

TRENDS AND ISSUES

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FRAMING AND ANNUITIES

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EXECUTIVE SUMMARY

Despite agreement among experts that many consumers should place a high value on life annuities and related products that insure against longevity risk, few consumers voluntarily annuitize their retirement savings. This brief summarizes evidence that consumers' aversion to annuities is not a fully rational phenomenon. Our survey research shows that framing, i.e., how financial products are presented to consumers, can significantly affect respondents' preferences among competing products. Specifically, when products are presented in a frame that emphasizes consumption consequences, 72 percent of survey respondents prefer a life annuity to a savings account. In contrast, when the same products are presented using investment terminology, only 21 percent of respondents prefer the annuity. The finding that framing matters is robust to alternative product comparisons as well as to variations in the survey context.

This evidence is consistent with the hypothesis that when consumers think in terms of consumption, they perceive the life annuity as offering valuable insurance against the risk of outliving one's resources. However, when they think in investment terms, they view life annuities as increasing risk without increasing return, because of the potential for variation in the total value of payments based on how long they live.

This research helps to explain why so few individuals annuitize and suggests that organizations that seek to promote the purchase of life annuities and related products may wish to employ the consumption frame in their customer interactions. More generally, it suggests that organizations that seek to promote consumer well-being through wise financial choices may wish to pay careful attention to financial education, the psychology of choice, and subtle aspects of how financial information is presented.



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INTRODUCTION

Most economists agree that a risk-averse consumer who faces uncertainty about length-of-life should place a high value on life annuities that provide guaranteed income for life. Yet, in fact, few consumers voluntarily annuitize their retirement savings. This puzzling gap between expert opinion and observed behavior has become increasingly important as public and private pension systems around the world continue the shift from traditional defined benefit plans, which typically pay benefits for life, to defined contribution plans, which rarely require annuitization. Over the last year and a half, our research group has explored the idea that consumers' aversion to annuities is not a fully rational phenomenon, and this brief summarizes our main results. In particular, we have emphasized the notion of framing, and the idea that consumers may make significantly different choices depending on the manner in which their options are presented.

This research is potentially relevant both to those who wish to understand why observed levels of annuitization are lower than predicted by models of optimal financial behavior and to those who aim to increase the levels of purchase of life annuities and related products. In addition, the recognition that consumers may not always make fully considered choices (and an understanding of the dynamics of this phenomenon) is relevant to those who seek to promote wise financial decisions more generally.

THE FRAMING HYPOTHESIS

Over the last several decades, economists have increasingly understood the importance of framing in economic decisions (see, for example, Tversky and Kahneman, 1981.) Framing is a general phenomenon, although an area of particular interest has been individuals' differential responses to choices depending on whether outcomes are framed as losses or gains. Within this tradition, we have developed a hypothesis regarding financial choices for income in retirement. We propose that, instead of viewing choices through a consumption frame (focusing on the end result of what can be spent over time), many consumers adopt an investment frame (focusing on the intermediate results of return and risk without considering the consequences for consumption). Consumers effectively isolate one choice (how to invest) from others (how to consume) and focus on specific features of this choice rather than view it as part of a broader, integrated set of choices.

When consumers think in terms of consumption, an actuarially fair annuity offers a higher rate of monthly spending relative to an alternative safe investment such as a bond, and in addition it provides valuable insurance against the possibility of out-living one's assets. Like other forms of insurance, this product provides additional resources precisely in those situations when consumers need the money the most — in this context, when individuals live a long time — and hence reduces financial risk. Most of the academic models and other expert arguments that underscore the importance of annuities are based on this type of reasoning.

In contrast, when consumers think in terms of investment features (e.g., account balances, rates of return, etc), then the annuity appears riskier than the bond, because the total payments received will depend on how long one lives. Specifically, total payments received will be less than the value of the initial investment if the customer dies relatively early, and greater than that value if they live longer. This "reversal" underlies our hypothesis: within the consumption frame, the annuity is an attractive form of insurance, while within the narrower investment frame, the annuity is unattractive because it appears to impose additional risk.

This insight is consistent with industry market research that has found that many consumers think of annuities as a "gamble" rather than as insurance. In practical terms, it implies that consumers will strongly value a principal-protected life annuity, i.e., a life annuity that promises to return at least the amount of the initial investment regardless of the time of death.

TESTING THE FRAMING HYPOTHESIS

We tested the framing hypothesis via two separate internet surveys of adults over 50, one conducted in December 2007 and one in April 2008. The details of these surveys and of our hypotheses and results are described in our earlier papers (Brown et al. 2008a and b). In these surveys, respondents answered questions that described the investment/spending decisions of two fictitious people and asked, “Who has made the better choice?”

For some survey respondents, financial products were described using the investment frame, while for others products were described using the consumption frame. The investment frame emphasized the 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. In the life and period annuity cases, the respondent was explicitly told that at the end the investment would be worth nothing.

The consumption frame emphasized 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. In both frames choices were described in terms of amounts and durations, and specific financial terms like “annuity,” “savings account,” or “bond” were not used in either frame. It is important to note that, while the language differed across the two frames, both frames provided the individual with the same relevant informational content.

Individuals were asked to compare two products at a time. Several choices were included in all surveys: (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. Respondents answering in the investment frame were also asked about 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 until death.

RESULTS

When questions were presented in the consumption frame, the majority of individuals preferred the life annuity to other products of comparable actuarial value. Specifically, in this frame, when individuals were told that any remaining 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. 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 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, i.e., \$400 per month, from which interest but not invested money could be withdrawn. In every case, the difference in rates between the consumption and investment frames was statistically significant.

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: (i) the conversion from flexible access to money (i.e., “liquidity” in the investment frame) to a fixed stream of payments, and (ii) the survival-contingent nature of the payouts and the corresponding application of the mortality premium to the annuity payments. Survey

results allowed us to isolate the effect of each of these factors. In the consumption frame, we find that the loss of flexibility 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 (flexible access) as preferred the life annuity to the period-certain annuity (fixed payment). 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 find that the mortality premium, which arises from pooling mortality risk, 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 loss of control are more salient when consumers think in terms of investments than when they think about spending. Similarly, a desire to insure against longevity risk is salient in the consumption frame but not the investment frame.

The effect of framing on preferences persisted when survey respondents were told that the fictitious chooser had children, when a purchase price was explicitly mentioned, and when the habitual consumption of the fictitious chooser was varied. When individuals were told that remaining payments went to children rather than to charity, the magnitude of the between-frame differences remained quite similar, although percentages choosing the annuity declined by about 10 to 20 percentage points in both frames. When the consumption frame explicitly mentioned that the fictitious chooser would expend \$100,000 to purchase the annuity and \$100,000 to purchase the savings account or alternative product, the percentage of respondents preferring the life annuity to the alternative products was not statistically distinguishable from the percentage when this price was not mentioned, demonstrating that the framing effect was not driven by the mention of the initial purchase price present in the investment frame.

Finally, as the habitual monthly spending of the hypothetical individual was increased from a level that could be provided in perpetuity by any of the choices to a level that even the annuity could not provide, preferences for life annuities declined slightly relative to preferences for other products. For example, 80 percent of respondents preferred the life annuity to the savings account when habitual spending was \$1200, Social Security provided \$1000, and the bond yielded \$400 in perpetuity while the annuity offered \$650 for life. If habitual spending was increased to \$1800 with no changes in other parameters, then 72 percent of respondents choose the annuity. While this difference is noteworthy, it is small relative to the differences of approximately 50 percentage points observed between the consumption and investment frames; it indicates that respondents' perception of the value of annuities is not tightly anchored to preserving a habitual level of consumption.

Surveys indicated that principal protection was highly valued in the investment frame: when survey participants were told that, after death, any 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 at \$650 was similarly preferable. Again, this high valuation is consistent with our hypothesis and specifically with an aversion to the loss of wealth with a reference point at the amount of the initial investment. Varying the amount of the guaranteed repayments within the range we examined (\$80,000 to \$110,000 in protection for a \$100,000 initial investment) had no significant effect on preferences for the principal-protected annuity, suggesting that although respondents were averse to the potential loss of principal, there was not a sharply defined reference point at the purchase price.

We examined the influence of certain demographic characteristics (gender, age, marital status, children, and health status) on preferences for annuities and the magnitude of framing effects. In general, these variables had no effect on

our finding that framing matters. The one exception is that in the investment frame, females had a lower preference than males for the life annuity and for the principal-protected annuity. In the consumption frame, this difference between the genders was not observed. As one would therefore expect, the estimated effect of the consumption frame relative to the investment frame was greater for females than for males. For example, in a comparison between the consumption and investment frames that controlled for other demographic characteristics, females were seven percentage points less likely than males to choose the annuity in the investment frame, and the consumption frame effect was 58 percentage points for females and 48 percentage points for males.

CONCLUSION

The primary finding of this research is that framing dramatically affects preferences for life annuities. For example, when products were presented in a frame that emphasized the consumption consequences of various product choices, 72 percent of survey respondents preferred an annuity to a savings account, while when this same choice was framed in the investment terminology of risk and return, 21 percent of respondents preferred the annuity. In addition, in the investment frame respondents placed a high valuation on principal protection. Our interpretation of these and other findings is that, when consumers think in terms of consumption, they perceive the annuity as offering valuable insurance that protects a level of consumption against the risk of outliving one's resources. Alternatively, when they think in terms of investment, annuities appear to increase risk without increasing return, because of the possibility that the total value of the stream of payments will be less than the initial investment.

At a practical level, 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. In addition, it suggests that organizations that seek to promote the purchase of annuities may wish to use the consumption frame in their customer conversations. We are conducting market tests of the effects of the consumption frame on actual product purchases and look forward to the results.

At a more conceptual level, consumers' apparent sensitivity to framing and context in the survey setting raises the concern that consumers may not be making fully considered financial choices in the market setting; we define fully considered choices as choices that consumers themselves would not change in the face of additional or alternative information. In response to this concern, organizations that seek to increase consumer well-being via promoting wise financial choices may wish to pay careful attention to the psychology of choice and subtle aspects of how financial information is presented to those making important decisions.

As social scientists, we recommend the testing of alternative frames and informational presentations to identify those that promote the most robust choices, ideally defined as choices that are most satisfactory to the affected individuals themselves. In addition, we see a need for additional research on the presentations that lead consumers to act on their financial intentions, the role of brokers and other intermediaries in financial decisions, and the interaction between customer confusion and other complex aspects of insurance markets, such as adverse selection.

REFERENCES

Brown, Jeffrey R., Jeffrey R. Kling, Sendhil Mullainathan, and Marian V. Wrobel. 2008a. "Why Don't People Insure Late-Life Consumption? A Framing Explanation of the Under-Annuitization Puzzle." TIAA-CREF Institute *Research Dialogue* (April 2008).

Brown, Jeffrey R., Jeffrey R. Kling, Sendhil Mullainathan, Garth Wiens, and Marian V. Wrobel. 2008b. "Framing, Reference Points, and Preferences for Life Annuities." TIAA-CREF Institute *Research Dialogue* (November 2008).

Tversky, Amos and Daniel Kahneman. 1981. "The Framing of Decisions and the Psychology of Choice." *Science*, 211(4481): 453-458.

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