

Online Appendices for:

The Welfare Cost of Perceived Policy Uncertainty: Evidence from Social Security

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ONLINE APPENDIX A: Measurement-Error Correction Model

1. Measurement-error correction to the benefit expectation

The measurement-error correction model is a version of the standard latent factor model that was adapted to our setting. This model exploits the fact that we elicit three measures of a respondent's predicted receipt of future Social Security benefits. Under the assumption of uncorrelated measurement error in these three measures, we can solve for the variance of the measurement error in each of these measures. We elicit two quantitative measures: expected benefits based on the balls/bins questions (Q3.3-Q3.6) and expected benefits based on the slider questions (Q3.1-Q3.2). As elsewhere, expected benefits and certainty equivalents are all expressed as a fraction of the benefits one is supposed to get under current law.

We denote expected benefits from the balls/bins question by B and denote the reported expected benefits from the slider questions by S . We use the balls/bins question as our baseline measure because it elicits an expectation in the mathematical sense (which we calculate), which may not necessarily be true for the slider question (some respondents may report a mode or a median). We assume that the reported answer to the balls/bins question is equal to the underlying benefit expectation X plus uncorrelated mean-zero measurement error:

$$B = X + \varepsilon_b .$$

Because the reported answer to the slider question may not be an expectation in the mathematical sense, we allow for an additive bias term (α) and a multiplicative bias term (β) term for the answer to the slider question:

$$S = \alpha + \beta X + \varepsilon_s .$$

We denote the variance of X by σ_x^2 , the variance of ε_b by σ_b^2 , and the variance of ε_s by σ_s^2 . We observe three second-order moments:

$$\text{var}(B) = \sigma_x^2 + \sigma_b^2 , \tag{1}$$

$$\text{var}(S) = \beta^2 \sigma_x^2 + \sigma_s^2 , \text{ and} \tag{2}$$

$$\text{cov}(B, S) = \beta \sigma_x^2 . \tag{3}$$

Given that we only have 3 equations but 4 unknowns, the system is underidentified. However, one can plot all combinations of σ_b^2 and σ_s^2 that are consistent with these three equations by assuming different values for β . Figure A1 shows these combinations.

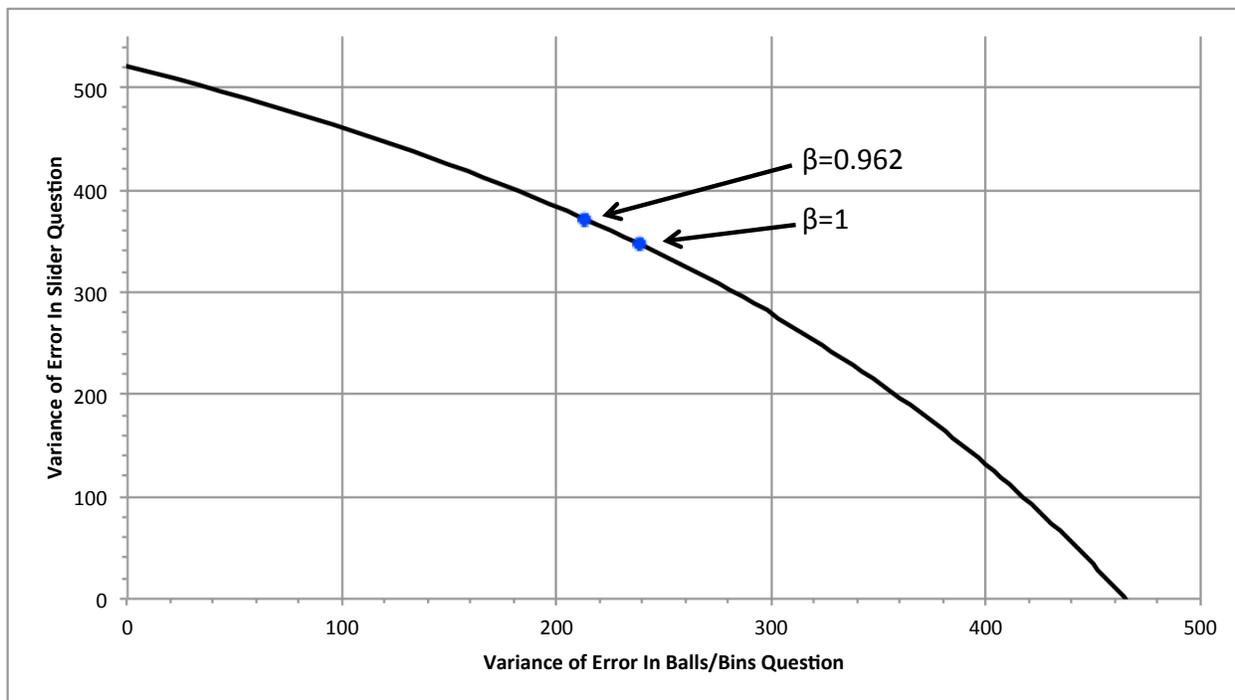


Figure A1: Combinations of σ_b^2 and σ_s^2 consistent with observed moments

We can exactly identify the variances σ_b^2 and σ_s^2 by exploiting a third measure of the respondent's predicted future benefits. Respondents answer a qualitative question about their confidence in getting Social Security benefits. The wording of this question is taken from Greenwald et al. (2010) and we will refer to this question as the Greenwald question. Because the Greenwald question is categorical, we don't want to impose structure on its error term. Let the answer to the Greenwald question be denoted by G and let it be related to the underlying expected benefits (X) as follows:

$$G = \alpha_g + \gamma X + \varepsilon_g .$$

Regressing the Greenwald question on the balls/bin question yields a regression coefficient given by:

$$\hat{\beta}_{GonB} = \gamma \frac{\sigma_x^2}{\sigma_x^2 + \sigma_b^2} . \tag{4}$$

Regressing the Greenwald question on the slider question yields a regression coefficient given by:

$$\hat{\beta}_{Gons} = \gamma\beta \frac{\sigma_x^2}{\beta^2\sigma_x^2 + \sigma_s^2}. \quad (5)$$

We solve equations (1) through (5) for four parameters of interest ($\sigma_b^2, \sigma_s^2, \sigma_x^2, \beta$) and a nuisance parameter (γ). This yields:

$$\beta = \frac{\text{var}(S)\hat{\beta}_{Gons}}{\text{var}(B)\hat{\beta}_{GonB}},$$

$$\sigma_x^2 = \text{cov}(B, S)/\beta,$$

$$\sigma_b^2 = \text{var}(B) - \sigma_x^2, \text{ and}$$

$$\sigma_s^2 = \text{var}(S) - \beta^2\sigma_x^2.$$

We use the estimates of σ_x^2 and σ_b^2 to construct the shrinkage estimate of the expected value of Social Security benefits:

$$\hat{X} = E[B] + \sqrt{\frac{\sigma_x^2}{\sigma_x^2 + \sigma_b^2}}(B - E[B]).$$

The estimate \hat{X} is the measurement-error corrected value of the expected benefits for an individual whose answers to the balls/bins question yields a reported benefit expectation of B . By construction, the variance of the shrinkage estimates \hat{X} is equal to the variance of the underlying distribution of the expected value of benefits.

2. Measurement-error correction to the certainty equivalent

The reported certainty equivalent is the value derived from the series of binary questions where we ask respondents to choose between their uncertain Social Security benefits and different values of guaranteed benefits. We assume that the reported certainty equivalent C is equal to the underlying certainty equivalent Y plus uncorrelated mean-zero measurement error:

$$C = Y + \varepsilon_c.$$

We denote the variance of error term ε_c by σ_c^2 . The variance of measurement error in the benefits expectation was identified because we had three different measures of expected benefits (the balls/bins question, the slider question, and the Greenwald qualitative question). In contrast,

because we only have one measure for the certainty equivalent, we cannot directly estimate the variance of measurement error in the certainty equivalent. To proceed, we assume that signal-to-noise ratio is the same for the certainty equivalent as for the benefit expectation:

$$\frac{\sigma_y^2}{\sigma_c^2} = \frac{\sigma_x^2}{\sigma_b^2}. \quad (6)$$

Hence, using the observed value of $var(C)$ and the previously calculated values of σ_x^2 and σ_b^2 , we solve for σ_c^2 from:

$$var(C) = \sigma_y^2 + \sigma_c^2 = \left(\frac{\sigma_x^2}{\sigma_b^2}\right) \sigma_c^2 + \sigma_c^2 = \left(\frac{\sigma_x^2}{\sigma_b^2} + 1\right) \sigma_c^2.$$

Next, we find σ_y^2 by rearranging equation (6):

$$\sigma_y^2 = \left(\frac{\sigma_x^2}{\sigma_b^2}\right) \sigma_c^2.$$

The resulting shrinkage estimate of the certainty equivalent of Social Security benefits is given by:

$$\hat{Y} = E[C] + \sqrt{\frac{\sigma_y^2}{\sigma_y^2 + \sigma_c^2}} (C - E[C]).$$

The estimate \hat{Y} is the measurement-error corrected value of the certainty equivalent for an individual whose reported value of the certainty equivalent is C .

3. Measurement-error correction to the risk premium

By definition, the risk premium is the difference between the expected benefits and the certainty equivalent. Thus, the reported risk premium, R , is equal to the reported expected benefits minus the reported certainty equivalent:

$$R = B - C,$$

and the underlying risk premium, Z , is equal to the underlying expected benefits minus the underlying certainty equivalent:

$$Z = X - Y.$$

By construction, the measurement error in the risk premium, ε_r , is the difference between the measurement error in expected benefits and the measurement error in the certainty equivalent:

$$\varepsilon_r = \varepsilon_b - \varepsilon_c.$$

We denote the variance of error term ε_r by σ_r^2 , and we assume the correlation between the measurement error in expected benefits and the certainty equivalent is given by ρ . Hence, σ_r^2 can be calculated using the assumed value of ρ and the values of σ_b^2 and σ_c^2 calculated above:

$$\sigma_r^2 = \sigma_b^2 + \sigma_c^2 - 2\rho\sigma_b\sigma_c.$$

The observed covariance between B and C is given by:

$$\text{cov}(B, C) = E[((X - E[X]) + \varepsilon_b)((Y - E[Y]) + \varepsilon_c)] = \phi\sigma_x\sigma_y + \rho\sigma_b\sigma_c, \quad (7)$$

where ϕ denotes the correlation between the underlying expected value, X , and the underlying certainty equivalent, Y . We solve equation (7) for ϕ using the values of σ_x , σ_y , σ_b , and σ_c calculated above, the assumed value of ρ , and the observed covariance between B and C . We use ϕ to calculate the variance of the underlying risk premium Z , which we denote by σ_z^2 :

$$\sigma_z^2 = \text{var}(Z) = \text{var}(X - Y) = \sigma_x^2 + \sigma_y^2 - 2\phi\sigma_x\sigma_y.$$

The resulting shrinkage estimate of the risk premium is given by:

$$\hat{R} = E[R] + \sqrt{\frac{\sigma_z^2}{\sigma_z^2 + \sigma_r^2}}(R - E[R]).$$

The estimate \hat{R} is the measurement-error corrected value of the risk premium for an individual whose reported value of the risk premium is R .

Figure A2 shows the uncorrected distribution of risk premia as well as two measurement-error corrected distributions. The baseline correction assumes that ρ is equal to zero and the maximal correction assumes that ρ is equal to the most negative value that is consistent with all variances in the model remaining nonnegative.

Appendix Figure A2: Measurement-Error Adjusted Risk Premium Distributions

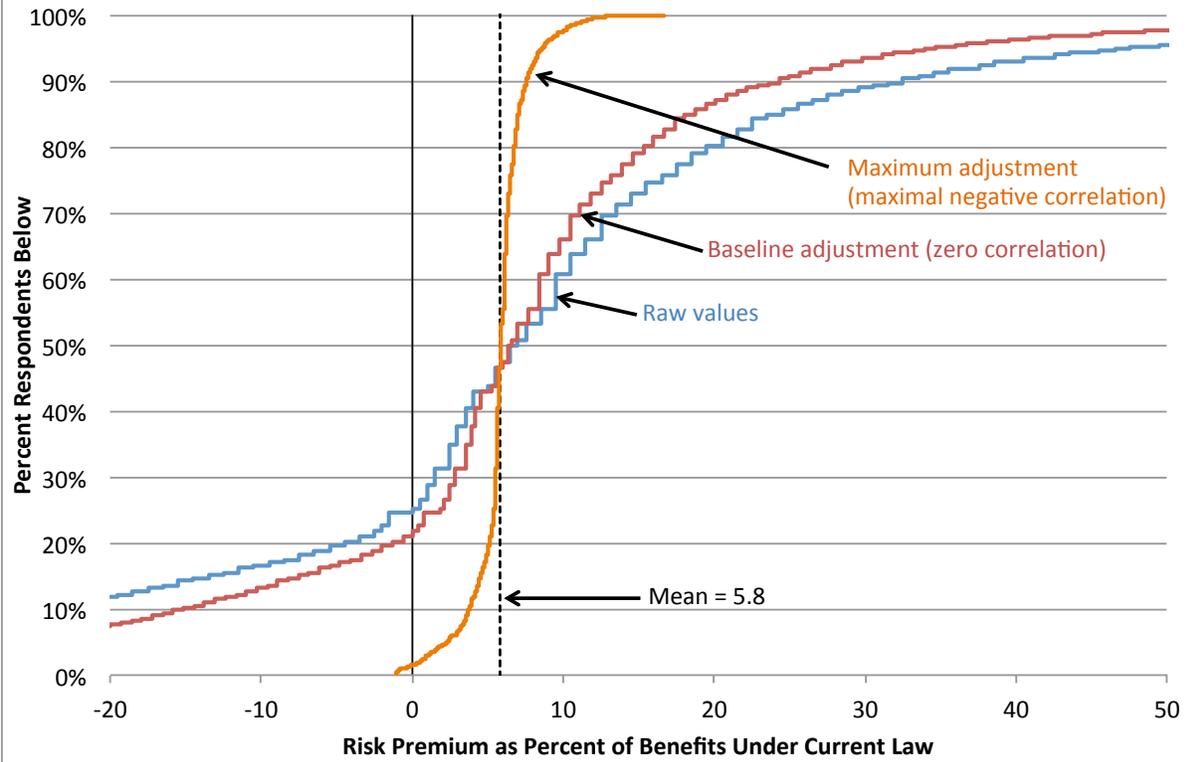


Table A1: Comparison of Demographic Variables with the Current Population Survey

| Variable | (1) | (2) | (3) |
|--------------------------------|--------------------------------------------------|---------------------------------------------------------|---------------------|
| | 2010 Current Population Survey: Ages 25-59 | Knowledge Networks Survey Respondents: Ages 25-59 | |
| | Mean | Mean | Difference with CPS |
| Age | 42.03 | 42.49 | 0.452** |
| Age: 25-34 | 0.282 | 0.257 | -0.025*** |
| Age: 35-49 | 0.434 | 0.442 | 0.008 |
| Age: 50-59 | 0.284 | 0.301 | 0.017** |
| Female | 0.507 | 0.464 | -0.042*** |
| White | 0.657 | 0.702 | 0.045*** |
| Black | 0.119 | 0.103 | -0.016*** |
| Hispanic | 0.154 | 0.154 | 0.000 |
| Other Race/Ethnicity | 0.070 | 0.041 | -0.029*** |
| High School Dropout | 0.111 | 0.088 | -0.023*** |
| High School | 0.301 | 0.286 | -0.015* |
| Some College | 0.275 | 0.229 | -0.046*** |
| Bachelor's Degree or Higher | 0.314 | 0.397 | 0.083*** |
| Married | 0.614 | 0.643 | 0.029*** |
| Widowed | 0.017 | 0.013 | -0.004* |
| Divorced | 0.118 | 0.076 | -0.042*** |
| Separated | 0.030 | 0.018 | -0.011*** |
| Never Married | 0.222 | 0.157 | -0.065*** |
| Living with Partner | .. | 0.092 | |
| Region: Northeast | 0.182 | 0.174 | -0.008 |
| Region: Midwest | 0.216 | 0.237 | 0.021*** |
| Region: South | 0.367 | 0.354 | -0.013 |
| Region: West | 0.236 | 0.235 | -0.001 |
| Household size of one | 0.111 | 0.123 | 0.011* |
| Household size of two | 0.284 | 0.305 | 0.020** |
| Household size of three | 0.211 | 0.198 | -0.013* |
| Household size of four | 0.213 | 0.218 | 0.005 |
| Household size of five or more | 0.181 | 0.157 | -0.024*** |
| Household Income: Below 25k | 0.152 | 0.141 | -0.011* |
| Household Income: 25k-50k | 0.214 | 0.229 | 0.015* |
| Household Income: 50k-75k | 0.201 | 0.207 | 0.005 |
| Household Income: 75k-100k | 0.151 | 0.157 | 0.006 |
| Household Income: Above 100k | 0.282 | 0.267 | -0.015* |
| Observations | 64,286 | 3,053 | |

Notes: * significant at 10%, ** significant at 5%, *** significant at 1%. Our sample consists of Knowledge Networks panelists who completed our survey. To be eligible to take our survey, the respondent had to be between the ages of 25 and 59 and believe himself/herself to be eligible for Social Security benefits under current law, either on his/her own earnings record or on the record of a spouse. Demographic characteristics are the values available in standard demographic profile variables at the time of the survey (June 2011). Knowledge Networks collects the standard demographic profile variables. CPS Data were collected in March 2010.

Table A2: Summary Statistics of Control Variables

| Variable | Mean | (1) Standard Deviation | (2) 25th Percentile | (3) Median | (4) 75th Percentile | (5) Number of Observations |
|-------------------------------------------------------------------|-------|------------------------------|---------------------------|---------------|---------------------------|----------------------------------|
| <i>Demographic Control Variables</i> | | | | | | |
| Age | 42.5 | 10.0 | 34.0 | 43.0 | 51.0 | 3,053 |
| Ethnicity | | | | | | |
| White | 0.702 | | | | | 3,053 |
| Black | 0.103 | | | | | 3,053 |
| Hispanic | 0.154 | | | | | 3,053 |
| Other | 0.041 | | | | | 3,053 |
| Education | | | | | | |
| High School Dropout | 0.088 | | | | | 3,053 |
| High School Education | 0.286 | | | | | 3,053 |
| Some College | 0.229 | | | | | 3,053 |
| Bachelor's Degree or Higher | 0.397 | | | | | 3,053 |
| ln(Household Size) | 1.00 | 0.52 | 0.69 | 1.10 | 1.39 | 3,053 |
| ln(Household Income) | 10.97 | 0.89 | 10.53 | 11.12 | 11.63 | 3,053 |
| Marital Status | | | | | | |
| Married | 0.643 | | | | | 3,053 |
| Widowed | 0.013 | | | | | 3,053 |
| Divorced | 0.076 | | | | | 3,053 |
| Separated | 0.018 | | | | | 3,053 |
| Never Married | 0.157 | | | | | 3,053 |
| Living with partner | 0.092 | | | | | 3,053 |
| Female | 0.464 | | | | | 3,053 |
| Homeowner | 0.726 | | | | | 3,053 |
| Region | | | | | | |
| Northeast | 0.174 | | | | | 3,053 |
| Midwest | 0.237 | | | | | 3,053 |
| South | 0.354 | | | | | 3,053 |
| West | 0.235 | | | | | 3,053 |
| Lives in MSA | 0.843 | | | | | 3,053 |
| Kids in Household | 0.467 | | | | | 3,053 |
| Employment Status | | | | | | |
| Currently Working | 0.788 | | | | | 3,053 |
| Retired | 0.019 | | | | | 3,053 |
| Disabled | 0.021 | | | | | 3,053 |
| Unemployed | 0.086 | | | | | 3,053 |
| Not Working | 0.085 | | | | | 3,053 |
| <i>Other Control Variables</i> | | | | | | |
| Risk Aversion Index (Using Lifetime Income Gambles, 1-6 scale) | 4.6 | 1.4 | 4.0 | 5.0 | 6.0 | 2,997 |
| Subjective Probability of Surviving To Age 75 (percent) | 67.9 | 22.5 | 51.0 | 71.0 | 85.0 | 2,935 |
| Importance of Social Security Funds during Retirement (1-4 scale) | 2.8 | 1.0 | 2.0 | 3.0 | 4.0 | 2,982 |
| Trust in Elected Federal Officials (1-5 scale) | 2.2 | 1.0 | 1.0 | 2.0 | 3.0 | 3,018 |
| Optimism Indicator (standardized variable) | 0.0 | 1.0 | -0.6 | 0.0 | 0.7 | 2,955 |
| Financial Literacy (0-4 scale) | 2.4 | 1.2 | 2.0 | 3.0 | 3.0 | 3,053 |

Notes: Control variables are measured in the June 2011 Social Security Policy Risk Survey, designed by the authors and fielded by Knowledge Networks. The sample is restricted to individuals between the ages of 25 and 59 as of May 2011. The baseline demographics are the values in the standard demographic profile variables at the time of the baseline survey (June 2010). The standard demographic profile is collected by Knowledge Networks. The risk-aversion variable is an index that runs from 1 to 6 and is based on five questions about hypothetical choices between a riskless and a risky job (Q6.1-Q6.5). The index corresponds respectively to the following six CRRA ranges: [<0.5], [0.5-1],[1-2],[2-4],[4-8],[>8]. Importance of Social Security Funds during Retirement is measured on a 4-point scale from "not so important" to "extremely important" (Q6.10). Trust in Elected Federal Officials is on a five-point scale, with higher values indicating more trust (Q6.11). The Optimism Indicator is the standardized average of the non-missing responses to the six items (reverse coded when appropriate) of Q6.12. The financial literacy index is the number of correct responses to the four questions on financial literacy (Q6.13-Q6.16).

Table A3: Sample Comparisons on Confidence in Social Security

| | (1) Very Confident | (2) Somewhat Confident | (3) Not too Confident | (4) Not at All Confident | (5) Mean Response | (6) N |
|--------------------------------|--------------------------|------------------------------|-----------------------------|--------------------------------|-------------------------|----------|
| Panel A : Entire Sample | | | | | | |
| Greenwald et al. Phone Survey | 9.8% (1.0%) | 33.4% (1.6%) | 37.4% (1.6%) | 19.3% (1.3%) | 2.34 (0.03) | 874 |
| Knowledge Networks Survey | 3.2% (0.3%) | 22.0% (0.8%) | 45.5% (0.9%) | 29.4% (0.8%) | 1.99 (0.01) | 2,932 |
| Panel B: Females Only | | | | | | |
| Greenwald et al. Phone Survey | 8.8% (1.3%) | 32.4% (2.2%) | 40.0% (2.3%) | 18.8% (1.8%) | 2.31 (0.04) | 457 |
| Knowledge Networks Survey | 3.6% (0.5%) | 22.5% (1.1%) | 46.9% (1.4%) | 27.1% (1.2%) | 2.03 (0.02) | 1,348 |
| Panel C: Males Only | | | | | | |
| Greenwald et al. Phone Survey | 11.1% (1.5%) | 34.4% (2.3%) | 34.6% (2.3%) | 20.0% (2.0%) | 2.37 (0.05) | 416 |
| Knowledge Networks Survey | 2.8% (0.4%) | 21.6% (1.0%) | 44.3% (1.2%) | 31.3% (1.2%) | 1.96 (0.02) | 1,584 |
| Panel D: Ages 25-34 | | | | | | |
| Greenwald et al. Phone Survey | 8.4% (1.8%) | 21.9% (2.7%) | 41.4% (3.2%) | 28.3% (2.9%) | 2.11 (0.06) | 237 |
| Knowledge Networks Survey | 2.2% (0.5%) | 13.7% (1.3%) | 48.5% (1.8%) | 35.6% (1.8%) | 1.82 (0.03) | 744 |
| Panel E: Ages 35-49 | | | | | | |
| Greenwald et al. Phone Survey | 8.7% (1.5%) | 31.7% (2.4%) | 41.0% (2.5%) | 18.5% (2.0%) | 2.31 (0.04) | 378 |
| Knowledge Networks Survey | 3.0% (0.5%) | 18.1% (1.1%) | 44.8% (1.4%) | 34.1% (1.3%) | 1.90 (0.02) | 1,308 |
| Panel F: Ages 50-59 | | | | | | |
| Greenwald et al. Phone Survey | 13.0% (2.1%) | 46.0% (3.1%) | 28.4% (2.8%) | 12.6% (2.1%) | 2.59 (0.05) | 261 |
| Knowledge Networks Survey | 4.3% (0.7%) | 34.8% (1.6%) | 43.9% (1.7%) | 17.0% (1.3%) | 2.26 (0.03) | 880 |

Notes: Standard errors in parentheses. Knowledge Networks Survey data are from the June 2011 Social Security Political Risk Survey, designed by the authors and fielded by Knowledge Networks. The sample is restricted to individuals between the ages of 25 and 59 as of May 2011 who answered both the balls/bins questions and the certainty equivalent questions. For details on the Greenwald et al. phone survey data see Greenwald et al. (2010). The phone survey was a random-digit dial telephone survey. The Greenwald sample reported here imposes our age restriction (ages 25-59) and was graciously cross-tabulated for our purposes by Greenwald et al.

Table A4: Expectations about Social Security Benefits and Taxes

| | (1) | (2) | (3) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------|-------|
| | Mean | Median | N |
| Panel A: Respondent Confidence in Social Security | | | |
| Very Confident | 0.033 (0.003) | .. | 3,045 |
| Somewhat Confident | 0.223 (0.008) | .. | 3,045 |
| Not too Confident | 0.453 (0.009) | .. | 3,045 |
| Not at all Confident | 0.291 (0.008) | .. | 3,045 |
| Panel B: Does Social Security Face a Financial Shortfall? | | | |
| Yes | 0.914 (0.005) | .. | 3,036 |
| No | 0.086 (0.005) | .. | 3,036 |
| Panel C: How Will the Government Address the Shortfall? | | | |
| Mostly or Entirely through Benefit Cuts | 0.183 (0.007) | .. | 3,028 |
| Balanced Mix of Benefit Cuts and Tax Increases | 0.576 (0.009) | .. | 3,028 |
| Mostly or Entirely through Tax Increases | 0.241 (0.008) | .. | 3,028 |
| Panel D: Chance of a Decline in General Level of Benefits | | | |
| Within 10 Years | 61.0 (0.5) | 61.0 (0.8) | 2,937 |
| By Age 65 | 66.6 (0.5) | 71.0 (0.5) | 2,840 |
| Panel E: Do you Expect More, the Same, or Less Benefits than you are Supposed to Get Under Current Law? | | | |
| More | 0.028 (0.003) | .. | 3,026 |
| The Same | 0.241 (0.008) | .. | 3,026 |
| Less | 0.731 (0.008) | .. | 3,026 |
| Panel F: Importance of Benefit Amount Uncertainty | | | |
| Matters Very Much | 0.475 (0.009) | .. | 3,038 |
| Matters Somewhat | 0.320 (0.008) | .. | 3,038 |
| Matters Little | 0.148 (0.006) | .. | 3,038 |
| Does Not Matter at All | 0.057 (0.004) | .. | 3,038 |
| Panel G: Percent chance that the Social Security payroll tax rate will be raised above 12.4%... | | | |
| Sometime within the next 10 years? | 57.5 (0.48) | 59 (1.25) | 2,884 |
| By the time you turn 65? | 63.6 (0.50) | 69 (1.00) | 2,792 |
| Panel H: What do you expect the Social Security payroll tax rate to be... | | | |
| In ten years? | 16.6 (0.11) | 15 (0.04) | 2,980 |
| By the time you turn 65? | 18.2 (0.13) | 16 (0.20) | 2,881 |
| Panel I: Percent chance that lawmakers will raise the Social Security taxable earnings limit beyond the automatic adjustments for inflation sometime... | | | |
| Within the next 10 years? | 57.7 (0.50) | 59 (1.25) | 2,915 |
| By the time you turn 65? | 61.9 (0.52) | 64 (1.76) | 2,815 |
| Panel J: Percent chance that lawmakers will add a new source of revenue to fund Social Security... | | | |
| Within the next 10 years? | 39.2 (0.46) | 40 (0.49) | 2,913 |
| By the time you turn 65? | 43.2 (0.48) | 42 (1.26) | 2,827 |

Notes: Robust standard errors in parentheses. See Online Appendix C for exact question definitions: Q1.2 for Panel A, Q2.1 for Panel B, Q2.2 for Panel C, Q2.11 for Panel D, Q3.1 for Panel E, Q4.1 for Panel F, Q2.3 and Q2.4 for Panel G, Q2.5 and Q2.6 for Panel H, Q2.7 and Q2.8 for Panel I, and Q2.9 and Q2.10 for Panel J. Data from the June 2011 Social Security Policy Risk Survey, designed by the authors and fielded by Knowledge Networks.

Table A5: Robustness of Table 4 to Omitting "Other Control Variables"

| | (1) | (2) | (3) |
|-----------------------------|-------------------------------------|-----------------------------------------------------|--------------------------------|
| | Dep. Variable: Expected Benefits | Dep. Variable: Standard Deviation of Benefits | Dep. Variable: Risk Premium |
| Age | 0.96*** (0.06) | -0.22*** (0.03) | 0.31*** (0.06) |
| Black | 7.4*** (2.0) | 2.8*** (1.0) | 10.6*** (2.1) |
| Hispanic | 5.1*** (1.6) | 1.6** (0.8) | 5.5*** (1.7) |
| Other | -0.9 (2.9) | 1.9 (1.3) | -4.4 (2.7) |
| Highschool Dropout | -0.1 (2.3) | 3.8*** (1.1) | 2.8 (2.4) |
| Some College | 0.6 (1.5) | -0.7 (0.7) | -1.6 (1.5) |
| Bachelor's Degree or Higher | 3.3** (1.4) | 0.1 (0.7) | 0.0 (1.3) |
| Ln Household Size | 1.4 (1.6) | 0.5 (0.8) | 0.6 (1.5) |
| Ln Household Income | -2.7*** (0.8) | -0.9** (0.4) | -1.8** (0.9) |
| Widowed | 8.5** (4.0) | -0.7 (2.9) | 6.2 (3.9) |
| Divorced | 0.6 (2.1) | -0.1 (1.1) | -0.4 (2.1) |
| Separated | 1.7 (3.7) | -0.3 (1.9) | 7.3** (3.3) |
| Never Married | 2.8 (1.8) | -1.0 (0.9) | 1.5 (1.7) |
| Lives With Partner | 0.6 (2.0) | 0.6 (0.9) | 1.5 (2.1) |
| Female | -2.5*** (1.1) | 0.0 (0.5) | 2.5** (1.1) |
| Owns House | -1.3 (1.3) | -1.3** (0.7) | -1.9 (1.4) |
| Lives in Northeast | 4.5*** (1.5) | 0.1 (0.7) | -0.7 (1.4) |
| Lives in Midwest | 2.2 (1.4) | 0.1 (0.7) | -0.9 (1.3) |
| Lives in West | 0.4 (1.5) | 1.1* (0.7) | -2.3 (1.5) |
| Lives in MSA | 2.6* (1.5) | -0.1 (0.7) | 0.4 (1.5) |
| Kids in Household | -5.9*** (1.6) | 0.2 (0.8) | -1.7 (1.5) |
| Retired | 10.0** (3.9) | -3.4* (1.9) | 10.7*** (3.5) |
| Disabled | -2.3 (3.9) | -1.3 (2.2) | -5.1 (4.1) |
| Unemployed | -1.5 (2.1) | -1.3 (1.0) | -0.7 (2.2) |
| Not Working | -0.7 (2.0) | 1.9** (0.9) | 2.1 (2.0) |
| R ² | 0.136 | 0.064 | 0.052 |
| N | 2,960 | 2,960 | 2,939 |

Notes: Robust standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%. This table is identical to Table 4 except that the "other control variables" (i.e., the subjective control variables) are omitted.

Table A6: Impact of Experimental Manipulations on Benefit Perceptions and the Risk Premium

| | (1) | (2) |
|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------|
| Panel A: Effect of Weather Example on Expected Benefits | Dependent Variable: Expected Social Security Benefits | |
| Respondent Sees High SD Weather Example | -0.76 (1.10) | -1.09 (1.00) |
| Demographic and Other Controls | No | Yes |
| R ² | 0.0002 | 0.2039 |
| N | 2,939 | 2,939 |
| Panel B: Effect of Weather Example on Perceived Uncertainty | Dependent Variable: Std. Dev. of Perceived Social Security Benefits | |
| Respondent Sees High SD Weather Example | 2.73*** (0.50) | 2.88*** (0.49) |
| Demographic and Other Controls | No | Yes |
| R ² | 0.010 | 0.080 |
| N | 2,960 | 2,960 |
| Panel C: Effects of Randomizations on Risk Premium | Dependent Variable: Risk Premium of Social Security Benefits | |
| Starting Value is 70% | -7.63*** (1.02) | -7.87*** (1.00) |
| Guaranteed Benefits Is Second Option | -0.79 (1.02) | -1.32 (1.00) |
| Respondent Sees High SD Weather Example | -0.20 (1.02) | -0.05 (0.99) |
| Demographic and Other Controls | No | Yes |
| R ² | 0.0188 | 0.0946 |
| N | 2,939 | 2,939 |

Notes: Robust standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%. Demographic and Other Controls are the set of controls used in Table 4. The weather example is an example of a probability distribution using the balls/bins format that was presented to the respondent prior to Q3.3. The variable Respondent Sees High SD Weather Example is a dummy that equals 1 if the variance of the distribution in the example was high.

Table A7: Measures of Response Quality

| Variable name | Explanation | (1) | (2) | (3) |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------|----------------------------|
| | | Sample mean | | |
| | | Entire sample | At least some college | At least bachelor's degree |
| Is not 100% sure to be alive at age 75 (Q6.9) | Dummy for giving a probability of being alive at age 75 that is strictly less than 100% | 0.914 | 0.925*** | 0.936*** |
| Low discrepancy in longevity expectation (Q6.9) | Dummy for giving a probability of being alive at age 75 that is within 15 percentage points (the median absolute difference) of the actuarial probability based on age, cohort, and gender | 0.481 | 0.547*** | 0.590*** |
| Plausible benefit amount in dollars (Q6.8) | Dummy for reporting a dollar amount of benefits that he/she is supposed to get under current law that is less than the maximal possible benefits under current law for a respondent of the given age, cohort, and year of starting to claim benefits | 0.913 | 0.915 | 0.912 |
| Consistent probabilities in Q2.3/Q2.4 | Dummy for giving probabilities that the payroll tax is increased that are weakly increasing with time horizon | 0.723 | 0.759*** | 0.784*** |
| Consistent probabilities in Q2.7/Q2.8 | Dummy for giving probabilities that the SS taxable earning limit is increased that are weakly increasing with time horizon | 0.731 | 0.763*** | 0.780*** |
| Consistent probabilities in Q2.9/Q2.10 | Dummy for giving probabilities that a new revenue source is used for SS that are weakly increasing with time horizon | 0.727 | 0.758*** | 0.778*** |
| Consistent probabilities in Q2.11/Q2.12 | Dummy for giving probabilities that general SS benefits are cut that are weakly increasing with time horizon | 0.766 | 0.807*** | 0.831*** |
| Correct answer financial literacy Q6.13 | Dummy for correct answer to the financial literacy question on basic numeracy | 0.744 | 0.822*** | 0.872*** |
| Correct answer financial literacy Q6.14 | Dummy for correct answer to the financial literacy question on compound interest | 0.568 | 0.664*** | 0.727*** |
| Correct answer financial literacy Q6.15 | Dummy for correct answer to the financial literacy question on inflation / money illusion | 0.595 | 0.669*** | 0.723*** |
| Correct answer financial literacy Q6.16 | Dummy for correct answer to the financial literacy question on diversification | 0.536 | 0.645*** | 0.727*** |
| Benefit estimates differ by 10 ppt or less | Dummy for the point estimate of expected benefits being within 10 percentage points of the expectation of the distribution of benefits | 0.423 | 0.453*** | 0.476*** |
| Benefit estimates differ by 20 ppt or less | Dummy for the point estimate of expected benefits being within 20 percentage points of the expectation of the distribution of benefits | 0.643 | 0.689*** | 0.709*** |
| Survey duration is more than 10 minutes | Dummy for the respondent taking more than 10 minutes to complete the survey | 0.905 | 0.907 | 0.889** |
| Survey duration is less than 40 minutes | Dummy for the respondent taking less than 40 minutes to complete the survey | 0.812 | 0.821 | 0.828* |
| Number of observations | | 3,053 | 1,911 | 1,211 |

Note: Stars indicate the significance level of the difference with the entire sample: * significant at 10%, ** significant at 5%, *** significant at 1%. The measure of answer quality labeled "consistent probabilities" equals one if the respondent assigns a weakly higher probability of a change occurring when the event is more distant in the future. The measure of response quality labeled "benefit estimates differ by ..." compares the point estimate of future benefits (based on the slider question, Q3.2) to the expected benefits (based on the balls/bins questions, Q3.3-Q3.6). The median survey duration is 20 minutes. Hence, the measures for survey duration are set at half and double the median duration.

Table A8: Estimates of Measurement-Error Correction Model

| | (1) | (2) | (3) | (4) | (5) |
|------------------------------------------------------------------------------------------------|------------------|-------------------|---------------------------|------------------|------------------|
| | Entire Sample | | Response-Quality Terciles | | |
| | | | Lowest | Middle | Highest |
| Assumed correlation in measurement error: | zero | minimal | zero | zero | zero |
| (1) Variance(BallsBins question) | 896 (22) | 896 (22) | 1023 (54) | 841 (28) | 805 (31) |
| (2) Variance(Slider question) | 997 (26) | 997 (26) | 1228 (60) | 951 (39) | 837 (33) |
| (3) Covariance(BallsBins question, Slider question) | 651 (22) | 651 (22) | 532 (52) | 627 (31) | 767 (32) |
| (4) Fraction measurement error in BallsBins question | 0.239 (0.023) | 0.239 (0.023) | 0.436 (0.053) | 0.179 (0.038) | 0.054 (0.014) |
| (5) Fraction measurement error in Slider question | 0.354 (0.014) | 0.354 (0.014) | 0.562 (0.032) | 0.356 (0.019) | 0.077 (0.015) |
| (6) Variance of underlying Expected Benefits | 676 (29) | 676 (29) | 569 (70) | 692 (43) | 761 (33) |
| (7) Variance of underlying Certainty Equivalent | 582 (22) | 582 (22) | 474 (49) | 637 (37) | 626 (26) |
| (8) Assumed correlation of measurement error in the BallsBins question and the Slider question | 0 | -0.909 (0.130) | 0 | 0 | 0 |
| (9) Variance of uncorrected Risk Premium | 784 (35) | 784 (35) | 1232 (81) | 764 (59) | 397 (37) |
| (10) Variance of underlying Risk Premium | 375 (51) | 4 (37) | 401 (125) | 478 (86) | 316 (44) |
| (11) Fraction of uncorrected Risk Premia that are negative | 0.246 (0.008) | 0.246 (0.008) | 0.285 (0.015) | 0.249 (0.014) | 0.209 (0.013) |
| (12) Fraction of underlying Risk Premia that are negative | 0.210 (0.012) | 0.015 (0.058) | 0.234 (0.023) | 0.249 (0.020) | 0.209 (0.013) |
| (13) Number of observations | 2,939 | 2,939 | 919 | 1,006 | 1,014 |

Notes: Bootstrapped standard errors in parentheses (based on 10,000 replications). The sample is limited to observations for which both the expected benefits and the certainty equivalent are non-missing. The adjective "underlying" means corrected for measurement error, using the methodology described in Online Appendix A. The assumed correlation in measurement error in expected benefits and the certainty equivalent is zero in columns (1), (3), (4), and (5). This correlation is set at the lowest possible value (consistent with all latent variances being positive) in column (2), which results in the lowest possible variance in the underlying risk premium. "BallsBins" refers to the expected benefit as calculated using the balls/bins questions (Q3.3-Q3.6). "Slider" refers to the expected benefit based on the slider questions (Q3.1-Q3.2). The fraction measurement error in the BallsBins question and in the Slider question are calculated using the methodology described in Online Appendix A. Some respondents had upper and lower bounds on their certainty equivalent that yielded upper and lower bounds of their risk premium that spanned zero or small negative numbers. For these respondents we asked the certainty equivalent question a sixth time so that we could always determine whether their risk premium either exceeded 0 or exceeded -2. As a result, we do not have respondents whose midpoint of their upper and lower bound to the risk premium lies between 0 and 2. This gap in probability mass of midpoints between 0 and 2 means that as the variance of the risk premium decreases slightly, the fraction of negative risk premia (as measured by the midpoint of the upper and lower bound) can stay the same. This occurs in columns (4) and (5) of the table.

Table A9: Fraction with Negative Risk Premium by Demographic Groups

| | N | (1) | | (2) | | (3) | |
|----------------------------------|-------|-----------------------|-------|----------------------------------------------------------------|-------|-------------------------------------------------------------------|-------|
| | | Baseline Risk Premium | | Risk Premium Adjusted for Measurement Error (Zero Correlation) | | Risk Premium Adjusted for Measurement Error (Minimal Correlation) | |
| | | Percent RP<0 | S.E. | Percent RP<0 | S.E. | Percent RP<0 | S.E. |
| All | 2,939 | 24.6 n.a. | (0.8) | 21.0 n.a. | (0.8) | 1.5 n.a. | (0.2) |
| Age: 25-34 | 747 | 28.8 *** | (1.7) | 24.8 *** | (1.6) | 3.1 *** | (0.6) |
| Age: 35-49 | 1,310 | 28.9 *** | (1.3) | 25.1 *** | (1.2) | 1.5 | (0.3) |
| Age: 50-59 | 882 | 14.7 *** | (1.2) | 11.8 *** | (1.1) | 0.2 *** | (0.2) |
| Female | 1,353 | 23.1 * | (1.1) | 18.9 *** | (1.1) | 1.4 | (0.3) |
| White | 2,093 | 25.6 * | (1.0) | 21.6 | (0.9) | 1.5 | (0.3) |
| Black | 290 | 19.3 ** | (2.3) | 17.6 | (2.2) | 0.3 *** | (0.3) |
| Hispanic | 434 | 21.7 | (2.0) | 18.7 | (1.9) | 2.1 | (0.7) |
| Other Race/Ethnicity | 122 | 32.0 * | (4.2) | 27.9 * | (4.1) | 3.3 | (1.6) |
| High School Dropout | 242 | 19.4 ** | (2.5) | 17.8 | (2.5) | 2.1 | (0.9) |
| High School | 827 | 26.2 | (1.5) | 22.6 | (1.5) | 1.2 | (0.4) |
| Some College | 677 | 24.7 | (1.7) | 20.5 | (1.6) | 1.8 | (0.5) |
| Bachelor's Degree or Higher | 1,193 | 24.6 | (1.2) | 20.9 | (1.2) | 1.5 | (0.4) |
| Kids in Household | 1,381 | 28.0 *** | (1.2) | 23.5 *** | (1.1) | 1.9 | (0.4) |
| Household size of one | 350 | 24.6 | (2.3) | 20.9 | (2.2) | 0.3 *** | (0.3) |
| Household size of two | 901 | 20.6 *** | (1.3) | 18.1 *** | (1.3) | 1.8 | (0.4) |
| Household size of three | 579 | 26.4 | (1.8) | 22.3 | (1.7) | 1.0 | (0.4) |
| Household size of four | 649 | 29.1 *** | (1.8) | 25.6 *** | (1.7) | 1.8 | (0.5) |
| Household size of five or more | 460 | 23.9 | (2.0) | 18.9 | (1.8) | 2.2 | (0.7) |
| Household Income: Below 25k | 396 | 26.3 | (2.2) | 23.2 | (2.1) | 1.5 | (0.6) |
| Household Income: 25k-50k | 667 | 22.2 * | (1.6) | 18.0 ** | (1.5) | 1.0 | (0.4) |
| Household Income: 50k-75k | 607 | 27.2 | (1.8) | 23.2 | (1.7) | 1.6 | (0.5) |
| Household Income: 75k-100k | 467 | 25.1 | (2.0) | 20.6 | (1.9) | 1.5 | (0.6) |
| Household Income: Above 100k | 802 | 23.7 | (1.5) | 21.1 | (1.4) | 1.9 | (0.5) |
| Married | 1,910 | 24.3 | (1.0) | 20.7 | (0.9) | 1.7 | (0.3) |
| Widowed | 37 | 10.8 *** | (5.2) | 10.8 ** | (5.2) | 0.0 *** | (0.0) |
| Divorced | 219 | 27.4 | (3.0) | 24.2 | (2.9) | 0.9 | (0.6) |
| Separated | 54 | 18.5 | (5.3) | 14.8 | (4.9) | 0.0 *** | (0.0) |
| Never Married | 448 | 25.9 | (2.1) | 21.4 | (1.9) | 0.9 | (0.4) |
| Living with Partner | 271 | 25.8 | (2.7) | 22.9 | (2.6) | 2.2 | (0.9) |
| Owns House | 2,149 | 24.3 | (0.9) | 20.7 | (0.9) | 1.4 | (0.3) |
| Region: Northeast | 507 | 24.3 | (1.9) | 20.1 | (1.8) | 1.2 | (0.5) |
| Region: Midwest | 1,035 | 25.0 | (1.3) | 21.2 | (1.3) | 1.4 | (0.4) |
| Region: South | 707 | 24.0 | (1.6) | 20.5 | (1.5) | 1.3 | (0.4) |
| Region: West | 690 | 24.9 | (1.6) | 22.0 | (1.6) | 2.3 * | (0.6) |
| Lives in MSA | 2,476 | 24.1 | (0.9) | 20.7 | (0.8) | 1.6 | (0.3) |
| Working | 2,324 | 25.0 | (0.9) | 21.3 | (0.8) | 1.4 | (0.2) |
| Retired | 55 | 5.5 *** | (3.1) | 5.5 *** | (3.1) | 0.0 *** | (0.0) |
| Disabled | 61 | 26.2 | (5.7) | 24.6 | (5.6) | 1.6 | (1.6) |
| Unemployed | 250 | 26.0 | (2.8) | 23.2 | (2.7) | 2.4 | (1.0) |
| Not Working | 249 | 23.3 | (2.7) | 18.9 | (2.5) | 2.0 | (0.9) |
| Lowest Response-Quality Tercile | 919 | 28.5 *** | (1.5) | 24.8 *** | (1.4) | 2.2 * | (0.5) |
| Middle Response-Quality Tercile | 1,006 | 24.9 | (1.4) | 21.8 | (1.3) | 1.8 | (0.4) |
| Highest Response-Quality Tercile | 1,014 | 20.9 *** | (1.3) | 16.9 *** | (1.2) | 0.7 *** | (0.3) |

Notes: Significance stars denote the significance level of the test that the subgroup mean is equal to the overall mean. * significant at 10%, ** significant at 5%, *** significant at 1%. Each cell reports the fraction of observations among the subgroup listed in the row that has a negative risk premium. The methodology for adjusting the risk premium for mean-zero measurement error is explained in general terms in Section 5.3 of the text and in detail in Online Appendix A. Response-quality terciles are constructed as terciles of the first principal component of the 15 response-quality indicators listed in Appendix Table A7.

Table A10: Predictors of Having a Negative Risk Premium

| | (1) | | (2) | | (3) | |
|----------------------------------|-----------------------------------------------------|---------|------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------|---------|
| | Dependent Variable: Baseline Risk Premium < 0 | | Dependent Variable: Measurement-Error Adjusted Risk Premium < 0 (Zero Correlation) | | Dependent Variable: Measurement-Error Adjusted Risk Premium < 0 (Minimal Correlation) | |
| Age: 35-49 | -0.009 | (0.021) | -0.012 | (0.019) | -0.019 *** | (0.006) |
| Age: 50-59 | -0.136 *** | (0.024) | -0.140 *** | (0.023) | -0.031 *** | (0.007) |
| Female | -0.027 | (0.017) | -0.037 ** | (0.016) | -0.004 | (0.005) |
| Black | -0.084 *** | (0.028) | -0.056 ** | (0.027) | -0.011 | (0.008) |
| Hispanic | -0.064 *** | (0.024) | -0.053 ** | (0.022) | -0.001 | (0.007) |
| Other Race/Ethnicity | 0.049 | (0.040) | 0.043 | (0.038) | 0.014 | (0.012) |
| High School Dropout | -0.067 ** | (0.032) | -0.047 | (0.030) | 0.008 | (0.009) |
| Some College | -0.015 | (0.023) | -0.023 | (0.021) | 0.005 | (0.007) |
| Bachelor's Degree or Higher | -0.019 | (0.022) | -0.023 | (0.021) | 0.000 | (0.006) |
| Kids in Household | 0.027 | (0.026) | 0.009 | (0.025) | 0.002 | (0.008) |
| Household size of two | -0.036 | (0.031) | -0.032 | (0.030) | 0.007 | (0.009) |
| Household size of three | -0.016 | (0.037) | -0.017 | (0.035) | -0.005 | (0.011) |
| Household size of four | -0.002 | (0.040) | 0.005 | (0.038) | 0.001 | (0.012) |
| Household size of five or more | -0.051 | (0.043) | -0.058 | (0.040) | 0.003 | (0.012) |
| Household Income: 25k-50k | -0.032 | (0.028) | -0.038 | (0.027) | -0.001 | (0.008) |
| Household Income: 50k-75k | 0.019 | (0.031) | 0.018 | (0.029) | 0.005 | (0.009) |
| Household Income: 75k-100k | 0.006 | (0.034) | -0.001 | (0.032) | 0.005 | (0.010) |
| Household Income: Above 100k | 0.003 | (0.033) | 0.018 | (0.032) | 0.012 | (0.010) |
| Widowed | -0.074 | (0.072) | -0.041 | (0.068) | -0.002 | (0.021) |
| Divorced | 0.052 | (0.034) | 0.054 * | (0.032) | 0.000 | (0.010) |
| Separated | -0.042 | (0.060) | -0.050 | (0.057) | -0.015 | (0.017) |
| Never Married | 0.014 | (0.028) | -0.002 | (0.027) | -0.010 | (0.008) |
| Living with Partner | 0.014 | (0.029) | 0.013 | (0.028) | -0.002 | (0.008) |
| Owns House | 0.004 | (0.020) | 0.002 | (0.019) | -0.002 | (0.006) |
| Region: Northeast | -0.017 | (0.023) | -0.018 | (0.022) | -0.002 | (0.007) |
| Region: Midwest | -0.018 | (0.021) | -0.010 | (0.020) | -0.001 | (0.006) |
| Region: West | 0.002 | (0.022) | 0.013 | (0.020) | 0.006 | (0.006) |
| Lives in MSA | -0.034 | (0.023) | -0.026 | (0.021) | 0.003 | (0.007) |
| Retired | -0.104 * | (0.059) | -0.070 | (0.056) | -0.003 | (0.017) |
| Disabled | 0.036 | (0.057) | 0.050 | (0.054) | 0.003 | (0.017) |
| Unemployed | 0.023 | (0.030) | 0.032 | (0.028) | 0.012 | (0.009) |
| Not Working | -0.017 | (0.030) | -0.017 | (0.029) | 0.002 | (0.009) |
| Middle Response-Quality Tercile | -0.053 *** | (0.020) | -0.045 ** | (0.019) | -0.006 | (0.006) |
| Highest Response-Quality Tercile | -0.094 *** | (0.021) | -0.095 *** | (0.020) | -0.019 *** | (0.006) |
| R ² | 0.043 | | 0.0427 | | 0.0139 | |
| N | 2,939 | | 2,939 | | 2,939 | |

Notes: Robust standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%. Each column reports the results of an OLS regression of the dependent variable listed in the column heading on the explanatory variables listed in the rows. The methodology for adjusting the risk premium for mean-zero measurement error is explained in general terms in Section 5.3 of the text and in detail in Online Appendix A. Response-quality terciles are constructed as terciles of the first principal component of the 15 response-quality indicators listed in Appendix Table A7.

Table A11: Classification of Open-Ended Responses about Choice to Take Uncertain Benefits over Higher Guaranteed Benefits

Classification of open-ended response to the question:

We are interested in better understanding why you chose uncertain benefits around [B]% of the Social Security benefits you are supposed to get under current law over guaranteed benefits equal to [L]% of the Social Security benefits you are supposed to get under current law. Could you tell us the main reason for your choice?

The question was asked of those respondents who chose uncertain benefits [B] that were more than 5 percentage points lower than the guaranteed benefits [L].

| Classification | Percent of reasons | Examples of reasons given: |
|--------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Risk premium is truly negative | 35.5 (2.8) | Because it is almost nothing as it is. Better to take a gamble in that case...I might come out ahead. I'll take the chance of getting 100%. |
| Reported risk premium is biased downwards (does not believe / trust guarantee contract) | 5.7 (1.4) | Our government cannot guarantee anything since it is broke. Guaranteed benefits are unrealistic in our society. |
| Likely measurement error | 58.8 (2.9) | |
| Of which: | | |
| Emotional or fairness reasons | 12.5 (1.9) | I am unwilling to lock in for anything less than what I am supposed to receive. It just seems like I am giving in too easily. |
| "Voting": person assumes the choice is binding for everyone | 9.8 (1.7) | Locking in a number would guarantee tax increases. I do not believe that the government should be in charge of peoples retirement. |
| Person says being confused or having made a wrong choice | 6.1 (1.4) | I hit the wrong answer. I really don't understand this . |
| Other reasons | 30.4 (2.7) | There will not be enough money to spread around. I hope to get more but am not very confident in the people we have in the government. |

Notes: Standard errors in parentheses. Answers were classified independently by both authors. Authors' classifications corresponded between the three main categories (Risk premium is truly negative; Reported risk premium is biased downwards; Likely measurement error) in 83.7% of cases. In case of conflicting classifications, final classification was made by mutual decision. Given that there is inherently some subjectivity in the classifications, the classification of each answer is shown in Appendix Table A12. The open-ended question was asked of 514 respondents who rejected a guaranteed benefit amount that was at least 5 percentage points higher than their uncertain expected benefits. Of those who were asked this question, 296 respondents (58%) gave a reason (other than responses such as "don't know" or "n/a"). Reasons that indicated that the respondent chose the uncertain benefits over the higher guaranteed benefits because they like risk or value the upside option were classified as "Risk premium is truly negative." Reasons that mentioned that the respondent did not trust the guarantee (or the government to pay it), were classified as "Reported risk premium is biased downwards" because these respondents undervalued the guarantee because they did not believe it. Finally, all those reasons that indicated that the respondent's choice was made for reasons other than relating to risk preferences were classified as "Likely measurement error." If a respondent gave multiple reasons, the classification was based on the first reason given.

Table A12: Full Listing of Open-Ended Responses and Their Classification

| Expected Uncertain Benefits | Rejected Guaranteed Benefits | Reason given for choosing expected benefits over guaranteed benefits |
|-------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Panel A: Reasons classified as respondent indicating a truly negative risk premium</i> | | |
| 76 | 90 | Nothing in life is guaranteed. I will take my chances with current social security. I am not planning on receiving anything from it, but am pretty sure I will get something. By choosing uncertainty, I am taking a chance that I will get over |
| 66 | 80 | I would rather risk the benefit of more than 80% benefits rather than take the sure 80% |
| 32 | 55 | At 55% I figure I can take the risk. |
| 3 | 10 | There is not much of a difference between 3 and 10% and considering the unstable situation of Social Security, it is a good gamble to take the chance |
| 38 | 50 | the 38% is a mean, but the distribution of possible outcomes means it could be well above 50%. Since I'm financially secure, I don't mind taking that chance. However, the higher the contracted amount is the more I value the certainty. |
| 31 | 55 | Because if the economy recovers sufficiently, it is possible that the 31% rate would go up. Also I personally do not feel like I will get any Social Security benefits whatsoever, so I am ok to gamble with it a bit |
| 40 | 60 | 60% is too low. I would rather take the chance of uncertainty |
| 29 | 35 | the guarantee is so close to the uncertain that I would rather risk it with uncertainty |
| 9 | 35 | I don't expect anything, and thus I will gamble up that I will actually get up to 35%. I have a hard time accepting the guaranteed" premise. throughout history, governments have confiscated personal wealth in one way or another." |
| 13 | 35 | 35% of those benefits isn't very much money. I'd rather risk it. |
| 19 | 55 | I can't live on only half of SS at this time without major changes to my other retirement area, so I might as well take a chance to see if a miracle occurs and we do get some decent SS benefits in the future. |
| 64 | 85 | its a gamble |
| 42 | 60 | at 60% I'd rather take the risk |
| 19 | 55 | 55% is a low number, I would rather take a chance on the uncertain benefits.. |
| 19 | 35 | Because it is almost nothing as it is. Better to take a gamble in that case...I might come out ahead |
| 2 | 95 | I like to gamble. |
| 53 | 65 | The more we are uncertain the more they take. I would take a chance that I will get more on the uncertain %. |
| 58 | 75 | I am a gambler |
| 26 | 45 | At some point the risk that you might get more becomes worth it. |
| 70 | 80 | I took this question as uncertain meaning there is the possibility of earning MORE. So I would risk uncertain benefits of 70% if there was a chance to get to 100% or some increased fluxuation. |
| 56 | 65 | its pretty close to 50/50 so I'd rather take a chance on getting more. |
| 48 | 65 | I'd do a better job of insuring my financial personal future than handing over to politicians. Social Security is an adendum to my future, of which I'm willing to take a risk. It's about personal accountability. |
| 51 | 80 | I'm investing for my own retirement and not counting on social security at all. anything I get will be "bonus" money, so I'm willing to take the risk of a smaller benefit for the potential of a larger one. |
| 12 | 35 | If I am only guaranteed 35% I would be more likely to take my chances and plan for only 401k. |
| 84 | 95 | I have a retirement plan outside of social security and am not really relying on it, so I'm not going to invest money in some "insurance plan" to guarantee me benefits. What I get is what I get!! |
| 28 | 35 | The difference is small enough that I'll take the gamble. |
| 66 | 80 | They are uncertain benefits, so they could be more or less. This is close enough that I would be willing to take the chance that the benefits would be better with uncertain benefits than 80% |
| 36 | 55 | There probably won't be any ss, 55% won't even support me, might as well take the chance |
| 71 | 85 | Not enough difference to chance permanent reduction. 20% was worth it. |
| 75 | 95 | this is no way to fix this problem..if anything benefits need to be raised to a higher level..you have generations now that were told they would have ss benefits..for many this is there only guaranteed income..i think i will roll the dice again |
| 76 | 85 | I'm willing to gamble a little when it comes to the US government. I don't think they'll fall apart THAT easily. It seems worth the risk up to a point. |
| 50 | 60 | The difference is not that big and around 50% could be over 60%...I would take the chance with a percentage difference that low. |
| 39 | 50 | It is a gamble at this point |
| 29 | 35 | If I am going to settle I may as well take a gamble on exceeding 29 percent |
| 59 | 85 | I would rather have a chance at full benefits then settle at 59%, but if guaranteed at 90%, that would be acceptable in the least |
| 14 | 45 | Indifferent to risk below 50% guarantee. |
| 23 | 65 | I would take my chances with the uncertain versus the guaranteed if it's less than 70%. |
| 9 | 50 | I want the most but when you drop to 50% I would rather take my chances |
| 31 | 55 | I'd rather take my chances on what the current law will be and get 31% of that. Anything under 60% Im willing to take a chance. |
| 39 | 45 | It is a gamble for uncertain benefits it could equal less than 39% but could also be more than the guaranteed offer of 45%. |
| 50 | 75 | I would risk getting less than 75% of the benefits if it meant there was a chance of getting more than 75% of the current benefits offered by law. |
| 54 | 65 | uncertain benefits are subject to change-- namely through political activity. i can lobby to improve benefits. plus i don't really believe you when you say that any alternative to social security would be "guaranteed." |
| 42 | 60 | 42 is a uncertain amount and could be higher. I deserve to get what I paid for and actually do not like ANY amount of reduced benefit. |
| 18 | 75 | I think the liberals wil tax and come up with at least 80% |
| 11 | 35 | maybe things will get better than i expect |
| 59 | 90 | always a possibility of receiving 100% or even more if laws are changed |
| 42 | 70 | I don't think 28% is that big of a difference and I understood the 42% to be uncertain that it could be more or less. I'm confident about retirement and should not need the government's help. |
| 63 | 70 | i might get more that way |
| 5 | 25 | There's still a chance that I could get more and uncertain is uncertain, I'd hate to give up a better deal for 25%. |
| 32 | 45 | Because deep down I hope there will be a movement among constituents to make our representatives truly/honestly work to fix social security. If such thing happens I am thinking I could get at least 60%, and not settle for so much less 45% |
| 22 | 35 | Because it's uncertain, it could be higher. |
| 3 | 10 | I am hoping that the benefits will be more than the guaranteed 10%. |
| 72 | 80 | It is so close to 72...it wouldn't make that much difference. It could be higher than 72. |
| 44 | 60 | Would hope that a change would be made that would make the benefits greater than 60%. Worth the risk of a greater change would happen than only receive 60% of what I payed in tohte system. Willing to risk more on a new plan if I am only going |
| 79 | 90 | I'll take the chance of getting 100% |
| 75 | 95 | the 75% option still offers the possibility to get 100 % of what i have coming.the guaranteed option only offers a portion. I want ALL my benefits. |
| 47 | 85 | I'm young enough to gamble that the laws will eventually give me 100% or more of what I am now scheduled to get. |

72 85 Anything less than 90% guaranteed is not acceptable. I would rather take a chance of getting 100%.

63 75 The law might remain the same, or might even be changed in my favor.

88 95 because there is always a possibility you could end up getting more than you expect to get. getting benefits late than never at all means i am in the black and ahead of the game.

17 80 because there is always a possiblability that things can change.

66 75 I have a good feeling that it will be at least 80%, so guaranteeing 75% would be detrimental.

26 55 Ther is a chance I could get more than 26%.

38 45 The uncertain benefit has the possibility/likelihood of being more than 38% or even 45%. The guaranteed benefit is locked in at 45% and cannot or is unlikely to be more than 45%.

27 55 Hard to explain but it just seems odds are better to receive benefits better than 55% by the time I retire.

29 70 Because those uncertain benefits may be more.

78 85 uncertain 78% but could be 100%. guaranteed 85% is no more no less

70 90 I think the "uncertainty" is not truly distributed evenly around 70, but probably weighs more heavily toward 100; and the situation could change again between now and then.

26 40 because i dont know if I could possibly receive more than 50 percent in uncertain benefits at that time

89 95 Better have a higher income than a guaranteed income. More likely because I will not depend on SS for my expenses after retirement

15 35 because at uncertain benefits it could go higher than 35%

37 50 the uncertain percentage could change and have potential to be higher

35 45 It might actually be what it's supposed to be and be more than 45%. that is, if the government stops giving it away before I retire.

50 65 There is a chance I could get the full benefit I am entitled to. The thought the US govt can "buy" me off for 65% of what they previously promised when taking more than 6% of wages for my working career due to their mismanagement makes me angry. I would just as soon the govt was not involved at all with social "security".

4 35 choosing uncertain of 4% allows for Hope! I wouldnt want to be locked into something less than 40%. I would already be taking a huge loss at 40%.

31 55 The uncertain benefit might be higher than 55%.

84 95 a change to get more

41 65 Uncertain benefits between 41% and stil means that it may be higherthan 65%. I feel that 65% of wat I am supposed to get is not enough of a difference to not risk the possible upside.

39 65 Things can change...you never know. We might turn this economy around and I might actually get what I'm entitled to.

76 95 you never know what tomorrow holds things could happen and we could get 100%

23 50 Because those uncertain benefits could be more than 50% and you might have given up more if you picked the guaranteed.

43 55 It may happen that I get 100% of the benefits I am due, so I don't want to lose that chance.

77 95 I still have faith that at least I will get the same amount I'm supposed to get instead of lower.

14 20 Just because the 14% is uncertain, there is still a chance it could go over 20% by the time I retire

20 35 even being uncertain ,it may go higher

60 70 The 60% was my guess at what I think that I'd get, my hope it that I receive 100%. Guaranteed 70% takes away the chance of 30%.

43 55 because those uncertain benefits could still wind up being above 55 %

84 90 i could still end up with 100% of current law. maybe even an increase

52 65 because there is so much uncertainty, it might be better to wait and see rather than lock into something at that rate

20 95 The possibility still exists that it could be fixed and laws are changed for the better. I could potentially make over a 100% of current laws.

27 55 Hope that the uncertain benefits will be more than the 27%.

53 60 While I believe I will receive about half of my benefits under current law there is a decent chance my benefits will not be cut by that much. I don't believe the scenario of benefits being cut by more than 50% is too likely. So I am taking a chance that my benefits could be more at the risk of it being about 5-10% less.

44 55 It seems like a small gap between 44% and 55%, I would rather not be locked in at 55% if there was a chance, even if it was an uncertain chance, that the benefits would go higher than the 44% or even higher than the 55%

59 70 It is uncertain at 59% but it could be greater than 70%.....the difference is not great enough to remove the potential for greater benefit by guarnateeing a lesser amount

66 75 the uncertainty part means that I might get more than 75%

30 55 If it is uncertain benefits at 30% there is always a chance the benefits may be higher. The reality is that benefits will fall below what we are expecting, so I will not rely on that money since I have no guarantee it will actually be there when I turn 65. Yet, I am an optimist and I am willing to entertain the idea that we may be happily surprised - I'll just make financial plans as if that money won't be there so I won't be relying on it to live.

8 55 I have hope and faith that the government will find ways to gaurantee more then 55%.

44 65 I could be wrong and it may not go down to 44%

30 40 the 40% can't be changed, but the uncertain benefit could be higher in the future

50 65 Because the guaranteed benefits cannot be changed, but the uncertain benefits might change.

61 75 Uncertain leaves possibility of receiving full benefits.

12 20 may be more

57 70 The government could surprise us and it will be more than 57%

26 35 because 35% guaranteed can't be changed, 26% uncertain may be more

49 55 Because I think that with the uncertainty is the possibility that I might get more than 55% of the benefits I am supposed to get.

Panel B: Reasons indicating that reported risk premium is biased downwards because respondent does not believe or trust guarantee contract

3 35 I'm not betting on the government even being able to do anything

41 60 I am suspicious of a program that guarantees such a small percentage of the SS benefits. This sounds to me a bit like those late night commercials offering cash now for legal settlement payments.

57 70 I do not trust our law makers at all and they could care less about the people.

20 75 Not signing anything with the government..

10 95 If the government cannot "guarantee" what they already promised to do with the current SS, why should I have ANY trust that they could possibly "guarantee" some other percentage in the future? SS was the worst sort of thing for the government to get involved in from the very beginning. I personally expect to get nothing from SS and make my OWN financial planning decisions accordingly.

5 95 Such a guarantee is preposterous. Not only preposterous it does not guarantee buying power of the dollar which is far more important than the guarantee without a standard. One can guarantee to pay 1000% of my SS benefits under the current law

30 55 Lack of faith in the government maintaining or increasing funding.

66 85 A "guaranteed benefit" cannot really be "sure" to happen (if, for example, such guarantee or others like it completely disrupt the economy. Also a so-called guarantee effectively LIMITS payouts to less than 100%

41 95 One reason is that I don't believe any government guarantees. Another is that in order to meet their guarantee", the government will make us "pay" in other areas such as higher payroll taxes or less benefits/services in other areas."

41 95 One reason is that I don't believe any government guarantees. Another is that in order to meet their "guarantee", the government will make us "pay" in other areas such as higher payroll taxes or less benefits/services in other areas.

54 75 Total lack of trust in anything that the Federal government offers. My student loans interest rates were not to be changed, lo and behold a senate group decided that it was unfair that some folks had higher rates of interest that they had to pay, so my fixed rate loans became variable rate with out so much as a by your leave...

37 95 Because the government lies and there are no guarentees on anything...period. I choose not to live in a world with rose colored glasses. The democrats lie and the republicans are worse yet!

79 95 Our government cannot guarantee anything since it is broke.

82 95 Any time the government "guarantees" any benefit, it causes unrealistic stresses on the benefit in question. Being somewhat cynical, assuming the government restructures Social Security to make it fair and responsive to all those who legitimately qualify for benefits (which it will not), the system must allow for a smaller workforce paying to a larger pool of recipients, as well as added beneficiaries who were originally not part of social security. The math does not seem to work out; that is receiving guaranteed benefits under the current system.

1 95 The social security benefits will be bankrupt before I turn 65. Would not rely on the government to secure any amount for me in the future for my retirement. Will plan to rely on something else to support me and family after I retire.

32 55 I feel like it is too close to a 50/50 type deal, which would be too easy for government to reduce lower.

77 95 Guaranteed benefits are unrealistic in our society.

Panel C.1: Reasons indicating likely measurement error. Subclassification 1: Emotional or fairness reasons

6 25 30% is still to low but it seems worth the risk more so than 25%. If I'm going to get the shaft, which I fully believe to be the case, I'd take the thirty percent and invest it in my own way.

70 85 I do not like the changes they are wanting to make with social security.

3 25 I want my social security money

3 85 I want at least 90%

59 90 It just seems like I am giving in too easily.

32 45 I don't have a choice to pay in after paying in all my life a guaranteed benefit of less than 50% of what was promised and I paid into is just a screw job. I would rather stop paying into the system and invest the money myself.

47 55 we deserve what we earn and are entitled to. it is not fair to even have to chose less than we are entitled to, pisses me off!

19 45 I could make up half of what I am suppose to get. Any thing less the government better start looking at things.

32 45 45% sucks

34 95 I am unwilling to lock in for anything less than what i am supposed to receive

12 25 If I do not get what I am supposed to get after paying the MAXIMUM into the social security system, they can shove the what little bit they give me up their ass.

11 55 I worked for this, I should collect ALL of what I am supposed to get under current law. I am not currently putting in because the job market is in the tank, and I cannot get a job, WITH 2 college degrees, I still cannot get a job. Anyone who is currently paying in, or has paid in through their working life, should get what they have put in thus far, regardless of what the future brings. Get ppl off welfare, back to work. Our country won't survive this recession, it is not getting better, and I don't have a very positive outlook on the future.

2 15 Is it possible to substain life on nothing? Where is my right to life? I work to insure my right to life. Not enough funds is suicide concerd by the Government. We are under contract with the Government for this service.It is sad the Government values those who need the help as so!

16 25 I have a 30% cut off.

49 65 I don't want to automatically give up more than the 30 percent I have read currently being projected, just on principle.

21 55 Because it's insulting.

40 55 Comfort level, under 60 percent of guaranteed was my cut off level to go with the uncertain amount.

59 70 I would like to be guaranteed an amount I should get

5 85 With our current government, people should be demanding all or nothing. I've paid into social security for nearly 20 years, I should get 100% or nothing.

56 65 Well, an 80 o 70% guarantee sounds better than what I expect. However, anything lower is just giving in with decades to go. If the government can bail out businesses and poor people with medicaid and social security disability, they might bail me out. I guess if the whole country is going to be bankrupted i might as well hold out for my piece of the pie. Also, I have saved and will be able to retire without social security. as a matter of fact, I don't count it in my retirement plans. So I feel like I can gamble with anything under 70% in your scenarios.

69 85 If I can't be guaranteed at least 90% of current law benefits, I'd rather take a chance. If the guaranteed benefits can't be changed, it needs to be a fairly high percent before I'd agree to the guarantee.

8 25 Given what I have already paid into the system and am expected to pay over the next 20+ years, the fact that realistically I can only expect at best 1/3 of my money back is insulting. I figure anything less than 1/4, is criminal, so why not roll the dice and see if I can get more.

3 95 i want 100%. but expect nothing

64 95 If the law says 100% give me the 100% I paid in, I was born here and have worked here, my money is spent here! If the magots did not steal and piss away the money, we would not have this issue!

5 45 Because 45 is still pretty low. 50 would be the absolute lowest I would choose as guaranteed. It is disheartening to know I have worked all these years for probably nothing in the future.

75 95 I have watched people who never worked outside of the home recive social security benefits (and not as a surviving spouse) and I have paid into it all my adult life. I think I deserve full benefits

78 95 I expect to get everything I paid for so I am not going to sign a contract for less

68 90 Because who have worked so long and hard and have contributed to the SS system should get at least the same benefits as the people recieved when we were contributing our hard earned money.

15 35 40 PERCENT IS MY CUTOFF

26 35 35% is too low of a guarantee

34 95 I would like to get 100% of what I am entitled to

29 55 I am planning on receiving approximately 29% and look at that as the floor. If I accepted the 55% then I would be allowing the government to short change me rather than continuing to explore other possibilities. I look at the uncertainty as potential.

5 30 It is all about retirement.....you have paid your whole life and you deserve something in return for paying until you retire....

4 70 I would like to get back what I'm due and have paid in...I don't think that that will happen though...I do believe our government has scandered, has over spent, has lived high on the hog and will not be able to cover our fair share...

15 55 I have paid into social security for my entire working career and I deserve much more than 55% in return

64 75 I don't think it's okay to receive less, though I think that is really going to happen anyway.

76 85 Because really I should get 100% and I'm going to fight against any "solutions" to the Social Security "crisis" that cut more than 10% of benefits that people are supposed to get.

Panel C.2: Reasons indicating likely measurement error. Subclassification 2: "Voting" -- the respondent assumes the choice is binding for everyone

79 95 The 79% makes more sense to me. In order to guarantee the 95% means to me that there would have to be drastic measures(tax increases, program cuts, etc.) made in order to arrive at that percentage.

2 95 Less government involvement the better off we'll be

65 95 Locking in a number would guarantee tax increases.

2 95 I believe social security should be wiped out and a new program should be put in place. It is not ready to support the baby boom generation. I feel like my money is wasted every month.

83 95 I believe this guarentee would only come about with privitation of social security and I strongly oppose this.

25 95 I would like to see the government out of the retirement business. Since they have proven that they are incapable of managing anything in a cost effective manner, even the military, they should let the private market handle the retirement business.

67 95 It doesn't matter what I want. If I pick a guarantee amount, they will use that excuse to lower all benefit amounts saying it's what the people want.

23 95 I believe that social security is unconstitutional and have no wish to partake in it. I would rather keep my money and save and invest how I wish seeing that I will never receive the money I've paid into social security back.

2 95 This series of questions is totally unreasonable without raising enormous taxes or having the socialist form of government entitlements grow even bigger. I am against any efforts to save the SS system as it was created. It is a failed system and needs to be totally replaced. It does not work and tinkering by taxing the so called rich will not make it solvent.

23 95 Because if it guaranteed benefits and they cannot pay for it, where is the money going to come from? I absolutely don't want higher taxes!

10 95 I think people should be responsible for their own retirement. Open a Roth IRA. I'm tired of being taxed while others don't work.

68 95 The only way to guarantee any benefit amount would be to raise taxes on future generations.

56 70 Not sure that social security can continue paying out more benefits than what it is receiving without some new changes.

33 95 I don't think there should be a social security. I don't expect that the government should provide any retirement benefits to me, and don't think they should be guaranteeing anything because that is ALWAYS a bad idea and will put our nation further and further into debt

14 95 Because the Govt will not be able to find a solid solution to the issue our gov does a poor job of solving our countries issues. So i am better off not counting on it and planning accordingly. If they do figure it out then it will be a windfall...

50 70 I don't need SS. I would like to not get ss benefits and get a tax cut.

29 95 I am a liberal American - however I feel that it is not fiscally responsible for the US Government to contract into a specific amount of benefits. I think that it is very important to have your own savings plan - and utilize free markets for yourself. While I understand that SSI benefits are important to older generations - I have no promise or guarantee on my own use of those same benefits.

25 35 I save every penny I earn. I plan my own financial future. I do not appreciate the government automatically withdrawing money from my paycheck, BY NO CHOICE OF MY OWN, and having it NOT be there when I need it because some corrupt bastard in congress stole it. UNACCEPTABLE!!! Let me finance my own retirement with that money. Instead of Social Security, force that money into a bond account that people can't touch until they're at retirement age.

11 95 Because I don't think the government should be funding my retirement. I'd rather have uncertain benefits with the hope they will privatize social security.

13 20 I would rather pay less into Social Security in order for me to save and invest on my own as I believe I can handle the money better than the government can.

34 95 I do not believe that the government should be in charge of peoples retirement

63 75 Because I hope that our elected officials in Washington might be able to get a backbone and make some tough decisions now to correct the underfunding of the system instead of constantly raiding the trust fund for useless government spending.

5 95 I believe that social security should be radically changed or done away with. I believe it would do the government and our nation more harm to have an unbreakable contract tying them to a course of action since they cannot seem to stay on any 1 course of action. If the social security system remain as it is, I believe it will eventually fail. If guarantees were given, I believe that it would still fail eventually and possibly take the entire government with it. I prefer the first option.

11 95 I think people have become too reliant on Social Security. Social Security wasn't created as a "retirement program". It was meant to help those who were truly unable to work due to their age. The social security age needs to be raised and people need to start taking care of themselves instead of waiting for the Government (or anyone else) to do it for them.

58 70 I would feel better if a decision was made and a plan was in place within the government even if it meant a 25%-30% decrease in my benefits. If I couldn't be guaranteed at least 75% of my benefits I would prefer more work be done to come to a better result for my benefits.

78 95 I am afraid that guaranteed benefits means more taxes and more government involvement. Maybe uncertain means they would actually invest the money paid in instead of using it to fund other programs. 12.4 % should really be returning nice profits if invested right.

60 90 I do not want social security privatized. The system would be working if government didn't take the social security funds and spend it on other things. Plus, they should be more focused on eliminating the wage limit on taxable income for social security purposes. If all of my wages are taxed so should the next person's.

80 95 Because I vote.

37 95 I don't want any law that forces the government to spend money they don't have. There has got to be a way to fix the program so that it works. Obviously, any law passed can be changed.

Panel C.3: Reasons indicating likely measurement error. Subclassification 3: Respondent reports being confused or having made a wrong choice

25 35 It was a mistake.

3 30 I hit the wrong answer.

25 90 I did not read the question thoroughly enough. I actually meant to answer with guaranteed benefits equal to 90%. Sorry!

14 70 id rather be sure and recieve 70% i just put the wrong answer. And its because Id rather know to plan my future retirement!

4 30 choose wrong answer.

32 90 clicked wrong answer

41 50 It was an error. I probably won't see a dime of the money anyway.

30 60 choose wrong answer on accident meant to choose answer b, just couldnt go back to change it, to certain benefits sorry

6 70 i didnt i said i would rather have a guarantee

28 70 I chose the other, not certain why this is selecting in correctly.

58 70 I guess I thought it was suppose to go the other way. I thought by putting the balls in 42%, that that's the amount I thought I'd receive.

47 70 choose the wrong one

40 70 mistake

27 50 That question confused me...

16 90 i dont know,i thing dont understand the question

73 80 You have found a way to make questions as confusing as possible. I feel as though I am never quite sure I am giving the answer I intend to give.

59 70 I really don't understand this .

32 55 dont understand. Would take the risk

Panel C.4: Reasons indicating likely measurement error. Subclassification 4: Other reason, or reason not sufficiently clear to be classified elsewhere

20 60 need money to live

22 65 I just don't think there will be anything anyway

67 75 It just seems to me that 80% is the number that I am most comfortable settling for a guaranteed amount.

28 55 because that would mean there was still some certainty around 70%

48 70 my chose was because i have other retirement saving.

21 65 sounds like more than that what i will probably get

51 90 they are have issues when ssi

21 70 better to have guarantee of something

57 90 I THINK THEY WILL NOT HAVE THE MONEY TO PAY OUT WHEN I GET 65

12 55 55% of social security benefits is not that much anyway. At that point it's a wash.

29 45 Because I feel that by the time I turn 65 and will be eligible for S.S. benefits, there will be major changes and cuts to the program due to the financial crisis our government is in. There may be NO S.S. benefits by the time I turn 65.

48 70 70 is better than 40

6 30 looks like a coin flip

51 60 im going to need all i can get

49 55 The difference could be negligible, and I intend to have my own money saved for retirement

48 60 cause lawmakers will take all the money

82 95 Because you are just looking for the default amount that I am willing to accept instead of looking for ways to buttress the current payout plan.

27 45 Who knows wherer its going to be

6 35 My financial planning for retirement would rely entirely on other sources. Social Security becomes bonus income.

22 95 us gov. doesn't have the money and people are living longer

1 70 I will need that much to survive. I have tens of thousands in student loans and cannot find a job in my field. I am very worried about my future.

46 90 Hoping the government faces reality and lets us choose to invest the greatest portion of our social security deduction for the chance of a greater than 100%""

15 95 I am uncertain there will be a U.S. Government when its time for me to collect anything

14 20 Not sure what the benefits would be:)

11 55 If people are getting so little of what they are supposed to, the society will probably come up with some other way to fund social security or provide for retirees.

67 80 Congress always seems to find a way to Social Security funded whiie not really tinkering too much with benefit levels. Why should I limit myself to a lower percentage when levels don't seem to be changing much?

15 70 Large amount of people don't know what benefits they have; and you can't trust every.

25 70 the way ss is today i doubt i will be able to get to retire later on in life

61 95 because the economy looks like it going to take at least 20 years to get back to a stable currency

58 95 who can trust anyone who are traitors to our country ??

29 80 There will not be enough money to spread around

63 70 better to have a sure thing than a uncertainty

14 70 Because I think the government will spend it all or use it on other things and I am 31 and there will be nothing left when I get to retirement age. So recession is coming again

76 95 the laws will be changed by congress

25 45 te current govt system is not very promising

35 95 i do not believe social security is viable unless the age is raised to 72

70 95 Anything is better than nothing

21 45 It's uncertain!

2 25 Sounds like it could amount to the same....

16 35 We will never see the money anyway.

1 30 i like quarentee

26 45 it's not worth anything if it's not more than 50%. I already do not think anything is going to be there.

68 75 The government is going to run out of money. Due to technology there are less jobs out there.

27 55 there may not be any social security by the time I retire

40 95 Discrepancy of qualifications

33 60 i am trying to be more reasonable for how it will actually be.

58 75 I will not be fully relying on Social Security benefits when I retire - I have other retirement plans

24 35 Why bother if I'm only going to get such a small amount that it won't make much difference in the way I'll be able to live?

49 90 because it guaranteed u the change will not change

32 60 shitty expectations

41 95 I am not sure of how the benefits will turn out

30 60 I prefer to be certain unless the risk is very low.

77 90 I think 10% premium based on our understanding or prediction of a future law is too much.

4 95 I am not entitled to SS. Therefore, uncertain benefits is worth the gamble to me.

3 70 the way the econmony is

18 70 I just decided that 70% of the current benefits would be acceptable

63 70 not sure if benefits will be there something is better than nothing

37 60 60 is more than 60

57 70 pay more taxes

41 95 with all the spending, that this president is doing nothing is certain for the future.

15 55 I would not be able to retire off of just 55% benefits I'm supposed to get.

27 45 I don't know I honestly hope things change for the better and 27% is more a higher wage under a new program vs. people now at the 45% level, a lot of older people are suffering and having to work

9 15 cut administrative cost and studies to examine studies?.

12 30 It really doesn't matter to me, I expect nothing and I am planning my retirement around wise choices and investing now...not leaving it up to the government

51 85 economy

1 15 If its in the red now, what's it really gonna be in 20+ years?

49 60 I guess looking at just 11% possible difference, I've had to make 10% adjustments in my spending & it's been do-able".

16 25 I hope to get more but am not very confident in the people we have in the government

28 55 62%...duh

17 70 there is not going to be any benefits when i am 65 because i am only 29

74 90 no confident

36 45 because the 36 is variable?

3 10 Seems to be getting closer to same amount so made a call

13 40 I am actually not confident that there will be any benefits available in the future. And do not think that the economy can support the benefits that are being paid now.

5 70 because it will be guarantee benefits

15 35 the percent guaranteed the better

45 85 YOU NEVER KNOW WHAT CHANGES WILL OCCUR IN YOUR LIFE. I PREFER TO FACE THOSE CHANGES AS THEY OCCUR

18 45 does not matter what is said don't count on any

23 90 Because it doesn't matter what I choose the money has already been squandered that I paid and it WAS guaranteed previously....Remember?

42 90 I THINK THERE WILL BE LESS MONEY TO GO AROUND.

16 55 Because the guarateed benefits were to low

3 55 I will not receive benefits as it stands now. We pay in to the program and will get nothing back. It is our money.

| | | |
|----|----|-------------------------------------------------------------------------------------|
| 2 | 80 | it is just mess up government spending our money away |
| 7 | 25 | Just nervous about the future of benefits |
| 43 | 65 | Im not really sure, But this is what I expect the real number will reflect |
| 15 | 65 | Because it will not be enough to support my family and myself. |
| 44 | 65 | I can't live off that little, would rather hope for the best. |
| 25 | 70 | I think that I will get less |
| 52 | 70 | money wont be enough to support "babyboomers" |
| 31 | 45 | the economy--- less workers and more dependent people on social security disability |

Notes: See the notes to Appendix Table A11 for details on question wording and classification method. The column with "Expected Uncertain Benefit" gives the respondent's expected Social Security benefit as a percent of the benefit he/she is supposed to get under current law, as calculated by the expectation of the distribution of benefits elicited by the balls/bins question. This percentage was shown to the respondent as the value [B] in the wording of the open-ended question. The column with "Rejected Guaranteed Benefits" gives the highest guarantee amount as a percent of benefits one is supposed to get under current law that was rejected by the respondent when given a choice between this guarantee amount and his/her uncertain Social Security benefits. This percentage was shown to the respondent as the value of [L] in the wording of the open-ended question.

Table A13: Regression of Outcomes on Measures of Response Quality

| | (1) | (2) | (3) | (4) |
|-------------------------------------------------------------------|-----------------|-------------------|----------------------|--------------------------------|
| | Risk Premium | Expected Benefits | Certainty Equivalent | Standard Deviation of Benefits |
| Starting Value (equal to 30 or 70) | -0.20*** (0.02) | -0.03 (0.02) | 0.17*** (0.02) | 0.00 (0.01) |
| Is not 100% sure to be alive at age 75 | -2.2 (3.6) | -1.4 (3.4) | 0.7 (2.8) | 3.4*** (1.4) |
| Low discrepancy in longevity expectation | 1.6 (1.1) | 1.7 (1.1) | 0.1 (1.1) | 0.9 (0.6) |
| Plausible benefit amount in dollars | -0.1 (1.9) | 1.5 (2.0) | 1.5 (1.9) | 1.4 (1.0) |
| Consistent probabilities in Q2.3/Q2.4 | 2.2* (1.3) | -0.7 (1.3) | -2.8** (1.2) | 0.1 (0.6) |
| Consistent probabilities in Q2.7/Q2.8 | -2.3* (1.3) | -1.1 (1.3) | 1.2 (1.2) | -0.8 (0.6) |
| Consistent probabilities in Q2.9/Q2.10 | 1.5 (1.3) | 1.8 (1.2) | 0.3 (1.2) | -0.2 (0.6) |
| Consistent probabilities in Q2.11/Q2.12 | -0.5 (1.4) | -1.2 (1.3) | -0.7 (1.3) | 0.7 (0.7) |
| Correct answer financial literacy Q6.13 | 1.4 (1.4) | 2.4* (1.3) | 1.1 (1.3) | -1.1* (0.6) |
| Correct answer financial literacy Q6.14 | 0.5 (1.1) | 1.5 (1.1) | 1.0 (1.1) | 0.5 (0.5) |
| Correct answer financial literacy Q6.15 | 0.8 (1.2) | 2.0* (1.1) | 1.2 (1.1) | 0.6 (0.5) |
| Correct answer financial literacy Q6.16 | -0.1 (1.1) | -1.0 (1.1) | -0.9 (1.1) | 0.7 (0.5) |
| Benefit estimates differ by 10 ppt or less | -1.9 (1.2) | 4.1*** (1.2) | 6.0*** (1.2) | -6.0*** (0.6) |
| Benefit estimates differ by 20 ppt or less | 2.8** (1.4) | 4.6*** (1.3) | 1.8 (1.3) | -2.0*** (0.6) |
| Survey duration is more than 10 minutes | 4.0 (2.4) | 1.8 (2.1) | -2.2 (2.1) | 0.5 (1.1) |
| Survey duration is less than 40 minutes | 1.9 (1.3) | 0.9 (1.3) | -1.0 (1.2) | -0.7 (0.6) |
| Basic Demographic Characteristics | Yes | Yes | Yes | Yes |
| Other Control Variables | Yes | Yes | Yes | Yes |
| R ² | 0.101 | 0.223 | 0.160 | 0.145 |
| N | 2,939 | 2,939 | 2,939 | 2,939 |
| p-value on test that response-quality indicators are jointly zero | 0.1748 | 0.0000 | 0.0000 | 0.0000 |

Notes: Robust standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%. Each column reports the results of an OLS regression of the outcome variable listed in the column heading on the variables listed in the rows. All regressions contain the same demographic and other control variables as in Table 4. Definitions of the response-quality variables are provided in Table A7. For consistency with Table 6, the sample is limited to observations that have a non-missing value for both expected benefits and the certainty equivalent.

Table A14: Adjustments for Starting Value and Response Quality, Allowing for Interaction Terms

| | (1) | | (2) | | (3) | | (4) | |
|---------------------------------------------------------------|---------------|---------------|-------------------|---------------|----------------------|---------------|--------------------------------|---------------|
| | Risk Premium | | Expected Benefits | | Certainty Equivalent | | Standard Deviation of Benefits | |
| | Mean | Median | Mean | Median | Mean | Median | Mean | Median |
| (1) Unadjusted Estimate | 5.8 (0.5) | 7.0 (0.4) | 59.5 (0.6) | 62.7 (0.9) | 53.7 (0.5) | 57.5 (0.1) | 22.6 (0.3) | 23.0 (0.4) |
| (2) Starting Value Adjustment | -0.4 (0.5) | -0.7 (1.4) | 0 -- | 0 -- | 0.4 (0.5) | 0.2 (1.9) | 0 -- | 0 -- |
| (3) Estimate Adjusted for Starting Value | 5.4 (0.8) | 6.3 (1.4) | 59.5 (0.6) | 62.7 (0.9) | 54.2 (0.8) | 57.7 (1.9) | 22.6 (0.3) | 23.0 (0.4) |
| (4) Response Quality Adjustment | 2.3 (1.3) | 2.0 (1.2) | 6.4 (1.2) | 6.8 (1.2) | 4.1 (1.2) | 3.9 (1.5) | -2.9 (0.6) | -3.3 (0.7) |
| (5) Estimate Adjusted for Starting Value and Response Quality | 7.7 (1.4) | 8.3 (1.7) | 65.9 (1.3) | 69.5 (1.4) | 58.3 (1.4) | 61.6 (2.0) | 19.6 (0.6) | 19.7 (0.7) |
| Number of observations | 2,939 | | 2,939 | | 2,939 | | 2,939 | |

Notes: Bootstrapped standard errors in parentheses (based on 10,000 replications). This table is identical to Table 6 except that we allow for interaction effects between the starting value and the 15 response-quality indicators. Specifically, the starting-value adjustment is based on regressions that are the same as the regressions reported in Table A13 except that to the set of regressors we added interactions of each response-quality indicator with the starting value.

ONLINE APPENDIX C: Social Security Policy Risk Survey Instrument

[SECTION 1: PRELIMINARIES]

[DISPLAY]

Q.1.1: [INTRO] Introduction

Hello, we are researchers at Dartmouth College who are interested in people's views of the future of Social Security. You have been selected by Knowledge Networks to take this survey. Some of the questions in this survey might be difficult to answer, or you might not have an exact answer in mind. That is perfectly okay! Even if you do not know the answer, we would appreciate your best guess. Thank you very much for your participation!

[SP]

Q.1.2: [SS_CONFIDENCE] Confidence in Social Security in general

How confident are you that the Social Security System will be able to provide you with the level of future benefits that you are supposed to get under current law?

- (1) Very confident
- (2) Somewhat confident
- (3) Not too confident
- (4) Not at all confident

[SP; PROMPT, TERMINATE IF SKIP AFTER PROMPT]

Q.1.2b: [SS_RECEIPT] Currently receiving Social Security

Do you currently receive Social Security benefits?

- (1) Yes
- (2) No

[IF SS_RECEIPT=1, THEN GO TO STANDARD CLOSE]

[CREATE A VARIABLE MRRG BASED ON PPMARIT.

MRRG=0 IF PPMARIT=5 OR 6 (NEVER MARRIED OR LIVING WITH PARTNER);

MRRG=1 IF PPMARIT=1 (MARRIED);

MRRG=2 IF PPMARIT=2, 3, OR 4 (WIDOWED, DIVORCED, OR SEPARATED).]

[SP; PROMPT, TERMINATE IF SKIP AFTER PROMPT]

Q.1.3: [ELGB] Does R think he will be eligible for Social Security benefits?

Under current law, workers become eligible for Social Security benefits by working and paying the Social Security payroll tax for a total of 10 years or more before they retire. Their spouses and former spouses are also eligible for benefits.

Under current law, are you or will you become eligible for Social Security benefits by the time you retire?

- (1) Yes
- (2) No

[SP;ASK Q.1.4 IF ELGB == 2, ELSE SKIP]

Q.1.4: [Y_NO_ELGB] Why R believes he will be ineligible for Social Security benefits

Why do you think you will not be eligible for Social Security benefits?

- (1) My main job is not or was not covered by Social Security.
- (2) I do not have or will not have a sufficient work history to receive Social Security benefits
- (3) Other reason [please give textbox]_____

[SP; ASK IF (ELGB == 2 AND (MRRG == 1 OR MRRG == 2))
[PROMPT, TERMINATE IF SKIP AFTER PROMPT]

Q.1.5: [SPS_ELGB] Prompt respondent who does not believe(s) he will get Social Security benefits to think about possible benefits from a past or current marriage.

Individuals who are not eligible for Social Security benefits based on their own work history often will be eligible to receive Social Security benefits based on the earnings of their spouse, late spouse, or ex-spouse. Do you think you will be eligible to receive Social Security benefits based on the past and expected future work history of your [IF (MRRG == 1), display "spouse" ELSE IF (MRRG == 2) display "prior spouse"]?

- (1) Yes
- (2) No

**IF (SPS_ELGB == 2 OR (MRRG ==0 AND ELGB==2)), TERMINATE THE SURVEY IMMEDIATELY
(GO TO STANDARD CLOSE)**

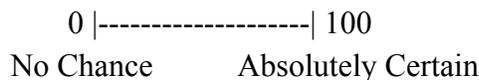
[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL: 1]
[INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

Q.1.6: [CHANCE_RAIN] Chance of rain example

Later in this survey, we would like to ask your opinion about how likely you think various events might be. When we ask such a question, we would like for you to respond with a number from 0 to 100, where '0' means that you think there is absolutely no chance, and '100' means that you think the event is absolutely sure to happen.

For example, no one can ever be sure about tomorrow's weather, but if you think that rain is very unlikely tomorrow, you might say that there is a 10 percent chance of rain. If you think there is a very good chance that it will rain tomorrow, you might say that there is an 80 percent chance of rain.

Let's try an example and start with the weather. What do you think are the chances that it will rain tomorrow?



[SECTION 2: PERCEPTIONS ABOUT EXPECTATIONS OF POLICY REPSONSE TO SOCIAL SECURITY SHORTFALLS]

[SP]

Q.2.1: [SHORTFALL_KNOW] Does the respondent know of SS shortfalls?

Do projections show that Social Security is facing a financial shortfall? A shortfall means that, in the future, Social Security is projected to pay more in benefits than it will have in the trust fund or receive in taxes.

- (1) Yes
 - (2) No
-

[INSERT A NOBACK]

[SP]

Q.2.2: [SHORTFALL_FIX] How respondent thinks shortfalls will be fixed

Social Security is projected to face a long-term financial shortfall. To fix this, Social Security must either increase the amount of tax revenue it collects or decrease the amount of benefits it pays out. How do you think lawmakers will choose to fix this shortfall?

- (1) They will fix the shortfall mostly or entirely through benefits cuts.
 - (2) They will fix the shortfall with a balanced mix of benefit cuts and tax increases.
 - (3) They will fix the shortfall mostly or entirely through tax increases.
-

[DISPLAY; SHOW ON A NEW SCREEN]

Under current law, the Social Security payroll tax rate is 12.4%, which is split evenly between the employer and the employee. Therefore, every time a worker is paid, Social Security taxes 6.2% of the worker's earnings, and the worker's employer pays an additional 6.2% of the worker's earnings to Social Security. This tax only applies to the first \$106,800 of a worker's yearly pay. Earnings above \$106,800 are not taxed.

[CREATE AND RANDOMLY SET A BINARY (0,1) VARIABLE, TEN_RET_ORDER]

[IF (TEN_RET_ORDER == 0), FIRST DISPLAY Q.2.3, THEN DISPLAY Q.2.4. ELSE, FIRST DISPLAY Q.2.4, THEN DISPLAY Q.2.3]

[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL: 1]
[INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

Q.2.3: [PRT_RAISE_CHNC_10YR] Chance of payroll tax being raised in the next 10 years

What do you think is the percent chance that the Social Security payroll tax rate will be raised above 12.4% sometime within the next 10 years?

0 |-----| 100
No Chance Absolutely Certain

[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL: 1]
[INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

[IF (AGE OF RESPONDENT == 55), SKIP Q.2.4]

Q.2.4: [PRT_RAISE_CHNC_RET] Chance of payroll tax being raised by age of 65

What do you think is the percent chance that the Social Security payroll tax rate will be raised above 12.4% by the time you turn 65?

0 |-----| 100
No Chance Absolutely Certain

[IF (TEN_RET_ORDER == 0), FIRST DISPLAY Q.2.5, THEN DISPLAY Q.2.6. ELSE, FIRST DISPLAY Q.2.6, THEN DISPLAY Q.2.5]

[NUMBER BOX; 0-50; PLEASE ALLOW TWO DECIMALS]

Q.2.5: [EXP_PRT_10YR] Expected payroll tax in 10 years

As we have mentioned, the Social Security payroll tax rate is 12.4% under current law. What do you expect the Social Security payroll tax rate to be in ten years?
____%

[NUMBER BOX; 0-50; PLEASE ALLOW TWO DECIMALS]

[IF (AGE OF RESPONDENT) == 55, SKIP Q.2.6]

Q.2.6: [EXP_PRT_RET] Expected payroll tax by age of 65

As we have mentioned, the Social Security payroll tax rate is 12.4% under current law. By the time you turn 65, what do you expect the Social Security payroll tax rate to be?
____%

[IF (TEN_RET_ORDER == 0), FIRST DISPLAY Q.2.7, THEN DISPLAY Q.2.8. ELSE, FIRST DISPLAY Q.2.8, THEN DISPLAY Q.2.7].

REGARDLESS OF ORDER, DISPLAY THE FOLLOWING PARAGRAPH ONLY ABOVE THE FIRST QUESTION.

As we have mentioned, the Social Security payroll tax is 12.4% under current law. This tax only applies to the first \$106,800 of a worker's earnings. This amount is known as the Social Security taxable earnings limit and is automatically adjusted for inflation every year.

[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL: 1]

[INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

Q.2.7: [PRTCAP_RAISE_CHNC_10YR] Expected payroll tax cap in 10 years

What do you think is the percent chance that lawmakers will raise the Social Security taxable earnings limit beyond the automatic adjustments for inflation sometime within the next 10 years?

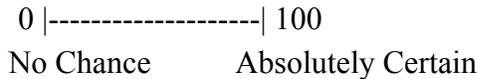
0 |-----| 100
No Chance Absolutely Certain

[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL: 1] [INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

[IF AGE OF RESPONDENT == 55, SKIP Q.2.8]

Q.2.8: [PRTCAP_RAISE_CHNC_RET] Expected payroll tax cap at age of 65

What do you think is the percent chance that lawmakers will raise the Social Security taxable earnings limit beyond the automatic adjustments for inflation by the time you turn 65?



[IF (TEN_RET_ORDER == 0), FIRST DISPLAY Q.2.9, THEN DISPLAY Q.2.10. ELSE, FIRST DISPLAY Q.2.10, THEN DISPLAY Q.2.9].

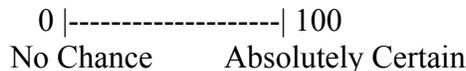
REGARDLESS OF ORDER, DISPLAY THE FOLLOWING PARAGRAPH ONLY ABOVE THE FIRST QUESTION.

As we have mentioned, Social Security is funded mainly through a payroll tax. These tax revenues, along with the existing trust fund, are used to fund current Social Security benefits. However, lawmakers could choose to fund Social Security using some new source of revenue.

[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL: 1] [INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

Q.2.9 [ALTREV_SRC_CHNC_10YR] Chance of a new revenue source in 10 years

What do you think is the percent chance that lawmakers will add a new source of revenue to fund Social Security within the next 10 years?

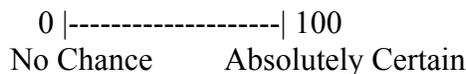


[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL: 1] [INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

[IF (AGE OF RESPONDENT == 55), SKIP Q.2.10]

Q.2.10: [ALTREV_SRC_CHNC_RET] Chance of a new revenue source in 10 years

What do you think is the percent chance that lawmakers will add a new source of revenue to fund Social Security by the time you turn 65?



[DISPLAY]

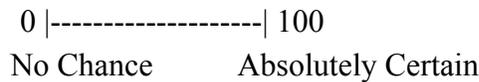
These next questions ask about what you think the general level of Social Security benefits will be. When answering these questions, please think of the Social Security benefits that everyone covered by Social Security will receive, not just the Social Security benefits you expect to receive.

[HORIZONTAL RATINGS THERMOMETER; RANGE: 0-100; INTERVAL: 1] [INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

[IF (TEN_RET_ORDER == 0), FIRST DISPLAY Q.2.11, THEN DISPLAY Q.2.12. ELSE, FIRST DISPLAY Q.2.12, THEN DISPLAY Q.2.11]

Q.2.11 [GENLVL_DCLN_CHNC_10YR] Chance of decline in general level of benefits in the next 10 years

Thinking of the Social Security program in general and not just your own Social Security benefits, what is the percent chance that lawmakers will change Social Security so that it becomes less generous sometime in the next 10 years?

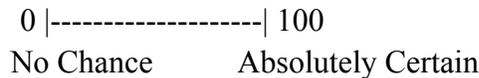


[HORIZONTAL RATINGS THERMOMETER; RANGE: 0-100; INTERVAL: 1] [INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

[IF (AGE OF RESPONDENT == 55), SKIP Q.2.12]

Q.2.12: [GENLVL_DCLN_CHNC_RET] Chance of decline in general level of benefits at the age of 65

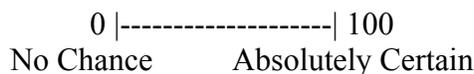
Thinking of the Social Security program in general and not just your own Social Security benefits, what is the percent chance that lawmakers will change Social Security so that it becomes less generous than now by the time you turn 65?



[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL: 1] [INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

Q.2.13: [OTHR_BNFT_CHNC] Chance of receiving benefits from other governmental program

If Social Security were to become less generous, what do you think is the percent chance that some other government program will provide regular benefits in place of the Social Security benefit reductions?



[SECTION 3: PERCEPTIONS ABOUT RESPONDENT'S OWN FUTURE SOCIAL SECURITY BENEFITS AND TAXES]

[DISPLAY]

outcome is, the more balls you should put in that bin. To see how this works, an example is shown on the next screen.

[CREATE AND RANDOMLY SET A BINARY (0,1) VARIABLE, WIDE_NRW_EXMPL]

[NOTE TO KN PROGRAMMERS: We did this Bin/Ball format question previously in KN survey K2298 (SNO13460); you may wish to borrow and adapt the code used in that survey. See the attached figure for the graphic associated with the “bins and balls” question format. The graphic should be interactive (i.e. respondents should see the picture and be able to add/remove balls from each bin using +/- buttons that appear below each bin (one ball per click). Please also show a box with “balls remaining.”]

[IF (WIDE_NRW_EXMPL == 0), DISPLAY BELOW]

This is an example that shows what we think the temperature will be in Boston at noon tomorrow. We don't know for sure how hot or cold it will get, but we have some guesses. The more likely we think that it will be a given temperature, the more balls we put in that bin.

We are sure that the temperature will not reach 70 °F (or higher) or drop to 54 °F (or lower) at noon, so we don't put any balls in those bins. We think that there is a 20 percent chance (4 out of 20) that it will be 55-59°F, so we put 4 out of 20 balls in that bin. We think that there is a 50 percent chance (10 out of 20) that it will be 60-64 °F, so we put 10 out of 20 balls in that bin. We think that there is a 30 percent chance (6 out of 20) that it will be 65-69 °F, so we put 6 out of 20 balls in that bin.

What do you think the temperature will be in Boston at noon tomorrow?

| | | | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|-------|--------------|
| | | oo | oo | | | | | |
| | oooo | oooo | oooo | | | | | |
| 54 or lower | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | 85-89 | 90 or higher |
| +- | +- | +- | +- | +- | +- | +- | +- | |

[IF (WIDE_NRW_EXMPL == 1), DISPLAY BELOW]

This is an example that shows what we think the temperature will be in Boston at noon tomorrow. We don't know for sure how hot or cold it will get, but we have some guesses. The more likely we think that it will be a given temperature, the more balls we put in that bin.

We are sure that the temperature will not reach 90 °F (or higher) at noon, so we don't put any balls in that bin. We think that there is a 25 percent chance (5 out of 20) that it will be 65-69 °F, so we put 5 out of 20 balls in that bin. We think that there is a 15 percent chance (3 out of 20) that it will be 60-64 °F, so we put 3 out of 20 balls in that bin. We think that there is a 10 percent chance (2 out of 20) that the temperature will fall in each of the remaining bins, so we put 2 balls in each of the remaining bins.

What do you think the temperature will be in Boston at noon tomorrow?

| | | | | | | | | |
|----|----|-----|-----------|----|----|----|----|--|
| oo | oo | ooo | o oooo | oo | oo | oo | oo | |
|----|----|-----|-----------|----|----|----|----|--|

| | | | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|-------|--------------|
| 54 or lower | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | 85-89 | 90 or higher |
| +- | +- | +- | +- | +- | +- | +- | +- | |

Q.3.3: [NOTHING_BALLS, LESS_BALLS, SAME_BALLS, MORE_BALLS] Ball/bin distribution of above/below expectations

You have been given 20 balls to put in the following bins. Each bin describes a scenario that involves the Social Security benefits you are supposed to get. The more likely you think a bin is, the more balls you should put in that bin.

What do you think will happen to your Social Security benefits?

| | | | |
|---------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------|
| I will receive no benefits whatsoever | I will receive lower benefits than I am supposed to get under current law | I will receive the benefits that I am supposed to get under current law | I will receive higher benefits than I am supposed to get under current law |
| +- | +- | +- | +- |

[IF LESS_BALLS == 0, SKIP Q.3.4. AND SET LESS_BIN1=0, LESS_BIN2=0, LESS_BIN3=0, LESS_BIN4=0, LESS_BIN5=0]

Q.3.4: [LESS_BIN1, LESS_BIN2, LESS_BIN3, LESS_BIN4, LESS_BIN5] Ball/bin distribution of future benefit decreases

[IF LESS_BALLS>1, DISPLAY:]

You put [LESS_BALLS] balls in the bin marked “I will receive less than I am supposed to get under current law”. Please distribute those balls in the following bins. The more likely you think a bin is, the more balls you should put in that bin.

[IF LESS_BALLS==1, DISPLAY:]

You put 1 ball in the bin marked “I will receive less than I am supposed to get under current law”. Please put that ball in the bin below that you think is most likely to occur.

[ALWAYS DISPLAY:]

What percentage of the Social Security benefits that you are supposed to get under current law do you think you will receive?

| | | | | |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| I will receive between 1%-19% of the benefits that I am supposed to get | I will receive between 20%-39% of the benefits that I am supposed to get under | I will receive between 40%-59% of the benefits that I am supposed to get under | I will receive between 60%-79% of the benefits that I am supposed to get under | I will receive between 80%-99% of the benefits that I am supposed to get under |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|

| | | | | |
|-------------------|-------------|-------------|-------------|-------------|
| under current law | current law | current law | current law | current law |
| +- | +- | +- | +- | +- |

[IF MORE_BALLS == 0, SKIP Q.3.5. AND SET MORE_BIN1=0, MORE_BIN2=0, MORE_BIN3=0, MORE_BIN4=0, MORE_BIN5=0]

Q.3.5: [MORE_BIN1, MORE_BIN2, MORE_BIN3, MORE_BIN4, MORE_BIN5] Ball/bin distribution of future benefit increases

[IF MORE_BALLS>1, DISPLAY:]

You put [MORE_BALLS] balls in the bin marked “I will receive more than I am supposed to get under current law”. Please distribute those balls in the following bins. The more likely you think a bin is, the more balls you should put in that bin.

[IF MORE_BALLS==1, DISPLAY:]

You put 1 ball in the bin marked “I will receive more than I am supposed to get under current law”. Please put that ball in the bin below that you think is most likely to occur.

[ALWAYS DISPLAY:]

What percentage of the Social Security benefits that you are supposed to get under current law do you think you will receive?

| | | | | |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| I will receive between 101%-120% of the benefits that I am supposed to get under current law | I will receive between 121%-140% of the benefits that I am supposed to get under current law | I will receive between 141%-160% of the benefits that I am supposed to get under current law | I will receive between 161%-180% of the benefits that I am supposed to get under current law | I will receive more than 181% of the benefits that I am supposed to get under current law |
| +- | +- | +- | +- | +- |

Q.3.6: [SUB_BIN1, SUB_BIN2, SUB_BIN3, SUB_BIN4, SUB_BIN5]

[SET LB=missing]

[IF LESS_BIN1 > 10, THEN SET LB=0 and SET NBALLS=LESS_BIN1]

[IF LESS_BIN2 > 10, THEN SET LB=20 and SET NBALLS=LESS_BIN2]

[IF LESS_BIN3 > 10, THEN SET LB=40 and SET NBALLS=LESS_BIN3]

[IF LESS_BIN4 > 10, THEN SET LB=60 and SET NBALLS=LESS_BIN4]

[IF LESS_BIN5 > 10, THEN SET LB=80 and SET NBALLS=LESS_BIN5]

[IF MORE_BIN1 > 10, THEN SET LB=101 and SET NBALLS=MORE_BIN1]

[IF MORE_BIN2 > 10, THEN SET LB=121 and SET NBALLS=MORE_BIN2]

[IF MORE_BIN3 > 10, THEN SET LB=141 and SET NBALLS=MORE_BIN3]

[IF MORE_BIN4 > 10, THEN SET LB=161 and SET NBALLS=MORE_BIN4]

[IF MORE_BIN5 > 10, THEN SET LB=181 and SET NBALLS=MORE_BIN5]

[IF LB≠missing, DISPLAY:]

You put [NBALLS] balls in the bin marked “I will receive between [Max(1,LB)]%-[LB+19]% of the benefits that I am supposed to get under current law”. Please distribute those balls in the following bins. The more likely you think a bin is, the more balls you should put in that bin.

What percentage of the Social Security benefits that you are supposed to get under current law do you think you will receive?

| | | | | |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| I will receive between [Max(1,LB)]%- [LB+3]% of the benefits that I am supposed to get under current law | I will receive between [LB+4]%- [LB+7]% of the benefits that I am supposed to get under current law | I will receive between [LB+8]%- [LB+11]% of the benefits that I am supposed to get under current law | I will receive between [LB+12]%- [LB+15]% of the benefits that I am supposed to get under current law | I will receive between [LB+16]%- [LB+19]% of the benefits that I am supposed to get under current law |
| +- | +- | +- | +- | +- |

Run this code below for ALL respondents even if Q.3.6 is skipped
[CREATE A NEW VARIABLE: BINBALL_BNFT_CHNG_EXP]

[SET BINBALL_BNFT_CHNG_EXP = [(LESS_BIN1*10 + LESS_BIN2*29.5 + LESS_BIN3*49.5 + LESS_BIN4*69.5 + LESS_BIN5*89.5 + SAME_BALLS*100 + MORE_BIN1*110.5 + MORE_BIN2*130.5 + MORE_BIN3*150.5 + MORE_BIN4*170.5 + MORE_BIN5*190.5)/20]

(Note to programmer: BINBALL_BNFT_CHNG_EXP should NOT be rounded to an integer yet)

[IF (NOTHING_BALLS + LESS_BIN1 + LESS_BIN2 + LESS_BIN3 + LESS_BIN4 + LESS_BIN5 + SAME_BALLS + MORE_BIN1 + MORE_BIN2 + MORE_BIN3 + MORE_BIN4 + MORE_BIN5) ≠ 20, THEN SET BINBALL_BNFT_CHNG_EXP TO MISSING]

[IF LB≠missing, THEN SET ADJ = SUB_BIN1*0.5*(Max(1,LB)+LB+3)/20 + SUB_BIN2*(LB+5.5)/20 + SUB_BIN3*(LB+9.5)/20 + SUB_BIN4*(LB+13.5)/20 + SUB_BIN5*(LB+17.5)/20 - NBALLS*0.5*(Max(1,LB)+LB+19)/20]

[IF LB≠missing AND BINBALL_BNFT_CHNG_EXP ≠ missing AND NBALLS==(SUB_BIN1 + SUB_BIN2 + SUB_BIN3 + SUB_BIN4 + SUB_BIN5), THEN REPLACE BINBALL_BNFT_CHNG_EXP = BINBALL_BNFT_CHNG_EXP + ADJ]

[ROUND BINBALL_BNFT_CHNG_EXP TO THE NEAREST WHOLE NUMBER]

[CREATE A NEW VARIABLE: NORISK]

[SET NORISK=0]
 [IF NOTHING_BALLS==20, SET NORISK=1]
 [IF SAME_BALLS==20, SET NORISK=1]
 [IF MAXIMUM(SUB_BIN1, SUB_BIN2, SUB_BIN3, SUB_BIN4, SUB_BIN5)==20, SET NORISK=1]

[SECTION 4: PERCEIVED COSTS OF UNCERTAINTY]

[SP]

Q.4.1: [UNCRT_IMPT] Importance of uncertainty

How much does it matter to you that you do not know exactly how much you will get in Social Security benefits?

- (1) Uncertainty matters very much.
- (2) Uncertainty matters a fair amount.
- (3) Uncertainty matters little.
- (4) Uncertainty does not matter.

[CREATE AND RANDOMLY SET A BINARY (0,1) VARIABLE UNCRT_ORD MEANT TO TRACK IN WHICH ORDER THE OPTIONS IN 4.2 ARE PRESENTED.]

Note to programmers: Normally the randomization would be done inline, but the differences are so large that we have decided to write out two separate questions.

[GRID/SP]

Q.4.2: [UNCRT_BNFT_AMT_IMPT, UNCRT_BNFT_CHNG_IMPT, UNCRT_BNFT_OTHR_IMPT] Importance of various other factors contributing to benefit uncertainty

[DISPLAY IF UNCRT_ORD == 0]

You might be uncertain about your Social Security benefits for a variety of reasons. It is possible that Social Security could have a shortfall or program rules could be changed so that you do not receive what you are supposed to get under current law. Even if benefit levels are not changed, you might be uncertain about the Social Security benefits you are supposed to get under current law. Please show how much each of these issues matters to you below.

| | Matters Very Much | Matters a Fair Amount | Matters Little | Does Not Matter |
|------------------------------------------------------------------|-------------------|-----------------------|----------------|-----------------|
| Uncertainty about possible changes to benefit levels | | | | |
| Uncertainty about what you are supposed to get under current law | | | | |
| Other (Please enter in text box below) | | | | |

Text box for other: _____

[DISPLAY IF UNCRT_ORD == 1]

You might be uncertain about your Social Security benefits for a variety of reasons. You might be uncertain about the Social Security benefits you are supposed to get under current law. Even if you know how much you are supposed to get under current law, it is possible that Social Security could have a shortfall or program rules could be changed so that you do not receive what you are supposed to get under current law. Please show how much each of these issues matters to you below.

| | Matters Very Much | Matters a Fair Amount | Matters Little | Does Not Matter |
|------------------------------------------------------------------|-------------------|-----------------------|----------------|-----------------|
| Uncertainty about what you are supposed to get under current law | | | | |
| Uncertainty about possible changes to benefit levels | | | | |
| Other (Please enter in text box below) | | | | |

Text box for other: _____

[SP]

Q.4.3: [END, PR0, PR1, PR2, PR3, PR4, PR5, A1, A2, A3, A4, A5, L, U] Willingness to accept contract for certain amount and ultimate categorization

[SET END = 0]

[CREATE AND RANDOMLY SET A BINARY (1,2) VARIABLE PR0]

[THIS QUESTION WILL BE ASKED MULTIPLE TIMES, CONTINUING AS LONG AS END = 0. THE WORDING FOR SUBSEQUENT QUESTIONS IS DIFFERENT FROM THE WORDING WHEN THE QUESTION IS ASKED THE FIRST TIME. PLEASE SEE THE SECTION BELOW THE FIRST QUESTION FOR THE SUBSEQUENT WORDING.]

[THE FIRST TIME RESPONDENT IS QUERIED, FILL IN THE PERCENTAGE WITH PR1 AND RECORD THE RESPONDENT'S ANSWER IN A1. THE SECOND TIME, FILL IN THE PERCENTAGE WITH PR2 AND RECORD THE ANSWER IN A2, ETC. A LOGIC PATTERN FOR VALUES OF PR# AND END IS SEEN BELOW.]

[Create and randomly set a binary (0,1) variable Q43_ORD to track in which order the two answer categories in Q.4.3 are presented. If Q43_ORD=1, the unbreakable contract is shown as the second option]

[CREATE NEW VARIABLE ALT_VERSION, and SET ALT_VERSION=0]

[IF NORISK=0 AND BINBALL_BNFT_CHNG_EXP≠missing, THEN SET ALT_VERSION=1]

[If ALT_VERSION==0, then display]

[PROMPT IF SKIPPED]

Imagine that you were offered a contract that guaranteed you a certain percent of the Social Security benefits you are supposed to get under current law. This contract is unbreakable and cannot be changed by anybody, even the United States government.

Would you rather have:

- (1) Benefits as determined by an unbreakable contract that offers you [APPROPRIATE PR# INTERATION]% of the Social Security benefits you are supposed to get under current law
- (2) Benefits as determined by Social Security when you claim benefits

[If ALT_VERSION==1, then display instead the following text the first time Q4.3 is asked:]

[PROMPT IF SKIPPED]

The way you put balls into various bins shows that you expect to receive [BINBALL_BNFT_CHNG_EXP]% of the Social Security benefits you are supposed to get under current law. It also shows that you could receive more or less than this [BINBALL_BNFT_CHNG_EXP]%. Let's call this distribution of possible benefits, as described by you using the bins and balls, your "uncertain benefits." So, your uncertain benefits are whatever level of benefits you get when you claim benefits.

Imagine a contract that instead guarantees you a certain percentage of the Social Security benefits you are supposed to get under current law. This is like having all 20 balls on this certain percentage. This contract is unbreakable and cannot be changed by anybody, even the United States government.

Would you rather have:

- (1) Guaranteed benefits equal to [APPROPRIATE PR# INTERATION]% of the Social Security benefits you are supposed to get under current law
- (2) Uncertain benefits around [BINBALL_BNFT_CHNG_EXP]% of the Social Security benefits you are supposed to get under current law

[ASK 4.3 FOR THE FIRST TIME USING PR1]

IF PR0 = 1, PR1 = 30
IF PR0 = 2, PR1 = 70

**[NOTE TO PROGRAMMERS: If ALT_VERSION==0, SHOW BELOW WORDING FOR EVERY QUERY OF THE RESPONDENT AFTER THE FIRST]
[SP; PROMPT IF SKIPPED]**

And how about the following choice? Would you rather have:

- (1) Benefits as determined by an unbreakable contract that offers you [APPROPRIATE PR# INTERATION]% of the Social Security benefits you are supposed to get under current law

(2) Benefits as determined by Social Security when you claim benefits

[If ALT_VERSION==1, then display for the subsequent queries of Q4.3:]
[SP; PROMPT IF SKIPPED]

And how about the following choice? Would you rather have:

(1) Guaranteed benefits equal to [APPROPRIATE PR# INTERATION]% of the Social Security benefits you are supposed to get under current law

(2) Uncertain benefits around [BINBALL_BNFT_CHNG_EXP]% of the Social Security benefits you are supposed to get under current law

[IF END = 0, ASK 4.3 FOR THE SECOND TIME USING PR2]

IF PR0 = 1 & A1 = 1, PR2 = 20
IF PR0 = 1 & A1 = 2, PR2 = 60

IF PR0 = 2 & A1 = 1, PR2 = 40
IF PR0 = 2 & A1 = 2, PR2 = 80

[IF END = 0, ASK 4.3 FOR THE THIRD TIME USING PR3]

IF PR0 = 1 & A1 = 1 & A2 = 1, PR3 = 10
IF PR0 = 1 & A1 = 1 & A2 = 2, PR3 = 25
IF PR0 = 1 & A1 = 2 & A2 = 1, PR3 = 40
IF PR0 = 1 & A1 = 2 & A2 = 2, PR3 = 80

IF PR0 = 2 & A1 = 1 & A2 = 1, PR3 = 20
IF PR0 = 2 & A1 = 1 & A2 = 2, PR3 = 60
IF PR0 = 2 & A1 = 2 & A2 = 1, PR3 = 75
IF PR0 = 2 & A1 = 2 & A2 = 2, PR3 = 90

[IF END = 0, ASK 4.3 FOR THE FOURTH TIME USING PR4]

IF PR0 = 1 & A1 = 1 & A2 = 1 & A3 = 1, PR4 = 05
IF PR0 = 1 & A1 = 1 & A2 = 1 & A3 = 2, PR4 = 15
IF PR0 = 1 & A1 = 1 & A2 = 2 & A3 = 1, SET L = 20, U = 25, END = 1
IF PR0 = 1 & A1 = 1 & A2 = 2 & A3 = 2, SET L = 25, U = 30, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 1, PR4 = 35
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 2, PR4 = 50
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 1, PR4 = 70
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 2, PR4 = 90

IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 1, PR4 = 10
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 2, PR4 = 30
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 1, PR4 = 50
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 2, PR4 = 65
IF PR0 = 2 & A1 = 2 & A2 = 1 & A3 = 1, SET L = 70, U = 75, END = 1
IF PR0 = 2 & A1 = 2 & A2 = 1 & A3 = 2, SET L = 75, U = 80, END = 1
IF PR0 = 2 & A1 = 2 & A2 = 2 & A3 = 1, PR4 = 85
IF PR0 = 2 & A1 = 2 & A2 = 2 & A3 = 2, PR4 = 95

[IF END = 0, ASK 4.3 FOR THE FIFTH TIME USING PR5]

IF PR0 = 1 & A1 = 1 & A2 = 1 & A3 = 1 & A4 = 1, SET L = 0, U = 5, END = 1
IF PR0 = 1 & A1 = 1 & A2 = 1 & A3 = 1 & A4 = 2, SET L = 5, U = 10, END = 1
IF PR0 = 1 & A1 = 1 & A2 = 1 & A3 = 2 & A4 = 1, SET L = 10, U = 15, END = 1
IF PR0 = 1 & A1 = 1 & A2 = 1 & A3 = 2 & A4 = 2, SET L = 15, U = 20, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 1 & A4 = 1, SET L = 30, U = 35, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 1 & A4 = 2, SET L = 35, U = 40, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 2 & A4 = 1, PR5 = 45
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 2 & A4 = 2, PR5 = 55
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 1 & A4 = 1, PR5 = 65
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 1 & A4 = 2, PR5 = 75
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 2 & A4 = 1, PR5 = 85
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 2 & A4 = 2, PR5 = 95

IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 1 & A4 = 1, PR5 = 5
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 1 & A4 = 2, PR5 = 15
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 2 & A4 = 1, PR5 = 25
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 2 & A4 = 2, PR5 = 35
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 1 & A4 = 1, PR5 = 45
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 1 & A4 = 2, PR5 = 55
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 2 & A4 = 1, SET L = 60, U = 65, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 2 & A4 = 2, SET L = 65, U = 70, END = 1
IF PR0 = 2 & A1 = 2 & A2 = 2 & A3 = 1 & A4 = 1, SET L = 80, U = 85, END = 1
IF PR0 = 2 & A1 = 2 & A2 = 2 & A3 = 1 & A4 = 2, SET L = 85, U = 90, END = 1
IF PR0 = 2 & A1 = 2 & A2 = 2 & A3 = 2 & A4 = 1, SET L = 90, U = 95, END = 1
IF PR0 = 2 & A1 = 2 & A2 = 2 & A3 = 2 & A4 = 2, SET L = 95, U = 100, END = 1

[4.3 IS NOT REPEATED A SIXTH TIME. RATHER, SET VARIABLES L, U, AND END ACCORDING TO RESULTS OF THE FIFTH ITERATION]

IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 2 & A4 = 1 & A5 = 1, SET L = 40, U = 45, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 2 & A4 = 1 & A5 = 2, SET L = 45, U = 50, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 2 & A4 = 2 & A5 = 1, SET L = 50, U = 55, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 1 & A3 = 2 & A4 = 2 & A5 = 2, SET L = 55, U = 60, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 1 & A4 = 1 & A5 = 1, SET L = 60, U = 65, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 1 & A4 = 1 & A5 = 2, SET L = 65, U = 70, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 1 & A4 = 2 & A5 = 1, SET L = 70, U = 75, END = 1

IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 1 & A4 = 2 & A5 = 2, SET L = 75, U = 80, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 2 & A4 = 1 & A5 = 1, SET L = 80, U = 85, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 2 & A4 = 1 & A5 = 2, SET L = 85, U = 90, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 2 & A4 = 2 & A5 = 1, SET L = 90, U = 95, END = 1
IF PR0 = 1 & A1 = 2 & A2 = 2 & A3 = 2 & A4 = 2 & A5 = 2, SET L = 95, U = 100, END = 1

IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 1 & A4 = 1 & A5 = 1, SET L = 00, U = 05, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 1 & A4 = 1 & A5 = 2, SET L = 05, U = 10, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 1 & A4 = 2 & A5 = 1, SET L = 10, U = 15, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 1 & A4 = 2 & A5 = 2, SET L = 15, U = 20, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 2 & A4 = 1 & A5 = 1, SET L = 20, U = 25, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 2 & A4 = 1 & A5 = 2, SET L = 25, U = 30, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 2 & A4 = 2 & A5 = 1, SET L = 30, U = 35, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 1 & A3 = 2 & A4 = 2 & A5 = 2, SET L = 35, U = 40, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 1 & A4 = 1 & A5 = 1, SET L = 40, U = 45, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 1 & A4 = 1 & A5 = 2, SET L = 45, U = 50, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 1 & A4 = 2 & A5 = 1, SET L = 50, U = 55, END = 1
IF PR0 = 2 & A1 = 1 & A2 = 2 & A3 = 1 & A4 = 2 & A5 = 2, SET L = 55, U = 60, END = 1

Q4.3b: [A6] Narrowing of guaranteed/uncertain benefits for certain respondents

[Order of the answer categories be determined by Q43_ORD]

[SP; PROMPT IF SKIPPED]

[SET FIN_PR=missing]

[If ALT_VERSION==1 AND (BINBALL_BNFT_CHNG_EXP-2) ≤ L AND L < BINBALL_BNFT_CHNG_EXP, THEN SET FIN_PR= BINBALL_BNFT_CHNG_EXP]

[If ALT_VERSION==1 AND (BINBALL_BNFT_CHNG_EXP-6) ≤ L AND L < (BINBALL_BNFT_CHNG_EXP-2), THEN SET FIN_PR= BINBALL_BNFT_CHNG_EXP-2]

[If ALT_VERSION==1 AND (BINBALL_BNFT_CHNG_EXP-11) ≤ L AND L < (BINBALL_BNFT_CHNG_EXP-6), THEN SET FIN_PR= L+3]

[IF FIN_PR≠missing, THEN DISPLAY:]

And how about the following choice? Would you rather have:

(1) Guaranteed benefits equal to [FIN_PR]% of the Social Security benefits you are supposed to get under current law

(2) Uncertain benefits around [BINBALL_BNFT_CHNG_EXP]% of the Social Security benefits you are supposed to get under current law

Q4.3c [REASON] Opportunity for respondent to give textual feedback if difference between willingness to accept uncertain vs. guaranteed benefits is very low

[INSERT A NOBACK]

[If ALT_VERSION==1 AND BINBALL_BNFT_CHNG_EXP < L-5 THEN DISPLAY:]

[OPEN-ENDED TEXT BOX]

We are interested in better understanding why you chose uncertain benefits around **[BINBALL_BNFT_CHNG_EXP]**% of the Social Security benefits you are supposed to get under current law over guaranteed benefits equal to **[L]**% of the Social Security benefits you are supposed to get under current law.

Could you tell us the main reason for your choice?

[CREATE AND RANDOMLY SET THREE BINARY (0,1) VARIABLES: INCDEC_4_4, RSLW_4_4, AND TXCP_4_4. THE RANDOMIZATIONS SHOULD BE INDEPENDENT]

Note to programmers: Normally the randomization would be done inline, but the differences are so large that we have decided to write out two separate questions (just as in 4.2)

[GRID/SP]

**Q.4.4: [UNCRT_PRT_RATE_IMPT, UNCRT_PRT_CAP_IMPT, UNCRT_PRT_OTHER_IMPT]
Importance of various other factors contributing to tax uncertainty**

[IF (TXCP_4_4 == 0) DISPLAY BELOW]

You might be uncertain about the taxes that fund Social Security for a variety of reasons. For example, you could be uncertain about whether the current Social Security payroll tax rate will be **[IF INCDEC_4_4 == 0, display “raised or lowered” else display “lowered or raised”]**. Additionally, you could be uncertain about whether the Social Security taxable earnings limit will be **[IF RSLW_4_4 == 0, display “raised or lowered” else display “lowered or raised”]** (other than automatic adjustments for inflation). Please show how much each of these issues matter to you below.

| | Matters Very Much | Matters a Fair Amount | Matters Little | Does Not Matter |
|--------------------------------------------------------------|-------------------|-----------------------|----------------|-----------------|
| Uncertainty about the Social Security payroll tax rate | | | | |
| Uncertainty about the Social Security taxable earnings limit | | | | |
| Other (Please enter in text box below) | | | | |

Text box for other: _____

[IF (TXCP_4_4 == 1, DISPLAY BELOW)]

You might be uncertain about the taxes that fund Social Security for a variety of reasons. For example, you could be uncertain about whether the Social Security taxable earnings limit will be **[IF RSLW_4_4 == 0, display “raised or lowered” else display “lowered or raised”]** (other than automatic adjustments for inflation). Additionally, you could be uncertain about whether the current Social Security payroll tax rate will be **[IF INCDEC_4_4 == 0, display “raised or lowered” else display “lowered or raised”]**. Please show how much each of these issues matter to you below.

| | Matters Very Much | Matters a Fair Amount | Matters Little | Does Not Matter |
|--------------------------------------------------------------|-------------------|-----------------------|----------------|-----------------|
| Uncertainty about the Social Security taxable earnings limit | | | | |

| | | | | |
|--------------------------------------------------------|--|--|--|--|
| Uncertainty about the Social Security payroll tax rate | | | | |
| Other (Please enter in text box below) | | | | |

Text box for other: _____

[SECTION 5: SELF-REPORTED RESPONSES TO UNCERTAINTY IN SOCIAL SECURITY BENEFITS]

[CREATE AND RANDOMLY SET A BINARY (0,1) VARIABLE PRCNT_ORD_51]

[IF (PRCNT_ORD_51 == 0, SET PRCNT_OFFRD_51 = BINBALL_BNFT_CHNG_EXP]

[IF PRCNT_ORD_51 == 1, SET PRCNT_OFFRD_51 = 100]

[IF PRCNT_OFFRD_51 == MISSING, SET PRCNT_OFFRD_51= PRCT_BNFT_CHNG_EXP]

[IF PRCNT_OFFRD_51 == MISSING, SET PRCNT_OFFRD_51=75]

[GRID/SP]

Q.5.1: [UNCRT_RSPN_SVNG, UNCRT_RSPN_CLMAGE, UNCRT_RSPN_WRKAGE, UNCRT_RSPN_RTRMSPND, UNCRT_RSPN_PRE_RTRMWRK, UNCRT_RSPN_WILL]

[IF BINBALL_BNFT_CHNG_EXP≠ missing, THEN DISPLAY:]

The way you put balls into various bins shows that you currently expect to receive

[BINBALL_BNFT_CHNG_EXP]% of the Social Security benefits you are supposed to get under current law. **[IF BINBALL_BNFT_CHNG_EXP≠ missing AND NORISK=0, THEN DISPLAY IN THE SAME PARAGRAPH]** It also shows that you think you could receive more or less than this **[BINBALL_BNFT_CHNG_EXP]**%.

[ALWAYS DISPLAY:]

Suppose that all of the uncertainty about possible changes to benefit levels is eliminated: you receive an unbreakable contract that guarantees you **[PRCNT_OFFRD_51]**% of the Social Security benefits you are supposed to get under current law. Unbreakable means that this contract cannot be changed by anybody, even the United States government.

How would your behavior change with your benefits guaranteed at this level? Would your ...

| | Significantly Decrease | Somewhat Decrease | No Change | Somewhat Increase | Significantly Increase |
|-----------------------------------------|------------------------|-------------------|-----------|-------------------|------------------------|
| Saving before retirement | | | | | |
| Hours worked per year before retirement | | | | | |
| Spending during retirement | | | | | |
| Age when you stop working for pay | | | | | |

| | | | | | |
|------------------------------------------------------|--|--|--|--|--|
| Age when you start claiming Social Security Benefits | | | | | |
| Assets you leave to others | | | | | |

[PLEASE MAKE SURE THE VARIABLE NAMES IN THE GRID CORRESPOND TO THE QUESTION ASKED AS FOLLOWS:]

| | |
|------------------------------------------------------|------------------------|
| Saving before retirement | UNCRT_RSPN_SVNG |
| Hours worked per year before retirement | UNCRT_RSPN_PRE_RTRMWRK |
| Spending during retirement | UNCRT_RSPN_RTRMSPND |
| Age when you stop working for pay | UNCRT_RSPN_WRKAGE |
| Age when you start claiming Social Security Benefits | UNCRT_RSPN_CLMAGE |
| Assets you leave to others | UNCRT_RSPN_WILL |

[SECTION 6: RESPONDENT CHARACTERISTICS]

[SP]

Q.6.1: [JOB_GMBL1] Measures aversion to risk using lifetime-income gambles

Suppose that you are the only income earner in the family. Your doctor recommends that you move because of allergies, and you have to choose between two possible jobs.

The first would guarantee your current total family income for life.

The second is possibly better paying, but the income is also less certain. There is a 50–50 chance the second job would double your total lifetime income and a 50–50 chance that it would cut it by a third.

Which job would you take—the first job or the second job?

- (1) The first job
- (2) The second job

[SP]

[ASK ONLY IF (JOB_GMBL1 == 2)]

Q.6.2: [JOB_GMBL2] Measures aversion to risk using lifetime-income gambles

Thinking of the same scenario, what about these two jobs?

The first would guarantee your current total family income for life.

There is a 50–50 chance the second job would double your family income, and a 50–50 chance that it would cut it in half.

Which job would you take—the first job or the second job?

- (1) The first job
- (2) The second job

[SP]

[ASK ONLY IF (JOB_GMBL1 == 1)]

Q.6.3: [JOB_GMBL3] Measures aversion to risk using lifetime-income gambles

Thinking of the same scenario, what about these two jobs?

The first would guarantee your current total family income for life.

There is a 50–50 chance the second job would double your family income, and a 50–50 chance that it would cut it by 20 percent.

Which job would you take—the first job or the second job?

- (1) The first job
 - (2) The second job
-

[SP]

[ASK ONLY IF (JOB_GMBL2 == 2)]

Q.6.4: [JOB_GMBL4] Measures aversion to risk using lifetime-income gambles

Thinking of the same scenario, what about these two jobs?

The first would guarantee your current total family income for life.

There is a 50–50 chance the second job would double your family income, and a 50–50 chance that it would cut it by 66 percent.

Which job would you take—the first job or the second job?

- (1) The first job
 - (2) The second job
-

[SP]

[ASK ONLY IF (JOB_GMBL3 == 1)]

Q.6.5: [JOB_GMBL5] Measures aversion to risk using lifetime-income gambles

Thinking of the same scenario, what about these two jobs?

The first would guarantee your current total family income for life.

There is a 50–50 chance the second job would double your family income, and a 50–50 chance that it would cut it by 10 percent.

Which job would you take—the first job or the second job?

- (1) The first job
 - (2) The second job
-

**[CREATE AND RANDOMLY INITIALIZE A BINARY (0,1) VARIABLE
WRKSTP_ORD]
[NUMBER BOX; RANGE: 0-120]**

Q.6.6: [WRKSTP_AGE, NEVER_WORKED] (Expected) age of retirement, or lack of working history

At what age **[IF (WRKSTP_ORD == 0) DISPLAY “did you stop working for pay or do you plan to stop working for pay?” ELSE DISPLAY “do you plan to stop working for pay or did you stop working for pay?”]**

____ **[RANGE 0 ... 120]**

I never worked for pay **[SP]**

[Create a variable [NEVER_WORKED] that records whether people check the box “I never worked for pay”]

[NUMBER BOX; RANGE: 60-99]

Q.6.7: [CLCT_AGE_EXP] Expected age of benefit collection

At what age do you plan to start collecting Social Security benefits?

____ **[RANGE 60...99]**

[NUMBER BOX; RANGE: 0-6000]

SET CLAIM_AGE2=CLAIM_AGE

IF CLAIM_AGE2<62 OR CLAIM_AGE2=MISSING, SET CLAIM_AGE2=62

Q.6.8: [BNFT_EXPT] Expected level of benefits

In this question, we would like get your estimate of the Social Security benefits you are supposed to get under current law if you claim benefits at age [CLAIM_AGE2].

Even if you do not know exactly, please give your best guess.

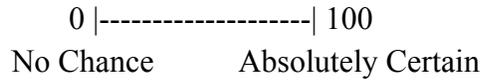
(Please report any Social Security benefits paid to you yourself, not Social Security benefits paid to any other member in your household. Also, please give your answer in today’s dollars, and ignore any inflation that may occur between today and when you collect Social Security benefits)

I believe the Social Security benefits I am supposed to get are roughly \$_____ **[NUMBER BOX WITH RANGE 0-6000]** per month if I claim benefits at age [CLAIM_AGE2].

[HORIZONTAL RATINGS THERMOMETER; RANGE:0-100; INTERVAL:1] [INCLUDING A NUMBER BOX NEXT TO THE SLIDER]

Q.6.9: [LNGVTY_EXP] Longevity expectations by estimating chances of surviving to age 75

On a scale from 0 to 100, where 0 is no chance and 100 is absolutely certain, what is the percent chance that you will live to age 75 or older?



[SP]

Q.6.10: [BNFT_PCNT_RTRMTSPND] How important is Social Security to retirement spending?
 Roughly, how important will the income that you are supposed to get from Social Security be relative to income from pensions, savings or other sources to pay for your household’s spending during retirement?

(Please include in your answer any Social Security income that you or other members in your household are supposed to get from Social Security).

- (1) Extremely important: Social Security would pay for more than 75% of spending
- (2) Very important: Social Security would pay for 50% to 75% of spending
- (3) Important: Social Security would pay for 25% to 50% of spending
- (4) Not so important: Social Security would pay for less than 25% of spending

[SP]

Q.6.11: [PLCTCL_TRST] Level of trust in the political system

How much do you agree with the following statement? *Most elected federal officials are trustworthy.*

| | | | | |
|-------------------|-------------------|----------------------------|----------------|----------------|
| Strongly Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Strongly Agree |
|-------------------|-------------------|----------------------------|----------------|----------------|

[GRID/SP]

Q.6.12: [OPTIMISM1, OPTIMISM2, OPTIMISM3, OPTIMISM4, OPTIMISM5, OPTIMISM6]

Respondent’s general level of optimism/pessimism

How much do you agree or disagree with the following statements?

| Question | Strongly Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Strongly Agree |
|--------------------------------------------|-------------------|-------------------|----------------------------|----------------|----------------|
| If something can go wrong for me, it will. | | | | | |

| | | | | | |
|--------------------------------------------------------------|--|--|--|--|--|
| I am always optimistic about my future. | | | | | |
| In uncertain times, I usually expect the best. | | | | | |
| Overall, I expect more good things to happen to me than bad. | | | | | |
| I hardly ever expect things to go my way. | | | | | |
| I rarely count on good things happening to me. | | | | | |

[DISPLAY]

Next, we would like to ask you some questions to find out how people use numbers in everyday life and how they make decisions involving money.

[NUMBER BOX; 0-2,000,000; PLEASE ADD COMMA FOR THE NUMBER]

Q.6.13: [FINLIT_LOTRY] Financial Literacy 1 – Lottery test

If 5 people all have the winning numbers in the lottery and the prize is two million dollars, how much will each of them get?

\$ _____

[SP]

Q.6.14: [FINLIT_CMPND] Financial Literacy 2 – Compound Interest

Suppose you had \$100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have in this account in total?

- (1) More than \$200
- (2) Exactly \$200
- (3) Less than \$200
- (4) I don't know.

[SP]

Q.6.15: [FINLIT_INFLAT] Financial Literacy 3 – Inflation / Money Illusion

Suppose that in the year 2020, your after-tax income has doubled and prices of all goods have doubled too. In 2020, how much will you be able to buy with your income?

- (1) More than today
- (2) The same as today
- (3) Less than today
- (4) I don't know.

[SP]

Q.6.16: [FINLIT_MUTUAL] Financial Literacy 5 – Advanced Knowledge: Mutual Funds

True or false? Buying a company stock usually provides a safer return than a stock mutual fund.

(1) True

(2) False

(3) I don't know.

ONLINE APPENDIX D: Voting Interpretation of Certainty-Equivalent Question

In this online appendix, we discuss and estimate the bias to our estimate of the risk premium that may occur as a result of some respondents interpreting the certainty-equivalent question as a “vote” rather than as a personal choice. Indeed, when we categorized the open-ended responses to our question on the reason for selecting a negative risk premium (see Appendix Table A11), about 10% of those who were asked this question (those who rejected a certainty equivalent that is at least 5 percentage points above their expected benefits) and answered it gave a reason that indicated that they interpreted the question as a voting question rather than as a choice that only applied to them personally. If the question is interpreted as a vote, their choice would have aggregate budget implications that can affect future tax rates. These effects on future taxes can bias their response to the certainty-equivalent question and lead to bias in our estimate of the average risk premium.

Those who interpreted certainty-equivalent question as a “voting” question fall into two groups. One group consists of those who think that the tax changes will be borne by others, e.g., because they themselves will no longer be working by the time payroll taxes are changed. Hence, the risk premium of this group is not affected by the budget implications of their choice.

The second group consists of those who think they themselves will be affected by the tax reductions that happen if they choose a guaranteed contract that has lower benefits than their expected benefits; in short, they think that if their choice leads them to get lower benefits, their taxes will be lower too. For this second group, it matters whether they believe benefit changes outweigh the resulting tax changes or not.

First, we consider respondents who believe that benefit changes outweigh the resulting tax changes (so a benefit cut with the resulting tax cut still makes the respondent worse off). While a benefit cut makes the respondent worse off, it is not as costly as it looks because it comes with lower taxes. Hence, the respondent is willing to accept a lower guaranteed contract, which causes the risk premium to be biased up (relative to the case where taxes don’t adjust). We can quantify the bias if the respondent believes the response in the PDV of taxes to a benefit change is proportional to the change in the PDV of benefits so, $\Delta \text{PDV}(\text{taxes}) = \alpha \Delta \text{PDV}(\text{benefits})$, with $0 < \alpha < 1$. In other words, the impact on the respondent of a benefit change is scaled down proportionally, so that the net impact is $(1-\alpha)$ times the nominal benefit change. In this case, the respondent is willing to accept a guaranteed contract that lies $1/(1-\alpha)$ times her true risk premium below her expected benefit.

To illustrate the size of the resulting bias, assume that about 7% of respondents fall in this group. The 7% is based on the 10% of respondents whose open-ended answer indicated that they took the question as a voting question and subtracting out our estimate of 3% of respondents that respond as if benefit changes are outweighed by tax changes (see below for how we arrive at 3%). We conservatively assume that only a negligible fraction of those who took the certainty-equivalent question as a voting question thinks the resulting tax changes would not affect them personally. We assume that $\alpha=0.5$ (the midpoint of the range for α) and that this group of respondents has the same risk premium as the rest of the population (5.8%). Under these assumptions, they would report a risk premium of $5.8/(1-0.5) = 11.6$, which is an upward bias of 5.8%. If this group makes up 7% of all respondents, they bias our estimate of the average risk premium up by $0.07*5.8 = 0.41$ percentage points.

Second, we consider respondents who believe that benefit changes are outweighed by the resulting tax changes (so a benefit cut with the resulting tax cut actually makes the respondent better off). Hence, if they are first offered a choice where the guaranteed contract is lower than their expected benefits (rather than higher than their expected benefits), they would choose this guaranteed contract. For the next choice, they would be offered an even lower guaranteed contract, which they would again choose (it is even more attractive for them). They would be offered lower and lower guaranteed contracts, which they would keep choosing. As a result, they would end up at the lowest possible guaranteed contract and the resulting the midpoint of their certainty equivalent would be 2.5% of benefits they are supposed to get under current law. In contrast, if they were first offered a guaranteed contract above their expected benefits, such respondents would choose their expected benefits. Next, they would be offered a higher guaranteed contract, which they would again reject (it is even less attractive for them). They would be offered higher and higher guaranteed contracts (which they keep rejecting) and they would end up at the highest possible guaranteed contract. The resulting midpoint of their certainty equivalent would be 97.5% of benefits they are supposed to get under current law. In short, individuals would end up in one of the two extremes for the certainty equivalent: if they were initially offered a guaranteed contract below their expected benefits they should end up on the lower extreme and if they were initially offered a guaranteed contract above their expected benefits they should end up on the upper extreme. This is a testable prediction. While it is endogenous whether the initial guaranteed contract is below or above their expected benefits (because expected benefits are endogenous), we can instrument for this using the randomized starting value of the guaranteed contract. The IV regression shows that initially being offered a guaranteed contract above one's expected benefits raises the probability of ending up at the upper extreme (relative to ending up at the lower extreme) by 2.9 percentage points (p-value 0.076). In short, 2.9% of respondents behave in a way that is predicted if they (i) took the choice as

voting and (ii) believe that a benefit cut is outweighed by the resulting tax cut, though it is important to keep in mind that this estimate of 2.9% is only marginally significantly different from zero.

The following calculation illustrates the rough magnitude of the bias stemming from the answers of these 2.9 percent of individuals. It turns out that the overall bias is limited because some of these individuals end up at the upper extreme and others at the lower extreme. We calculate the expected Social Security benefit of treatment compliers using the methodology explained in Angrist and Pischke (2009). We find that expected benefits of this group of compliers (i.e., the 2.9% that end up at an extreme based on whether the initial guaranteed contract offered was above or below their expected benefits) are 48% of what they are supposed to get under current law. Given that half of them get a starting value of 30% and half a starting value of 70%, roughly half would initially see a guaranteed contract below their expected benefits and end up at the lower extreme while other half would initially see a guaranteed contract above their expected benefits and end up at the upper extreme. If their true risk premium is 6% of the benefits they are supposed to get (i.e., equal to the population average, which implies a certainty equivalent of $48\% - 6\% = 42\%$), then the bias on the average risk premium is $0.029 * 0.50 * (42 - 2.5) + 0.029 * 0.50 * (42 - 97.5) = -0.23$ percentage points. If their true risk premium is 12% (twice the population average, which implies a certainty equivalent of 36%) then the bias becomes -0.41 percentage points, and if their true risk premium is 0%, then the bias becomes -0.06 percentage points. In short, the impact of this bias is rather limited on our overall estimate of the average risk premium.

Combining our best estimate of the bias from those who thought that benefit changes outweigh the resulting tax changes (estimated at 0.41 percentage points) and the bias from those who thought that benefit changes would be outweighed by the resulting tax changes (estimated at -0.23 percentage points), we estimate that the overall bias of those who took our certainty equivalent question as a voting question rather than a personal choice is 0.18 percentage points. If we allow for reasonable variations in the assumptions of the bias calculation (e.g., the fraction of respondents in each group, the parameter α , or the true risk premium), the overall bias generally stays below 0.5 percentage points.

Reference for Appendix D

Joshua D. Angrist and Jörn-Steffen Pischke. Mostly harmless econometrics: An empiricist's companion. *Princeton University Press*, 2009.