



Definitions of **bolded key terms** are at the end of this article.

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Authors, Titles and Publication Dates of the Articles Addressed in the Insight  
ohn Chalmers and Jonathan Reuter. 2012. “How Do Retirees Value Life Annuities? Evidence from Public Employees.” *Review of Financial Studies* 25 (8): 2601–34. <https://doi.org/10.1093/rfs/hhs057>.

**Who Should Read This Insight:**  
Annuity manufacturers, employer sponsors of defined-benefit pension plans and their third-party administrators, workers, retirees, consumer advocates, policymakers

**Institute Research Agenda Topic:**  
New takes on the annuity puzzle.

## Insight: THE VALUE OF ANNUITIES VS. LUMP-SUM PAYMENTS FOR RETIREES

### IDEAS IN THE INSIGHT YOU CAN PUT INTO ACTION

This study finds that small changes in annuity pricing (e.g., due to the introduction of tax subsidies) are unlikely to increase annuitization rates by an economically significant amount. Policymakers should explore the efficacy of solutions that are more cost-effective, such as making life annuities the default retirement payout choice in retirement plans. This would also temper the behavioral biases associated with financial decisions. The study also finds that financial literacy is consistent with higher annuitization, and therefore policymakers could incentivize the financial training of potential retirees.

### PRINCIPAL INSIGHTS

There are several different kinds of insurance products known as **annuities** that can provide regular income for a **retiree**. For example, **life annuities** or **lifetime annuities** provide income for life, and hence insure retirees against **longevity risk**, which is the risk someone will outlive their accumulated financial assets.

This insurance is extremely valuable for the **annuitant**, and standard economic models predict that retirees should spend a substantial portion of their assets on buying life annuities. In spite of that prediction, though, the size of the private market for life annuities is relatively small. Economists call this mismatch the **annuity puzzle**. One common explanation for the annuity puzzle is **adverse selection**: the people who most need protection from longevity risk—such as those with good health and so presumably longer lives—are the same people who are more likely to purchase life **annuity** products: the number of payments the annuitants will receive depends on the number of years they live. The insurers internalize this adverse selection of customers and set a relatively high price for all potential customers. This leads to a price that is too high for the average retiree and so limits the number of people who will find it convenient to purchase the product—and thus to fewer people ultimately buying annuities. In fact, if a retiree has an average life expectancy, she might believe that the annuity’s price is too high and so decide against purchasing it. This, in turn, means that in fact the only people who buy the insurance product are the same people who are more likely to be expensive for the insurer.

Another explanation for the annuity puzzle credits the low levels of **annuitization** to poor financial decision-making, known as **financial illiteracy**: A retired man might wish he had purchased an annuity before retiring. He might have decided against purchasing an annuity when he had the option because (1) he did not fully understand the benefits he would get from it due to his limited comprehension of annuities or due to his own financial illiteracy or (2) despite his ability to understand the benefits of the annuity, he chose not to buy one. Instead, he preferred to have access to his money today rather than to avoid inferior financial

outcomes in the future (known as **behavioral biases**).

To conclude, Chalmers and Reuter offer three different explanations for the annuity puzzle: (1) adverse selection, (2) financial illiteracy, and (3) behavioral biases. Distinguishing between these three explanations for insufficient annuitization is extremely relevant for policymakers. If, for example, the most important explanation is adverse selection, then the policymaker might incentivize and/or facilitate the collection of information on potential customers' pre-existing conditions. By contrast, if the main explanation is financial illiteracy, the policymaker could try to improve financial education of potential customers, such as by disseminating better information or by educating retirees. Finally, if the main explanation is behavioral biases the policymaker could **nudge** (or even force) people to buy annuities.

It is very important to understand what causes the annuity puzzle in order to better comprehend how retirees actually value life annuities—in other words, we need to understand what the retirees consider to be important when they are deciding whether to purchase an annuity.

So, do preexisting conditions really play an important role? To what extent the price of the product affects retirees' decision? In their article, Chalmers and Reuter attempt to answer these questions by analyzing the choices made by retirees and by linking their decisions to both the characteristics of retirees and those of the annuities themselves.

The authors examine the payout decisions of 32,060 individuals who retired between January 1990 and June 2002 and who are covered by the Oregon Public Employees Retirement System (PERS). PERS retirees receive a stream of payments for the rest of their lives (i.e., life annuity payments). They might in addition choose to receive an initial one-time **lump sum** payment at retirement. Each retiree can choose either to receive (1) higher life annuity payments and no initial lump-sum payment (the total life annuity option), or (2) lower life annuity payments together with an initial lump-sum payment.

For the average retiree, the Oregon PERS total life annuity option is extremely advantageous compared to a similar product available through a private insurance company; the price of the PERS annuity is extremely low. At the same time—according to standard **actuarially fair** calculations—for the **consumer** the total life annuity option is better than the lump-sum option. In the sample, 85 percent of PERS retirees chose the total life annuity option. This percentage is notably higher than the rate of annuitization in the general population. These findings therefore suggest that retirees might be more likely to purchase an annuity if the price of annuities were more favorable in the private market.

Furthermore, although the Oregon PERS annuities choice is consistently favorable with respect to alternative options, PERS's prices also change over time, although these price changes are small. By looking at retirees' choices across different years, the authors are able to measure whether retirees respond to these small variations in prices over time. They do not find any sizeable change in the retirees' decisions.

In sum, the authors' findings suggest that, although retirees do not take into account small changes in price, they will increase their investment in annuities if those price changes are very large (i.e., annuities are extremely favorable with respect to the lump-sum option). That means that, although small changes in annuity pricing are unlikely to increase annuitization rates by an economically significant amount, a large variation in prices (which authors define as salient) could induce a large shift in retirees' choices.

Chalmers and Reuter also documented which characteristics help to predict the choice of the annuity plan versus the lump-sum option. They found that men, as well as less-healthy

retirees of both genders, tend to prefer the lump-sum option at retirement. Men, on average, have a lower life expectancy than women. Furthermore, less-healthy retirees are predicted to have a shorter life expectancy and thus expect to receive fewer payments under the annuity plan.

This finding confirms the theoretical prediction that preexisting health conditions and life expectancy are salient features that drive consumer choice on whether to purchase annuities.

Overall, this suggests that the aforementioned adverse selection problem related to the annuities market is in fact at play: the selection of retirees who choose the annuity options are those more likely to live longer. Consequently, the **annuity provider** would have to increase the price of the annuities since it would expect the number of payments to be large.

Finally, the authors also find that retirees with a higher level of **financial literacy** are associated with a higher uptake of the annuity plan. They tested this finding using the salary of the retiree as a proxy for financial literacy, since retirees with higher salary are more likely to be in managerial positions and hence more likely to have better financial knowledge. They find that those who retire from positions with better salaries are indeed more likely to choose the annuity plan.

Most of the findings documented by Chalmers and Reuter in this article align with theoretical predictions. First, the authors' finding that retirees respond to large (salient) changes in annuity prices but not to small price changes is particularly relevant. They conclude that policymakers should explore solutions to low annuitization rates that are more cost-effective, such as making life annuities the default retirement payout choice in retirement plans.

Second, they find that preexisting health conditions are an important factor driving the uptake of annuities. Hence, to stimulate the annuity market, it might help to improve the information available to the insurer so that the insurer can align the prices better with the retirees' profiles: the price of the annuity would be higher for retirees who have fewer preexisting health conditions and would be lower for the average retirees. In this way, many retirees might find it advantageous to purchase annuities. Finally, it is also important to improve the financial literacy of retirees. From a theoretical point of view, retirees should find the purchase of annuities to be optimal. If they have limited financial literacy, however, they might not fully understand the advantage of buying these instruments for retirements. As the authors found, better financial literacy is in fact consistent with higher annuitization. Policymakers should incentivize the financial education of potential retirees.

Making life annuities the default retirement payout choice would also temper the behavioral biases associated with financial decisions. In fact, previous academic research found that default options can have a dramatic impact on financial choices.

To conclude, the authors found that adverse selection and limited financial literacy are two important obstacles to the development of the life annuity market, and hence policy interventions to stimulate the annuity market are needed.

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To learn more, visit the Retirement Income Institute at  
[www.allianceforlifetimeincome.org/retirement-income-institute](http://www.allianceforlifetimeincome.org/retirement-income-institute)

KEY TERMS ARE SOURCED FROM THE ALLIANCE FOR LIFETIME INCOME'S ANNUITIES LANGUAGE GLOSSARY AND INVESTOPEDIA

**actuarially fair:** *An insurance product is actuarially fair if the premiums paid are equal to the expected value of the compensation received.*

**adverse selection:** *A market situation where buyers and sellers have asymmetrical information, leading to markets operating suboptimally and even failing. The party with less information is at a disadvantage versus the party with more information. This asymmetry causes a lack of efficiency in the price and the number of goods and services provided.*

**annuitant:** *A person who will receive the income payments from an annuity.*

**annuitization:** *The process of converting an investment into a series of periodic income payments by buying an annuity or beginning an income flow from an annuity.*

**annuity provider:** *Financial firms selling annuities.*

**annuity puzzle:** *The annuity puzzle refers to the fact that few people choose to annuitize even a portion of their accumulated savings even though they have many good and rational reasons to do so.*

**annuity:** *Annuities are insurance contracts that promise to pay you regular income either immediately or in the future.*

**behavioral bias:** *An illogical preference or prejudice that is a natural human foible that can cloud the judgment of a person deciding on an action.*

**consumer:** *Someone who invests in annuities.*

**financial literacy/financial illiteracy:** *Financial literacy is the ability to understand and effectively use various financial skills, including personal financial management, budgeting, and investing. The lack of these skills is financial illiteracy.*

**life annuity or lifetime annuity:** *A life annuity or lifetime annuity is an investment vehicle that functions as a personal pension plan.*

**longevity risk:** *The chance that you may live longer than your income will last.*

**lump sum:** *A lump sum is a single payment of money, as opposed to a series of payments made over time.*

**nudge:** *Nudge is a concept in behavioral economics, political theory, and behavioral sciences that proposes positive reinforcement and indirect suggestions as ways to influence the behavior and decision-making of groups or individuals.*

**retiree:** *Someone who has retired, regardless of age or investments.*

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