Do You Know Your Worth? Attention and Wealth Inequality

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CRETE 2026

July 9, 2026

Higher knowledge of personal finances → higher wealth

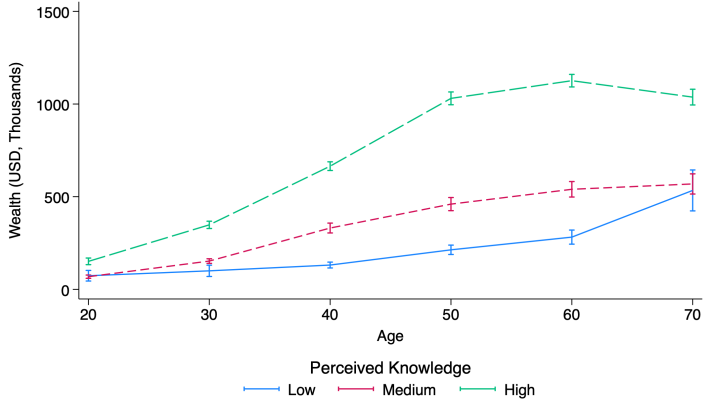

Figure: $\textit{net wealth}_i = \beta_0 + \beta_1\ \textit{perceived knowledge}_i + \beta_2\ \textit{age}_i + \beta_3\ \textit{perceived knowledge}_i \times \textit{age}_i + \epsilon_i$
Perceived Knowledge: Respondent's knowledge of personal finances, Data: SCF

Don't we know this?

- Focus up to now: actual financial knowledge
  - 'Actual financial knowledge': financial literacy (Lusardi & Mitchell (2011) Big 3)
    education
- Differences in households' **financial literacy** drive **wealth inequality**
  Lusardi *et al.* (2017), Mazzonna & Peracchi (2024), Castagno *et al.* (2023), Barth *et al.* (2020) and Behrman *et al.* (2012)

⋆ But figure plots **perceived** financial knowledge groups
  - Does financial literacy and education capture the observed wealth differences?

Higher **perceived** knowledge of personal finances → higher wealth

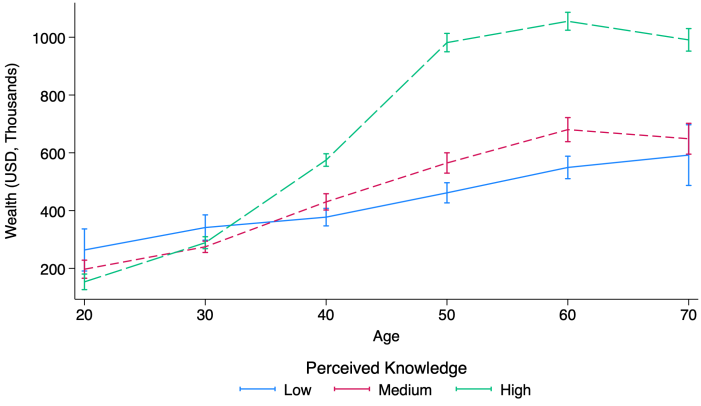

Figure: $\textit{net wealth}_i = \beta_0 + \beta_1\ \textit{perceived knowledge}_i + \beta_2\ \textit{age}_i + \beta_3\ \textit{perceived knowledge}_i \times \textit{age}_i + \beta_4\ \textit{financial literacy}_i + \beta_5\ \textit{education}_i + \epsilon_i$

Perceived Knowledge: Respondent's knowledge of personal finances

Financial Literacy: Lusardi & Mitchell (2011) Big 3, Data: SCF

Households learn with age, but at different rates

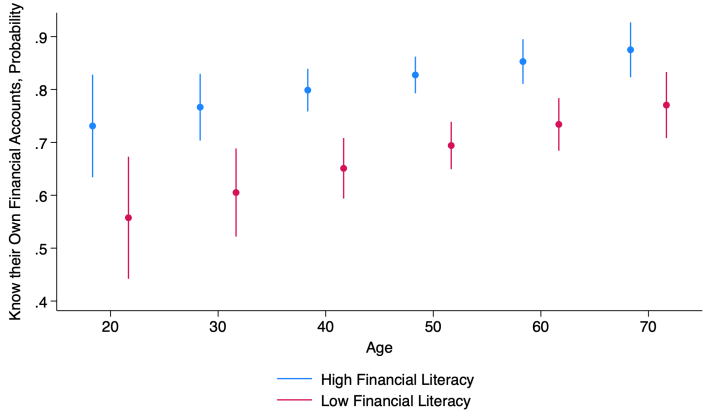

Figure: $\textit{know accounts}_i = \beta_0 + \beta_1\ \textit{financial literacy}_i + \beta_2\ \textit{age}_i + \beta_3\ \textit{financial literacy}_i \times \textit{age}_i + \epsilon_i$
Know accounts: Households rate their knowledge of their financial accounts average or higher
Financial Literacy: Lusardi & Mitchell (2011) Big 3, Data: SCE Education

This paper

- This paper examines the following:

  $\Rightarrow$ Differences in financial literacy among households

  $\Rightarrow$ **Differences in new information processing ability**
  $\Rightarrow$ **Differences in attention to returns to wealth**

  $\Rightarrow$ Differences in ability to accumulate wealth over the life-cycle

  Attention $\times$ Financial Literacy $\Rightarrow$ Wealth Inequality

- Main question: Does household attention to portfolio and housing returns impact wealth inequality?
- Approach: Life-cycle model of portfolio choice and housing
  - $\star$ Households are rationally inattentive - fully endogenous in the model

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- **Main question**: Does household attention to portfolio and housing returns impact wealth inequality?
- **Approach**: Life-cycle model of portfolio choice and housing
  - $\star$ Households are rationally inattentive - **fully endogenous** in the model

This paper

- **Mechanism**:
  - In each period, households choose their new information about returns

$$\text{Gain from Observation of Actual Values} \quad - \quad \underbrace{\text{Cost of Observation of Actual Values}}_{\lambda I}$$

λ: marginal information observation cost, captures information processing ability

- Low financial literacy households $\Rightarrow$ high λ
- High financial literacy households $\Rightarrow$ low λ

I: mutual information $\sim$ expected reduction in uncertainty

- More accurate information = greater utility cost

$\Rightarrow$ Attention of low-literacy households $\neq$ attention of high-literacy households

This paper

- **Main Findings**: Differences in marginal information cost $\Rightarrow$ differences in attention will:

  1. Impact timing of home-ownership and participation decisions
     - Prioritization of home-ownership vs. investing, especially before middle-age
     - Likelihood of adjusting risky-asset positions during low returns
     - Attention over life-cycle, conditional on past participation
  2. Result in large differences in wealth composition
     - Gap in financial wealth, especially for top of distribution
     - Gap in housing wealth, especially for bottom of distribution
  3. Drive wealth inequality
     - Higher wealth/income accumulated for more attentive households over their lifetime
     - Differences driven by higher financial wealth/income

Related literature

- Households' attention: this paper endogenizes rational inattention in a life-cycle model
  Weber *et al.* (2025), Roth & Wohlfart (2020), Sicherman *et al.* (2015), Dahlquist & Martinez (2015), Coibion & Gorodnichenko (2015), Gorodnichenko (2008), Mackowiak & Wiederholt (2012), Abel *et al.* (2007), Abel *et al.* (2013), Alvarez *et al.* (2012), Pagel (2018), Kőszegi & Rabin (2009), Bartzoka (2023)
- Wealth inequality: this paper examines attention as a driver
  Fagereng *et al.* (2019), Catherine *et al.* (2025), Boerma & Karabarbounis (2023), Fagereng *et al.* (2020), Kuhn *et al.* (2020), Bernstein & Koudijs (2024), Díaz *et al.* (2003), Hendricks (2007), Favilukis (2013)
- Household financial literacy: this paper examines how financial literacy affects attention
  Anderson *et al.* (2017), Jappelli & Padula (2013), Bianchi (2018), Kacperczyk *et al.* (2019), Kuhnen & Miu (2017), Van Nieuwerburgh & Veldkamp (2010)
  - As a driver for wealth inequality:
    Lusardi *et al.* (2017), Mazzonna & Peracchi (2024), Castagno *et al.* (2023), Barth *et al.* (2020), Behrman *et al.* (2012)

Stylized facts $\rightarrow$ model assumptions

- From stylized facts: household certainty about their financial accounts and their certainty about local house prices have a positive relationship (SCE data)
- To introduce co-movement of beliefs for different wealth components, hidden variable is latent state Ω_t

$$\mathbb{P}(\Omega_{t+1} = \Omega' \mid \Omega_t = \Omega) = Q_h(\Omega, \Omega') \quad \text{follows a finite-state Markov chain}$$

  - House prices per unit housing depend on the latent state Ω_t:

$$p^H_{t+1} = \bar{p}^H \phi^H(\Omega_t)$$

  - Risky asset returns also depend on the latent state Ω_t:

$$r^S_{t+1} = \mu^S(\Omega_t) + \sigma(\Omega_t)\varepsilon^S_{t+1}$$
$$r^S_{t+1}|\Omega_t \sim \mathcal{N}(\mu^S(\Omega_t), \sigma^2(\Omega_t))$$

  - Household i holds beliefs for Ω_t, denoted by $\pi_{i,t}$

Detail

Model Calibration

- 2 groups of households: Low λ (high financial literacy) and High λ (low financial literacy)
- Each group has different:
  - Prior beliefs about the current state Ω_t
  - Marginal cost of observing information λ
  - Stock market per-period participation cost parameter κ^{PP}
  - Initial conditions for the simulation

Parameter	All	Low λ	High λ
γ	6.0		
β	0.935		
ψ	0.01		
ν	0.75		
κ^{FC}	0.001		
κ^{PP}		0.0012	0.025
λ		0.001	0.09

Table: Calibrated Model Parameters

Home ownership vs. investments

- For households with high marginal observation cost λ:
  - More own house only without investing compared to low λ households, starts early in life and persists over time
  - Start investing later in life

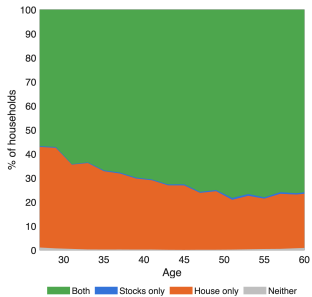


Figure: Low λ

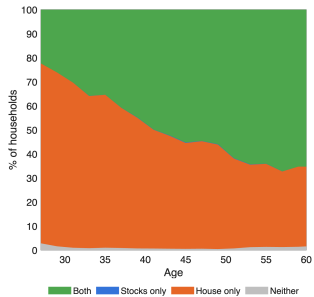


Figure: High λ

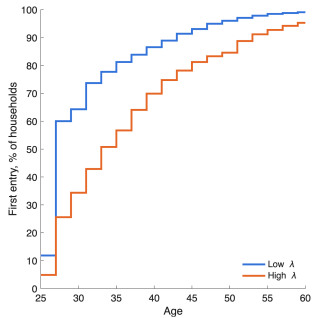


Figure: First Time Investing

Portfolio adjustments

- Low-λ households: more likely to adjust their portfolios over the life-cycle, adjustment rates decrease with age
- High-λ households: have $\sim$ constant adjustment rates, starting at early 30s

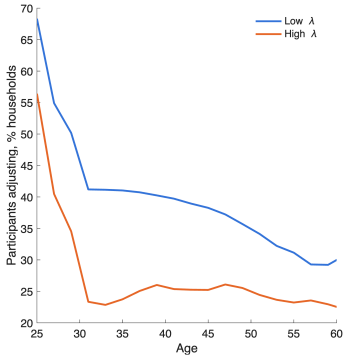


Figure: % Participants adjusting their risky-asset position

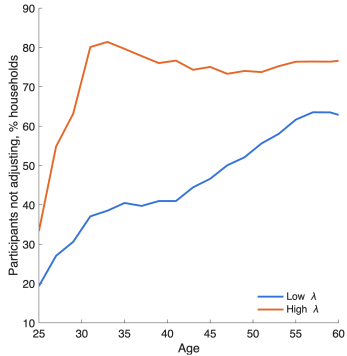


Figure: % Participants not adjusting after low risky-asset returns

Attention over the life-cycle

- High-λ households have lower attention levels overall
  - Attention of current non-investors remains $\sim$ constant, never-before investors less attentive with age

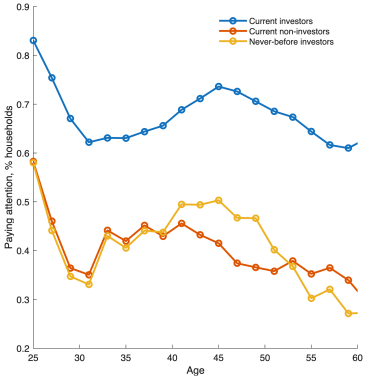


Figure: Low λ

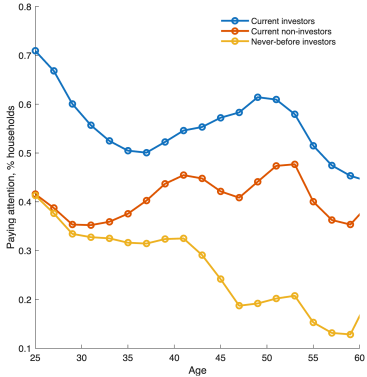


Figure: High λ

Impact to wealth composition

- Largest impact is to the top of the wealth distribution
  - Less financial wealth throughout their lifetime
  - More housing wealth until middle-age

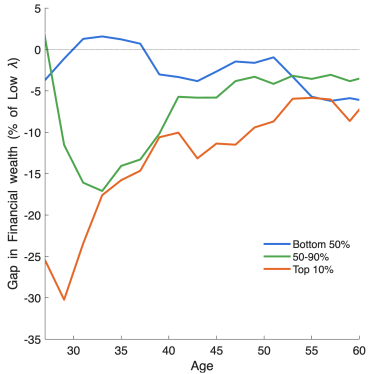


Figure: Financial Wealth

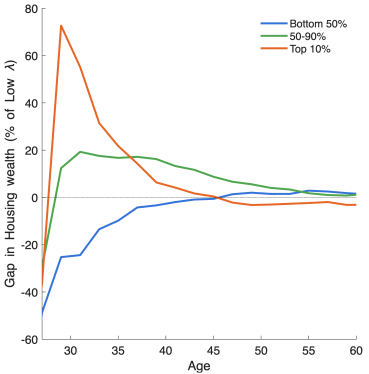


Figure: Housing Wealth

Attention and wealth inequality

- Households accumulate more wealth/income when they are more attentive over their lifetime
- Right panel: equivalent to motivational evidence from the SCF

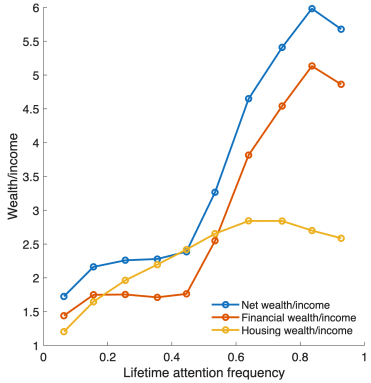


Figure: Wealth/Income over Lifetime Attention

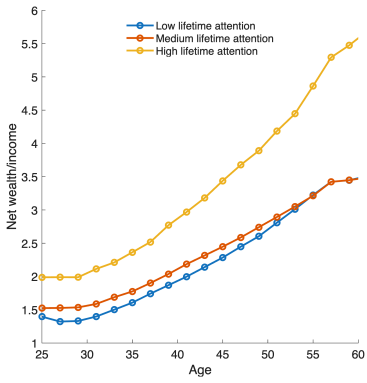
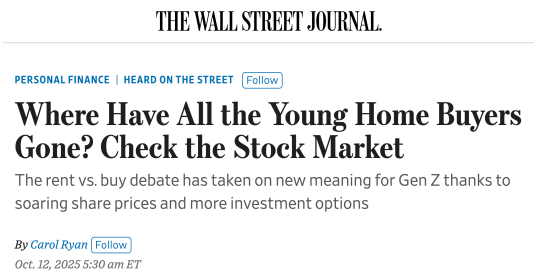


Figure: Wealth/Income by Age

Conclusion

- **Main question**: Does household attention to portfolio and housing returns impact wealth inequality?
- **Answer**: Yes, and it has significant implications on:
  - Timing of home-ownership and participation decisions
  - Portfolio adjustment
  - Wealth accumulation, leading to wealth inequality
- What happens when participation costs drop to 0?



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The rent vs. buy debate has taken on new meaning for Gen Z thanks to soaring share prices and more investment options

By Carol Ryan Follow

Oct. 12, 2025 5:30 am ET

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Attention choice in the model

- Trade-off for choosing information signal:

$$\text{Gain from Observation of Actual Values} \quad - \quad \underbrace{\text{Cost of Observation of Actual Values}}_{\lambda I}$$

where λ: marginal information observation cost

I: mutual information between information signal and returns to wealth
$\sim$ expected reduction in uncertainty about wealth value by observing some signal

⋆ λ will capture information processing ability

- Low financial literacy households $\Rightarrow$ high λ
- High financial literacy households $\Rightarrow$ low λ

⋆ 2 wealth components to increase certainty about: housing wealth and risky asset investment

- Relationship between certainty about house prices vs. certainty about financial accounts?

Stylized facts

- Look to the New York Fed Survey of Consumer Expectations for related evidence
- Construct relevant measures from the survey:
  - Certainty about house prices and financial accounts
    - Driven by information content of relevant actions (Sims, 1998, 2003, 2006)

$$Info_{d,i} = \sum_{j \in d} \omega_{d,j} i(p_{i,j})$$

where d: house prices or financial accounts
j: index for some future planned action
$\omega_{d,j}$: the weight of action j on domain d

$$i(p_{i,j}) = 1 + p_{i,j} \log_2 p_{i,j} + (1 - p_{i,j}) \log_2 (1 - p_{i,j})$$

by the definition of Shannon entropy

Certainty about financial accounts and house prices

- Household certainty about their financial accounts and their certainty about local house prices have a positive relationship

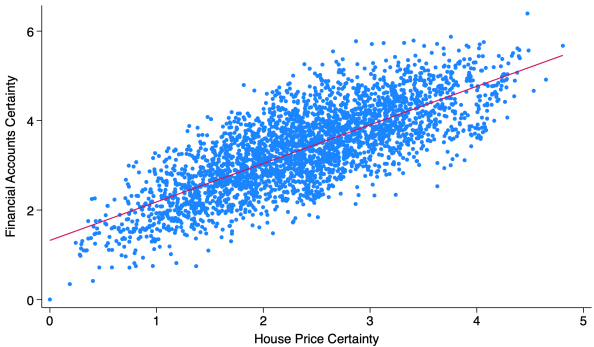

Figure: Scatterplot and best-fit line of Financial Account Certainty, $Info_{\text{financial accounts},i}$, against House Price Certainty, $Info_{\text{house prices},i}$

Information costs over the life-cycle

- Low-λ households: are persistently more certain about the hidden state, face very low observation costs
- High-λ households: their observation costs per year are higher when they're young

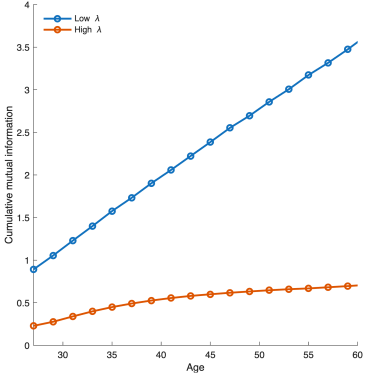

Figure: Cumulative uncertainty reduction

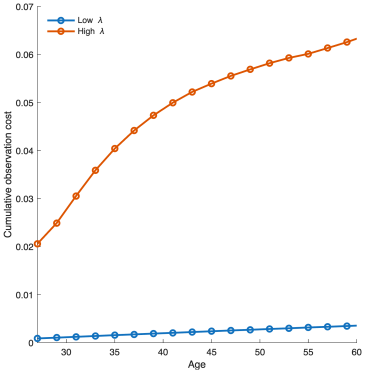

Figure: Cumulative observation cost

Attention and wealth inequality

- Financial wealth/income higher when lifetime attention is higher
- Housing wealth/income about the same regardless of attention

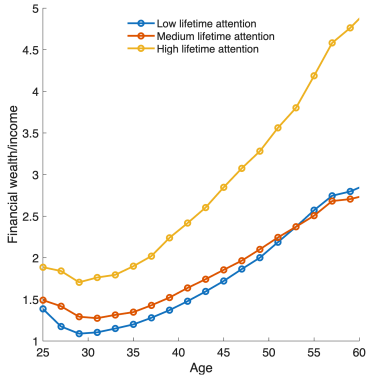

Figure: Financial Wealth/Income

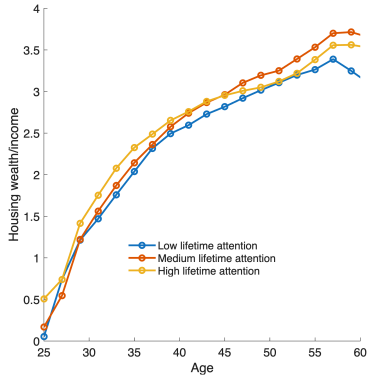

Figure: Housing Wealth/Income

Households learn with age, but at different rates

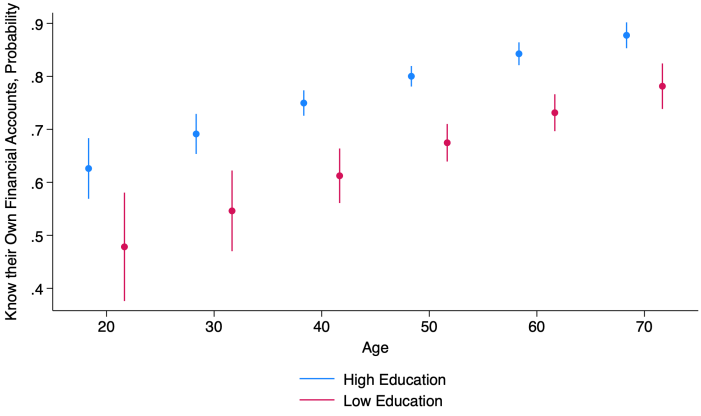

Figure: $know\ accounts_i = \beta_0 + \beta_1\ education_i + \beta_2\ age_i + \beta_3\ education_i \times age_i + \epsilon_i$
Know accounts: Households rate their knowledge of their financial accounts average or higher
Education: Low for households without a college degree, Data: SCE Motivation

Model overview

- **Setup**:
  - Life-cycle model with rationally inattentive households
- **Households**:
  - Are rationally inattentive about returns to their wealth:
    - Decide endogenously whether to pay attention and how much
    - Face cost $\rightarrow$ dis-utility for more precise information
  - Face discrete-continuous choice:
    - Decide whether to own or rent, I^h_{t+1}
    - Decide whether and how much to invest in the risky asset, I^f_t and w_{t+1}
    - Decide their non-housing consumption and housing consumption, c_t and h_{t+1}
  - Can borrow to buy a home
  - Their income includes a persistent component η_t and a transitory component
  - Wealth = housing wealth + risky asset investment
    - House prices and risky-asset returns are exogenous Main Model

Model

- Financial Assets, continued
  - Risk-free asset return: r
  - Stock market participation cost

$$\begin{aligned}
\kappa^f(I^f_{i,t+1}, I^f_{i,t}) &= 0 \quad \text{if} \quad I^f_{i,t+1} = 0 \\
\kappa^f(I^f_{i,t+1}, I^f_{i,t}) &= \kappa^{FC} + \kappa^{PP} \quad \text{if} \quad I^f_{i,t+1} = 1 \quad \text{and} \quad I^f_{i,t} = 0 \\
\kappa^f(I^f_{i,t+1}, I^f_{i,t}) &= \kappa^{PP} \quad \text{if} \quad I^f_{i,t+1} = 1 \quad \text{and} \quad I^f_{i,t} = 1
\end{aligned}$$

  κ^{PP}: per-period participation cost
  κ^{FC}: fixed, one-time participation cost

- Log Earnings

$$y_{i,t} = f(D_{i,t}; \theta) + \eta_{i,t} + \epsilon_{i,t}$$

  - $f(D_{i,t}; \theta)$: deterministic component of income
  - $\eta_{i,t} = \rho\eta_{i,t-1} + u_{i,t}$: persistent stochastic component
  - $\epsilon_{i,t}$: transitory stochastic component Main Model

Model

- Housing
  - House price

$$P^H_{i,t} = p^H_t h_{i,t}$$

    $h_{i,t}$: housing consumption, interpreted as housing size or quality
  - Housing transaction cost

$$\kappa^H_{i,t} = \tilde{\kappa}^H p^H_t h_{i,t}$$

    $\tilde{\kappa}^H$: housing transaction cost parameter
  - Rental cost

$$R^H_{i,t} = \tilde{R} p^H_t h_{i,t}$$

    $\tilde{R}$: rent-to-price ratio
- Debt, $B_{i,t}(h_{i,t}, y_{i,t}, \Omega_t)$, can borrow against their income or housing (for owners)
  - Down-payment restriction

$$x_{i,t} \geq \phi_H p^H_t h_{i,t}$$

    $x_{i,t}$: end-of-period net worth
    ϕ_H: minimum required down-payment Main Model

Model

- Gross portfolio return

$$R_{i,t}(w_{i,t}, \Omega_t) = r(1 - w_{i,t}) + w_{i,t} r_t^S(\Omega_t)$$

- Budget constraint

$$\begin{aligned} c_{i,t} =& a_{i,t} + y_{i,t} - HF_{i,t}(h_{i,t}, h_{i,t+1}, \Omega_t) - R_{i,t}^H \\ & -\kappa^f(I_{i,t+1}^f, I_{i,t}^f) - B_{i,t}(h_{i,t}, y_{i,t}, \Omega_t) + B_{i,t+1}(h_{i,t+1}, y_{i,t}, \Omega_t) - a_{i,t+1} \end{aligned}$$

with feasibility restriction $c_{i,t} > 0$

and with $HF_{i,t}(h_{i,t}, h_{i,t+1}, \Omega_t) = \bar{p}^H \phi^H(\Omega_t)\Big[h_{i,t+1}(1 + \tilde{\kappa}^H) - h_{i,t}(1 - \tilde{\kappa}^H)\Big]$

- Per-period utility

$$u(c_{i,t}, h_{i,t}) = \frac{[c_{i,t}^{\nu}(1 + \psi I_{i,t}^h) h_{i,t}^{1-\nu}]^{1-\gamma}}{1 - \gamma}$$

ψ: preference to own instead of rent
ν: non-housing share of consumption
γ: coefficient of relative risk aversion Main Model