SUPPLEMENTARY MATERIAL

To "Tail and Center Rounding of Probabilistic Expectations in the Health and Retirement Study"

Supplementary Appendix to Section 2

SA2 Exploratory Analysis of Response Patterns Across Questions and Waves in the HRS

Since 2002 the HRS has devoted an entire section of its core questionnaire to measurement of respondents' expectations in the domains of personal health, personal finances, and general economic conditions. Figure 1 in the main text shows the list of expectations questions asked in Section P of the HRS core questionnaire between 2002 and 2014 organized by domain.

As documented in Table S1, the number of responses varies across expectations questions. This occurs for several reasons. First, questions have been added and removed over time.

Second, the HRS makes extensive use of skip sequencing. In particular, whether a specific question is asked or not to a certain respondent may depend on the previous answers given by the respondent and on whether the event specified by the question is relevant to the respondent. For example, respondents who are older than 62 are not asked their subjective probability of working full-time past 62. Similarly, respondents who are older than 75 are not asked their subjective probability of living past 75, and so on. Moreover, respondents who respond 'Don't know' (DK) or 'Refuse' (RF) to three consecutive expectations questions are skipped to the next section.

Third, sample composition may change over time. In particular, the HRS sample has been augmented with new cohorts of respondents who joined the study in specific waves. On the other hand, respondents may exit the study due to attrition or death.

SA2.1 Temporal Stability of Response Tendencies

We start by investigating the empirical distributions of responses to each of the questions listed in Table S1 above separately for each wave between 2002 and 2014. To reduce length, in Table S2 we present the response patterns for a subset of 9 questions in different domains. We focus on questions that were asked in at least 4 waves.

For each of the 9 questions selected and for each of the waves in which those questions were posed, the columns of Table S2 show the fractions of respondents who do not respond (NR), who respond 0, 50, or 100, who respond with any other multiple of 10 percent (i.e., in $\mathbb{M}10 = \{10, 20, 30, 40, 60, 70, 80, 90\}$), who respond with any multiple of 5 percent that is not a multiple of 10 percent (i.e., in $\mathbb{M}5 = \{5, 15, 25, 35, 45, 55, 65, 75, 85, 95\}$), and who respond in two ranges of multiples of 1 percent that are not multiples of 5 or 10 percent (i.e., in 1-4 and in 96-99). In the column "Other" we report the residual fraction of respondents who respond with a multiple of 1 percent that does not lie in the 1-4 or 96-99 range.

By and large, HRS expectations questions feature low rates of item nonresponse in the personal health and personal finances domains (below 0.05) and higher rates of item nonresponse in the general economic conditions domain (typically between 0.05 and 0.10), with peaks of 0.25-0.30 rates of nonresponse to specific questions eliciting respondents' expectations of future performance of the stock market (e.g., see question P47 in Table S2).

The rates of 0, 50, and 100 vary across questions. For example, the fraction of 50 percent responses tends to be higher in the general economic conditions domain, where they range between 0.20 and 0.30, than in the remaining domains. Among the 9 questions shown in Table S2, the fractions of 0 and 100 are highest for specific questions belonging to the personal finances and personal health domains. For example, the fraction of 0 ranges between 0.35 and 0.50 for P14 (probability of losing own job during the next year) and for P32 (probability of moving to a nursing home in 5 years); whereas the fraction of 100 percent is highest for P5 (probability of leaving an inheritance of at least $10K), ranging between 0.324 and 0.447 across waves.

The high rates of 0, 50, and 100 in response to specific questions do not suggest any particular degree of rounding. For example, responses of 50 percent are consistent with any degree of rounding. Respondents who answered P47 (probability that the mutual fund will increase in value in the next year) might genuinely believe that it is equally likely that the stock market will increase or decrease in value in a 1-year time; they might mean that the chances that the stock market will go up are between 40 and 60 percent; or they might have epistemic uncertainty, using 50 percent to indicate a complete lack of knowledge.

Consistently high fractions of responses across questions and waves are multiples of 10 percent and, to a lesser extent, of 5 percent. For the 9 questions shown in Table S2, the fractions of $\mathbb{M}10$ and $\mathbb{M}5$ responses range respectively between 0.20 and 0.45 and between 0.05 and 0.15 across questions and waves. On the other hand, the fractions of cases where the response takes the value 1-4 or 96-99 are substantially smaller and range respectively between 0.002 and 0.035 and between 0.000 and 0.010 across questions and waves. Responses in the "Other" category occur even more infrequently and usually constitute 0.006 or less of cases.

The main takeaway from Table S2 is that the basic patterns found by Manski and Molinari (2010) using the 2006 data are confirmed for the remaining waves as well. Hence, these patterns are stable across waves.

SA2.2 Pooling Data across Waves to Probe More Deeply into Response Tendencies

The exploratory analysis presented in Section 2.1 of the main text describes the relative prevalence of rounding patterns aggregated across the HRS respondents. To obtain further insight, we examine in depth the rounding behavior of particular respondents across questions and waves. This kind of exploration is possible in the HRS, as each respondent has been asked and answered many expectations questions. Table S3 displays the average numbers of expectations questions asked and answered by HRS respondents, in total and by wave and question domain. This exploration yields important new findings, which we describe next.

We proceed by drawing a random subset of 100 HRS respondents and by generating histograms of the responses each respondent thus selected gave in each of the three question domains. Figure S1 illustrates using the respondent selected by the 9th random draw.

Inspection of the histograms across the 100 randomly drawn respondents suggests that many of them may be applying weakly coarser rounding in the middle of the 0-100 percent chance scale than in its tails. To better visualize this pattern we report a grouped version of the histograms. For example, Figure S2 presents the grouped versions of the histograms shown in Figure S1 for respondent #9. Specifically, in Figure S2 responses are grouped according to the following partition of the 0-100 scale, where 25 and 75 are used as the thresholds separating the center from the two symmetric tails: $\mathbb{M}$1-Tail = values in 1-24 ∪ 76-99 that are not divisible by 5; $\mathbb{M}$1-Center = values in [26, 74] that are not divisible by 5; $\mathbb{M}$5-Tail = {5, 15, 85, 95}; $\mathbb{M}$5-Center = {35, 45, 55, 65}; $\mathbb{M}$10-Tail = {10, 20, 80, 90}; $\mathbb{M}$10-Center = {30, 40, 60, 70}; $\mathbb{M}$25 = {25, 75}; $\mathbb{M}$100 = {0, 100}; $\mathbb{M}$50 = {50}.

There are two notable features in the distributions of responses given by respondent #9 in Figure S2. First, the high frequencies of 25 and 75 percent responses (grouped in $\mathbb{M}$25) relative to other multiples of 5 (grouped in $\mathbb{M}$5-T and $\mathbb{M}$5-C) suggest that 25 and 75 may have special status among multiples of 5. These percentages correspond respectively to “1 in 4” and “3 in 4” chances. Thus, they might be viewed by respondents as more rounded than other multiples of 5.

The second important feature emerging from the histograms shown in Figure S2 is that the relative frequencies of refined responses in the tail segments of the scale are generally higher than the frequencies of such responses in the corresponding center segment. For instance, the heights of the bars corresponding to $\mathbb{M}$10-T responses are systematically higher than those corresponding to $\mathbb{M}$10-C responses in all three question domains. The same pattern applies to the remaining response categories. This suggests that the more frequent use of multiples of 1 percent near the endpoints of the scale than toward the middle of the scale documented by earlier analyses of rounding might be the expression of a more general tendency of respondents to round more coarsely around the middle of the 0-100 scale than in its tails.

Supplementary Appendix to Section 3

SA3.1 Determination of Respondent Rounding Types

Table S4 presents in a formal and compact way the complete algorithm used to determine a respondent's rounding type in the center of the 0-100 scale (panel A) and in its tails (panel B) within a given question domain. Specifically, Table S4A maps all logically possible response tendencies that may be observed in the center of the 0-100 scale into corresponding center rounding types. Table S4B maps all logically possible response tendencies that may be observed in the tails of the 0-100 scale into corresponding tail rounding types. For each question domain, each respondent is assigned a bivariate (tails, center) rounding type belonging to the cross product of the tail and center rounding types listed in the two panels of Table S4. Both panels make use of the partition of the 0-100 scale described in Table S5.

In Section 3.1, we present an example where a respondent is observed to answer four expectations questions in the domain of personal finances. The respondent's answers are {5, 30, 60, 85}. As the set includes 2 multiples of 5 percent in the tails and 2 multiples of 10 percent in the center, the respondent is classified as rounding to the nearest 5 percent *or finer degree* in the tails ($\mathcal{M}$5-T) and to the nearest 10 percent *or finer degree* in the center ($\mathcal{M}$10-C).

We now discuss additional cases to further illustrate the logic of our proposed algorithm. Let us first consider an alternative scenario where the respondent is asked an additional question in the domain of personal finances and answers it with a value in the center that is either a multiple of 10 percent or 50 percent. Under this scenario, our conclusion about the respondent's rounding type in the center for the finances domain does not change. If, on the other hand, the respondent were to answer the additional question with a multiple of 5 percent in the center, our conclusion might change as it would depend on the respondent's response pattern in the two domains other than personal finances. For example, if in a second domain (say personal health), the respondent gave at least one center response that is a multiple of 5 percent or finer (i.e., a multiple of 1 percent), then the respondent would be classified as rounding to the nearest 5 percent (rather than 10 percent) in the center within the personal finances domain.

Moving now to the tails, let us imagine that the respondent is asked an additional question in the class of personal finances and answers it with a value in the tails that is a multiple of 5 percent, a multiple of 10 percent, or a focal response of 0 or 100. In this case, our conclusion about the respondent's rounding type in the tails for the finances domain does not change. If, on the other hand, the respondent were to answer the additional question with a multiple of 1 percent in the tails, our conclusion might change depending on the respondent's response pattern in the other two domains. Specifically, if in a second domain (say general economic conditions), the respondent gave at least one response — either in the tails or in the center — that is a multiple of 1 percent, then the respondent would be classified as rounding to the nearest 1 percent in the tails within the personal finances domain.

Building on the example introduced in Section 3.1, in Section 3.3 we explain how to assign probability intervals to the respondents' point responses. Here we discuss additional cases to further illustrate the logic of our algorithm, particularly the application of the boundary conditions in construction of the intervals.

Let us first consider a case where the respondent is asked an additional question (relative to the example discussed in Section 3.1) and were observed to answer with a multiple of 1 percent in the tails (say 2 percent). The respondent is still classified as $\mathcal{M}$5-T in the tails, as long as they did not use any multiple of 1 percent to answer questions in the remaining domains. Under this scenario, construction of the interval around 2 percent requires a "boundary condition," whereby the lower bound of the assigned interval cannot be smaller than 0 percent. Hence, if the respondent were observed to respond with 2 percent to one question in the finances domain, while still being classified as $\mathcal{M}$5-T, 2 percent would be assigned the interval [0, 4.5] or [max(0, 2 - 2.5), 2 + 2.5]. In the right tail of the scale, a response of 98 percent would be handled symmetrically and would be assigned a range of [95.5, 100] or [98 - 2.5, min(100, 98 + 2.5)].

Let us now consider an alternative scenario where the respondent is asked two additional questions in the personal finances domain and is observed to answer both of them with a multiple of 1 percent in the tails (say 2 percent and 98 percent). We now classify the respondent as $\mathcal{M}$1-T. Under this scenario, all of the respondent's tail answers in the personal finances domain are taken at face value. Hence, 2 percent is assigned the range [2, 2], 5 percent is assigned the range [5, 5], and so on. Finally, regardless of the respondent's rounding type, any NR is assigned an interval of [0, 100].

Let us now entertain a final situation where the respondent's highest response in the left tail is 24 percent. In this case, the boundary condition to the left of 30 might bind, depending on the respondent's rounding type in the tails. Specifically, if the respondent is still $\mathcal{M}$5-T — as it would happen if 24 percent were the only multiple of 1 percent (but not of 5 percent) used by the respondent in any domain — then the boundary condition to the left of 30 percent would bind, since 24 + 2.5 > 30 – 5. In this case, the probability interval assigned to the response of 30 percent in the center would be [26.5, 35] instead of [25, 35]. On the other hand, if the respondent were classified to be $\mathcal{M}$1-T — as it would happen if they gave a second response, in addition to 24 percent, that is a multiple of 1 percent (but not of 5 percent) in any domain — then the boundary condition to the left of 30 percent would not bind, since 24 < 30 – 5.

SA3.2 Brief Description of Bivariate Ordered Probit Model

In our application, within each domain, the bivariate ordered probit model specifies two seemingly unrelated latent equations for the respondent's tendency to round, one for the tail and one for the center, where $y^{*,C} = X\beta^C + \varepsilon^C \; and \; y^{*,T} = X\beta^T + \varepsilon^T$. The pair $(\varepsilon^C, \varepsilon^T)$ is assumed to have the standardized bivariate normal distribution with means zero, both variances equal to one, and correlation ρ.

For each $k = C, T$, the model assumes that respondent rounds to multiples of 1 if $y^{*,k} < \delta_1^k$, to multiples of 5 if $\delta_1^k \leq y^{*,k} < \delta_2^k$, and so on, for a total of four categories in the tails (𝕄1-T, 𝕄5-T, 𝕄10-T, 𝕄100) and five categories in the center (𝕄1-C, 𝕄5-C, 𝕄10-C, 𝕄25, 𝕄50). It is then possible to obtain the likelihood function for the rounding types. For l= 1, . . ., 5 and m = 1, . . . , 4, the probability that a person has rounding type $(l\ , m)$ is

$$\Pr\left(y_i^C = l, y_i^T = m\right) = \Phi\left((\delta_l^C - X\beta^C), (\delta_m^T - X\beta^T), \rho\right) - \Phi\left((\delta_{l-1}^C - X\beta^C), (\delta_m^T - X\beta^T), \rho\right)$$
$$- \Phi\left((\delta_l^C - X\beta^C), (\delta_{m-1}^T - X\beta^T), \rho\right) + \Phi\left((\delta_{l-1}^C - X\beta^C), (\delta_{m-1}^T - X\beta^T), \rho\right),$$

where Φ is the standardized bivariate normal distribution function with mean zero, both variances equal to one, and correlation ρ.

SA3.3 Variation of Rounding Types with Respondent Characteristics

Before describing how probability intervals are formed based on respondents' point responses and their inferred rounding types, we investigate whether the latter vary systematically by respondents' characteristics. To this end, in Section 3.3 we estimate three bivariate ordered probit models, one per question domain, where the outcome variables are the respondent's bivariate vectors of tail and center rounding categories in the corresponding domains and the predictors are respondent's gender, age, educational attainment, race, and cognitive score.

Here we provide additional estimates from a specification that excludes cognitive scores. These estimates are shown in Table S6. We do so as we believe that this part of our analysis may yield useful information about likely characteristics of respondents that are associated with coarser or more refined rounding behavior to researchers who analyze survey expectations but do not have access to: (a) a sufficiently large number of expectations questions per respondent to directly apply our method; (b) a sufficiently rich or specialized set of relevant covariates as in the HRS.

The main patterns are analogous to those observed in the specification including cognitive scores. In particular, higher levels of educational attainment are still unambiguously and statistically significantly associated with a tendency to give more refined responses (less rounding) across all scale segments and question domains. Similarly, the dummies continue to display a non-linear effect. Respondents belonging to the oldest age category (80+) have a statistically significant tendency to give more rounded responses than respondents belonging to the youngest one (50-59) across all scale segments and questions domains. On the other hand, respondents in the two intermediate age groups (i.e., 60-69 and 70-79) belong to rounding categories that may be more refined, coarser, or statistically indistinguishable from those characterizing younger respondents, depending on the specific domain or scale segment. Gender and race continue to features a somewhat mixed pattern. As before, rounding tendencies are positively correlated across scale segments. Hence, respondents who give coarser responses in the tails are more likely to do so in the center and *vice versa*.

SA3.4 Using Survey Responses and Rounding Types to Form Expectations Intervals

Table S7 (making use of the partition of the 0-100 scale described in Table S5) presents in a formal and compact way the complete portion of the algorithm used to assign intervals to observed point responses in the scale tails (panel A) and in the its center (panel B) within a given domain. Specifically, Table S7A maps all logically possible rounding types and responses that may be observed in the tails of the 0-100 scale into corresponding tail intervals. Similarly, Table S7B maps all logically possible rounding types and responses that may be observed in the center of the 0-100 scale into corresponding center intervals.

We apply the algorithm described in Table S7 to all responses by HRS respondents who responded to at least one expectations question in any question domain and in any wave between 2002 and 2014. For the purpose of constructing the intervals, respondents who were classified as rounding more coarsely in the tails than in the center are now treated as respondents who were classified as rounding to the same degree in the tails and in the center.

Table S8 reports the distributions of interval width for the responses given in wave 2014 to the following three questions: the percent chance that the respondent will live to be 75 or older (P28), the percent chance that the respondent will work full time past age 62 (P17), and the percent chance that a mutual fund will increase in value within the next year (P47).

The distribution of interval width for the probability of working past 62 displayed in the middle column of the table displays higher frequencies at lower width values than the distributions shown in the remaining columns, consistent with the pattern shown in Table 5 of the main text.

Tables and Figures Appendix

Table S1: Number of Waves, Observations, and Respondents by Question

Question: percent chance that…	N waves asked	N total obs. (across waves)	N Rs asked (across waves)
		Personal Health	
P19: Health limit work next 10 years	1	5,475	5,475
P28: Live to be age 75 or more	7	56,497	17,868
P29: Live to be age X or more	7	118,404	27,638
P32: Move to nursing home in 5 y	7	74,696	26,095
P103: Live independently at 75	2	7,590	5,693
P104: Free of serious mental… at 75	2	7,590	5,693
P106: Live independently at X	2	15,291	13,228
P107: Free of serious think/reason…	4	33,518	15,599
P108: Same health in 4 years	2	16,253	12,509
P109: Worse health in 4 years	2	16,232	12,512
		General Economic Conditions	
P34: U.S. have economic depression	4	50,661	19,598
P47: Mutual funds up /next y	7	105,714	27,279
P110: SS in general will be worse	5	71,770	24,868
P114: Mutual fund up /more than living	1	16,680	16,680
P115: Mutual fund up 8% /more than…	1	16,652	16,652
P116: Cost living up /more than 5%	2	32,431	17,781
P150: Mutual funds up by 20/10/ X%	5	42,092	20,051
P180: Mutual funds down by 20%	3	31,658	17,826
P183: Medicare less generous in 10 y	2	36,524	19,938
P190: Stock market up by next year	1	8,615	8,615
P192: Stock market up by 20%	1	5,430	5,430
P193: Stock market down by 20%	1	5,306	5,306

NOTE: N of total observations includes all answers by any respondent in any wave to the corresponding question, including don’t know/refuse. The set of questions each respondent is asked and observed to answer may vary across waves as a function of aspects of survey design such as the decision of designers to introduce new questions or to eliminate existing ones, the respondent’s time-varying characteristics used for skip logic, etc. Additionally, new cohorts of respondents have been added over time, while a portion of respondents from the initial cohorts have left the study due to death or other reasons.

Table S1 (Continued): Number of Waves, Observations, and Respondents by Question

Question: percent chance that…	N waves asked	N total obs. (across waves)	N Rs asked (across waves)
		Personal Finances	
P4: Income keep up inflation in 5 y	3	51,559	20,852
P5: Leave inheritance ≥ $10K	7	116,769	28,252
P6: Leave inheritance ≥ $100K	7	95,625	25,360
P7: Leave any inheritance	7	19,716	9,426
P8: Receive inheritance in 10 y	3	51,559	20,852
P14: Lose job next year	6	32,743	12,220
P15: Find job in few months/loss	6	32,727	12,220
P16: Work for pay in the future	7	66,855	20,902
P17: Work full time after age 62	7	36,603	13,325
P18: Work full time after age 65	7	37,062	13,158
P20: Find job in few months/unemployed	7	8,206	5,182
P30: Give $5K to others in 10 y	3	50,528	20,633
P31: Receive $5K… in 10 y	3	50,528	20,633
P59: Leave inheritance ≥ $500K	7	73,872	21,339
P70: Med expenses use up savings	3	50,478	19,583
P71: Give $1K to others in 10 y	2	21,024	13,717
P72: Give $10K to others in 10 y	2	12,904	8,981
P73: Give $20K to others in 10 y	2	11,155	7,838
P74: Receive $2.5K… in 10 y	2	30,644	18,014
P75: Receive $1K… in 10 y	2	30,397	17,924
P76: Receive $10K… in 10 y	2	3,270	2,786
P111: SS worse/current own benefits	5	51,023	16,477
P112: SS worse/future own benefits	5	26,753	10,599
P166: Home worth more next year	3	28,067	11,422
P168: Home worth more/less by X	3	26,394	11,168
P175: OP med exp ≥ $1.5K next year	3	56,760	21,771
P176: OP med exp ≥ $500 next year	3	10,962	7,482
P177: OP med exp ≥ $3K next year	3	44,022	19,526
P178: OP med exp ≥ $8K next year	3	36,369	17,453
P181: Any work after age 70	2	17,057	9,915
P182: Work full time after age 70	2	10,384	6,856

NOTE: N of total observations includes all answers by any respondent in any wave to the corresponding question, including don't know/refuse. The set of questions each respondent is asked and observed to answer may vary across waves as a function of aspects of survey design such as the decision of designers to introduce new questions or to eliminate existing ones, the respondent's time-varying characteristics used for skip logic, etc. Additionally, new cohorts of respondents have been added over time, while a portion of respondents from the initial cohorts have left the study due to death or other reasons.

Table S2: Responses by Question and Wave in the 2002-2014 HRS

			Fraction of responses equal to or in:								
Question: percent chance that…	Wave	N	NR	0	1-4	50	96-99	100	𝕄10	𝕄5	Other
P5: leave inheritance ≥ $10,000	2002	16,119	0.050	0.154	0.004	0.074	0.007	0.443	0.205	0.060	0.002
(personal finances)	2004	18,249	0.037	0.162	0.004	0.083	0.008	0.404	0.241	0.059	0.002
	2006	17,191	0.053	0.159	0.004	0.067	0.008	0.447	0.209	0.052	0.001
	2008	16,060	0.050	0.153	0.004	0.067	0.010	0.431	0.236	0.046	0.002
	2010	20,397	0.037	0.172	0.007	0.080	0.009	0.344	0.296	0.053	0.003
	2012	19,359	0.039	0.170	0.007	0.085	0.009	0.329	0.306	0.053	0.003
	2014	17,647	0.037	0.167	0.006	0.086	0.008	0.324	0.319	0.050	0.003
P14: lose job during next year	2002	4,220	0.022	0.479	0.021	0.122	0.002	0.018	0.244	0.091	0.002
(personal finances)	2004	5,629	0.013	0.450	0.021	0.128	0.000	0.019	0.277	0.091	0.001
	2006	4,797	0.020	0.461	0.026	0.107	0.001	0.018	0.274	0.090	0.003
	2010	6,785	0.018	0.323	0.028	0.141	0.001	0.022	0.356	0.106	0.004
	2012	6,093	0.017	0.322	0.033	0.140	0.001	0.022	0.363	0.099	0.002
	2014	5,219	0.015	0.323	0.035	0.126	0.001	0.018	0.376	0.103	0.003
P15: find equally good job	2002	4,220	0.022	0.183	0.009	0.165	0.006	0.142	0.353	0.120	0.001
(personal finances)	2004	5,629	0.013	0.176	0.012	0.158	0.003	0.138	0.387	0.112	0.002
	2006	4,797	0.017	0.173	0.014	0.152	0.004	0.143	0.383	0.112	0.003
	2010	6,769	0.013	0.188	0.022	0.148	0.004	0.069	0.435	0.118	0.004
	2012	6,093	0.014	0.166	0.018	0.164	0.003	0.076	0.447	0.108	0.003
	2014	5,219	0.014	0.141	0.016	0.166	0.002	0.083	0.463	0.112	0.003
P17: work full time after age 62	2002	3,219	0.012	0.194	0.005	0.139	0.005	0.220	0.312	0.111	0.001
(personal finances)	2004	4,528	0.007	0.161	0.008	0.156	0.004	0.163	0.387	0.112	0.003
	2006	5,238	0.011	0.299	0.011	0.133	0.004	0.142	0.305	0.093	0.002
	2008	3,870	0.026	0.160	0.012	0.134	0.006	0.202	0.357	0.099	0.004
	2010	7,828	0.008	0.152	0.014	0.151	0.006	0.143	0.415	0.108	0.004
	2012	6,647	0.010	0.148	0.016	0.147	0.005	0.136	0.434	0.098	0.005
	2014	5,294	0.006	0.147	0.015	0.142	0.005	0.137	0.443	0.099	0.005

NOTE: N = sample size, NR = nonresponse, 𝕄10 = multiple of 10 but not (0, 50, 100), 𝕄5 = multiple of 5 but not of 10.

Table S2 (Continued): Responses by Question and Wave in the 2002-2014 HRS

Question: percent chance that…	Wave	N	Fraction of responses equal to or in:								
			NR	0	1-4	50	96-99	100	𝕄10	𝕄5	Other
P28: live to be 75 or more	2002	7200	0.048	0.038	0.002	0.223	0.005	0.178	0.359	0.144	0.003
(personal health)	2004	9037	0.035	0.049	0.003	0.230	0.004	0.165	0.372	0.139	0.002
	2006	6713	0.040	0.053	0.004	0.222	0.005	0.152	0.375	0.144	0.004
	2008	5567	0.038	0.041	0.004	0.207	0.005	0.156	0.394	0.148	0.006
	2010	10498	0.041	0.059	0.005	0.206	0.006	0.143	0.402	0.133	0.006
	2012	9482	0.035	0.064	0.006	0.221	0.006	0.135	0.406	0.124	0.004
	2014	8084	0.029	0.064	0.006	0.226	0.006	0.136	0.414	0.115	0.004
P32: move to nursing home in 5 years	2002	9177	0.082	0.491	0.014	0.111	0.001	0.006	0.207	0.088	0.002
(personal health)	2004	12629	0.063	0.444	0.012	0.144	0.001	0.008	0.232	0.095	0.002
	2006	10044	0.075	0.463	0.021	0.101	0.000	0.007	0.231	0.100	0.002
	2008	10106	0.061	0.433	0.020	0.089	0.000	0.007	0.281	0.106	0.002
	2010	15512	0.045	0.393	0.025	0.130	0.001	0.016	0.284	0.103	0.003
	2012	9870	0.046	0.402	0.023	0.120	0.000	0.012	0.289	0.105	0.003
	2014	9367	0.037	0.400	0.028	0.113	0.000	0.013	0.304	0.102	0.003
P34: U.S. have economic depression	2002	184	0.103	0.054	0.016	0.299	0.000	0.082	0.359	0.071	0.016
(general economic conditions)	2004	17996	0.069	0.084	0.005	0.264	0.002	0.056	0.384	0.134	0.003
	2006	16754	0.078	0.066	0.006	0.238	0.002	0.060	0.404	0.142	0.004
	2008	15727	0.060	0.044	0.005	0.194	0.006	0.137	0.409	0.141	0.004
P110: Social Security will be less generous	2006	16754	0.065	0.048	0.003	0.231	0.005	0.120	0.387	0.139	0.002
(general economic conditions)	2008	15727	0.064	0.049	0.002	0.223	0.006	0.111	0.395	0.147	0.003
	2010	20208	0.046	0.048	0.005	0.191	0.010	0.187	0.379	0.130	0.005
	2012	19081	0.043	0.051	0.004	0.210	0.008	0.175	0.387	0.118	0.004
P47: mutual fund increase in value	2002	7260	0.206	0.079	0.004	0.239	0.000	0.040	0.306	0.122	0.003
(general economic conditions)	2004	17996	0.148	0.058	0.004	0.264	0.001	0.041	0.359	0.121	0.004
	2006	16754	0.240	0.042	0.003	0.231	0.001	0.036	0.339	0.106	0.003
	2008	15727	0.197	0.057	0.004	0.216	0.001	0.028	0.374	0.119	0.004
	2010	20208	0.111	0.062	0.006	0.238	0.001	0.037	0.420	0.122	0.005
	2012	19081	0.119	0.058	0.005	0.271	0.000	0.033	0.401	0.108	0.005
	2014	8828	0.097	0.052	0.007	0.273	0.000	0.041	0.414	0.109	0.006

Table S3: Numbers of Questions Asked and Answered by Wave and Question Domain

Wave / Question Domain	2002	2004	2006	2008	2010	2012	2014	All Waves
				Number of Questions				
personal finances	14	21	23	11	18	20	20	127
personal health	4	3	9	9	3	4	4	36
gen. economic cond.	3	2	6	5	4	5	7	32
Total	21	28	38	25	25	29	31	197
				Average Number of Questions Asked				
personal finances	8	12.4	13.2	5.6	9	9.7	9.7	67.6
personal health	2.3	2.1	3.5	5.1	2.2	2.4	2.5	20.1
gen. economic cond.	1	2	5.8	4.6	3.3	4.2	3.3	24.2
Total	11.3	16.5	22.5	15.3	14.5	16.3	15.5	111.9
				Average Number of Questions Answered				
personal finances	7.8	12.1	12.8	5.4	8.9	9.5	9.5	66
personal health	2.2	2	3.3	4.8	2.1	2.3	2.4	19.1
gen. economic cond.	0.8	1.8	4.8	4.2	3	4	3.1	21.7
Total	10.8	15.9	20.9	14.4	14	15.8	15	106.8

Figure S1: Distribution of Responses across Waves (2002-2014) of an Individual Respondent by Domain

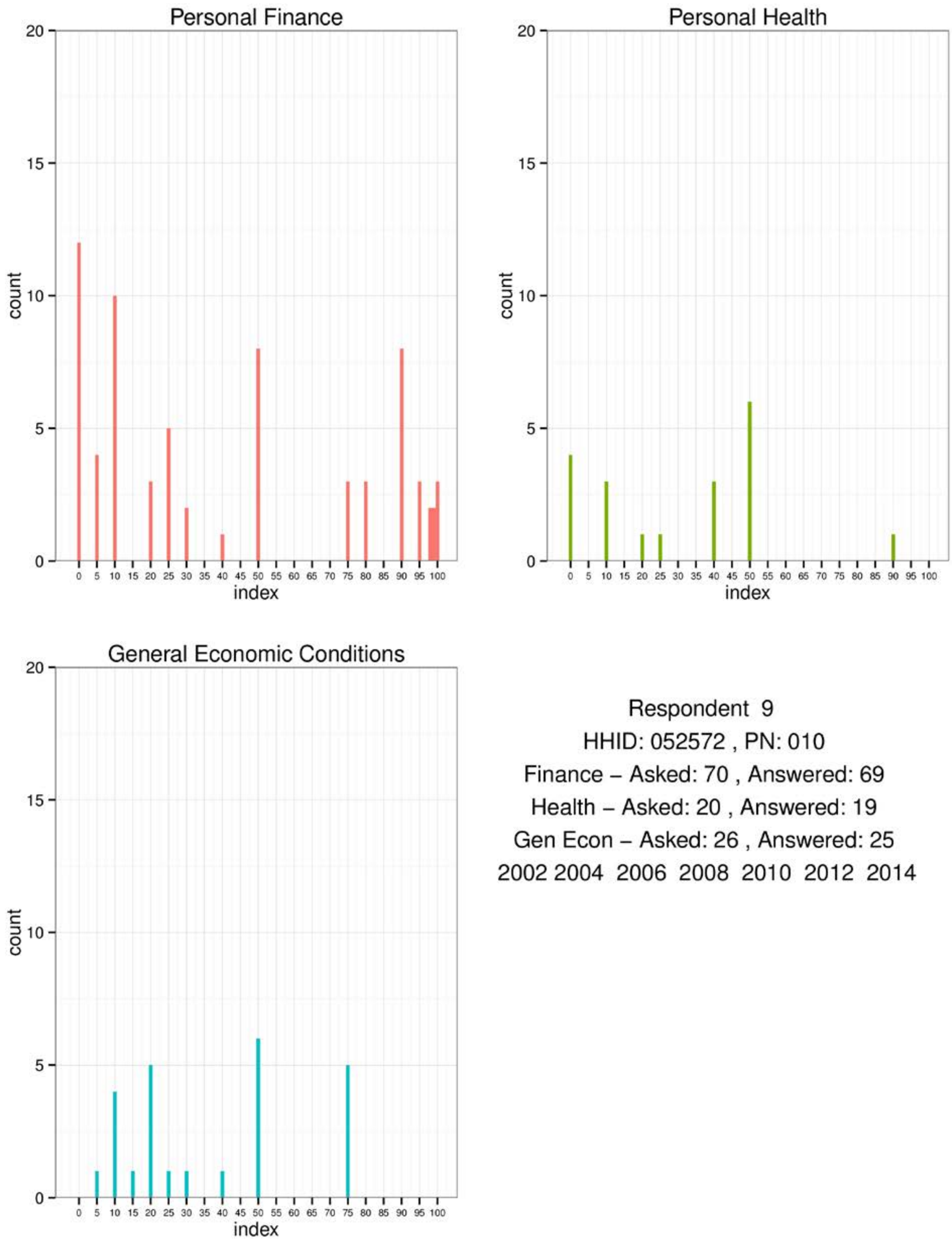

Figure S2: Distribution of Responses across Waves (2002-2014) of an Individual Respondent by Domain: Grouped Version

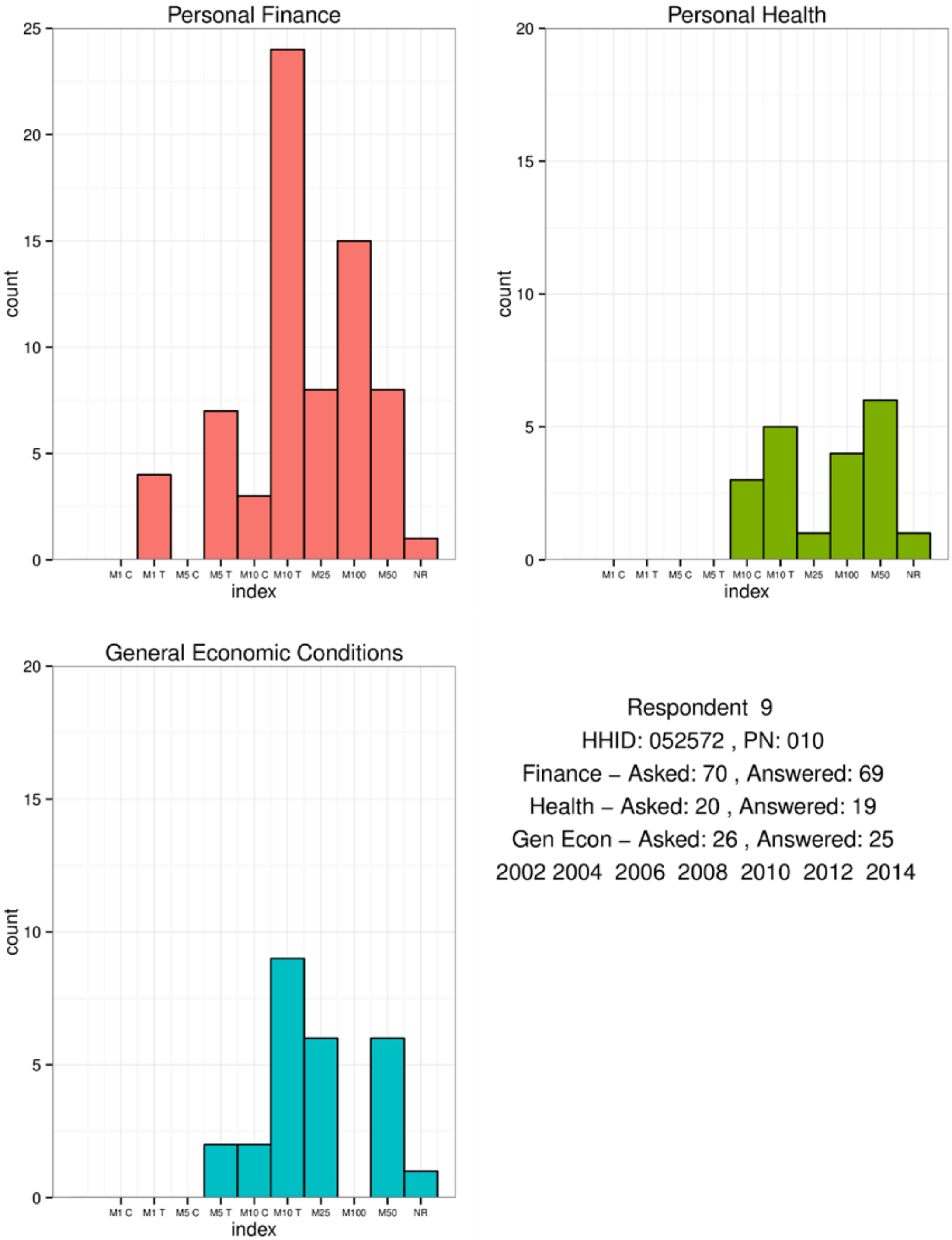

Table S4A: Portion of the Algorithm Determining the Rounding Type of Respondent *j* in the Center for Questions of Domain *l*

START: **IF** \ **AND** ∃ domain $l' \neq l$ s.t.	#($\Upsilon_{l'}$ ∩ 𝕄1-C) ≥ 1	#($\Upsilon_{l'}$ ∩ 𝕄1-C) = 0	#($\Upsilon_{l'}$ ∩ 𝕄5-C) ≥ 1	#($\Upsilon_{l'}$ ∩ 𝕄5-C) = 0	#($\Upsilon_{l'}$ ∩ 𝕄10-C) ≥ 1	#($\Upsilon_{l'}$ ∩ 𝕄10-C) = 0	#($\Upsilon_{l'}$ ∩ 𝕄25) ≥ 1	#($\Upsilon_{l'}$ ∩ 𝕄25) =0	#($\Upsilon_{l'}$ ∩ 𝕄50) ≥ 1	#($\Upsilon_{l'}$ ∩ 𝕄50) = 0	All NR
#(Υ_l ∩ 𝕄1-C) ≥ 2	*j* is **𝓜**1-C										
#(Υ_l ∩ 𝕄1-C)=1	**𝓜**1-C	IF *j* is still UNCLASSIFIED, GO to the NEXT row									
#(Υ_l ∩ {𝕄1-C ∪ 𝕄5-C}) ≥ 2	*j* is **𝓜**5-C										
#(Υ_l ∩ {𝕄1-C ∪ 𝕄5-C})=1	**𝓜**5-C		**𝓜**5-C	IF *j* is still UNCLASSIFIED, GO to the NEXT row							
#(Υ_l ∩ {𝕄1-C ∪ 𝕄5-C ∪ 𝕄10-C}) ≥ 2	*j* is **𝓜**10-C										
#(Υ_l ∩ {𝕄1-C ∪ 𝕄5-C ∪ 𝕄10-C})=1	**𝓜**10-C		**𝓜**10-C		**𝓜**10-C	IF *j* is still UNCLASSIFIED, GO to the NEXT row					
#(Υ_l ∩ {𝕄1-C ∪ 𝕄5-C ∪ 𝕄10-C ∪ 𝕄25}) ≥ 2	*j* is **𝓜**25										
#(Υ_l ∩ {𝕄1-C ∪ 𝕄5-C ∪ 𝕄10-C ∪ 𝕄25})=1	**𝓜**25		**𝓜**25		**𝓜**25		**𝓜**25	IF *j* is still UNCLASSIFIED, GO to the NEXT row			
#(Υ_l ∩ {𝕄1-C ∪ 𝕄5-C ∪ 𝕄10-C ∪ 𝕄25 ∪ 𝕄50}) ≥ 2	*j* is **𝓜**50										
#(Υ_l ∩ {𝕄1-C ∪ 𝕄5-C ∪ 𝕄10-C ∪ 𝕄25 ∪ 𝕄50})=1	**𝓜**50		**𝓜**50		**𝓜**50		**𝓜**50		**𝓜**50	*j* type is **𝓤**ndetermined, END	
All NR	*j* type is **𝓤**ndetermined, END										

NOTE: Υ_l is the set of responses given by a hypothetical respondent *j* in domain *l*. 𝕄1-C, 𝕄5-C, 𝕄10-C, 𝕄25, and 𝕄50 are sets partitioning the center of the 0-100 scale, defined in Table 6. **𝓜**1-C, **𝓜**5-C, **𝓜**10-C, **𝓜**25, **𝓜**50, and '**𝓤**ndetermined' denote rounding types in the center. **𝓜**1-C denotes a respondent who rounds to the nearest 1 percent in the center, **𝓜**5-C denotes a respondent who rounds to the nearest 5 percent or finer in the center, and so on. **𝓤**ndetermined denotes respondents who could not be classified to belong to any of the preceding center types.

Table S4B: Portion of the Algorithm Determining the Rounding Type of Respondent *j* in the Tails for Questions of Domain *l*

AND ∃ domain $l' \neq l$ s.t. / **START:** **IF**	$\#(\Upsilon_{l'} \cap \{\mathbb{M}1\text{-T} \cup \mathbb{M}1\text{-C}\}) \geq 1$	$\#(\Upsilon_{l'} \cap \{\mathbb{M}1\text{-T} \cup \mathbb{M}1\text{-C}\}) = 0$	$\#(\Upsilon_{l'} \cap \{\mathbb{M}5\text{-T} \cup \mathbb{M}5\text{-C}\}) \geq 1$	$\#(\Upsilon_{l'} \cap \{\mathbb{M}5\text{-T} \cup \mathbb{M}5\text{-C}\}) = 0$	$\#(\Upsilon_{l'} \cap \{\mathbb{M}10\text{-T} \cup \mathbb{M}10\text{-C}\}) \geq 1$	$\#(\Upsilon_{l'} \cap \{\mathbb{M}10\text{-T} \cup \mathbb{M}10\text{-C}\}) = 0$	$\#(\Upsilon_{l'} \cap \mathbb{M}25) \geq 1$	$\#(\Upsilon_{l'} \cap \mathbb{M}25) = 0$	$\#(\Upsilon_{l'} \cap \{\boldsymbol{\mathcal{M}}100 \cup \boldsymbol{\mathcal{M}}50\}) \geq 1$	$\#(\Upsilon_{l'} \cap \{\boldsymbol{\mathcal{M}}100 \cup \boldsymbol{\mathcal{M}}50\}) = 0$	All NR
$\#(\Upsilon_l \cap \mathbb{M}1\text{-T}) \geq 2$	*j* is $\boldsymbol{\mathcal{M}}$1-T										
$\#(\Upsilon_l \cap \mathbb{M}1\text{-T}) = 1$	$\boldsymbol{\mathcal{M}}$1-T	IF *j* is still UNCLASSIFIED, GO to NEXT row									
$\#(\Upsilon_l \cap \{\mathbb{M}1\text{-T} \cup \mathbb{M}5\text{-T}\}) \geq 2$	*j* is $\boldsymbol{\mathcal{M}}$5-T										
$\#(\Upsilon_l \cap \{\mathbb{M}1\text{-T} \cup \mathbb{M}5\text{-T}\}) = 1$	$\boldsymbol{\mathcal{M}}$5-T		$\boldsymbol{\mathcal{M}}$5-T	IF *j* is still UNCLASSIFIED, GO to NEXT row							
$\#(\Upsilon_l \cap \{\mathbb{M}1\text{-T} \cup \mathbb{M}5\text{-T} \cup \mathbb{M}10\text{-T}\}) \geq 2$	*j* is $\boldsymbol{\mathcal{M}}$10-T										
$\#(\Upsilon_l \cap \{\mathbb{M}1\text{-T} \cup \mathbb{M}5\text{-T} \cup \mathbb{M}10\text{-T}\}) = 1$	$\boldsymbol{\mathcal{M}}$10-T		$\boldsymbol{\mathcal{M}}$10-T		$\boldsymbol{\mathcal{M}}$10-T	IF *j* is still UNCLASSIFIED, GO to NEXT row					
$\#(\Upsilon_l \cap \{\mathbb{M}1\text{-T} \cup \mathbb{M}5\text{-T} \cup \mathbb{M}10\text{-T} \cup \mathbb{M}25 \cup \boldsymbol{\mathcal{M}}100\}) \geq 2$	*j* is $\boldsymbol{\mathcal{M}}$100										
$\#(\Upsilon_l \cap \{\mathbb{M}1\text{-T} \cup \mathbb{M}5\text{-T} \cup \mathbb{M}10\text{-T} \cup \mathbb{M}25 \cup \boldsymbol{\mathcal{M}}100)\} = 1$	$\boldsymbol{\mathcal{M}}$100		$\boldsymbol{\mathcal{M}}$100		$\boldsymbol{\mathcal{M}}$100		$\boldsymbol{\mathcal{M}}$100		$\boldsymbol{\mathcal{M}}$100	*j* type is $\boldsymbol{\mathcal{U}}$ndetermined, END	
All NR	*j* type is $\boldsymbol{\mathcal{U}}$ndetermined, END										

NOTE: Υ_l is the set of responses given by a hypothetical respondent *j* in domain *l*. $\mathbb{M}$1-T, $\mathbb{M}$5-T, $\mathbb{M}$10-T, and $\mathbb{M}$100 are sets partitioning the tails of the 0-100 scale, defined in Table 6. $\boldsymbol{\mathcal{M}}$1-T, $\boldsymbol{\mathcal{M}}$5-T, $\boldsymbol{\mathcal{M}}$10-T, $\boldsymbol{\mathcal{M}}$100, and '$\boldsymbol{\mathcal{U}}$ndetermined' denote rounding types in the tails. $\boldsymbol{\mathcal{M}}$1-T denotes a respondent who rounds to the nearest 1 percent in the tails, $\boldsymbol{\mathcal{M}}$5-T denotes a respondent who rounds to the nearest 5 percent or finer in the tails, and so on. $\boldsymbol{\mathcal{U}}$ndetermined denotes respondents who could not be classified to belong to any of the preceding t types.

Table S5: Partition of the 0-100 Percent Chance Scale in Two Symmetric Tails and a Center

	LT (Left Tail)	RT (Right Tail)	T (Tail)	C (Center)	Union
(𝕄100,𝕄50)	{ 0 }	{ 100 }	𝕄100-LT ∪ 𝕄100-RT	{ 50 }	𝕄100 ∪ 𝕄50
𝕄25	∅	∅	∅	{ 25, 75 }	𝕄25
𝕄10	{ 10, 20 }	{ 80, 90 }	𝕄10-LT ∪ 𝕄10-RT	{ 30, 40, 60, 70}	𝕄10-T ∪ 𝕄10-C
𝕄5	{ 5, 15 }	{ 85, 95 }	𝕄5-LT ∪ 𝕄5-RT	{ 35, 45, 55, 65 }	𝕄5-T ∪ 𝕄5-C
𝕄1	1-4 ∪ 6-9 ∪ 11-14 ∪ 16-19 ∪ 21-24	76-79 ∪ 81-84 ∪ 86-89 ∪ 91-94 ∪ 96-99	𝕄1-LT ∪ 𝕄1-RT	26-29 ∪ 31-34 ∪ 36-39 ∪ 41-44 ∪ 46-49 ∪ 51-54 ∪ 56-59 ∪ 61-64 ∪ 66-69 ∪ 71-74	𝕄1-T ∪ 𝕄1-C
Union	𝕄100-LT ∪ 𝕄10-LT ∪ 𝕄5-LT ∪ 𝕄1-LT	𝕄100-RT ∪ 𝕄10-RT ∪ 𝕄5-RT ∪ 𝕄1-RT	𝕄100 ∪ 𝕄10-T ∪ 𝕄5-T ∪ 𝕄1-T	𝕄50 ∪ 𝕄25 ∪ 𝕄10-C ∪ 𝕄5-C ∪ 𝕄1-C	0-100 (entire scale)

Table S6: Bivariate Ordered Probit of (Tail, Center) Rounding Categories on Respondent's Characteristics, by Question Domain

	Personal Health		Personal Finances		Gen. Econ. Conditions	
	Tail Type	Center Type	Tail Type	Center Type	Tail Type	Center Type
Male	0.0306	-0.0203	0.0321	0.0166	0.0137	-0.0346
	(0.0146)	(0.0152)	(0.0139)	(0.0149)	(0.0147)	(0.0154)
Aged 60-69	-0.1860	-0.1343	-0.0062	0.0217	-0.1064	-0.0962
	(0.0177)	(0.0191)	(0.0171)	(0.0186)	(0.0182)	(0.0192)
Aged 70-79	-0.1409	0.0784	0.1732	0.2271	-0.7937	0.0562
	(0.0196)	(0.0203)	(0.0187)	(0.0201)	(0.0196)	(0.0205)
Aged 80+	0.1768	0.5320	0.5862	0.6615	0.2228	0.4162
	(0.0257)	(0.0252)	(0.0237)	(0.0248)	(0.0258)	(0.0257)
High school	-0.1749	-0.1996	-0.2507	-0.2776	-0.1250	-0.2324
	(0.0210)	(0.0206)	(0.0194)	(0.0203)	(0.0211)	(0.0210)
Some college	-0.1607	-0.2081	-0.2969	-0.3290	-0.1289	-0.2820
	(0.0346)	(0.0359)	(0.0326)	(0.0351)	(0.0347)	(0.0367)
Bachelor	-0.3400	-0.4218	-0.4566	-0.4950	-0.2714	-0.4588
	(0.0264)	(0.0276)	(0.0253)	(0.0271)	(0.0268)	(0.0277)
Graduate	-0.4362	-0.5580	-0.5459	-0.5586	-0.3513	-0.5527
	(0.0290)	(0.0311)	(0.0281)	(0.0306)	(0.0294)	(0.0313)
Black	0.0846	0.1947	-0.0548	0.0212	-0.0036	0.0477
	(0.0211)	(0.0216)	(0.0193)	(0.0209)	(0.0209)	(0.0217)
Other race	0.1586	0.2031	0.1264	0.0897	0.1220	0.1128
	(0.0296)	(0.0315)	(0.0280)	(0.0302)	(0.0306)	(0.0312)
Rho	0.2698		0.3799		0.2985	
	(0.0086)		(0.0073)		(0.0092)	
N	22,821		25,016		22,983	

NOTES: (i) Respondents whose tail or center rounding category is undetermined are excluded from this analysis. (ii) Omitted dummies are 'Female,' 'Aged 50-59,' 'No degree,' and 'White.' 'Rho' is the parameter capturing the correlation between the error terms of the tail and center latent equations. (iii) Standard errors are reported in parentheses.

Table S7A: Portion of the Algorithm Assigning Probability Intervals, $\left[\upsilon^{T}_{jktL}, \upsilon^{T}_{jktU}\right]$, to Point Responses in the Tails by Respondent *j* to Questions in Domain *l*, υ^{T}_{jkt}, by Rounding Type

Center Type / Tails Type	$\mathcal{M}$1-C	$\mathcal{M}$5-C	$\mathcal{M}$10-C	$\mathcal{M}$25	$\mathcal{M}$50	No or $\mathcal{U}$ndetermined center type
$\mathcal{M}$1-T	υ^{T}_{jkt}	υ^{T}_{jkt}	υ^{T}_{jkt}	υ^{T}_{jkt}	υ^{T}_{jkt}	υ^{T}_{jkt}
$\mathcal{M}$5-T	SAME AS ($\mathcal{M}$1-T, $\mathcal{M}$1-C)	$[\max(0,\upsilon^{T}_{jkt}-2.5), \min(\upsilon^{T}_{jkt}+2.5,100)]$	$[\max(0,\upsilon^{T}_{jkt}-2.5), \min(\upsilon^{T}_{jkt}+2.5,100)]$	$[\max(0,\upsilon^{T}_{jkt}-2.5), \min(\upsilon^{T}_{jkt}+2.5,100)]$	$[\max(0,\upsilon^{T}_{jkt}-2.5), \min(\upsilon^{T}_{jkt}+2.5,100)]$	$[\max(0,\upsilon^{T}_{jkt}-2.5), \min(\upsilon^{T}_{jkt}+2.5,100)]$
$\mathcal{M}$10-T	SAME AS ($\mathcal{M}$1-T, $\mathcal{M}$1-C)	SAME AS ($\mathcal{M}$5-T, $\mathcal{M}$5-C)	$[\max(0,\upsilon^{T}_{jkt}-5), \min(\upsilon^{T}_{jkt}+5,100)]$	$[\max(0,\upsilon^{T}_{jkt}-5), \min(\upsilon^{T}_{jkt}+5,100)]$	$[\max(0,\upsilon^{T}_{jkt}-5), \min(\upsilon^{T}_{jkt}+5,100)]$	$[\max(0,\upsilon^{T}_{jkt}-5), \min(\upsilon^{T}_{jkt}+5,100)]$
$\mathcal{M}$100	SAME AS ($\mathcal{M}$1-T, $\mathcal{M}$1-C)	SAME AS ($\mathcal{M}$5-T, $\mathcal{M}$5-C)	SAME AS ($\mathcal{M}$10-T, $\mathcal{M}$10-C)	$[\max(0,\upsilon^{T}_{jkt}-12.5), \min(\upsilon^{T}_{jkt}+12.5,100)]$	$[\max(0,\upsilon^{T}_{jkt}-25), \min(\upsilon^{T}_{jkt}+25,100)]$	$[\max(0,\upsilon^{T}_{jkt}-50), \min(\upsilon^{T}_{jkt}+50,100)]$
No or $\mathcal{U}$ndet. tail type	SAME AS ($\mathcal{M}$1-T, $\mathcal{M}$1-C)	SAME AS ($\mathcal{M}$5-T, $\mathcal{M}$5-C)	SAME AS ($\mathcal{M}$10-T, $\mathcal{M}$10-C)	SAME AS ($\mathcal{M}$100, $\mathcal{M}$25)	SAME AS ($\mathcal{M}$100, $\mathcal{M}$50)	$[0,100]$
All NR responses regardless of type	$[0,100]$	$[0,100]$	$[0,100]$	$[0,100]$	$[0,100]$	$[0,100]$

NOTE: $\mathcal{M}$1-T, $\mathcal{M}$5-T, $\mathcal{M}$10-T, $\mathcal{M}$100, and '$\mathcal{U}$ndetermined' denote rounding types in the tails. υ^{T}_{jkt} denotes a hypothetical response respondent *j* gave in the tails of the 0-100 scale when answering a question in domain *l*. $\left[\upsilon^{T}_{jktL}, \upsilon^{T}_{jktU}\right]$ denotes the probability interval assigned to the point response by the algorithm. The boundary conditions ensure that the lower and upper bounds of the probability interval lie in the tails of the 0-100 scale.

Table S7B: Portion of the Algorithm Assigning Probability Intervals, $\left[\upsilon^{C}_{jktL},\upsilon^{C}_{jktU}\right]$, to Point Responses in the Center by Respondent *j* to Questions in Domain *l*, υ^{C}_{jkt}, by Rounding Type

Center Type / Tails Type	$\mathcal{M}$1-C	$\mathcal{M}$5-C	$\mathcal{M}$10-C	$\mathcal{M}$25	$\mathcal{M}$50	No or $\mathcal{U}$ndet. center type or any NR
$\mathcal{M}$1-T	υ^{C}_{jkt}	$[\max(\max \Upsilon^{LT}_{j}, \upsilon^{C}_{jkt}-2.5), \min(\upsilon^{C}_{jkt}+2.5, \min \Upsilon^{RT}_{j})]$	$[\max(\max \Upsilon^{LT}_{j}, \upsilon^{C}_{jkt}-5), \min(\upsilon^{C}_{jkt}+5, \min \Upsilon^{RT}_{j})]$	$[\max(\max \Upsilon^{LT}_{j}, \upsilon^{C}_{jkt}-12.5), \min(\upsilon^{C}_{jkt}+12.5, \min \Upsilon^{RT}_{j})]$	$[\max(\max \Upsilon^{LT}_{j}, \upsilon^{C}_{jkt}-25), \min(\upsilon^{C}_{jkt}+25, \min \Upsilon^{RT}_{j})]$	$[0,100]$
$\mathcal{M}$5-T	AS ($\mathcal{M}$1T, $\mathcal{M}$1C)	$[\max(\max \Upsilon^{LT}_{j}+2.5, \upsilon^{C}_{jkt}-2.5), \min(\upsilon^{C}_{jkt}+2.5, \min \Upsilon^{RT}_{j}-2.5)]$	$[\max(\max \Upsilon^{LT}_{j}+2.5, \upsilon^{C}_{jkt}-5), \min(\upsilon^{C}_{jkt}+5, \min \Upsilon^{RT}_{j}-2.5)]$	$[\max(\max \Upsilon^{LT}_{j}+2.5, \upsilon^{C}_{jkt}-12.5), \min(\upsilon^{C}_{jkt}+12.5, \min \Upsilon^{RT}_{j}-2.5)]$	$[\max(\max \Upsilon^{LT}_{j}+2.5, \upsilon^{C}_{jkt}-25), \min(\upsilon^{C}_{jkt}+25, \min \Upsilon^{RT}_{j}-2.5)]$	$[0,100]$
$\mathcal{M}$10-T	AS ($\mathcal{M}$1T, $\mathcal{M}$1C)	SAME AS ($\mathcal{M}$5-T, $\mathcal{M}$5-C)	$[\max(\max \Upsilon^{LT}_{j}+5, \upsilon^{C}_{jkt}-5), \min(\upsilon^{C}_{jkt}+5, \min \Upsilon^{RT}_{j}-5)]$	$[\max(\max \Upsilon^{LT}_{j}+5, \upsilon^{C}_{jkt}-12.5), \min(\upsilon^{C}_{jkt}+12.5, \min \Upsilon^{RT}_{j}-5)]$	$[\max(\max \Upsilon^{LT}_{j}+5, \upsilon^{C}_{jkt}-25), \min(\upsilon^{C}_{jkt}+25, \min \Upsilon^{RT}_{j}-5)]$	$[0,100]$
$\mathcal{M}$100	AS ($\mathcal{M}$1T, $\mathcal{M}$1C)	SAME AS ($\mathcal{M}$5-T, $\mathcal{M}$5-C)	SAME AS ($\mathcal{M}$10-T, $\mathcal{M}$10-C)	$[\upsilon^{C}_{jkt}-12.5, \upsilon^{C}_{jkt}+12.5]$	$[\max(25, \upsilon^{C}_{jkt}-25), \min(\upsilon^{C}_{jkt}+25, 75)]$	$[0,100]$
No or $\mathcal{U}$ndet. tail type	AS ($\mathcal{M}$1T, $\mathcal{M}$1C)	SAME AS ($\mathcal{M}$5-T, $\mathcal{M}$5-C)	SAME AS ($\mathcal{M}$10-T, $\mathcal{M}$10-C)	SAME AS ($\mathcal{M}$100, $\mathcal{M}$25)	SAME AS ($\mathcal{M}$100, $\mathcal{M}$50)	$[0,100]$

NOTE: $\mathcal{M}$1-C, $\mathcal{M}$5-C, $\mathcal{M}$10-C, $\mathcal{M}$50, and '$\mathcal{U}$ndetermined' denote rounding types in the tails. υ^{C}_{jkt} denotes a hypothetical response respondent *j* gave in the center of the 0-100 scale when answering a question in domain *l*. $\left[\upsilon^{C}_{jktL},\upsilon^{C}_{jktU}\right]$ denotes the probability interval assigned to the point response by the algorithm. The boundary conditions ensure that the lower and upper bounds of the probability interval lie in the center of the 0-100 scale. Υ^{LT}_{j} denotes the set of responses respondent *j* gave in the left tail (i.e., in 0-24) when answering questions in domain *l*. Υ^{RT}_{j} denotes the set of respondent *j*'s responses in the right tail (i.e., in 76-100).

Table S8: Distribution of Range Size for Specific Expectations Questions in the 2014 HRS

Range Size	Percent Live to be 75 or older (P28 in Personal Health)	Percent Work full time past age 62 (P17 in Personal Finances)	Percent Mutual funds increase in value (P47 in General Economic Conditions)
0	7.17	20.95	6.04
2.5	3.71	9.05	2.02
3.5	0.09	0.09	0
4.5	0.04	0.08	0.02
5	27.72	31.72	23.82
6	0.01	0.02	0
7.5	0.99	1.38	1.55
9	0.02	0.02	0
10	42.96	32.58	48.11
12.5	1.53	0.34	0.77
15	0.38	0.19	0.36
17.5	0.06	0.13	0.11
20	0.05	0.02	0.02
22.5	0.06	0.11	0.09
25	4.40	1.57	3.77
27.5	0.02	0	0
30	0.02	0.02	0.01
32.5	0	0.02	0
35	0.01	0	0
40	0	0	0.02
42.5	0.01	0	0
50	7.71	1.1	3.56
60	0.01	0	0
100	2.99	0.62	9.72
Total	100	100	100
Sample size	8,084	5,294	8,828