



ELSEVIER

Contents lists available at ScienceDirect

Journal of Economic Behavior & Organization

journal homepage: www.elsevier.com/locate/jebo

Time inconsistent preferences and the annuitization decision

Philipp Schreiber^{a,*}, Martin Weber^{a,b}^a University of Mannheim, Department of Banking and Finance, L5 2, 68161 Mannheim, Germany^b CEPR, London, United Kingdom

ARTICLE INFO

Article history:

Received 21 April 2015

Received in revised form 29 March 2016

Accepted 13 June 2016

Available online 21 June 2016

JEL classification:

D14

D91

G02

H55

J14

J26

Keywords:

Annuity puzzle

Longevity risk

Time preferences

ABSTRACT

When entering retirement, many people face the decision of whether they would like to receive their defined contribution account balance as a lump sum distribution or to annuitize the amount. The fact that people tend to choose a lump sum distribution even if economic reasons suggest otherwise is called the “annuity puzzle.” The results of a large online survey show that people behave in a time inconsistent manner: older people have a stronger tendency to choose the lump sum than younger people. This effect, and therefore, the low real life annuitization can be explained by hyperbolic discounting. The age effect is considerably stronger for participants that answer simple time preference questions inconsistently. Our findings suggest that commitment devices can help to increase annuitization rates.

© 2016 Elsevier B.V. All rights reserved.

1. Introduction

Winning California State Lottery is a blessing but it is accompanied by a difficult decision: SuperLOTTO Plus winners have to decide between being paid out one lump sum or in 26 annual installments. While most individuals will never face this decision, they are likely to face a similar decision when they enter retirement. Retirement plans often ask individuals to choose between a one-time lump sum distribution at retirement age or a stream of annuity payments throughout retirement. This decision gains importance with increasing life expectancies and constant or decreasing effective retirement ages. The decision how to convert accumulated wealth into a stream of consumption, therefore, represents an important financial decision. Based on standard economic theory, individuals should opt for the annuity payment scheme to insure against longevity risk. However, empirical evidence shows that many choose a lump sum payment, both in retirement and in the lottery scenario. This discrepancy between theory and empirical evidence has been coined the “annuity puzzle.”

Building on Yaari (1965), research has focused on explaining the annuity puzzle using theoretical models that include a bequest motive, background risk, incomplete markets, and/or adverse selection. Typically, these models take a standard economic approach by assuming rational behavior of modeled agents. Brown (2007) states that “[...] the mixed success of explaining annuitization behavior in a fully rational context suggests that other factors are at play.” These “other factors” that impact behavior include framing, loss aversion, or endowment effects.

* Corresponding author.

E-mail addresses: pshchrei@mail.uni-mannheim.de (P. Schreiber), weber@bank.bwl.uni-mannheim.de (M. Weber).

In this paper, we focus on individuals' time preferences and their impact on the choice between a one-time lump sum distribution and a recurring monthly payment. A broadly accepted representation of time preferences is the hyperbolic time weighting function (e.g., [Ainslie and Herrnstein, 1981](#); [Thaler, 1981](#); [Benzion et al., 1989](#); [Ahlbrecht and Weber, 1997](#)). Particularly, hyperbolic discounting leads to strong discounting of payments in the near future and weaker discounting of payments longer term (compared to exponential discounting). Such a time weighting function may serve to explain time inconsistent behavior or behavior that changes over time, respectively.

To the best of our knowledge, a connection between time preferences and the annuitization decision has not been studied. We derive predictions for the annuitization decision based on hyperbolic discounting, and test them using data from a survey. We conduct a large online survey in cooperation with a national German newspaper, *Frankfurter Allgemeine Zeitung* (FAZ). Throughout the survey, participants encounter situations in which they have to choose between a lump sum distribution and a fair annuity. We use two scenarios in a between subjects design: In the *immediate case*, participants choose between a lump sum distribution today and a fair annuity also starting today. In the *future case*, participants choose between a fair annuity starting at retirement and a lump sum distribution received at retirement. To compare these two options (lump sum vs. annuity), we use a standard discounting approach. By definition, the present value of the lump sum is equal to the expected present value of the *fair* annuity. This does not hold for hyperbolic discounting: simple calculations show that older individuals will prefer the lump sum over the annuity. The effect reverses for younger individuals, where hyperbolic discounting leads to a preference for annuity payments. This holds for immediate and future decisions.

Our empirical evidence confirms our hypothesis that young individuals have a strong preference for annuities, whereas older individuals tend to prefer the lump sum. We find a significant negative effect of age on the probability of choosing the annuity. Annuitization increases by almost 30% from the oldest to the youngest decile of participants. This finding is in line with other empirical studies on annuity choices (see [Brown et al., 2015](#); [Hurd and Panis, 2006](#); [Beshears et al., 2014](#); [Shu et al., 2013](#)). The age effect becomes stronger for participants who answer simple time preference questions inconsistently from a standard economic approach, but consistent when assuming hyperbolic discounting. Moreover, we are able to rule out alternative explanations that compete with the hyperbolic discounting hypothesis by providing additional evidence that is specific to hyperbolic discounting. Therefore, our results provide strong support that time preferences significantly impact the annuity puzzle. As individuals face the annuitization decision late in life, following our results, they are more likely to choose a lump sum. In the future case, the switch of preferences over time can be seen as a self-control problem. Participants make the optimal decision (according to expected utility theory) when deciding what to choose in the future, but they reverse their decision once they actually make it.

Our results imply that there are four ways to increase annuitization. First, by introducing a commitment device allowing individuals to bind or precommit their behavior ([Strotz, 1955](#)). If they choose the lump sum because of self-control problems, a commitment device may help them overcome these problems ([Thaler and Shefrin, 1981](#); [Laibson, 1997](#); [Beshears et al., 2011](#)). A commitment device may also mitigate the adverse selection problem: annuities typically pay only about 80–90% of the fair value, partly because individuals have private information about their life expectancy. However, if they can make a binding annuity choice early in life, the information asymmetry regarding their future condition will be reduced. The annuity seller can offer annuities closer to the fair value and create an incentive to make a binding decision. Second, making it mandatory to determine the payout scheme at the beginning of the annuity contract when individuals are younger. Reversing this decision has to have an associated cost (either monetary or effort-wise, e.g., paperwork). A third possibility is to introduce a screening mechanism that allows differentiation between hyperbolic and non-hyperbolic decision makers. An annuity seems considerably more attractive to a younger hyperbolic decision maker. Therefore, she is willing to pay more than the fair price. This willingness to overpay allows to subsidize non-hyperbolic decision makers and to reduce the adverse selection problem. *Fourth*, by increasing individuals financial literacy. We find that financial literacy is a good predictor for time inconsistent behavior with less financial literacy leading to time inconsistency. Educating individuals in financial subjects could therefore lead to more consistent annuitization decisions.

2. Related literature

[Yaari \(1965\)](#) was the first to extend the standard life-cycle hypothesis and include mortality risk. He shows that in a model of rational decision making, a risk-averse individual with no bequest motive will annuitize 100% of his wealth to maximize utility. This result was confirmed by [Davidoff et al. \(2005\)](#) in a model with less restrictive assumptions. In contrast to these predictions, the empirically observed annuitization rates are very low,¹ as a consequence, research concentrates on explaining these low rates of annuitization. In this section we give a brief overview of the rational and behavioral reasons against full annuitization. In Internet Appendix A, we provide a detailed discussion, long with an overview of the hyperbolic discounting literature.

The main rational factors that could limit annuity demand are a strong bequest motive (e.g., [Brown, 2001](#); [Ameriks et al., 2011](#); [Hubener et al., 2013](#)), background risk (e.g., [Horneff et al., 2009](#); [Pang and Warshawsky, 2010](#)), unfair annuity prices (e.g., [Finkelstein and Poterba, 2004](#); [Brunner and Pech, 2006](#)), and government *crowding out* private annuitization ([Dushi and Webb, 2004](#); [Purcal and Piggott, 2008](#)). The more recent literature focuses on behavioral aspects that potentially influence

¹ See, for example, Health and Retirement Study (HRS) 1998–2008, [Buetler and Teppa \(2007\)](#), or for a summary, [Johnson et al. \(2004\)](#).

Download English Version:

<https://daneshyari.com/en/article/883407>

Download Persian Version:

<https://daneshyari.com/article/883407>

[Daneshyari.com](https://daneshyari.com)