Online Appendix: Longevity, Health and Housing Risks Management in Retirement*

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*This online appendix provides supplementary material for the paper. Equations and sections numbers refer to those in the main text.

A Model Solution

Consistent with the timing of decisions, we start at the last possible period of life and solve the model backwards (at which mortality rate approaches one). This is achieved by maximizing continuation utility (8) over consumption C_t and housing H_{t+1}, conditional on the state variables of contemporaneous mortgage D_t, household health status s_{ijt}, house prices P_t^H, as well as wealth W_t and housing status H_t. At initial time $t = 0$, we compute the indirect utility V_{ijt} over all 12 scenarios per respondent in addition to a baseline scenario without any product. This allows us to compute the (indirect) utility gain from purchasing a particular product in a given scenario.

Table A1: Discretized state space

Variable	Set	Interpretation	Range	Dimension	Scale
		a. Primary: for $t \geq 0$			
D_t	D	Mortgage	$[0, 0.65]$	5	convex
W_t	W	Financial wealth	$[0, 3000]$	10	convex
s_{ijt}	S	Health status	$[1, 16]$	16	linear
ϵ_t	E	House price shocks	$[-2, +2]$	5	linear
H_t	H	Owner status	$[0, 1]$	2	binary
Total				8K	

Notes: Mortgage measured in percentage of current house prices. Wealth in 1,000C$ units. Health shocks for couples $s_{ij} = (s_i, s_j) \in \mathcal{S}^2 = \{G, \ell, L, D\}^2$. House price shocks measured in standard errors deviations from mean. Owner status: renter (0) and owner (1).

The relevant state-space discretization is summarized in Table A1. First, mortgages D_t are set at between zero and $\omega^D = 0.65$ of house prices, where a convex scale captures bunching in the lower end for our population of older individuals (we use a square root transformation). Second, our survey summary statistics and tests on solving the model for reasonable parameter values suggest that financial wealth W_t is best represented between 0 and 3.0MC$, where the scaling is convex to capture unequal wealth distributions (again scaled with the square root). Third, health shocks s_{ijt} are taken to be one of the 16 possible combinations in $\mathcal{S}^2 = \{G, \ell, L, D\}^2$. Fourth, consistent with housing price process in (1) home price shocks ϵ_t are taken from -2 to +2 standard deviations σ from mean g using the CMA-specific statistics in Table 5.a and relying on distributional properties for the log-normal processes. Finally, consistent with the model, current home-owning status H_t is 0 for renters and 1 for owners.

Several elements contribute to make computation time a key issue in our setting. A large subset of deep parameters is not calibrated, but rather estimated, implying that the solution algorithm must be repeated a large number of times. This problem is compounded by the fact that the model must be solved/estimated for each of the 1581 respondents 13 times (12 scenarios plus one baseline). Hence, we make a number of careful restrictions to speed up computation of the solution. For instance, the model restricts all mortgages to be cleared by sellers, thereby ruling out renters ($H_t = 0$) with positive mortgage ($D_t > 0$). Moreover, preferences are such that at least one household member must be in G, ℓ health status to own a house, ruling out home-owning in all other health states.

We have explored various methods to reduce the number of recursion steps (ages). First, we attempted to make each period in the model represent jumps of five years. Although this speeds up computations, it also leads to non-neutral time aggregation issues when considering the valuation of income flows such as annuities. We found solutions to be very different when varying time increments. Instead, our preferred strategy is to actively solve for new decision rules as a function of state variables at certain ages while maintaining these decision rules fixed at ages in between. For example, we solve for decision rules by backward induction at the last periods but skip years where the decision rules do not change much. After much experimentation, we found that a frequency of three years for updating rules yields very similar values for indirect utility at the time of interview. Behavioural parallels with our approach would argue that it is costly for respondents to update their decision rules at each age. In the spirit of rational inattention models, agents may optimally fail to recompute decision rules when the value of doing so is less than the cognitive burden of doing so. While we have no evidence that a gap of three years is correct, we think that this approach strikes a good compromise between speed and accuracy.[1]

A grid search $C_t \in [0, X_t^W/(1+r_b)+X_t]$ was used to solve for optimal consumption. Although we tried to use faster algorithms such as golden section search, we found that the presence of kinks and non-convexities yielded solutions that were not reliable. We use 10 points for this grid. We have also experimented with a larger number of points with limited impact on the computation of indirect utilities. We interpolate the value function for next period using bi-linear interpolation over a (square root) grid in (D_{t+1}, W_{t+1}).

B Calibrated parameters

The calibrated auxiliary parameters are reported in Table 4. In panel a, the discounting and savings interest rates are set to the relatively low 2019 levels, and are both expressed in real terms at $r = 0.01$ using a 2% inflation rate. We use the 2016 SCF (Statistics Canada, 2023a) to calibrate the average interest on fixed rate mortgages[2] at age 60 to 70 to $r_d = 0.03$. Home equity lines of credit (HELOC's) rate is set from market data at 1% over the rate on mortgages, i.e. $r_h = 0.04$. Finally, owners borrowing beyond the limits set by HELOCs and RMs, as well as renters, are assumed to rely on their credit cards with borrowing rate $r_r = 0.095$.[3]

In panel b, we use financial information from mortgage providers to set the maximal LTV for mortgages at $\omega^D = 0.65$ of home price. In the spirit of Gorea and Midrigan (2018, p. 15), we set the amortization factor at $\xi^D = 0.9622$ to generate a mortgage half-life of 12.5 years calculated using r_d.[4] Eligible owners can reverse-mortgage up to $\omega^R = 0.55$ of their house prices. HELOC's eligibility is typically tested against both the

[1] Hong and Rios-Rull (2012) rely on 5-year time interval, whereas Nakajima and Telyukova (2017) use a 2-year interval in numerical optimization settings that are similarly demanding in terms of computational intensity.

[2] More than 76% of Canadian mortgaged Canadian homes have a fixed rate mortgage (typically 5 years).

[3] In the absence of Canadian data on credit card rates, we use U.S. data from the 2016 Survey of Consumer Finance to find an average real rate (APR) among credit card borrowers of 9.49%.

[4] More specifically, $\xi^D = (1 + r_d) \times 0.5^{(1/12.5)} = 0.9622$.

loan-to-value as well as on the value of the house. We implement both of these rules for $(\omega_1^h, \omega_2^h) = (0.65, 0.80)$.[5] Credit card borrowing is constrained by maximal borrowing $\omega^r = 32.9\%$ of household income using the average limit found in 2016 SCF (Statistics Canada, 2023a).

In panel c, the share of house prices determining rental prices is set to $\phi = 0.035$. Sellers must pay fixed legal fees and moving expenses (τ_0^s) of 1,500C$, plus commission (i.e. broker) fees (τ_1^s) of 5% of house prices, whereas home buyers pay moving expenses (τ_0^b) of 500C$ plus municipal transfer taxes (τ_1^b) of 1% of house prices. The medical expenditures M_{ijt} are calibrated in panel d by including three types of expenditures. First, we consider out-of-pocket medical expenditures in states (G, ℓ). Second, we consider home care expenditures (state ℓ), and finally, nursing home expenditures (state L). Using multiple sources of data, we compute province specific out-of-pocket cost estimates for each component and sum these up. We use the 2009 SHS data (Statistics Canada, 2023b), the latest public release file available, to calibrate out-of-pocket medical expenditures. The SHS contains an indicator variable for disability status of both the reference person and the spouse. which we map to the less severe health state ℓ in the model. We compute average out-of-pocket expenditures by region and the number of persons disabled in the couple (only one if single). We adjust for prices using the CMA specific CPI. Home care expenditures are incurred in health state ℓ. The 2002 General Social Survey collected data on number of (paid) hours of care provided. We consider paid time to do laundry, house cleaning, house maintenance, errands, meal preparation and personal care. We impute costs for these tasks using an hourly wage of 20C$. Average expenditures are computed by province and then mapped to CMAs. For health expenditures in state L, we calibrate using the average costs using the cost of a single room in a nursing home by province. In 2016, the price of a single room was 3,240C$ per month in British Columbia

[5] The HELOC cannot be more than 65% of the value of the house, while the HELOC plus the mortgage balance cannot exceed 80% of the value of the house (CHIP Reverse Mortgage, 2023). Credit score rebates are abstracted from.

and 1,837C$ in Quebec. We use these provincial estimates and inflate to 2019 dollars using CMA specific price indices.

The resource floor for retirees in Canada ($X_{\min}$) corresponds to the sum of old age pension (OAS) benefits and the Guaranteed income supplement (GIS). When a retiree has no other income sources, a minimum income floor of 18,212C$ for singles and of 27,733C$ for couples is provided. Several transfers are anchored on these floor values. For example, nursing home out-of-pocket expenditures are reduced one for one for retirees with net income less than the combined OAS and GIS rates. Income flows from the survey were reported before income taxes. Hence, we need to impute taxes and compute after-tax income to reflect actual resources available to retirees.

We use a tax simulator to separately compute average tax rates by pension income for singles and couples, distinguishing between Quebec, and other Canadian rates proxied by Ontario.[6] For Quebec, we use Quebec tax parameters and for other provinces, we use tax parameters from Ontario. These tax rates are applied to first period income and retirement income to produce after-tax income figures. Finally, we follow Boyer et al. (2022) for Canadian data and standard practices in setting annual subjective discount rate to 3% corresponding to a discount factor $\beta = 0.97$ in panel e.

C Expectations Modeling

House Prices Consider respondent i in CMA c. The annual (log) change in house prices Δp_t^H in CMA c is distributed with mean g_c and standard deviation σ_c. Given the random walk process assumed, the cumulative change in house prices (percent terms) after T years, $\Delta^T p_t^H = p_{t+T}^H - p_t^H$, is approximately normally distributed with mean $g_{T,c} = T g_c$ and standard deviation $\sigma_{T,c} = \sqrt{T}\sigma_c$. We can use this insight to map the objective house price process to beliefs of respondents regarding house prices in 10 years.

[6] The Simulateur de Revenu Disponible is a Python-based disposable income simulator.

Denote the perceived parameters of the random walk process for respondent i: $g_i^T = \mu_i g_{T,c}$ and $\sigma_{T,i} = \zeta_i \sigma_{T,c}$. Then the probability that the cumulative return is lower than some threshold p is given by:

$$\Pr(\Delta^T p^H < p) = \pi_c(p, \mu_i, \zeta_i) = \Phi\left(\frac{p - \mu_i g_{T,c}}{\zeta_i \sigma_{T,c}}\right),$$

where $\Phi(\cdot)$ is the standard normal CDF. In Q23 of the survey, respondents report J analogs of these probabilities at thresholds $(p_1, ...p_J)$. Denote these probabilities $l_{i,j}$ and the corresponding thresholds p_j. For each threshold, we set the following restriction, $l_{i,j} - \pi_c(p_j, \mu_i, \zeta_i) = 0$. Denote by $L_i(\mu_i, \zeta_i)$ the set of J such restrictions. We use a minimum distance estimator to estimate (μ_i, ζ_i) for each respondents Formally, we use the estimator:

$$(\hat{\mu}_i, \hat{\zeta}_i) = \arg\min_{\mu_i, \zeta_i} L_i(\mu_i, \zeta_i)' L_i(\mu_i, \zeta_i).$$

Health Process We feed each respondent's characteristics 5,000 times in this simulator and collect the state in terms of (G, ℓ, L, D) for each of these draws at each age. We then estimate for each respondent a dynamic multinomial logit process of the form,

$$\begin{aligned} q_{it}(s, s') &= \Pr_t\left[s_{it+1} = s' \mid s_{it} = s\right] \\ &= \frac{\exp\left[\alpha_i(s')\, t + \delta_i(s, s')\right]}{\sum_{s' \in \mathcal{S}} \exp\left[\alpha_i(s')\, t + \delta_i(s, s')\right]} \end{aligned}$$

where i denotes the respondent, s the current state and s' n-period ahead states. We obtain, for each respondent, estimates of the parameters α_i, δ_i using the 5,000 simulated life trajectories. The microsimulation model produces two-year respondent-specific Markov transition matrices for each age. We rescale these two-year Markov transition rates to obtain one-year transitions q_{it}^1 using the eigen values and vectors of the two-year matrices. We denote these probabilities the objective health probabilities of respondent i.

For those with valid responses to mortality probabilities, we introduce new intercepts $\tilde{\delta}_i(s, \mathcal{D}) = \delta_i(s, \mathcal{D}) + \xi$ for $s \in (G, \ell, L)$. Hence, ξ measures the degree to which subjective beliefs about mortality are above (pessimistic) or below (optimistic) what the objective risk would predict. We solve numerically for the value of ξ that matches the subjective beliefs for both the respondent and the spouse (if any). For respondents who do not report a valid probability (do not know or refuse to answer), we assume they have $\xi = 0$. A total of 8.6% of respondents and 9% of spouses are missing mortality expectations.

D Estimator and Inference

Within transformation Given that we observe reported probabilities, we can use the following transformation to obtain a log odds-ratio which is linear in $\delta_{i,n}$,

$$g_{i,k} = \log\left(\frac{p_{i,k}}{1 - p_{i,k}}\right) = -\delta_{i,n(k)} + \lambda_{v,n(k)}\tilde{V}_{i,k}(\boldsymbol{\theta}).$$

We rely on a within transformation, for each product type $n(k)$, to eliminate fixed effects $\delta_{i,n}$. In particular, we can retrieve product specific individual fixed effects $\delta_{i,n(k)}$ using within differences. Note first that:

$$\overline{g}_{i,n(k)} = -\delta_{i,n(k)} + \lambda_{v,n(k)}\overline{V}_{i,n(k)}(\theta)$$

where we assume that $\overline{v}_{i,n(k)} \approx 0$ given that $E(\overline{v}_{i,n(k)}) = 0$. Hence, an unbiased estimate of $\delta_{i,n(k)}$ is given by

$$\hat{\delta}_{i,n(k)} = -(\overline{g}_{i,n(k)} - \hat{\lambda}_{v,n(k)}\overline{V}_{i,n(k)}(\hat{\theta})).$$

These estimates are noisy given that the number of scenarios per product is limited (4). Nonetheless, they provide valuable (unbiased) information on unobserved characteristics of respondents which make them systematically not likely to purchase a product. Probabilities are set to 0.01 when reported to be zero and to 0.99 when reported to be 1 so that the log-odds transformation gives a finite result. The resulting within differences are independent of $\delta_{i,n}$ but are also are linear in $\lambda_{v,n}$ for a given value of $\boldsymbol{\theta}$ (and therefore of the $\tilde{V}_{i,k}(\boldsymbol{\theta})$). Hence, the value of $\lambda_{v,n}$ can be obtained by OLS of $g_{i,k}$ on $\tilde{V}_{i,k}(\boldsymbol{\theta})$ once a within transformation has been applied. Since a closed-form solution for their value is known, they can be concentrated-out of the objective function to estimate $\boldsymbol{\theta}$, speeding up the search for the best value of parameters. We develop below a concentrated non-linear least-square estimator to estimate $\boldsymbol{\theta}$ for which we rely on the derivative-free NEWUOA algorithm (Powell, 2006). In the estimation, we allow $\lambda_{v,n(k)}$ to vary by product type (A, L, R) and also by whether or not respondents know the product based on their responses (if they respond that they know the product *a lot*). Hence, we estimate for each product type $(\lambda_{v,0}, \lambda_{v,1})$ where the index 1 denotes the product is known and zero if not. We compute cluster-robust standard errors from the full NLS estimator using numerical gradients.

Concentrated NLLS estimator Because we want to exploit within differences and get rid of $\delta_{i,j}$, we define $\overline{g}_{i,j} = \frac{1}{4}\sum_{k:j(k)=j} g_{i,k}$ and similarly for $\overline{V}_{i,j}(\theta) = \frac{1}{4}\sum_{k:j(k)=j} \tilde{V}_{i,k}(\theta)$ the individual-product specific means.

Consider the non-linear least-square estimator:

$$(\hat{\theta}, \hat{\lambda}_v) = \arg\min_{\theta,\lambda_v} \sum_i \sum_j \sum_{k:j(k)=j} ((g_{i,k} - \overline{g}_{i,j}) - \lambda_{v,j}(\tilde{V}_{i,k}(\theta) - \overline{V}_{i,j}(\theta)))^2.$$

The first-order conditions with respect to θ and λ_v for this problem are given by:

$$\sum_i \sum_j \sum_{k:j(k)=j} \frac{\partial(\tilde{V}_{i,k}(\theta) - \overline{V}_{i,j}(\theta))}{\partial\theta'}((g_{i,k} - \overline{g}_{i,j}) - \lambda_{v,j}(\tilde{V}_{i,k}(\theta) - \overline{V}_{i,j}(\theta)) = \mathbf{0}_J$$
$$\sum_i \sum_{k:j(k)=j} ((g_{i,k} - \overline{g}_{i,j}) - \lambda_{v,j}(\tilde{V}_{i,k}(\theta) - \overline{V}_{i,j}(\theta)) = 0, \quad j = A, L, R.$$

where $\mathbf{0}_J$ is a J by 1 vector of zeros.

The first-order conditions (FOC) can conveniently be solved by concentration methods. First, using the FOC, we get the partial solution for $\lambda_{v,j}(\theta)$:

$$\lambda_{v,j}(\theta) = \frac{\sum_{i=1}^{N}\sum_{k:j(k)=j}(\tilde{V}_{i,k}(\theta) - \overline{V}_{i,j}(\theta))(g_{i,k} - \overline{g}_{i,j})}{\sum_{i=1}^{N}\sum_{k:j(k)=j}(\tilde{V}_{i,k}(\theta) - \overline{V}_{i,j}(\theta))^2},$$

which is an ordinary least square estimate on within differences (within estimator) for a given product type j. For a given value of θ, $\lambda_{v,j}(\theta)$ can thus be obtained as the OLS coefficient of a regression of $(g_{i,k} - \overline{g}_{i,j})$ on $\tilde{V}_{i,k}(\theta) - \overline{V}_{i,j}(\theta)$. This has the advantage of avoiding evaluating $\tilde{V}_{i,k}(\theta)$ for trial values of $\lambda_{v,j}$ in a non-trivial numerical problem to find $\hat{\theta}$. Second, using this partial solution in the FOC, the following (concentrated) NLS estimator is used to solve for $\hat{\theta}$ numerically:

$$\hat{\theta} = \arg\min_{\theta} \sum_{i}\sum_{j}\sum_{k:j(k)=j}((g_{i,k} - \overline{g}_{i,j}) - \lambda_{v,j(k)}(\theta)(\tilde{V}_{i,k}(\theta) - \overline{V}_{i,j}(\theta))^2.$$

To compute standard errors, denote the NLS residual $\hat{e}_{ik}$:

$$\hat{e}_{ik} = (g_{i,k} - \overline{g}_{i,j(k)}) - \hat{\lambda}_{v,j(k)}(\tilde{V}_{i,k}(\hat{\theta}) - \overline{V}_{i,j(k)}(\hat{\theta})).$$

These residuals are likely correlated for a given respondent and also potentially heteroscedastic. We compute standard errors clustered at the respondent i's level. Denote $Q = J + 3$ to be the total number of estimated parameters, including the signal to noise scalars $\lambda_{v,j}, \quad j = A, L, R$. Denote by $\hat{e}_i$ the $1 \times K$ vector of errors for a given respondent i, and by $\nabla\hat{e}_i$ the $Q \times K$ matrix of derivatives of the residuals with respect to estimated parameters. The clustered-robust covariance matrix of the estimates based on asymptotic properties of the NLS estimator is:

$$\Omega(\hat{\theta}_e, \hat{\lambda}_v) = \left(\sum_{i=1}^{N}\nabla\hat{e}_i\nabla\hat{e}_i'\right)^{-1}\left(\sum_{i=1}^{N}\nabla\hat{e}_i(\hat{e}_i'\hat{e}_i)\nabla\hat{e}_i'\right)\left(\sum_{i=1}^{N}\nabla\hat{e}_i\nabla\hat{e}_i'\right)^{-1}.$$

E Actuarially fair pricing

Our empirical strategies propose variations from fixed pricing for annuities, long-term care insurance and reverse mortgages, proxied by market prices set by Canadian providers of these products. In the comparative statics exercises of Table 9 we compute and compare experimental with actuarially fair prices described next.

Annuities Under our independence assumption, the annuity price is conditional on buyer i's initial health status s_{i0} and satisfies:

$$P_i^A = P^A(s_{i0}) = \tau^A \sum_{n=1}^{T} \exp(-rn) \left[1 - q_{i0}^n(s_{i0}, \mathcal{D})\right]$$

where r is a constant interest rate and τ^A is an annuity markup factor that equals 1 under fair pricing.

Long-term-care insurance Again under our independence assumption, the price of the benefit is conditional on the insuree i's initial health status s_{i0} and is paid conditional on being in states (G, ℓ):

$$P_i^L = P^L(s_{i0}) = \frac{\tau^L \sum_{n=1}^{T} \exp(-rn) q_{i0}^n(s_{i0}, L)}{\sum_{n=1}^{T} \exp(-rn) \left[q_{i0}^n(s_{i0}, G) + q_{i0}^n(s_{i0}, \ell)\right]}$$

where τ^L is the LTC insurance markup factor that equals 1 under fair pricing.

Reverse mortgages We follow Shao et al. (2019), Shao et al. (2015) and Nakajima (2012) in letting $T^h \in [1, T]$ denote the stochastic (and endogenous) RMR termination date, i.e. when the house is sold and the amount in RMR is due. The reverse mortgage contract relies on the home-owning continuation probabilities q_{ijt}^h, as well as corresponding survival (i.e. non-termination) up to time t denoted S_{ijt}^h that both depends both on the health statuses of household ij's member(s):

$$q^h_{ijt} = \Pr[H_{t+1} = 1 \mid H_t = 1, s_{ijt}],$$
$$S^h_{ijt} = \prod_{k=0}^{t-1} q^h_{ijk}$$

Given the RMR nominal amount due by borrower L_{ijt} to the lender, as well as, any loss to RMR issuer l_{ijt}:

$$L_{ijt} = L_0 \exp\left[\left(r + \tau^R \pi_{ij}\right) t\right],$$
$$l_{ijt} = \max\left[L_{ijt} - P^H_t, 0\right],$$

the household status-dependent insurance premium $\pi_{ij} = \pi(s_{ij0})$ is implicitly defined from equality between non-negative equity guarantee (NNEG) and the mortgage insurance premia (MIP):

$$\underbrace{\mathrm{E}_0 \sum_{t=0}^{T} \exp(-rt) S^h_{ijt}(1 - q^h_{ijt}) l_{ijt}}_{\text{NNEG}} = \underbrace{\pi_{ij} \sum_{t=0}^{T} \exp(-rt) S^h_{ijt} L_{ijt}}_{\text{MIP}}.$$

Here E_0 is with respect to housing prices, conditional on time-0 information. The RMR markup τ^R applied on the premium π_{ij} is equal to one under fair pricing.

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F Questionnaire

INSTRUCTIONS INCLUDED WITH AN ANONYMOUS QUESTIONNAIRE

FINANCIAL PRODUCTS FOR RETIREMENT

The following pages contain an anonymous questionnaire, which we invite you to complete. This questionnaire was developed as part of a research project at HEC Montréal.

Since your first impressions best reflect your true opinions, we would ask that you please answer the questions included in this questionnaire without any hesitation. We ask, however, that you take the time needed to consider certain questions on knowledge, which might involve concepts with which you are less familiar. There is no time limit for completing the questionnaire, although we have estimated that it should take approximately 20 minutes.

The information collected will be anonymous and will remain strictly confidential. It will be used solely for the advancement of knowledge and the dissemination of the overall results in academic or professional forums. It is possible that the collected data will be shared with other researchers, solely for non-commercial research purposes, but for projects other than the one for which the data was originally collected. Note as well that the anonymized dataset resulting from the survey may, at a later date, be made publicly available for academic research purposes.

The online data collection provider agrees to refrain from disclosing any personal information (or any other information concerning participants in this study) to any other users or to any third party, unless the respondent expressly agrees to such disclosure or unless such disclosure is required by law.

You are free to refuse to participate in this project and you may decide to stop answering the questions at any time. By completing this questionnaire, you will be considered as having given your consent to participate in our research project and to the potential use of data collected from this questionnaire in future research. Since the questionnaire is anonymous, you will no longer be able to withdraw from the research project once you have completed the questionnaire because it will be impossible to determine which of the answers are yours.

If you have any questions about this research, please contact the principal investigator, Pierre-Carl Michaud, at the telephone number or email address indicated below.

HEC Montréal's Research Ethics Board has determined that the data collection related to this study meets the ethics standards for research involving humans. If you have any questions related to ethics, please contact the REB secretariat at (514) 340-6051 or by email at cer@hec.ca.

Thank you for your valuable cooperation!

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Section 1: Background

QA Are you…?
1 Male
2 Female

QB How old are you?
Please Enter [TERMINATE IF NOT 60-70 INCLUSIVELY]
[PN: MUST ENTER THE 2 CHARACTERS]

*****

Q0 Can you please enter the first 3 characters of your postal code? Please type in below
[PN: MUST ENTER FIRST 3 CHARACTERS] *FSAs validated with FSA file
[TERMINATE IF FSA IS NOT PART OF THE 11 TARGETED CMAs]

Q1 What is the highest degree, certificate or diploma you have obtained?
1 Less than high school diploma or its equivalent
2 High school diploma or a high school equivalency certificate
3 Trade certificate or diploma
4 College, CEGEP or other non-university certificate or diploma (other than trades certificates or diplomas)
5 University certificate or diploma below the bachelor's level
6 Bachelor's degree (e.g. B.A., B.Sc., LL.B.)
7 University certificate, diploma, degree above the bachelor's level

Q2 What is your marital status?
1 married
2 living common-law
3 widowed
4 separated
5 divorced
6 single, never married

IF Q2==1,2
    Q2a How old is your partner (spouse)?
    Numeric (>12)

    Q2b What is the highest degree, certificate or diploma your spouse has obtained?
    1 Less than high school diploma or its equivalent
    2 High school diploma or a high school equivalency certificate
    3 Trade certificate or diploma
    4 College, CEGEP or other non-university certificate or diploma (other than trades certificates or diplomas)
    5 University certificate or diploma below the bachelor's level
    6 Bachelor's degree (e.g. B.A., B.Sc., LL.B.)
    7 University certificate, diploma, degree above the bachelor's level
END IF

Q3 Do you have children?
1 Yes
2 No

IF Q3==2 SKIP TO Q4

ELSE IF Q3==1
[SHOW ON SAME PAGE]
Q3a How many children do you have?
Numeric (>=0)
END IF

Q4 For 2018, what is your best estimate of your income from various sources, before taxes and personal deductions?

[“TOTAL” ROW AT BOTTOM AUTO-SUMS AMOUNTS IN RIGHT COLUMN]

Wages and salaries, including self-employment income net of business expenses	**[INSERT AMOUNT – RANGE $0 TO $99,999,999]**
<u>GOVERNMENT TRANSFERS</u>	
▪ OAS (Old Age Security), GIS (Guaranteed Income Supplement), Spouse’s or Survivor’s Allowance	**[INSERT AMOUNT – RANGE $0 TO $50,000]**
▪ CPP (Canada Pension Plan) or QPP (Quebec Pension Plan)	**[INSERT AMOUNT – RANGE $0 TO $50,000]**
▪ Other transfers (e.g. workers’ compensation benefits, Employment Insurance, or social assistance/welfare benefits)	**[INSERT AMOUNT – RANGE $0 TO $50,000]**
Workplace pension(s), **<u>excluding</u>** OAS/GIS/Allowance and CPP/QPP	**[INSERT AMOUNT – RANGE $0 TO $99,999,999]**
Income from annuities	**[INSERT AMOUNT – RANGE $0 TO $99,999,999]**
Total income from these sources in 2018	**[AUTOSUMS]**

IF MORE THAN 3 CELLS IN Q4 LEFT EMPTY (OTHERWISE SKIP TO Q4f):
[SHOW ON SAME SCREEN AS Q4, IF POSSIBLE; IF NOT, ALLOW RESPONDENT TO GO BACK TO Q4]
Q4a For 2018, what is your best estimate of your <u>total</u> income from the sources listed above, before taxes and personal deductions?
Numeric (>0)
9999999 Don’t know or prefer not to say

IF Q4a==9999999

Q4b Is it more than $60,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q4b==1

Q4c Is it less than $120,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q4c == 1

Q4d Is it more than $90,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

END IF

ELSE IF Q4b==2

Q4e Is it more than $30,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

END IF

END IF

END IF

IF Q2==1,2

[SHOW ON SAME SCREEN AS Q4, IF POSSIBLE; IF NOT, ALLOW RESPONDENT TO GO BACK TO Q4]

Q4f For 2018, what is your best estimate of the income received by your spouse from the sources listed above, before taxes and personal deductions?

Numeric (>0)

9999999 Don't know or prefer not to say

IF Q4f==9999999

Q4g Is it more than $60,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q4g==1

Q4h Is it less than $120,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q4h == 1

Q4i Is it more than $90,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

END IF

ELSE IF Q4g==2

Q4j Is it more than $30,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

END IF

END IF

END IF

Q5 Do you consider yourself retired?

1 Yes
2 No

IF Q5==2

Q5a At what age do you plan to be fully retired?
Numeric (Current Age [RESPONSE TO QB] – 100)

Q5b What is your best estimate of the income you will receive from the various sources we listed, before taxes and personal deductions, once you are fully retired?
[“TOTAL” ROW AT BOTTOM AUTO-SUMS AMOUNTS IN RIGHT COLUMN]

Wages and salaries, including self-employment income net of business expenses	**[INSERT AMOUNT – RANGE $0 TO $99,999,999]**
GOVERNMENT TRANSFERS	
▪ OAS (Old Age Security), GIS (Guaranteed Income Supplement), Spouse’s Allowance	**[INSERT AMOUNT – RANGE $0 TO $50,000]**
▪ CPP (Canada Pension Plan) or QPP (Quebec Pension Plan)	**[INSERT AMOUNT – RANGE $0 TO $50,000]**
▪ Other transfers (e.g. workers’ compensation, Employment Insurance, or social assistance/welfare)	**[INSERT AMOUNT – RANGE $0 TO $50,000]**
Workplace pension(s), **excluding** OAS/GIS/Allowance and CPP/QPP	**[INSERT AMOUNT – RANGE $0 TO $99,999,999]**
Income from annuities	**[INSERT AMOUNT – RANGE $0 TO $99,999,999]**
Total income from these sources in full retirement	**[AUTOSUMS]**

IF MORE THAN 3 CELLS IN Q5b LEFT EMPTY (OTHERWISE SKIP TO Q6):

[SHOW ON SAME SCREEN AS Q5b, IF POSSIBLE; IF NOT, ALLOW RESPONDENT TO GO BACK TO Q5b]
Q5c What is your best estimate of the total income from the sources listed above you plan to receive once fully retired, before taxes and personal deductions?
Numeric (>0)
9999999 Don’t know or prefer not to say

IF Q5c==9999999

Q5d Is it more than $60,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don’t know

IF Q5d==1

Q5e Is it less than $120,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don’t know

IF Q5e == 1
Q5f Is it more than $90,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
END IF

ELSE IF Q5d==2
Q5g Is it more than $30,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
END IF
END IF
END IF

IF Q2==1,2
Q6 Does your spouse consider himself or herself retired?
1 Yes
2 No

IF Q6==2
Q6a At what age does he or she plan to be fully retired?
Numeric (Current Spouse Age [RESPONSE TO Q2a] – 100)

[SHOW ON SAME SCREEN AS Q5b, IF POSSIBLE; IF NOT, ALLOW RESPONDENT TO GO BACK TO Q5b]
Q6b What is your best estimate of the total income from the sources listed above that your spouse plans to receive once fully retired, before taxes and personal deductions?
Numeric (>0)
9999999 Don't know or prefer not to say

IF Q6b==9999999
Q6c Is it more than $60,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q6c==1
Q6d Is it less than $120,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q6d == 1
Q6e Is it more than $90,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
END IF

ELSE IF Q6c==2
Q6f Is it more than $30,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
END IF
END IF
END IF
END IF

Q6g For 2018, what is your best estimate of your household's average total monthly spending?
Numeric $(1-850,000)
9999999 Don't know or prefer not to say

IF Q6g== 9999999
    Q6h Is it more than $9,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say

    IF Q6h== 1
        Q6i Is it less than $13,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say

        IF Q6i==1
            Q6j Is it more than $11,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say

        ELSE IF Q6i==2
            Q6k Is it more than $15,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say

            IF Q6k==1
                Q6l Is it less than $17,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say
            END IF
        END IF

    ELSE IF Q6h== 2
        Q6m Is it more than $5,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say

        IF Q6m==1
            Q6n Is it less than $7,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say

        ELSE IF Q6m==2
            Q6o Is it less than $3,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say

            IF Q6o==1
                Q6p Is it more than $1,000? 1 Yes 2 No 7777777 Don't know 8888888 Prefer not to say
            END IF
        END IF
    END IF
END IF

Q7 Do you own your primary residence?
1 Yes
2 No

IF Q7==1

Q8 What is your best estimate of the current market value of your primary residence (if you were to sell it)?
Numeric $(1-9,999,998)
9999999 Don't know or prefer not to say

IF Q8==9999999
    Q8a Is it more than $300,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

    IF Q8a==1
        Q8b Is it less than $600,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

        IF Q8b == 1
            Q8c Is it more than $450,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

        ELSE IF Q8b ==2
            Q8d Is it less than $750,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

            IF Q8d == 2
                Q8e Is it more than $900,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
            END IF
        END IF

    ELSE IF Q8a==2
        Q8f Is it more than $150,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
    END IF
END IF

Q9 Do you still have a mortgage on this residence?
1 Yes
2 No

IF Q9==1
    Q9a How many years do you have left before completing your mortgage repayment?
    Numeric (0-40)
    9999999 Don't know or prefer not to say

    Q9b What are the total regular monthly mortgage or loan payments for this dwelling? Please enter the amount per month, **excluding municipal taxes**.
    Numeric $(1-10,000)

    Q10 How much do you still owe on your mortgage?
    Numeric $(1-5,000,000)
    9999999 Don't know or prefer not to say

```
            IF Q10 == 9999999
                Q10a As a fraction of the current market value of your house, is it more than
                50%? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

                IF Q10a == 1
                    Q10b As a fraction of the current market value of your house, is it less
                    than 75 %? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

                    IF Q10b == 1
                        Q10c As a fraction of the current market value of your house, is it
                        more than 60%? 1 Yes 2 No 8888888 Prefer not to say 7777777
                        Don't know

                    ELSE IF Q10b == 2
                        Q10d As a fraction of the current market value of your house, is it
                        more than 85%? 1 Yes 2 No 8888888 Prefer not to say 7777777
                        Don't know
                    END IF

                ELSE IF Q10a == 2
                    Q10e As a fraction of the current market value of your house, is it less
                    than 25 % 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

                    IF Q10e == 1
                        Q10f As a fraction of the current market value of your house, is it
                        more than 10%? 1 Yes 2 No 8888888 Prefer not to say 7777777
                        Don't know

                        IF Q10f == 2
                            Q10g As a fraction of the current market value of your
                            house, is it less than 5%? 1 Yes 2 No 8888888 Prefer not to
                            say 7777777 Don't know
                        END IF

                    ELSE IF Q10e == 2
                        Q10h As a fraction of the current market value of your house, is it
                        more than 35%? 1 Yes 2 No 8888888 Prefer not to say 7777777
                        Don't know
                    END IF
                END IF
            END IF
        END IF

ELSE IF Q7==2
        Q10i What is the current monthly rent for your dwelling? Please enter the amount per month.
        Numeric $(1-10,000)
END IF
```

*****

Defined-contribution pension plans are plans sponsored by employers, where you choose how much to contribute and the balance of your account fluctuates with the financial markets. Upon retiring, you are allowed to withdraw as much as you want from the account.

Q11 What is your best estimate of how much your household has accumulated in defined-contribution employer pension plans (and which has not been taken out to date)?
Numeric (>=0)
9999999 Don't know or prefer not to say

IF Q11==9999999
Q11a Is it more than $50,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q11a==1
Q11b Is it less than $200,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

ELSE IF Q11a==2
Q11c Is it more than $10,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
END IF
END IF

Q12 What is your best estimate of how much your household has accumulated in individual Registered Retirement Savings Plans (RRSPs)? (Exclude savings in accounts linked to an employer.)
Numeric (>=0)
9999999 Don't know or prefer not to say

IF Q12==9999999
Q12a Is it more than $50,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q12a==1
Q12b Is it less than $200,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

ELSE IF Q12a==2
Q12c Is it more than $10,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
END IF
END IF

Q13 What is your best estimate of how much your household has accumulated in individual Tax-Free Savings Accounts (TFSAs) and individual non-registered savings accounts? (Exclude savings in accounts linked to an employer.)
Numeric (>=0)
9999999 Don't know or prefer not to say

IF Q13==9999999

Q13a Is it more than $50,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

IF Q13a==1
Q13b Is it less than $200,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know

ELSE IF Q13a==2
Q13c Is it more than $10,000? 1 Yes 2 No 8888888 Prefer not to say 7777777 Don't know
END IF
END IF

Q14 Looking at the following list of health conditions, has a doctor ever said you suffered from:
[Check any of:]
1 Heart disease
2 Stroke
3 Lung disease
4 Diabetes
5 Hypertension
6 Depression or other mental health problems
7 Cancer
8 None of the above [NO OTHER RESPONSE ALLOWED WITH THIS SELECTION]

IF Q2=1,2
Q14a Looking at the following list of health conditions, has a doctor ever said your spouse suffered from:
[Check any of:]
1 Heart disease
2 Stroke
3 Lung disease
4 Diabetes
5 Hypertension
6 Depression or other mental health problems
7 Cancer
8 None of the above [NO OTHER RESPONSE ALLOWED WITH THIS SELECTION]
END IF

Q15 Have you ever smoked cigarettes daily?
1 Yes
2 No

IF Q2=1,2
Q15a Has your spouse ever smoked cigarettes daily?
1 Yes
2 No
END IF

Q16 Do you regularly have problems with the following activities (for which you need help):
Check all that apply in this list

1. Preparing meals
2. Getting to appointments and running errands such as shopping for groceries
3. Doing everyday housework
4. Making bank transactions or paying bills
5. Washing
6. Dressing
7. Going to the toilet
8. Getting in and out of bed
9. Eating
10. Taking medication
11. Moving inside the house

IF Q2=1,2

Q16a Does your spouse regularly have problems with the following activities (for which he or she needs help):

Check all that apply in this list

1. Preparing meals
2. Getting to appointments and running errands such as shopping for groceries
3. Doing everyday housework
4. Making bank transactions or paying bills
5. Washing
6. Dressing
7. Going to the toilet
8. Getting in and out of bed
9. Eating
10. Taking medication
11. Moving inside the house

END IF

Section 2: Risk Perception

Q17 On a scale of 0 to 100, where 0 is absolutely no chance and 100 is absolutely certain, what do you believe is the percent chance you will live to age 85 or more?
Numeric (0-100)
7777777 Don’t know

IF Q2==1,2 & Q2a < 85

  Q17a On a scale of 0 to 100, where 0 is absolutely no chance and 100 is absolutely certain, what do you believe is the percent chance your partner (spouse) will live to age 85 or more?
  Numeric (0-100)
  7777777 Don’t know

END IF

Q18 On a scale of 0 to 100, where 0 is absolutely no chance and 100 is absolutely certain, what do you believe is the percent chance you will live more than 1 year during your lifetime with two or more limitations in activities of daily living? Activities of daily living include eating, washing, dressing, moving inside the house and getting in and out of bed.
Numeric (0-100)
7777777 Don’t know

IF Q18>0

  Q18a … 2 or more years?
  Numeric (0 – [ANSWER TO Q18])
  7777777 Don’t know

  IF Q18a>0

    Q18b … 4 or more years?
    Numeric (0 – [ANSWER TO Q18a])
    7777777 Don’t know

  END IF

END IF

Q19 Some may wish to go to a long-term care home when they have difficulties with activities of daily living. On a scale of 0 to 100, what do you believe is the percent chance that you will one day move to a long-term care home?
Numeric (0-100)
7777777 Don’t know

Q20 On a scale of 0 to 100, where 0 is absolutely no chance and 100 is absolutely certain, what do you believe is the percent chance you will leave a bequest to your heirs of more than $100,000?
Numeric (0-100)
7777777 Don’t know

Q21 On a scale of 0 to 100, where 0 is absolutely no chance and 100 is absolutely certain, what is the percent chance you will have withdrawn all your financial assets (RRSP, TFSA, other savings) by the age of 85?
Numeric (0-100)
7777777 Don’t know

IF Q7==1

Q22 Here are three possibilities concerning your future expected residence. On a scale of 0 to 100, where 0 is absolutely no chance and 100 is absolutely certain, what is the percent chance that each of these possibilities comes true? Given that only one of these possibilities can occur, the sum of the three probabilities must equal 100.

Q22a I'm going to stay in my current home until I die.
Numeric (0-100)

Q22b I will eventually move from my current home to live in another house or apartment.
Numeric (0 TO (100 – ANSWER TO Q22a))

Q22c I will eventually move from my current home to live in a long-term care home if my own condition and/or my spouse's condition requires it.
Numeric (0 TO (100 – ANSWER TO Q22a – ANSWER TO Q22b))

[NOTE: SUM OF ANSWERS TO Q22a, Q22b AND Q22c MUST EQUAL 100.]
[NOTE: MAKE SURE THE QUESTION IS PROPERLY NUMBERED ON THE SCREEN.]
[NOTE: WOULD IT BE POSSIBLE TO INCLUDE A COUNTER TO LET THE RESPONDENT KNOW HOW MANY % LEFT TO FILL IN?]

Q23 Over the **next 10 years**, on a scale of 0 to 100, where 0 is absolutely no chance and 100 is absolutely certain, what is the percent chance that the value of your house:
Q23a decreases, Numeric (0-100)
Q23b increases by more than 10%, Numeric (0-100) (CHECK SMALLER THAN 100-Q23a)
Q23c increases by more than 20%, Numeric (0-100) (CHECK SMALLER THAN Q23b)
Q23d increases by more than 40%, Numeric (0-100) (CHECK SMALLER THAN Q23c)
Q23e increases by more than 50%, Numeric (0-100) (CHECK SMALLER THAN Q23d)

END IF

Q24 Do you agree with the following statements? (Answers: 5 Strongly Agree; 4 Agree; 3 Disagree; 2 Strongly Disagree; 1 Don't know)

Q24a Parents should set aside money to leave to their children or heirs once they die, even when it means somewhat sacrificing their own comfort in retirement
Q24b Children should inherit their parents' family home
Q24c A house is an asset that should only be sold in case of financial hardship
Q24d Being in debt is never a good thing
Q24e I prefer to live well but for fewer years than to live long and have to sacrifice my quality of life

[NOTE: MAKE SURE THE QUESTION IS PROPERLY NUMBERED ON THE SCREEN.]
[NOTE: MIGHT THE SCALE FOR EACH STATEMENT BE INVERTED (I.E. "INCREASING" FROM LEFT TO RIGHT)? WE LEAVE THIS WITH YOUR EXPERTISE.]

Q25 Which of the following statements comes closest to describing the amount of financial risk that you are willing to take when you wish to save or make investments?
1 I am willing to take substantial financial risks expecting to earn substantial returns
2 I am willing to take above average financial risks expecting to earn above-average returns
3 I am willing to take average financial risks expecting to earn average returns
4 I am willing to take below average financial risks expecting to earn below-average returns
5 I am not willing to take any risk, knowing I will earn a small but certain return

Section 3: Knowledge of Financial Products

We would now like to ask you a few questions about 3 financial products used by some households in retirement.

An **annuity** is a financial product that guarantees you a regular payment every month or year until death (the “benefit”), in exchange for an initial one-time payment (the “premium”).

Q26 Which of the following best describes your current knowledge about this type of product?
1 A lot
2 A little
3 None at all

Q27 Have you purchased an annuity in the private market, for which you are currently receiving or will eventually receive benefits (please exclude all government provided benefits such as those coming from your provincial pension plan, the Canada Pension Plan or Old Age Security)?
1 Yes, I have purchased an annuity
2 Yes, I have purchased more than one annuity
3 No
7777777 Don't know

IF Q27==3,7777777 GOTO Q28

ELSE IF Q27==1,2
    Q27a What was the total premium you paid for all your annuities, after any income taxes owed?
    Numeric $(>=0)
    7777777 Don’t know
    Q27b What is the total amount of the benefit(s) you are currently receiving, or will receive when payouts begin (monthly)?
    Numeric $(>=0)
    7777777 Don’t know
END IF

We will refer to a **reverse mortgage** as a financial product that lets you turn part of your current home equity into cash. Unlike many mortgage-based financial products, you’re not obligated to make any payments until you move, you sell your home, or you die. You have the certainty that once your residence will be sold, the amount required to repay the loan (including accumulated interest) will not exceed the selling price of the residence.

Q28 Which of the following best describes your current knowledge about this type of product?
1 A lot
2 A little
3 None at all

Q29 Have you received a loan as a reverse mortgage? (Do not include lines of credit.)
1 Yes, I have received a loan as a reverse mortgage
2 No
7777777 Don't know

IF Q29==2,7777777 GOTO Q30

ELSE IF Q29==1
    Q29a How much did you take as a loan?
    Numeric $(>=0)
    7777777 Don’t know
    Q29b What is the interest rate on that loan?
    Numeric (0-60)%
    7777777 Don’t know
END IF

We define **long-term care insurance** as a type of insurance that helps to pay for **extended** stays in a long-term care home or assisted living facility, or for personal or medical care in your home. This insurance is typically separate from your health insurance and distinct from the benefits offered by an employer, and it requires paying separate premiums. It is not provided by Medicare or the public healthcare system.

Q30 Which of the following best describes your current knowledge about this type of insurance?
1 A lot
2 A little
3 None at all

Q31 Do you have a long-term care insurance policy?
1 Yes
2 No
7777777 Don't Know

IF Q31==2,7777777 GOTO Q32

ELSE IF Q31==1
    Q31a What is the monthly premium on that policy?
    Numeric $(>=0)
    7777777 Don’t know
    Q31b What is the amount of the benefit the insurance would pay out (monthly)?
    Numeric$ (>=0)
    7777777 Don’t know
END IF

[RANDOMIZE ORDER OF SECTIONS 4, 5 AND 6]

Section 4: Preferences for Annuities [SCENARIOS]

IF FINWEALTH>0 [SEE DEFINITION BELOW]

We are going to show you some simple annuity products and ask you to rate them. You can assume that the institution offering the annuity will pay the monthly benefit no matter the circumstances. Once you pay the premium, you receive monthly benefits and have nothing else to pay.

Each product has two attributes:
a) a premium you have to pay;
b) a monthly benefit starting next year and lasting until death.

The benefit is adjusted for inflation (indexed).

Q32-Q35
[SCENARIOS]

What are the chances, 0% meaning no chance and 100% meaning for sure, that you would purchase this product if it were offered to you by a trusted financial institution within the next year?
Numeric (0-100)

END IF

*****
Scenarios randomization scheme

Parameters:

Age_benefit = (QB+1)

Premium = [0.2,0.5]*FinWealth
where FinWealth = Q11+Q12+Q13 (if bracketed, use mid-point in interval; if "Don't know" (7777777) or "Prefer not to say" (8888888), use FinWealth = 40,000)

Price = [0.5, 0.75, 1.25, 1.5]

For each combination of age and gender we provide Yield in table below. Use Age_benefit, as defined above, and gender (QA) to select correct Yield from table.

The benefit for the contract is given by (please round to nearest $10):

Benefit = Premium x (Yield/100) x Price/12

Randomize order of Price above (for 4 scenarios), sampling without replacement:
Scenario 1, Premium = 0.2*FinWealth
Scenario 2, Premium = 0.5*FinWealth

Scenario 3, Premium = 0.2*FinWealth
Scenario 4, Premium = 0.5*FinWealth
Present each scenario sequentially and not at once (4 screens in total), following this example:

When you buy the annuity	*Starting at age [Age_benefit]*
You pay $[Premium]	You receive $[Benefit] per month until death, indexed annually for inflation

CANNEX YIELDS (YEARLY BENEFIT AS % of PREMIUM), BY AGE AND GENDER

"Yield"

Age_benefit	Males	Females
60	5.623	5.197
61	5.749	5.331
62	5.895	5.482
63	6.061	5.618
64	6.236	5.761
65	6.399	5.914
66	6.557	6.054
67	6.748	6.223
68	6.958	6.407
69	7.181	6.604
70	7.441	6.770
71	7.515	6.882

Section 5: Preferences for Reverse Mortgages [SCENARIOS]

IF Q7==1 & Q29==2,7777777

> When we use the expression "**current home equity**", we are referring to the current market value of your primary residence after subtracting outstanding mortgage balances. For the rest of this section, try to have your current home equity in mind.
>
> We are going to show you some simple reverse mortgage products and ask you to rate them.
>
> Each reverse mortgage has two attributes:
> a) The percentage of your current home equity that you borrow.
> b) A fixed annual interest rate on the balance of the loan, generating interests that you do not need to pay before you move, sell or die.
>
> Suppose you have the certainty that you will never be put under pressure to sell your residence and that the contract terms will be respected.
>
> Q36-Q39
> [SCENARIOS]
>
> What are the chances, 0% meaning no chance and 100% for sure, that you would buy this reverse mortgage if a trusted financial institution offered it to you within the next year?
> Numeric (0-100)

END IF

*****
Scenarios randomization scheme

Parameters:

Interest_rates = [2.0%, 4.0%, 6.0%, 8.0%]
Share = [0.5, 1.0]

With these products we provide Borrow which is the proportion that is borrowed by age:
60-64: 30%
65-70: 40%

The contract of the reverse mortgage is given by (please round to nearest percentage point):

REVERSE = BORROW * SHARE * Q8 * (1-Q10/Q8)

For Q8, Q10, if bracketed, take mid points. If "Don't know" (7777777) or "Prefer not to say" (8888888), use Q8=400,000 and Q10=0.

Randomize order of interest rates above (sampling without replacement).
Scenario 1: Share = 0.5
Scenario 2: Share = 1.0
Scenario 3: Share = 0.5
Scenario 4: Share = 1.0

Present scenarios following this example, each on a separate screen:

You borrow [REVERSE].
You will be charged a fixed annual interest rate of [Interest_rates] on the balance of the loan for as long as you hold the loan. *Reminder: You're not obligated to make any payments until you move, you sell your home, or you die; and you have the certainty that once your residence will be sold, the amount required to repay the loan (including accumulated interest) will not exceed the selling price of the residence.*

Section 6: Preferences for Long-term Care Insurance [SCENARIOS]

IF Q31==2,7777777

We are going to show you some simple insurance policies and ask you to rate those. You can assume that if you were to have two or more limitations in your activities of daily living (eating, washing, dressing, moving inside the house and getting in and out of bed), the insurance company offering you this product would pay the benefits no matter what the circumstances. Once you receive benefits, you do not pay any premiums. Assume that you will continue to pay premiums until you receive benefits or die.

Each product has two attributes:
a) a monthly premium you have to pay;
b) a monthly benefit if you have 2 or more limitations in your activities of daily living;

and

The premium cannot increase once you have purchased the product. Finally, the benefits are adjusted for inflation (indexed).

Q40-Q43
[SCENARIOS]

What are the chances, 0% meaning no chance and 100% for sure, that you would purchase the policy if it were offered to you by a trusted financial institution?
Numeric (0-100)

END IF

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Scenarios randomization scheme

Parameters:

Benefit_ltc = [2000,4000]

With these benefits we provide EPremium (2x 2 = 4 data points; see table attached) which is the fair premium by age and sex.

The premium for the contract is given by (please round to nearest dollar):

prem = EPremium * Load
where Load = [0.5,0.75,1.25,1.5]

Randomize order of Load independently (4 possibilities) for 4 scenarios (sampling without replacement):
Scenario 1: Benefit_ltc = 2000
Scenario 2: Benefit_ltc = 4000
Scenario 3: Benefit_ltc = 2000
Scenario 4: Benefit_ltc = 4000

Present each scenario on a separate screen, following…

While healthy…	*Once you have at least 2 limitations in your activities of daily living…*
You pay $[prem] per month	You receive $[Benefit_ltc] per month

*****

“**EPremium**”

	Benefit_ltc = 2000	
Age (QB)	**Male (QA==1)**	**Female (QA==2)**
60-64	122.66	141.78
65-70	162.74	185.41

	Benefit_ltc = 4000	
Age (QB)	**Male (QA==1)**	**Female (QA==2)**
60-64	245.33	283.57
65-70	325.48	370.82