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DESIGNING AND FRAMING ANNUITIES

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EXECUTIVE SUMMARY

Annuities are not popular despite providing valuable insurance against outliving one's savings. The resistance to annuities is called the "annuitization puzzle." We conducted and analyzed two large surveys asking Americans to make hypothetical annuitization choices in order to explore some of the factors that influence consumer attitudes toward annuitization, focusing on product design and how choices are presented (i.e., "framed").

We find that allowing individuals to annuitize a fraction of their wealth increases annuitization relative to when annuitization is an all-or-nothing decision. Highlighting the effects of inflation increases the demand for inflation protection. Framing the annuitization decision in terms of flexibility and control or investment risk significantly reduces annuitization. A majority of respondents prefer to receive an extra "bonus" payment during one month of the year that is funded by slightly lower payments in the remaining months. Concerns about later-life income, spending flexibility, and counterparty risk are the most important self-reported motives that influence the annuitization decision, whereas the desire to leave a bequest has little influence on that decision.

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Financial Services

INTRODUCTION

Many households resist annuitization. In U.S. defined benefit (DB) pension plans that offer a lump-sum option, about half of individuals take their entire retirement benefit as a lump sum, even though the annuity is the default option and opting out requires time-consuming paperwork (Mottola and Utkus, 2007; Benartzi, Previtero, and Thaler, 2011; Previtero, 2012). In defined contribution (DC) saving plans, only 10% of participants who leave their job after age 65 annuitize their assets (Johnson, Burman, and Kobes, 2004). This resistance to annuitization is referred to as the "annuitization puzzle," (Modigliani, 1986), since the benefit of buying insurance against outliving one's savings should in theory create strong demand for annuities (Yaari, 1965).

In this article, we summarize results reported in our working paper Beshears et al. (2012) on some of the factors that influence consumer demand for annuitization, focusing on product design and how choices are presented. To study these issues, we fielded two large surveys in which we asked individuals aged 50 to 70 to make hypothetical annuitization choices. We examine 1) what factors people say are important to their annuitization choices, 2) how offering "partial annuitization," rather than an all-or-nothing choice, influences outcomes, 3) individual preferences about whether and how their monthly annuity payments should change over time, 4) whether altering the way different options are described (i.e., "framed") influences annuitization choices, and 5) whether there is demand for an annuity product that makes an extra "bonus" payment during one month of the year that is funded by slightly lower payments in the remaining months.

SURVEY 1 DESIGN

Survey 1 asked 1,000 participants to make choices under the following hypothetical scenario: "Just before you retire at age 65, you are working for a company that will give you pension payments every month for the rest of your life after you retire. This income is guaranteed, but the payments will stop when you die. You will also receive Social Security benefits every month for the rest of your life after you retire." This scenario is similar to that of a traditional DB pension plan. Respondents were told to assume that inflation would be 2% and the interest rate would be 5% for the rest of their lives. In order to avoid having responses be influenced by any negative association participants might have with existing annuities nowhere in the survey did we use the word "annuity" or "annuitization." The expected present value of all the payment options offered in Survey 1 was $330,000.[1]

ANNUITY PAYOUT GROWTH

In the first question, participants were told: "Suppose the company lets you choose between the following two retirement income options. The total cost to the company of providing these lifetime payments to you is expected to be *the same* under either option." The two options offered were the following:

A) Match-Inflation Income: "Your first year of monthly payments will sum to $24,200. Your monthly payments will rise by 2% each year for the rest of your life. The increase in your payments will match the increase in prices (inflation)."

B) Steady Income: "Your first year of monthly payments will sum to $29,000. Your monthly payments will stay the same for the rest of your life. Because inflation is 2% each year, the amount you can buy with your income will fall by 2% each year."

Below these descriptions and before participants were asked to make their choice, subjects were shown three graphs. The first was a graph depicting the likelihood that a person aged 65 today will live to at least age 70, 75, 80, 85, 90, 95, and 100. The second was a graph showing how much something that costs $1 today would cost in the future, from ages 65 to 100. The third graph showed the yearly nominal amount received under each payment option from ages 65 to 100.

1 The present value of the options was calculated based on the stated interest rate and Social Security mortality tables (averaging male and female mortalities together).

In the second question, participants were asked to make another choice between two options:

A) Match-Inflation Income, as described in the previous question

B) High-Growth Income: "Your first year of monthly payments will sum to $19,900. Your monthly payments will grow by 4% every year. The increase in these payments will be larger than the increase in prices (inflation)."

BONUS PAYMENTS

Participants were asked to choose between the following two options:

A) Match-Inflation Income: "In the first year, you will receive $2,000 every month. This monthly payment will grow by 2% every year for the rest of your life, matching the increase in prices."

B) Match-Inflation Income with Bonuses: "In the first year, you will receive $1,900 in every month except for one, when you will get *$1,900 plus an extra $1,200*. You can choose in which month the $1,200 bonus is paid. This month might be a time when you often want to spend extra. For example, you might like to travel somewhere warm or spend extra money during the December holiday season. The regular monthly payments and the bonus will each grow by 2% every year for the rest of your life."

Participants were told, "The total cost to the company of providing these lifetime payments to you is expected to be *the same* under either option." Participants who chose Match-Inflation Income with Bonuses were asked to choose in which month they would like the bonus to be paid.

LIFETIME INCOME STREAM VERSUS A LUMP SUM

We included three questions asking participants to choose what percent of their annuity benefit to cash out as a lump sum. The first question asked participants about the "Match-Inflation" income stream, offering three cash-out options: A) "0% Cash Out," which gave participants monthly payments that summed to $24,200 in the first year and increased 2% annually, but had no lump sum payout, B) "50% Cash Out," which gave participants $165,000 immediately plus monthly payments that summed to $12,100 in the first year and increased 2% annually, and C) "100% Cash Out," which gave participants $330,000 immediately and no other payment for the rest of their lives. Participants were told the three options had the same expected costs to the company. Participants were also shown a graph of the nominal annual payouts they would receive (excluding any lump-sum payment) under each option, from ages 65 to 100.

The second and third questions asked about cash-out rates for the "Steady Income" and "High-Growth Income" annuities described above, letting subjects choose in each case among "0% Cash Out," "50% Cash Out," and "100% Cash Out" options after seeing a graph of the nominal yearly payout amounts (excluding any lump sum) they would receive from ages 65 to 100 under each option.

EXIT QUESTIONS

After answering all of the annuity choice questions, participants were asked to rate on a six-point scale the importance of eleven potential reasons for their cash-out choices in the survey. Participants were also asked about their life expectancy relative to the average person of their age and a set of demographic questions.

SURVEY 2 DESIGN

In Survey 2, 4,130 participants were asked to make annuitization choices based on a hypothetical retirement scenario. This scenario, which is different than the one presented in Survey 1, was described in the first page of the survey:

> "Suppose that you are 65 years old. You are about to retire and have accumulated $500,000 in the pension plan at your current employer. Your employer wants to know whether you prefer to receive this balance as a lump sum payment right now (in other words, a single $500,000 payment) or as a stream of fixed payments over your lifetime, which your employer calls the guaranteed lifetime income option. This stream of fixed payments is based on current market interest rates. The fixed payments won't change in the future even if market interest rates do change."

As in Survey 1, nowhere in Survey 2 was the word "annuity" or "annuitization" used. The annuity option was described throughout the survey as a "guaranteed lifetime income option."

In Survey 2, our full-annuitization payouts were 110% of the actual payouts quoted by Western National Life Insurance as of March 1, 2012 for a $500,000 annuity. Married participants were offered a joint and 100% survivor annuity. We multiplied the quoted monthly payouts by 110% to account for the likelihood that an annuity purchased through an employer charges lower fees and to ensure that the annuity we were offering would be more generous than anything available on the open market—a feature necessary for the Good Deal treatment described below.

Participants were randomly assigned to one of eight different treatment arms:

- *Minimal Framing baseline*: Participants could choose to take 0%, 25%, 50%, 75%, or 100% of their $500,000 balance as a lump sum. They indicated their annuitization choice by clicking one of five buttons that were ordered from 0% cash-out on the far left to 100% cash-out on the far right. A horizontal axis with an arrow on each end was shown above the buttons. The left end of the axis was labeled "Lower lump sum/More guaranteed income" and the right end of the axis was labeled "Higher lump sum/Less guaranteed income." The remaining treatments were identical to the Minimal Framing baseline except in the ways described below.
- *All or Nothing treatment*: Participants were only allowed to choose to annuitize their entire $500,000 balance or receive a $500,000 lump-sum payment. This treatment showed no horizontal axis.
- *Good Deal treatment*: This treatment was designed to overcome any reluctance to annuitize due to the fear of foregoing a better deal elsewhere. The following text was added to the description of the annuity: "The guaranteed lifetime income option gives you higher payments than you would get by buying an identical product from an insurance company because your employer will not charge you fees."
- *Total Payments treatment*: The motivation for this treatment was the hypothesis that the reluctance to annuitize may partly be due to the contrast between the large size of the lump sum and the small size of the monthly annuity payment. We added the text, "The average individual who chooses 100% guaranteed income will receive total lifetime payments of $*x*." The number *x* was the expected total lifetime payments of a 100% annuitization choice, which was $695,765 for single participants and $775,382 for married participants.[2]
- *Investment Framing treatment*: In this treatment, we included a discussion of how the rate of return would vary with longevity: "Under the guaranteed income option, you get a higher return on your $500,000 investment if you die old and a lower return if you die young. Under the lump sum, you get the same return whether you die young or old." We relabeled the axis to show "Higher return if you die old/Lower return if you die young" on the left side, and "Same return whether you die young or old," on the right side.

2 We used the average of male and female mortality rates to calculate this expectation for single participants.

- *Flexibility and Control treatment*: Annuities may be unattractive because they require giving up control of one's investments and the timing of one's spending. We added the following language about flexibility and control: "Choosing a bigger lump sum gives you more control over your investments and more flexibility over the timing of your spending." We changed the axis labels to "You have less control and less flexibility" on the left side and "You have more control and more flexibility" on the right side.

- *Longevity Insurance treatment*: The Investment Framing treatment framed annuities as a risky choice. The Longevity Insurance treatment framed annuities as a risk-reducing choice. We added the following text: "Choosing more guaranteed income gives you more assurance that you will not outlive your savings, since the monthly payments will continue as long as you live." We changed the axis labels to "Less risk of outliving your savings" on the left side and "Greater risk of outliving your savings" on the right side.

- *Mortality Credits treatment*: Reluctance to annuitize may be driven by a failure to realize that even though annuities stop paying out when the annuitant (and spouse, if applicable) is dead, these are times when money is much less valuable to the annuitant. In exchange, annuities pay out more money when it is more valuable to the annuitant because he or she is alive. We added the following language to explain this: "The monthly payment from the guaranteed lifetime income option is much higher than the interest you would receive from investing the lump sum. The guaranteed income option stops payments when you are no longer alive. In return, the guaranteed income option delivers very high pay-outs as long as you live. You are giving up payments when you are no longer alive (and don't need the money) and receiving extra-large payments as long as you are alive (and need the money)."

After making their first annuitization choice, participants were shown a graph of the likelihood that a person aged 65 today would live to at least age 70, 75, 80, 85, 90, 95, and 100. They were asked to again elect how to receive their pension payments, with the qualification that it was fine to give the same answer as the previous question. The purpose of this second question was to see whether unrealistic life expectations were affecting the annuitization choice.

Participants in every treatment arm were then asked about a cost-of-living-adjustment provision. We presented the following scenario: "Now suppose that your employer only offers a guaranteed lifetime income option. But you can choose whether you want a cost-of-living adjustment (COLA) to your payments." Each participant was randomly assigned (independent of their assignment to the previous treatments) to one of three versions of the COLA question:

- *Minimal Inflation Information baseline*: Unmarried participants were told, "If you don't choose a cost-of-living adjustment, then your monthly pension payment will be $2,981 a month for the rest of your life. If you do choose a cost-of-living adjustment, then your first monthly pension payment will be $2,033 a month, but this amount will increase over time at a rate equal to the inflation rate (as measured by the Consumer Price Index)." Married participants had the two dollar figures replaced with $2,616 and $1,784. Participants were then asked whether they preferred a COLA over no COLA.

- *Inflation Compounding treatment*: Some people may not fully understand what inflation is. In addition, many people underestimate how quickly exponential series grow (Eisenstein and Hoch, 2005). Therefore, they may be unaware how much low levels of annual inflation will erode the purchasing power of a dollar over long horizons. In this treatment, we added to the Minimal Inflation Information baseline text a slightly fuller explanation of inflation and a calculation illustrating the long-run power of inflation. The following text was appended to the description of the no-COLA option for unmarried participants: "This means that as the cost of living increases, $2,981 per month will buy fewer goods and services. For example, if the cost of living increases by 2% per year for the rest of your life and you don't have a cost-of-living adjustment, your monthly pension payment will buy 33% fewer goods and services at age 85 than it does at age 65." The text for married participants was analogous. The COLA option description had the following additional sentence: "So your monthly payment will buy about the same amount of goods and services at every age in the future as it does at age 65."

- *Inflation Compounding With Graph treatment*: This treatment was identical to the Inflation Compounding treatment, except we also included a graph of what nominal monthly payments would be from age 65 to 100 for the annuity with and without the COLA.

We set the initial monthly payment amount for the annuity with a COLA in the above questions to be 68.2% of the non-COLA annuity's monthly payment. We computed this ratio using June 6, 2012 quotes from the Principal Life Insurance Company for a $500,000 joint and 100% survivor annuity with and without an inflation adjustment based on changes in the Consumer Price Index for All-Urban Consumers (CPI-U).

After making their annuitization choices, participants were asked to rate the importance on a six-point scale of ten potential reasons for the lump sum versus annuity choices they made in the survey. Participants were also asked questions about their life expectancy and demographics.

TABLE 1. PARTICIPANT CHARACTERISTICS

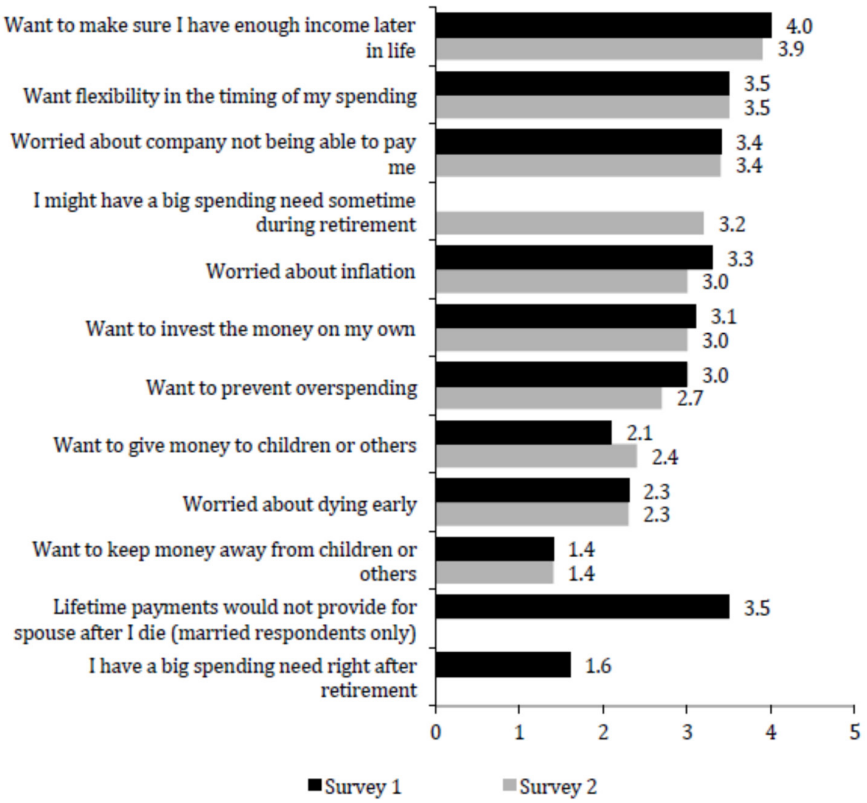
	SURVEY 1	SURVEY 2
Age (mean)	59.5	59.6
Male	50.2%	49.7%
Married	55.4%	54.5%
Number of children (mean)	2.1	2.0
Retired	35.6%	40.3%
Have a DB pension	39.3%	37.6%
Own home	71.3%	69.5%
Net worth (excluding non-respondents)		
Median	$162,500	$150,000
Mean	$298,217	$286,594
Highest education attained		
No high school diploma	1.9%	1.7%
High school diploma	22.9%	23.8%
Some college	35.0%	35.8%
College degree	27.1%	26.6%
Graduate degree	12.8%	11.8%
Decline to answer	0.3%	0.3%
Life expectancy		
Longer than the average person my age	36.4%	33.9%
About the same as the average person my age	54.1%	54.3%
Shorter than the average person my age	9.5%	11.8%
Sample size	1,000	4,130

RESULTS

OBSTACLES TO AND MOTIVATIONS FOR ANNUITIZATION

In Figure 1, we present the average importance individuals reported placing on various factors when making their lump sum versus annuitization choices. Ratings were similar across the two surveys on factors whose importance rating was elicited on both surveys. The factor with the highest average importance was the desire to "make sure I have enough income later in life," with an average rating of 3.9 to 4.0 out of 5. The next highest category was "flexibility in the timing of my spending," with an average rating of 3.5 in both surveys, closely followed by "worried about company not being able to pay me," with an average rating of 3.4 in both surveys. The desire for flexibility manifests itself in the 3.2 rating placed on "I might have a big spending need sometime during retirement" (asked only on Survey 2). The low rating of 1.6 on "I have a big spending need right after retirement" (asked only on Survey 1) suggests that respondents do not have a specific spending need in mind.

FIGURE 1. AVERAGE REPORTED IMPORTANCE OF MOTIVES FOR LUMP SUM VS. ANNUITY CHOICES



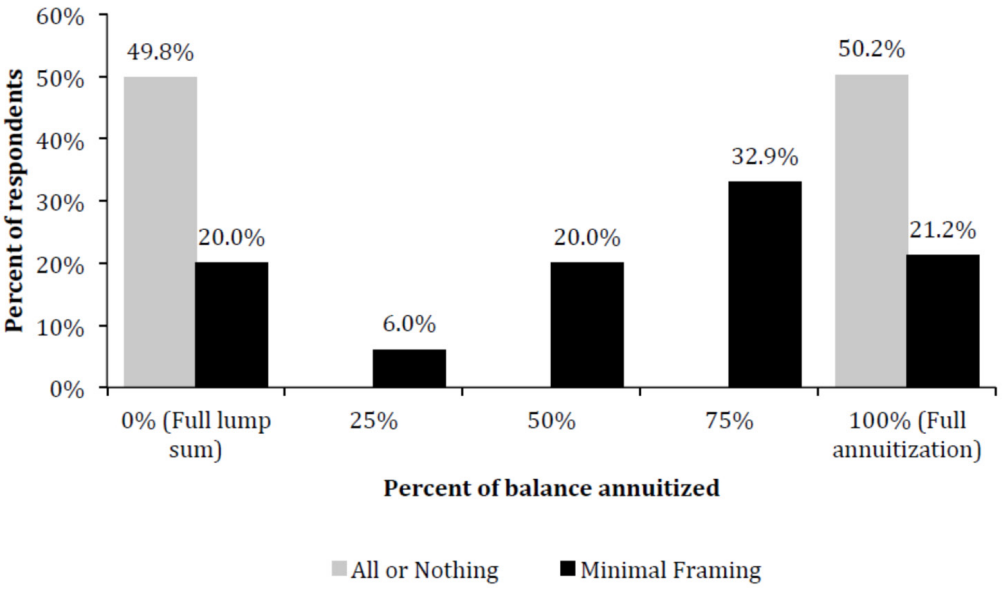
Worries about inflation (average rating of 3.0 to 3.3), the desire to invest the money on one's own (average rating of 3.0 to 3.1), and the desire to prevent overspending (average rating of 2.7 to 3.0) are intermediate-level concerns. In contrast, two other motives that are commonly discussed in the annuities literature are reported to have little absolute importance by participants. The desire to give money to children or others has an average rating of 2.1 to 2.4, and worries about dying early receive an average rating of 2.3. The factor rated least important was the desire to keep money away from children or others, which has an average rating of 1.4.

PARTIAL ANNUITIZATION

Mark Iwry, senior adviser to the Secretary of the Treasury and deputy assistant secretary for retirement and health policy, has reported that the U.S. Treasury Department would like to see DB plans move away from offering an "all-or-nothing" choice between an annuity and a lump sum to offering a variety of choices combining annuity and lump-sum payouts (Steverman, 2012). To examine the effect of such a change, we compare the first annuitization choice in Survey 2 (before respondents saw the mortality chart) under the All or Nothing treatment to the same choice in Survey 2 under the Minimal Framing baseline.

Figure 2 shows the distribution of annuitization percentages under each condition. We find that a majority of individuals (59%) choose partial annuitization when given the opportunity to do so. These partial annuitants represent shifts from both the full annuitization and full lump-sum outcomes under the All or Nothing treatment. The fraction of individuals who fully annuitize falls from 50% to 21%, and the fraction of individuals who choose a full lump sum similarly falls from 50% to 20%. Correspondingly, allowing for partial annuitization increases the fraction of people choosing a positive amount of annuitization from 50% to 80%. Moreover, allowing partial annuitization raises the average percent of pension wealth annuitized from 50% to 57%. Our findings suggest that expanding the use of partial annuitization in DB settings where total cash-outs are already allowed might lead to higher annuitization rates.

FIGURE 2. DISTRIBUTION OF PERCENT OF BALANCE ANNUITIZED IN SURVEY 2 BEFORE SEEING MORTALITY CHART UNDER THE ALL OR NOTHING TREATMENT AND MINIMAL FRAMING BASELINE



PAYOUT PATHS OVER TIME AND INFLATION

We infer whether Survey 1 respondents preferred real annuity payments that decline 2% per year, stay flat, or increase 2% per year by using their responses to the two questions with a binary choice about their desired annuity payment path. Excluding respondents who both chose real payments that decline 2% per year over flat real payments and real payments that increase 2% per year over flat real payments, we find that 19% preferred the declining real annuity, 32% preferred the flat real annuity, and 50% preferred the rising real annuity. In other words, our respondents overwhelmingly preferred flat or rising real retirement payment paths rather than downward sloping real paths (holding the present value of the payments fixed) when inflation is made salient. However, the percent of balances annuitized rather than cashed out is not very responsive to the annuity's payout slope, averaging 61%, 60%, and 63% for the decreasing, flat, and increasing annuities, respectively.

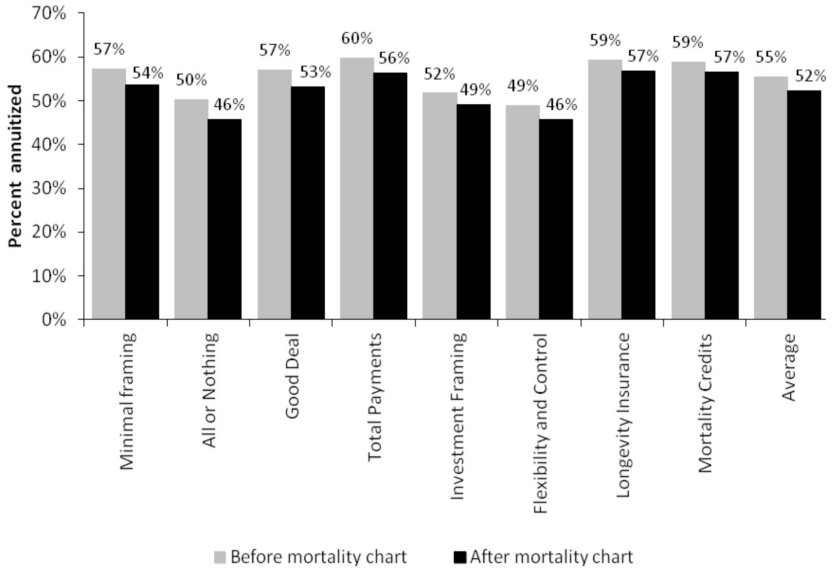
In Survey 2, we asked respondents whether they wanted to add a COLA to their annuity. When this question was asked in the Minimal Inflation Information condition, 44% of participants chose the COLA. Adding a short description of inflation and explaining how much 2% annual inflation erodes purchasing power over two decades in the Inflation Compounding treatment significantly raised the demand for a COLA to 67%. Interestingly, adding a graph of yearly payouts to the Inflation Compounding treatment made the treatment effect smaller, causing only 62% of participants to choose the COLA. Overall, the results suggest that an insufficient awareness of inflation's effects depresses the demand for COLAs and that a short description of inflation's impact when a consumer is making a decision about a COLA could substantially raise this demand.

FRAMING OF CHOICES

How do alternative presentations of different choices influence annuitization outcomes? Figure 3 shows the fraction of balances annuitized in Survey 2 both before and after the mortality graphs were shown. Focusing first on the pre-graph choices, we find that both the Flexibility and Control and Investment Framing treatments decrease the level of annuitization relative to the Minimal Framing baseline by 8 and 5 percentage points, respectively. The remaining four framing treatments have no statistically significant effect. These null effects cast some doubt on the hypotheses that motivated these treatments: that annuity demand is suppressed by the fear of foregoing a better deal elsewhere, by the large contrast between the magnitude of the lump sum and the magnitude of the monthly annuity payment, by the failure to recognize the longevity insurance embedded in an annuity, or by the failure to recognize the attractive mortality-contingent payment properties of an annuity.

Seeing the mortality graphs causes annuitization to fall in every experimental condition; the percent of balances annuitized across all conditions drops from 55% to 52%. The systematic drop could indicate that our respondents were on average over-optimistic about their expected longevity, and the mortality chart mitigated some of this bias, reducing annuity demand. Table 1 shows that 34% of participants said they expected to live longer than the average person their age, while only 12% said they expected to die sooner than the average person their age, indicating some optimistic bias in relative longevity expectations.

FIGURE 3. AVERAGE PERCENT OF BALANCES ANNUITIZED IN SURVEY 2 BEFORE AND AFTER SEEING MORTALITY CHART



ANNUITIES WITH "BONUSES"

Survey participants cited the desire for "flexibility in the timing of my spending" as one of the most important factors in their annuitization decision. Our prediction that this consideration would be important motivated exploring the demand for an annuity that offered a higher "bonus" payment in one month of each year, funded by lower payments in the remaining months. We find that 60% of Survey 1 respondents preferred a Match-Inflation Income with Bonuses annuity over a Match-Inflation Income annuity without a bonus. Among those choosing the bonus, 58% wanted the bonus to be paid during the winter holiday season—November, December, and January.

IMPLICATIONS FOR PRODUCT DESIGN AND FRAMING

Our results have several implications for annuity product design and presentation. To increase annuity demand, annuity providers could design products that give beneficiaries more flexibility and control. Our bonus annuity is an example of personalization that increases flexibility and control without compromising longevity insurance. Another example is an annuity with multiple annual bonuses. Such bonuses could either be pre-selected at the time the annuity was purchased or selected at the beginning of each calendar year. In fact, the payout stream for a given year could be made completely flexible without creating a substantial adverse selection problem.

Other forms of personalization and flexibility could also be adopted, such as limited penalty-free early withdrawals and even asset allocation flexibility (adopting some features of the variable annuity market). Of course, there is a tradeoff between greater flexibility/control and greater complexity. Too much flexibility may drive some consumers away from annuities (cf. Ivengar and Kamenica, 2010). Finding the sweet spot in product design space is a significant challenge but one that is worth taking on because of the scope for large potential welfare benefits.

Presentation changes may also increase the appeal of annuities, especially frames that highlight the availability of partial annuitization. Our results imply that most consumers prefer partial annuitization of their retirement nest egg over either 0% or 100% annuitization. We find that the availability of partial annuitization also raises the average fraction of wealth that ends up annuitized. In addition, frames that downplay investment risk may increase annuitization rates. Regarding choices about inflation, discussing the implications of inflation for purchasing power over the long-term may increase demand for inflation protection. Finally, participants report that fears of counterparty risk play a large role in their annuitization choice. Policy makers could increase annuity demand by adopting regulations that reduce this fear. For example, policy makers could make more salient *existing* institutions that mitigate counterparty risk, including back-stop state insurance funds. Current regulations ban insurance companies from mentioning back-stop funds in their marketing of annuity products. Although such bans are conceptually defensible—they reduce moral hazard problems by encouraging consumers to be selective in their choice of insurance companies—they may also have the perverse effect of decreasing annuity demand.

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