals value money differently in diverse contexts even when the money comes from the same source which violates the fungibility that money is based upon.

Next, present bias refers to the tendency of individuals to give strong weight to payoffs that are closer to the present time when considering trade-offs between two future moments. The standard economic view of saving for retirement “assumes that people have enough willpower to implement the relevant plan.”⁷ Present bias describes the impatience and desire for immediate gratification individuals have while making decisions. According to Ted O’Donoghue and Matthew Rabin “present bias is a model of discounting” and it “operates on the timing of utility”.⁸ Choices between saving and spending are driven entirely by maximizing the present discounted value of wealth. This attempt to maximize the present discounted value of wealth leads to a hyperbolic functional form for discounting. This model of discounting indicates that individuals will discount rewards that come later at a higher rate and discount immediate rewards at a lower rate. In other words, individuals place higher value on immediate rewards and gratification than rewards that come later in the future even if the future reward is of higher monetary, financial, or personal value. This valuing of present rewards versus future rewards occurs because “payoffs received now might be viewed as certain while payoffs to be received in the future might be viewed as uncertain, and payoffs to be received in the future might involve

⁷ Thaler, *Nudge: Improving Decisions about Health, Wealth, and Happiness*, 104

⁸ Ted O’Donoghue, “Present Bias: Lessons Learned and to Be Learned,” (*American Economic Review*, 2015), 273

higher transaction costs.”⁹ Hyperbolic discounting can result in poor decision-making because it incentivizes impulsivity and can make individuals blind to the benefits of long-term decision making like saving and investing which can include gains far greater than the gains of more immediate decisions. Establishing that saving for retirement is an issue in the United States and examining the hyperbolic discounting model of present bias and Thaler’s concept of mental accounting, this study seeks to answer the question: why do individuals in the United States not save enough for retirement? and whether mental accounting and present bias play a factor in saving behavior.

Methods

My research plan has two main components or stages: the first stage will include data analysis and deeper research into present bias modelling, and the second stage will include a case study in saving behavior. To prepare for my research, I need a firmer grasp on the most up to date models of present bias. This means I must engage in more research on present bias modelling and engage with my mentor more to aid in my statistical understanding of these complex models. My research into the modelling of present bias will primarily focus on essays and other publications in major economic journals. I believe this will give me the necessary foundation to continue with my research plan with statistical and behavioral analysis.

The first stage of my research will center around data analysis. I will investigate historical consumer financial data to undergo a statistical analysis of patterns in household spending and saving. I will utilize data in the Survey of Consumer Finances (SCF) from the Federal Reserve and in the Consumer Expenditure Surveys from the United States Bureau of

⁹ O’Donoghue, “Present Bias: Lessons Learned and to Be Learned,” 274

Labor Statistics. Using both datasets will allow for more accurate statistics on household spending and saving, and more accurate analysis of specific data items such as personal savings rate, average household savings, average personal savings, marginal and average propensity to consume, marginal and average propensity to save, and other statistics relevant to saving behavior in the United States. This data analysis will allow me to see how individuals and households save and provide a statistical foundation in my analysis of saving behaviors and practices in the United States.

The second part of my research will consist of examining a case study in saving behavior. I will most likely have to research two case studies about saving behavior in relation to mental accounting and present bias. This combination will allow me to observe whether the concept of mental accounting and the issue of present bias and hyperbolic discounting apply to saving behavior. The case studies will focus on individual and household saving and spending habits over certain periods of time to observe how organize and spend their income, and to discern any patterns in their consumption behaviors. This two-stage approach will allow me to investigate saving behavior from both a statistical and experimental approach.

Expected Results

My hypothesis or expected outcome for my research plan proposes that individuals do not save enough in the United States because of how they value money differently at different times and in different contexts due to mental accounting and present bias. The results of this study will only apply to individuals and households in the United States based on the data used. The results of the study may lead to more and different reasons for why individuals in the United States other than mental accounting and present bias and could lead to solutions and suggestions

toward economic policy and practices that will limit insufficient saving and help individuals and households spend and save more productively.

Conclusion

The standard economic view of saving for retirement assumes that individuals can calculate how much they will earn over their lifetime, determine the exact amount they will need to retire, and then have the discipline to save enough to enjoy a comfortable retirement without making any extensive sacrifices. These assumptions are problematic specifically the belief that individuals have the willpower and discipline to carry out their retirement plan without any deviations or obstacles. To examine saving behavior in the United States, this study will explore why these assumptions are problematic and whether Thaler's concept of mental accounting and present bias influence saving behavior. This investigation will lead to better understanding of the factors that affect saving behavior and how individuals and households save in the United States. With this understanding, economists and policymakers can better develop solutions and practices on how to avoid insufficient saving in the United States.

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Resources & Budget

<i>Week</i>	<i>Task</i>	<i>Resource Needed</i>	<i>Purpose for Resource</i>
1-2	Research into models of present bias and other statistical modelling	\$15/hr stipend (as per LMU's standard research assistant fee)	To compensate for time spent researching
3-9	-Consumer financial data analysis -Organization of data to better visualize relationships and changes over time	\$15/hr stipend	To compensate for time gathering data from the Federal Reserve and US Bureau of Labor Statistics, and organizing and analyzing the data
10-16	-Research case studies in saving behavior with relation to mental accounting and present bias -Looking over the case studies in relation to the data analyzed in weeks 3-9	\$15/hr stipend	To compensate for time researching and looking over the case studies
17-19	-Review all information gathered and write a paper on saving behavior in the United States connecting all the	\$15/hr stipend	To compensate for time reviewing the information and organizing it into a paper

	data and information gathered		
Total: 19 weeks		\$4,275 (assuming 15 hours of work each week)	