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Research Brief

Why Don't People Choose Annuities? A Framing Explanation

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According to standard economic models, a risk-averse consumer who does not know how long he will live should place a high value on life annuities that provide guaranteed income for life. Yet numerous studies show that few consumers voluntarily annuitize their retirement savings. Rather than attempting to rationalize the lack of annuity demand, this paper explores the idea that aversion to annuities is not a fully rational phenomenon. This paper suggests that a psychologically richer model of consumer behavior can explain under-annuitization. We hypothesize that framing matters for annuitization decisions: when consumers think in terms of consumption, annuities are viewed as valuable insurance, whereas when consumers think in terms of investment risk and return, the annuity is a risky asset because the payoff depends on an uncertain date of death. Survey evidence is consistent with our hypothesis that framing matters: the vast majority of individuals prefer an annuity over alternative products when the question is framed in terms of consumption, while the majority of individuals prefer non-annuitized products when the questions are presented in terms of risk and return.

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Why Don't People Choose Annuities? A Framing Explanation

By Jeffrey R. Brown, Jeffrey R. Kling, Sendhil Mullainathan, and Marian V. Wrobel

According to standard economic models, a risk-averse consumer who faces uncertainty about length-of-life should place a high value on annuities that provide guaranteed income for life. Yet numerous studies show that few consumers voluntarily annuitize their retirement savings. As public and private pension systems around the world continue the ongoing shift from traditional defined benefit plans, which typically pay benefits for life, to defined contribution structures which often give individuals a lump sum payment, retirees find themselves increasingly exposed to longevity risk — the risk of being unable to sustain a comfortable level of spending if they live longer than average.

Numerous academic research studies have attempted to resolve the puzzle of why so few individuals purchase life annuities despite their theoretical appeal. Typically, life annuities provide their purchasers with a stream of income that is guaranteed for life. Studies have explored the role of high prices and asymmetric information, high fractions of wealth already annuitized by public pension plans, the desire to leave a bequest to their children and other forms of risk sharing within families, the option value of delayed annuitization, as well as the shortcomings of available annuity products, which may not offer inflation protection, access to equity returns, and liquidity or insurance to address medical and other unexpected expenses. By combining a number of these factors, it is possible to rationalize very low demand in some specific contexts. As a whole, however, academic research has failed to find a sufficiently general explanation of consumer aversion to annuities. Additionally, financial services and insurance firms have created life annuities that overcome many of the product-based objections (e.g., inflation-protected annuities, annuities with payout streams linked to equity returns, policy riders that provide benefits for long-term care expenses), and yet few consumers buy these products. One exception to this rule is the recent relative popularity of variable annuities offering "guaranteed minimum withdrawal benefits for life," perhaps because these products successfully blend some features of a life annuity with some features of a more traditional investment product.

Rather than attempting to rationalize the lack of annuity demand, this paper explores the idea that aversion to annuities is not a fully rational phenomenon. Academic research has documented that consumer behavior is not rational in a wide range of activities that are important steps in the process of planning for retirement, including whether to participate in employer sponsored pension plans, how much to save, and how to allocate one's portfolio. To the extent that individuals exhibit biases in the wealth accumulation aspects of retirement planning, it seems natural that similar biases might also extend to consumers' attitudes towards spending wealth in retirement.

I. The Framing Hypothesis

This paper suggests that a psychologically richer model of consumer behavior can explain low levels of annuity demand. In recent years, economists have increasingly understood the importance of framing in economic decisions. Experimental findings suggest that choices are not based solely on material consequences, but instead are filtered through the particular *frame* that individuals use to interpret the choices. For the purpose on analyzing annuity demand, we define two frames:

- The consumption frame. A broader frame, in which individuals focus on the end result of what they will be able to spend over time.

- The investment frame. A narrower frame, in which individuals focus on intermediate investment results, such as risk and return.

We argue that when choosing how to utilize their retirement savings, individuals use the investment frame. Viewed through this lens, the annuity looks risky and unattractive.

Suppose an individual planning for his retirement thinks broadly (the consumption frame). He values and focuses on the total amount he will be able to consume over his life, discounted to present value. To this individual, life annuities are an attractive choice relative to stocks, bonds, or many other assets because they allow him to spend more while he is alive, particularly if he lives for a long time. Like an insurance policy, the annuity pays out the most under the conditions when the annuitant needs it most: if he lives for a long time. The fact that the annuity has no value after his death is immaterial; his focus is on spending during his lifetime.

We propose that, instead of focusing on consumption, many consumers use the investment frame when choosing assets. Consumers effectively isolate one choice (how to invest) from others (how to consume) and focus on specific features of this choice rather than viewing it as part of a broader, integrated set of choices. Specifically, suppose that individuals consider the rate of return and the investment risk, a natural frame for someone investigating alternative approaches to investing for retirement. In this case, a bond has a given return and poses no risk. On the other hand, the annuity has a higher return for a long-lived annuitant and a lower return for one who is short-lived. If the annuity is actuarially fairly priced, then the annuity has the same expected return as the simple bond. Yet despite having the same return, the annuity appears riskier than the bond. *This reversal is key to our hypothesis: under the consumption frame, the annuity is attractive because it serves as a form of insurance. In contrast, under the narrow investment frame, the annuity is viewed as being riskier than a bond because its return depends on the length of life, which is unknown.*

Practically, this framework suggests that the unattractive feature of the annuity in the investment frame will be the potential for the investment to have a negative return. This matches the qualitative intuition that practitioners provide: people react negatively to the possibility that they could lose money. In the extreme case, if an individual dies immediately after annuity purchase, he could lose his entire principal, although most life annuities sold today guarantee some minimum pay-out. The possibility of loss is particularly problematic since the annuity does not offer a higher expected return to offset this extra "risk." This insight is also consistent with industry market research that has found that many consumers think of annuities as a "gamble" rather than as insurance. In fact, the annuity is even more unattractive: life annuities payouts are typically less than actuarially fair due to administrative costs and adverse selection, meaning that the higher risk is bundled with a lower return. In addition, the risk of adverse selection also necessitates that most annuity contracts are essentially irreversible, resulting in illiquidity.

II. Testing the Framing Hypothesis

We used an internet survey to test the hypothesis that annuities appealed to consumers who were primed to think in the consumption frame but not to those who were primed to think in the investment frame. Specifically, we presented survey respondents with a series of comparisons between pairs of fictitious retirees who had managed their retirement wealth in different ways, some choosing life annuities and other choosing competing products (such as consol bonds or savings accounts.) The essence of the test was that some of the survey respondents were presented these products in an investment frame, which emphasized the depersonalized return on an account by using words such as “invest” and “earnings,” describing periods in terms of years, mentioning the value of the initial investment ($100,000 in every case), and alluding to the account value at other points in the description. The other respondents were presented these products in a consumption frame, meaning that they were told how much each product would ultimately allow its purchaser to consume and for how long, using words such as “spend” and “payment,” describing periods in terms of the purchaser's age, and never alluding to an account or its value. The key distinction is that the consumption frame shifted respondents' way of thinking: instead of simply considering the returns on the investment, individuals were presented with the consumption consequences of the choices. The consumption frame implicitly incorporated the results of investment decisions as well as what consumers would be able to purchase over time, and, in this sense, was broader.

We collected data to test this hypothesis in a four-arm internet survey conducted in December 2007. The internet survey firm Zoomerang hosted the survey and recruited respondents over age 50 from a pre-existing panel of individuals willing to participate in surveys in return for small incentives. A total of 1342 individuals, approximately 335 per arm, completed the survey. All respondents answered seven forced-choice questions. Each question described the investment/spending decisions of two fictitious people and asked, “Who has made the better choice?” In all arms of the survey, an introduction stated that both people receive $1,000 each month from Social Security, have “some savings” and have already set aside money for their children. The presence of savings and money for the children were intended to address respondents' potential concerns about liquidity in the face of unexpected expenses and bequests. In a real-life setting, such concerns could be addressed via annuitizing part of one's wealth and investing the remainder in a different way.

Two arms of the survey presented the introduction and the choices using the investment frame, and two arms used the consumption frame. Brown et al. (2007) provide the exact wording of the products and the frames. In all four arms of the survey, the choices were described in terms of amounts and durations: the terms “annuity,” “savings account,” and “bond” were not used. Several choices were compared in all arms: (1) a life annuity paying $650 each month until death (2) a traditional savings account bearing 4 percent interest (3) a consol bond paying $400 each month forever (4) a 35 year period annuity paying $500 each month and (5) a 20 year period annuity paying $650 each month. In all four arms of the survey, each respondent compared the life annuity separately to each of the other products. In addition, in the investment frame each respondent compared a principal-protected life annuity (i.e., a life annuity that guaranteed enough payments so that the nominal value of the principal would be repaid even in the event of an early death) paying $625 each month to the traditional savings account. All choices were designed to be actuarially equivalent and respondents were informed of this fact. To avoid spurious effects, the survey included several other comparisons that did not feature the life annuity, varied the order of the comparisons, and varied whether the life annuity was presented first or second within a given comparison.

To further address the role of the bequest motive in suppressing annuitization, we added an additional dimension of variation in the survey. Half of the respondents in each frame were told that, after death, remaining earnings or payments went to charity; the other half that they went to children.

We note that while our survey results are based on hypothetical scenarios, these scenarios are very similar to actual financial decisions that respondents and people they know have made. These hypothetical scenarios enabled us to obtain stated preferences over alternatives that may not be offered in a market (and for which there is no market data) but that were constructed to directly test our hypothesis.

III. Results

When questions were presented in the consumption frame, the majority of individuals preferred the consumption stream consistent with a life annuity to the consumption streams available from other products of comparable actuarial value. Specifically, in this frame, when individuals were told that any payments after death went to charity, 72 percent of respondents preferred the $650 per month that could be provided by a life annuity to the consumption stream from a savings account of comparable actuarial value (Table 1). 77 percent preferred the life annuity to receiving $650 per month for 20 years (age 85); 76 percent preferred the life annuity to receiving $500 per month for 35 years (age 100); and 71 percent preferred the life annuity to receiving $400 forever (the consol bond).

In contrast, when individuals faced the same choices in the investment frame, the proportions reversed, with the majority of individuals not choosing the life annuity. Specifically, only 21 percent of respondents preferred investing in an account earning $650 each month for life (i.e., a life annuity) to investing $100,000 at four percent. Further, only 48 percent preferred the life annuity to an account earning $650 per month for 20 years; 40 percent preferred the life annuity to an account earning $500 per month for 35 years; and only 27 percent preferred the life annuity to an account earning a five percent interest rate from which interest but not invested money could be withdrawn. Note that in the life and period annuity cases, the respondent was explicitly told that that, at the end, the investment would be worth nothing. In every case, the difference in rates between the consumption and investment frames was statistically significant.

When individuals were told that remaining payments went to children, rather than to charity, the percentages of respondents preferring the life annuity in the consumption frame declined, although it remained above 50 percent in most cases. Importantly, however, the percentages of respondents preferring the life annuity also fell in the investment frame so that the magnitude of the between-frame differences remained quite similar. Thus, regardless of the destination of any remaining payments, we find a substantially larger fraction of the population finds annuities attractive when framed in consumption, rather than investment, terms.

While the strong effect of the frame on the stated preferences for life annuities is the key finding of the survey, our research also provides insights on how the framing affects various features of the annuity product. Specifically, there are at least two distinct features of a life annuity that distinguish it from a savings account: its illiquidity and the mortality premium, i.e., the fact that the total value of payments is greater for long-lived individuals. We were able to isolate the effect of each of these factors by comparing alternative products within each frame.

In the consumption frame, we found that the loss of liquidity did not have much impact on the respondents' evaluation of choices. Similar, albeit slightly lower, percentages of respondents preferred the life annuity to the savings account (liquid) as preferred the life annuity to the period-certain annuity (illiquid). In contrast, the loss of flexibility did matter in the investment frame: a smaller fraction of respondents chose the life annuity over the savings account than chose the life annuity over the period-certain annuity.

We also found that the mortality premium was a positive attribute in the consumption frame, with respondents consistently favoring life annuities relative to period-certain annuities. In contrast, the mortality premium was viewed neutrally or negatively in the investment frame with respondents split equally on the choice of a life or 20 year annuity and a majority disliking the life annuity relative to its 35 year counterpart. These attitudes are consistent with our hypothesis: a dislike of illiquidity and an uncertain investment return are salient in the investment frame, but not in the consumption frame. Similarly, a desire to insure against longevity risk is salient in the consumption frame but not the investment frame.

Our survey also indicated that principal protection was highly valued in the investment frame: when remaining payments went to charity, 47 percent of respondents believed that a principal-protected life annuity earning $625 per month was a better choice than a savings account, while only 21 percent believed that an unprotected life annuity dominated; the result was more dramatic when remaining payments went to children. Again, this high valuation is consistent with our hypothesis and specifically with an aversion to losing any part of the initial investment.

IV. Conclusion

We hypothesize that framing matters for annuitization decisions: when consumers focus on consumption, annuities are viewed as valuable insurance, whereas when they think in terms of investment risk and return, the annuity is a risky asset because the payoff depends on an uncertain date of death. Survey evidence is consistent with our hypothesis that framing matters: the vast majority of individuals preferred an annuity over alternative products when presented in a consumption frame, whereas the majority of individuals preferred non-annuitized products when presented in an investment frame. To the extent that the investment frame is the dominant frame for consumers making financial planning decisions for retirement, this finding may help to explain why so few individuals annuitize. It is also consistent with the abiding popularity of Social Security and pensions, under the assumption that consumers tend to use a consumption and not an investment lens when considering these programs.

Table 1
Percent of Respondents Preferring Annuities to Alternative Products
Comparison of Consumption and Investment Frames

	Remaining payments left to "charity"		Remaining payments left to "children"	
Product comparison	**Consumption Frame %**	**Investment Frame %**	**Consumption Frame %**	**Investment Frame %**
Life annuity ($650 per month)				
Traditional savings account 4% interest	72	21	59	12
20 year period annuity $650 per month	77	48	65	28
35 year period annuity $500 per month	76	40	53	28
Consol bond $400 per month forever	71	27	49	12
Principal-protected life annuity ($625 per month)				
Traditional savings account 4% interest		47		50
N	352	321	339	330

Notes:

1. Each question described two fictitious men's decisions for investing/spending in retirement and asked, "Who has made the better choice?" An introduction stated that both men had $1,000 each month from Social Security and "some savings" and had already set aside money for their children.
2. The Consumption frame used terms such as "spend" and "payment," described periods in terms of the individual's age, and never alluded to an account or its value. The Investment frame used terms such as "invest" and "earnings," described periods in terms of years, mentioned the value of the initial investment ($100,000 in every case), and alluded to the account value at other points in the survey. All decisions were described in terms of amount and duration; the terms "annuity", "savings account", and "bond" were not used to label decisions.
3. Standard error 2.7 percentage points.
4. All differences between frames were significant at the 99 percent confidence level.
5. All respondents were 50 years old or older.
6. Data collected via internet survey mid-December 2007

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