



# CARDINAL ADVISORS

## Guaranteed Income For Life: A License to Spend

Hans and Tom use the retirement income institutes research paper to discuss their new video entitled "Guaranteed Income For Life: A License to Spend".

**GUARANTEED INCOME FOR LIFE: A LICENSE TO SPEND**

- RESEARCH PAPER - DAVID BLANCHETT AND MICHAEL FINKE  
 - SHIFTING SOME ASSETS TO INCOME ANNUITIES - PSYCHOLOGICAL LICENSE TO SPEND MORE

	COUPLE BOTH AGE 65	SINGLE AGE 65
PRINCIPLE	\$500,000 @ 7.42%	\$500,000 @ 7.92%
MONTHLY	\$3,090	\$3,300
ANNUAL	\$37,080	\$39,600
STATUS	GUARANTEED FOR LIFE OF BOTH	UNUSED CASH BALANCE PAID TO BENEFICIARIES
AGE 85	\$741,600	\$792,000
AGE 90	\$927,000	\$990,000
AGE 95	\$1,112,400	\$1,188,000

- DELAYED SOCIAL SECURITY + 8% YEAR  
 - ANNUITIZING SOME OF YOUR SAVINGS  
 - SIGNIFICANT SAVINGS, UNDERSPEND THE MOST  
 - UNDERSPEND REASONS ① LEAVE INHERITANCE ② UNCERTAIN MEDICAL EXPENSES ③ UNKNOWN LIFE EXPECTANCY  
 - GENERAL DISLIKE OF SPENDING DOWN WEALTH  
 - UNDERSTANDING INCREASES WITH AGE  
 - ANNUITIZATION → LONGEVITY RISK + MARKET DOWNTURNS  
 - RETIREE SPENDING DOES NOT TRACK FULL INFLATION  
 - 60 GO YEARS, SLOW GO YEARS, NO GO YEARS

INFLATION?  
 LONG-TERM CARE?  
 LOW RETURNS?  
 LIFETIME COMMITMENT?

**S.S.**   
**MED**   
**LTC**   
**401K/IRA**

**INCOME**   
**ESTATE**   
**TAXES**

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## ABSTRACT

We explore how the composition of retirement wealth is related to retirement spending and find that **retirees who hold a higher percentage in annuitized income spend more than retirees with an equal amount of non-annuitized wealth.** This result is consistent with traditional economic theory that predicts risk-averse retirees who do not know how long they will live should spend less than retirees who hold an equal amount of annuitized wealth, and with behavioral framing preferences that may make retirees more comfortable spending from income than assets. Marginal estimates indicate that investment assets generate about half of the amount of additional spending as wealth held in guaranteed income, which means that **retirees could spend substantially more each year in retirement if they shift investment assets into guaranteed income wealth.**

The size of the effect suggests that the explanation for under-spending non-annuitized savings is likely both **a behavioral and a rational response to longevity risk.** A survey conducted to test behavioral preferences toward income finds that 59.4% of respondents would feel more comfortable spending on nonessential activities if given \$10,000 of additional income rather than \$140,000 of wealth.

# GUARANTEED INCOME: A LICENSE TO SPEND

DAVID BLANCHETT AND MICHAEL FINKE

## INTRODUCTION

In 2022, 11% of private industry employees in the United States participated in an employer pension and 49% participated in a defined contribution retirement savings plan (Zook, 2023). Workers participating in 401(k)s arrive at retirement with a nest egg of stocks and bonds. Prior studies find little evidence that retirees spend investments down over time in a manner that resembles life cycle theory. If retirees spend less when they contribute to an investment account rather than a pension, this can have a significant impact on retiree welfare and on aggregate spending among older consumers.

Deciding how much to spend each year in retirement from investments is complicated when both the length of retirement and returns on assets are not known. Unknown longevity presents a tradeoff in which a retiree can either spend generously and risk outliving savings, or spend conservatively and live a less enjoyable retirement. A retiree who prefers not to accept the risk of outliving savings will spend less.

An alternative to spending from investments is to transfer the risk of an unknown lifespan to an institution, such as a pension, the federal government, or an insurance company. A rational, risk-averse retiree who does not transfer longevity risk will spend less each year than if they had purchased a fairly-priced income annuity. Economic theory predicts that a retiree with a similar annuitized wealth will spend more than a retiree with an equal amount of non-annuitized savings. The lifestyle that retirees give up by failing to annuitize is referred to by economists as the “annuity puzzle.”

There may also be behavioral costs from failing to annuitize. Retirees who are behaviorally resistant to spending down savings may better achieve their lifestyle goals by increasing the share of their wealth allocated to annuitized income. This could take the form of delaying claiming Social Security retirement benefits, choosing a job with an employer pension, or purchasing an income annuity from an insurer. An annuity can not only

reduce the risk of an unknown lifespan, it can also allow retirees to spend their savings without the discomfort generated by seeing one's nest egg gradually get smaller.

Essentially, annuities give retirees a psychological license to spend their savings in retirement. Surveys reveal a clear preference among retirees to live off income and many don't feel comfortable spending down assets to fund a lifestyle. This is surprising since funding a lifestyle is presumably what motivates retirement saving to begin with, and few retirees indicate a desire to pass on significant wealth at death.

In this paper we analyze how the composition of wealth is related to spending in retirement using data from the Health and Retirement Study (HRS). We examine households with at least \$100,000 in savings and compare how much money they could be spending in retirement, based on existing guaranteed income sources and assuming financial assets are annuitized, versus how much they are actually spending. We conduct an additional survey to test whether behavioral preferences might influence spending from income versus wealth.

We find strong evidence that households holding a greater share of their wealth in guaranteed income spend more each year than retirees who hold more of their wealth in investments. A household with a generous pension and no savings will spend more than a retiree with enough savings to buy an annuity that provides the same income as the pension. By holding household wealth constant, the analyses show that households are spending more not because they are wealthier (since financial assets can be converted to guaranteed income through actions such as delayed claiming Social Security retirement benefits or purchasing an annuity), but rather it is the form of the wealth they hold that impacts spending in retirement.

Marginal estimates indicate that investment assets generate about half of the amount of additional spending as an equal amount of wealth held in guaranteed income. In other words, retirees spend twice as much each year in retirement if they hold guaranteed income wealth instead of investment wealth. Therefore, every \$1 of assets converted to guaranteed income could result in twice the equivalent spending compared to money left invested in a portfolio. The size of the effect suggests that the

explanation for under-spending non-annuitized savings is likely both a behavioral and a rational response to longevity risk.

A survey conducted to explore preference for spending out of income or wealth finds that 59.4% of respondents would feel more comfortable spending on nonessential activities such as going out to eat or taking a vacation if they had an additional \$10,000 of income rather than the equivalent cost of an income annuity (\$140,000).

These findings have important implications for financial advisors and retirees. Retirees who shift assets from savings to lifetime income can align spending with a retiree's lifestyle goal and provide a retiree with the psychological benefit of being given "license to spend" accumulated savings. The ability to increase spending is an important reason to consider shifting wealth to guaranteed income either through delayed Social Security claiming or by partially annuitizing a portion of retiree savings.

## FUNDING RETIREMENT

Workers in the defined contribution era often retire with a lump sum of assets. These assets can be used either to fund spending or create a legacy. Deciding how much to spend each year is difficult because retirees generally do not know how long they will live or the future returns on their investments. Unknown longevity presents a tradeoff in which a retiree can either spend generously and risk either outliving savings (or significantly reducing spending later in life), or spending conservatively to minimize the risk of a shortfall.

A retiree's risk tolerance determines their willingness to accept shortfall risk (Milevsky and Huang, 2011, Finke, Pfau and Williams, 2012). A risk-averse retiree will prefer to avoid a possible drop in future spending, and will spend less to ensure the longevity of their nest egg. A risk tolerant retiree will accept the possibility of a shortfall and spend more in early retirement.

Consider a risk-averse retired opposite-sex couple with a relative risk aversion (RRA) of 8, and a risk tolerant retiree with a RRA of 4. The retiree holds a portfolio of bonds to fund safe spending in retirement with an expected



return of 4%.<sup>1</sup> Longevity expectations are based on a Society of Actuaries annuity mortality table modified for improvement to 2024. The retiree must select a spending level from their bond portfolio that will maximize their expected remaining lifetime utility. What impact will uncertain longevity have on optimal spending?

A risk-averse retired couple can maximize expected well-being in retirement by withdrawing 3.8% from their bond portfolio each year, and a risk-tolerant retiree will maximize expected utility by withdrawing 4.9% from the portfolio. By accepting the idiosyncratic risk of funding annual spending from safe savings using safe investments, a retiree will moderate spending to avoid the risk of running out of savings. Had the couple annuitized their savings at retirement, the average annual payout from the top five quotes available on CANNEX for a single premium immediate annuity for a joint couple, age 65 with a cash refund provision is 6.3%, at the time this paper was written. By transferring longevity risk to an institution, for example a pension or an insurance company, they could spend between 29% (risk-tolerant) and 66% (risk-averse) more each year.

Spending less is the rational response of a risk-averse retiree to accepting the possibility of outliving savings. The effect is analogous to an executive who must maintain a large position in a single stock. Their expected welfare is lower than an investor who can hold a well-diversified portfolio because the executive faces greater portfolio volatility with no increase in expected return. Likewise, the transfer of longevity risk to an institution allows the retiree to, on average, live better by spending more each year than a retiree who fails to transfer this risk (Mitchell, Poterba, Warshawsky and Brown, 1999). The annuitized retiree, whether through an income annuity or pension, has the same expected lifetime wealth (with an actuarially fair annuity) as a non-annuitized retiree but a higher expected welfare from spending more while alive (and avoiding the possibility of either a higher (or lower) than optimal bequest).

Prior research suggests that defined contribution retirees are generally challenged with the concept of spending down assets. For example, only 34% of 65–74

year-old households spent more than their income in 2017 (Ebrahimi, 2019), and this percentage has been declining since 2011. The 2020 EBRI Retirement Confidence survey finds that only 1 in 20 retirees are strategically spending down their assets, and 2 in 3 say they are preserving assets in order to fund later-life expenses (only 30% want to leave an inheritance). Failing to spend down savings by living only off the income produced by savings may be seen as an extreme response to longevity risk among loss-averse retirees who feel an emotional resistance to seeing their nest egg shrink (despite saving the nest egg for the purpose of funding a lifestyle).

Addoum, Delikouras and Korniotis (2019) propose a model where individuals are inclined to view income and assets separately and are more likely to increase (decrease) spending when income rises (falls) rather than drawing from investment assets to smooth spending over time. The decision to turn savings into income, either by saving in an employer pension or by purchasing an income annuity, will give retirees a license to spend savings they might otherwise be tempted to preserve despite only a modest desire to leave a bequest. In this research, we explore this theory.

## RETIREE SPENDING

Many retirees spend less from their wealth than economic theory would predict, and retirees with significant savings underspend the most. For example, Browning et al (2016) find a “retirement consumption gap” that ranges from 8% to over 50% depending on household wealth levels, and that the effect persists even after considering spending risks and bequests. De Nardi, French, and Jones (2016) note that retired U.S. households, especially those with high income, decumulate their net worth at a slower rate than that implied by a basic life-cycle model in which the time of death is known. Poterba, Venti, and Wise (2011) explore the “potential additional annuity income” that households could purchase given their holdings of non-annuitized financial assets at the start of retirement, and find that 47% of households between the ages of 65 and 69 in 2008 could increase their life-contingent income by more than \$5,000 per

1. 20-year Treasury Bond yields on January 11, 2024 were 4.32%. Utility calculations are conducted by holding withdrawal rate and bond returns constant and maximizing expected retirement utility with stochastic mortality risk.

year. They note the effect is especially pronounced at the upper end of the wealth distribution.

Banerjee (2018) notes that while most retirees do spend down their assets in the first 18 years following retirement, about one-third of all sampled retirees increased their assets over that period. While it is not necessarily clear why some households seem averse to accessing savings to fund consumption, the Society of Actuaries (2020) interviewed retirees and noted that respondents wanted to maintain or increase asset levels, and this was to be accomplished primarily through cuts in spending.

There are a variety of potential reasons to explain why some retirees under-consume, such as the desire to leave a bequest, uncertain medical expenses (especially late in retirement), and uncertain life expectancy. However, research finds a consumption gap persists even after controlling for these effects. For example, only 25% of retirees are noted to have an explicit bequest motive (Browning 2018), and medical expenses are not large enough to justify preserving such a large percentage of assets (Nordman et al. 2016). Spending far less than is optimal in order to self-insure against the tail risk associated with medical costs or advanced age is clearly suboptimal when products exist to pool these risks.

Most research on the benefits of annuities is based on the economic efficiency of pooling longevity risk. There may be additional behavioral benefits from increasing a retiree's share of wealth allocated to guaranteed income.

One explanation for lower than optimal spending is the general dislike of spending down wealth during retirement. For example, while research commonly assumes retirees will spend down savings in retirement, research from EBRI (2020) suggests only 21% of pre-retirees and 18% of retirees plan to spend down financial assets in retirement, while 33% of pre-retirees and 32% of retirees plan to maintain assets by only spending earnings, and 22% of pre-retirees and 25% of retirees actually plan to grow financial assets.

Retirees who are behaviorally resistant to spending down savings may better achieve their lifestyle goals by increasing the share of wealth allocated to annuitized income. This could take the form of delaying claiming Social Security retirement benefits, choosing a job with an employer pension or purchasing an income annuity. Annuities can both reduce the risk of an unknown

lifespan as well as allow retirees to spend their savings without the discomfort generated by seeing one's nest egg get smaller.

Despite decades of research on the potential benefits of income annuities, few retirees buy financial products that provide a lifetime income guarantee. The widespread failure to annuitize, despite clear theoretical benefits, is likely a result of behavioral barriers caused by framing wealth separately from income (Benartzi, Previtro and Thaler, 2011).

## METHODS

In order to estimate whether wealth is more likely to be consumed when it is held in the form of lifetime income, this research evaluates the differences in retiree spending based on the composition of the potential assets available to fund retirement, either savings (i.e., an IRA) or guaranteed income. The potential income that could be generated from savings is estimated using an annuity pricing model. We estimate spending levels for households based on the respective composition of assets to evaluate whether households with more guaranteed income spend significantly more than those with more savings even when the economic value of the sources is equivalent.

The analysis is conducted using data from the Health and Retirement Study (HRS). The HRS is a longitudinal household survey conducted by the Institute for Social Research at the University of Michigan that surveys a representative sample of approximately 20,000 people in America over the age of 50. It is supported by the National Institute on Aging and the Social Security Administration and has been administered on a biennial basis since 1992. This analysis uses income, assets, and demographic data specifically from the RAND HRS Longitudinal File and spending (i.e., consumption) from the RAND Consumption and Activities Mail Survey (CAMS) Spending Data. The RAND HRS Longitudinal File is a user-friendly version of a subset of the HRS, and the RAND CAMS is a user-friendly version of Part B of the CAMS survey.

The analysis includes both total spending and consumption spending values for completeness purposes. Household consumption is estimated by RAND and incorpo-

rates the fact certain goods may be purchased in one period (e.g., consumer durables such as an automobile and housing) but the item provides utility for more than one period. In the file RAND differentiates spending categories for those that contain a savings component (e.g., care payments and mortgage payments) and adjusts total spending to approximate for the savings component within those categories, based on the estimated usage. The analysis uses waves 5-13 of the respective surveys covering the years 2001 through 2015.

The assumed retirement year is the closest survey year to the respondent's retirement age, if household is a couple (i.e., based on the age of the second member to retire). Therefore, while the first wave used for each household is called "retirement" it may be slightly before or after the household retires since data is collected every other year, especially for households with members who retire in different years.

A number of filters are applied to the households included the analysis. First, a household must be coded as becoming retired during the waves reviewed. If the household is a couple, both members must be coded as retiring during the available waves and both must retire within three years. Spending must be greater than \$25,000 at retirement and total assets must be at least \$100,000. Households are not considered until they have claimed Social Security (or have both claimed for a couple). Guaranteed income levels cannot change by more than 50% across any of the waves. A total of 725 households met the required filters to be included in this analysis.

In order to examine whether observed spending differences between annuity and investment wealth can be attributed to behavioral preferences, we conduct a survey of 2,051 respondents using a panel selected to be nationally representative of adults over the age of 18. Responds are asked "would you feel more comfortable spending on nonessential activities such as going on vacation or eating dinner with friends if you received an additional \$10,000 (per year) of income for life (for example through a pension) or if you had an additional \$140,000 of savings." The \$140,000 of savings represent-

ed the cost of a single premium immediate annuity with a \$10,000 payout for a 65-year-old woman at the time of the survey in October 2023. Respondents could choose "I would feel more comfortable spending with \$10,000 of lifetime income" or "I would feel more comfortable spending with \$140,000 of additional savings."

## TOTAL SPENDABLE INCOME

The focus of the analysis is "total spendable income," which is estimated by adding total existing household guaranteed income to an estimate of what could be spent from the household's financial assets. In theory, we could convert guaranteed income into an asset value, but this is perhaps more complex (and less intuitive) because detailed information on the payout structure of the various guaranteed income sources (e.g., joint-and-survivor benefits, cost of living adjustments, etc.) are not necessarily realistic. While it is relatively easy to convert existing savings to income, converting a household's guaranteed income into an asset value can be less precise.

Spendable income from financial assets is estimated assuming the monies that are converted to a life only annuity, where the payout is determined based on the age of the respective household members, survey year, and mortality rates for the respective survey year. Spendable income is constrained so that it is between 25% and 200% for households.

Interest rates for estimating payout rates are based on the Moody's Seasoned Aaa Corporate Bond Yields<sup>2</sup> for the respective year. Mortality rates are based off the Society of Actuaries 2000 Basic Annuity mortality table with a 1% assumed annual improvement rate to update the table to assumed HRS survey year. The methodology corresponds relatively to actual historical income annuity quotes provided by CANNEX.

The annuity payouts assume a 2% annual compound cost of living adjustment (COLA). While research commonly assumes the retirement need increases annually by inflation, **there is growing evidence that retiree spending does not increase annually by the full inflation**

2. <https://fred.stlouisfed.org/series/DAAA>



**EXHIBIT 1.** *Guaranteed Income as a Percentage of Total Spendable Income*

level (Blanchett 2014 and others). Retirees who have Social Security income are already receiving an income source that rises with inflation. However, we include this assumption to provide a conservative estimate of pricing, including the COLA reduces the assumed spendable income from savings.

Payout rates estimated using this approach are relatively generous compared to historical estimates of safe initial withdrawal rates from a portfolio. For example, a male/female couple both age 65 retiring in 2005 would have a payout rate of 5.16% using this model. The payout is higher than practices such as the 4% rule given the risk pooling structure of the annuity.

The percentage of total guaranteed income among retirees is shown in Exhibit 1 and sorted by total spendable income levels. Guaranteed income represents 56% of wealth for the median household in our dataset and the average among retirees is 58%. There is less variation in the share of wealth held in guaranteed income among lower- and moderate-income households, mainly because most households hold a similar amount of annuitized wealth in the form of Social Security. Nonetheless, more than 25% of households with greater than \$75,000 of spendable income hold at least 70% of their wealth in guaranteed income.

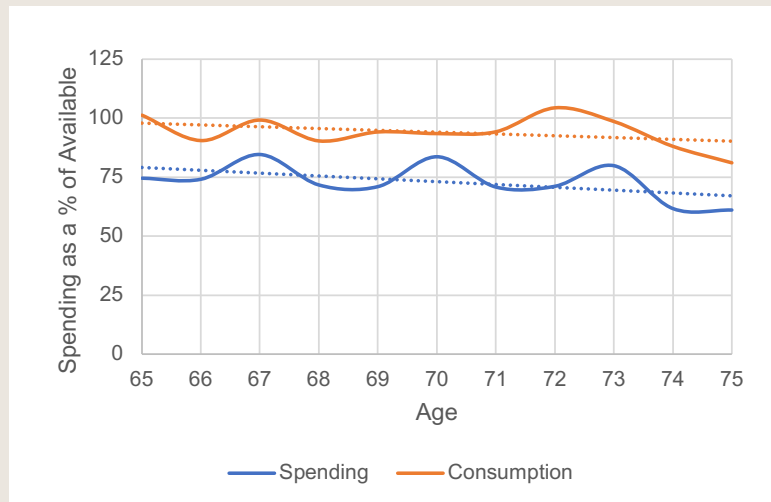
## SPENDING LEVELS AND WEALTH DECOMPOSITION

To better understand how holding greater wealth in the form of guaranteed income impacts spending, we explore how household spending varies across household asset composition types. First, we explore whether households are spending at levels consistent with what they could optimally consume from available asset without a bequest motive.

The percentage of spending as a proportion of the level of spending that could be maintained from retirement wealth is shown in Exhibit 2. The analysis focuses on retirees between the ages 65 to 75 since the number of respondents is at least 30 for each age category. As a reminder, in the RAND HRS spending is effectively an unadjusted figure of household spending while consumption adjusts for the savings component implied when spending money on certain durable items like cars and homes.

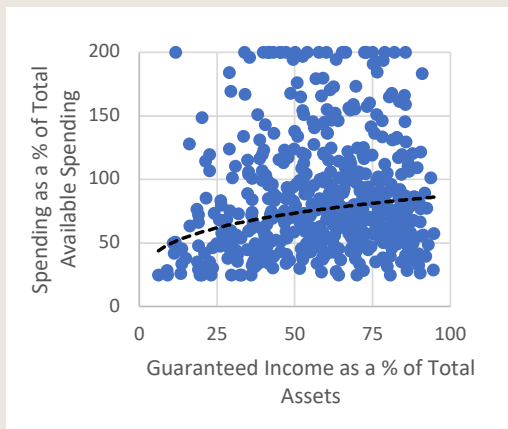
Retirees are consistently spending about 75% of what they could spend from available assets, and under-spending increases with age. These results are consistent with past research on this topic.



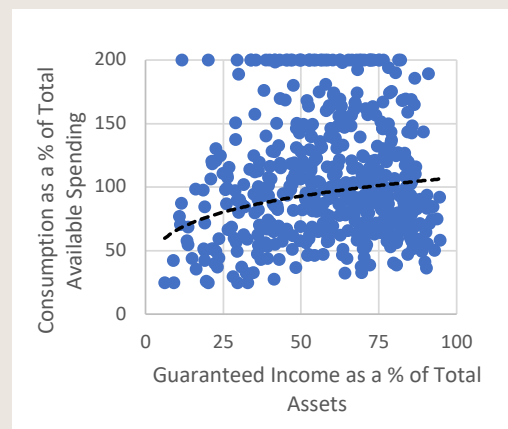


**EXHIBIT 2.** Median Spending as a % of Spendable Income, by Age

**PANEL A: SPENDING**



**PANEL B: CONSUMPTION**



**EXHIBIT 3.** Spending as a % of Spendable Income

Variation in spending and consumption as a percentage of spendable income is presented in Exhibit 3. Since spending is often volatile (retirees may go on an extended vacation or buy a classic car one year and stay home in another), there is a large amount of noise in observed spending. However, as the percentage of wealth held in guaranteed income increases retirees spend more on average.

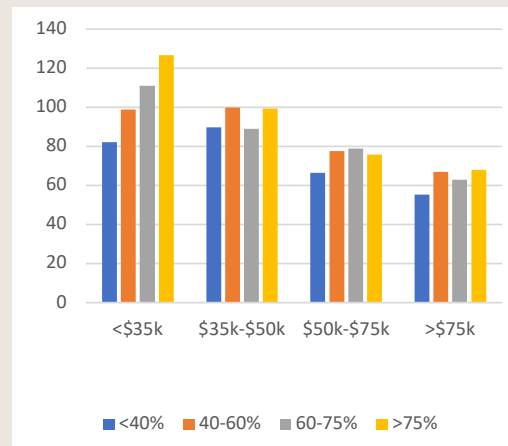
Exhibit 4 shows how spending as a percentage of spendable income changes by spendable income level. Most households fall in the less than \$35,000 spendable income category, and among these retirees there is a clear positive relationship between the percentage of guaranteed income and spending. A higher allocation to guaranteed income wealth results in higher spending. The relations are less consistent among households with



**PANEL A: SPENDING**

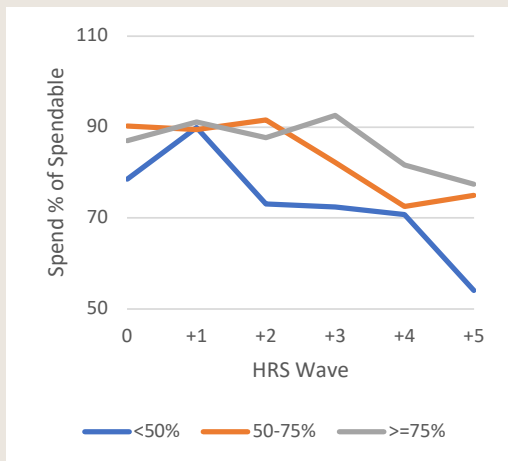


**PANEL B: CONSUMPTION**

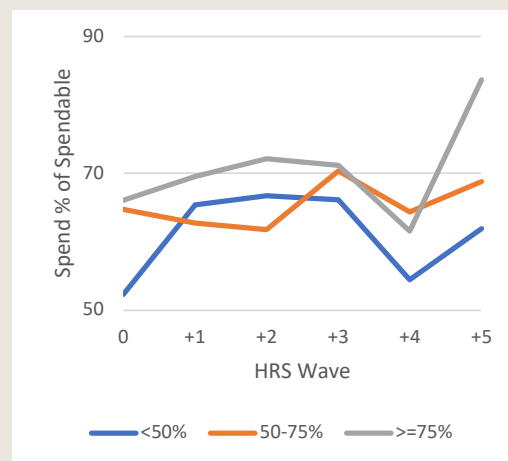


**EXHIBIT 4.** Median Spending as a % of Spendable Income, by % of Wealth Held in Guaranteed Income and Spendable Income Level

**PANEL A: SPENDABLE INCOME <\$50K**



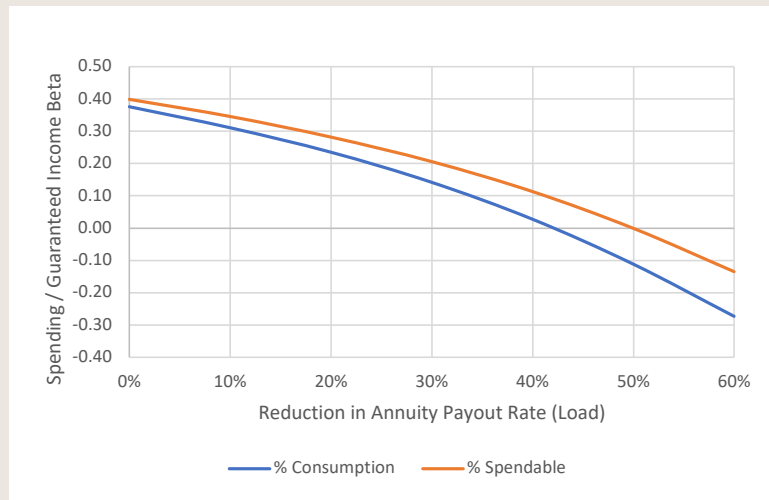
**PANEL B: SPENDABLE INCOME >=\$50K**



**EXHIBIT 5.** Spending Over Future Waves

spendable income between \$35,000 and \$75,000, but those with the lowest allocation of wealth to guaranteed income consistently spend the least within each group. Among households with spendable income greater than \$75,000, there is again a consistent monotonic increase in spending among retirees with a higher allocation to guaranteed income.

We investigate whether allocation to guaranteed income is associated with the change in spending over future waves of the HRS. Exhibit 5 shows how median spending evolves for two different spendable income levels (above and below \$50k) for three different guaranteed income levels. Among retirees with spendable income below \$50,000, those who hold less than 40%



**EXHIBIT 6.** *Annuity Payout Reductions Required to Equalize Spending*

their wealth consistently spend less than retirees with a higher allocation of wealth in the form of guaranteed income. Among those with spendable income above \$50,000, the effect is similar but slightly less pronounced among retirees with spendable income above \$50,000. However, those with the highest allocation to guaranteed income consistently spend more than retirees with a lower guaranteed income allocation.

### EQUIVALENT SPENDING LEVELS

The descriptive analysis affirms the hypothesis that households are not spending financial assets at the same rate they are spending guaranteed income since spending declines more sharply for households that have more of the spendable income in financial assets.

Since those with non-annuitized wealth spend less, how much more spending could be generated from a portfolio that includes a higher allocation to guaranteed income? If a retiree shifted non-annuitized wealth into an annuity, how much more would they be inclined to spend? To test this, we conduct an additional analysis.

For reference purposes the initial slope is .4, where the dependent variable is spending as a percentage of total spendable income and independent variable is the percentage of total income that is in guaranteed in-

come. In other words, the base relation suggests that households with guaranteed income increase spending by .4 for each additional percentage increase in guaranteed income.

All households in this analysis have some level of guaranteed income, though, and what we are interested in is the marginal impact of annuitizing financial assets on spending. To test this we determine how much annuity payout rates would need to change (in the annuity pricing model) to eliminate the relation between household spending and the level of household income in guaranteed income. In other words, we're determining the required reduction in annuity rates so that guaranteed income is no longer related to household spending levels. We test loads ranging from 0% to 60%, and the results of the analysis are included in Exhibit 6.

Annuity payout rates would need to be reduced significantly to result in the same spending levels as investment assets. Marginal estimates suggest that investment assets generate about half of the amount of additional spending as an equal amount of wealth held in guaranteed income. Retirees will spend twice as much each year in retirement if they shift investment assets into guaranteed income wealth.

For reference purposes, the average assumed annuity payout rate is 7.43% across households in the analysis.

	<b>Spend more from income</b>	<b>Spend more from savings</b>
Full sample	59.4%	40.6%
Retirement savings <\$100,000	61.0%	39.0%
Retirement savings \$100k to \$499,999	55.1%	44.9%
Retirement savings \$500,000 or more	62.0%	38.0%

**SURVEY RESULTS**

The payout rate reflects both the prevailing yield at the time of the HRS survey wave and the household composition (i.e., single versus married).

The results suggest annuity payouts would need to be reduced by approximately 50% to eliminate the difference in spending between non-annuitized and annuitized assets. This would imply a spending rate of approximately 3.7% from assets. This is not too far from the income that could be generated from a portfolio during the period and is reasonably similar to the often-noted “4% Rule” (see Bengen 1994 for some history).

**SURVEY RESULTS**

As discussed previously, we conducted a survey and, among 2,051 survey participants, 59.4% indicated that they would feel more comfortable spending on nonessential activities such as going on vacation or eating dinner with friends in retirement if they received an additional \$10,000 of income for life than if they had an additional \$140,000 of retirement savings (40.6%). The wealth amount represented the average cost of \$10,000 of annuitized income at retirement.

The preference for spending from additional income versus an equivalent amount of lifetime wealth was greater among participants in lower and higher retirement wealth categories.

These results are consistent with the hypothesis that the unwillingness to spend from non-annuitized assets may be greater than the rational response to an acceptance of longevity risk. Behavioral resistance to spend-

ing down savings may be causing additional significant under-spending among retirees. Shifting wealth to annuitized income can increase spending both as a rational response to reduced risk of outliving savings and by taking away the behavioral resistance to spending down a portfolio.

**CONCLUSIONS**

The sharp decrease in employer pensions will reduce the percentage of wealth held in guaranteed income among retirees. Prior research finds that retirees don’t spend nearly as much as they could from their investments, and surveys of retirees suggest that many retirees don’t like the idea of seeing their nest egg shrink even if it leads to a reduction in desired lifestyle. Under-spending will result in a loss of welfare if retirees don’t have a strong desire to pass on savings.

Economic theory provides both rational and behavioral explanations for under-spending among retirees with high non-annuitized wealth. Rational risk-averse retirees will spend less because they don’t know how long they will live and face the risk of outliving savings. Retirees may also exhibit behavioral preference that make them far more comfortable spending from income than they are from spending assets. Both rational and behavioral factors may contribute to lower spending among retirees who must fund a lifestyle with less guaranteed income.

We explore how the composition of retirement assets is related to retirement spending and find that retirees who hold a higher percentage of their wealth in guaranteed

income spend more than retirees whose wealth consists primarily of non-annuitized assets. Survey data confirm that most respondents would spend more on nonessential expenses from a lifetime income than from an equivalent amount of non-annuitized wealth. Empirical results suggest that by shifting non-annuitized wealth into annuitized wealth, retirees could spend twice as much each year per dollar of savings.

Our results are consistent with previous studies which find that retirees aren't spending as much as they potentially could. These results suggest that even though guaranteed income appears to close part of the gap, a gap still persists. Additional research should explore some of the explanations for conserving wealth in retirement, including perceived health risks and the impact of spending habits.

The low rate of spending among retirees who hold wealth in investments rather than guaranteed income suggests that advisors can significantly improve retiree welfare by offering clients the opportunity to increase annuitized wealth through delayed Social Security claiming or through private income annuities. A conflict of interest may arise if clients with behavioral preferences are inclined to conserve wealth in retirement if they fail to annuitize, resulting in greater investable assets over time managed by an advisor at the expense of lower satisfaction and higher unintended bequests for the client.

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