

The Wealthy Hand-to-Mouth

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CIGS Conference on Macroeconomic Theory and Policy 2014
Tokyo, May 2014

The wealthy hand-to-mouth (W-HtM)

- **W-HtM**: households with little liquid wealth but substantial illiquid wealth
- **P-HtM**: households with little liquid wealth and little illiquid wealth
- **N-HtM**: households with substantial liquid wealth

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- Like the P-HtM:
 - Large MPC out of small transitory income windfalls

- Unlike the P-HtM:
 1. Escape standard definitions and empirical measurement
 2. Similar demographic characteristics to the N-HtM
 3. Behave like the N-HtM for large income shocks

Outline

1. Simple 3 period model to illustrate
 - Emergence of the W-HtM when assets are illiquid
 - High MPC for the W-HtM
2. Strategy for identifying the HtM in survey data on household portfolios
3. Apply strategy to household data from 8 countries:
US, Canada, Australia, UK, Germany, France, Italy and Spain
4. Estimation of MPC out of transitory shocks
5. Implications for modeling and fiscal policy: compare 3 models

W-HtM households in theory

- Why live hand-to-mouth, rather than use wealth to smooth shocks?

W-HtM households in theory

- Why live hand-to-mouth, rather than use wealth to smooth shocks?
- High-return illiquid assets generate **trade-off**:

Better consumption smoothing (short-run)
VS
Higher lifetime consumption (long-run)

- Smoothing requires either:
 1. Opportunity cost of holding large cash balances
 2. Borrowing at expensive rates
 3. Paying transaction cost to adjust illiquid asset
- **Intuition**: welfare losses from not smoothing are second order

Three period deterministic model

- At $t = 0$: portfolio choice for endowment of 1 unit:
 - Liquid asset with return 1 (m_1)
 - Illiquid asset with return $R > 1$, cannot be accessed at $t = 1$ (a)
- At $t = 1$: receive income y_1 , consume c_1 , save/borrow m_2
- At $t = 2$: receive income y_2 and consume c_2
- Preferences: $u(c_1) + u(c_2)$ (no discounting)

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- Study HtM behavior at $t = 1$:
 - N-HtM: households with $m_2 > 0$, $a > 0$
 - P-HtM: households with $m_2 = 0$, $a = 0$
 - W-HtM: households with $m_2 = 0$, $a > 0$

Three period deterministic model

$$\max u(c_1) + u(c_2)$$

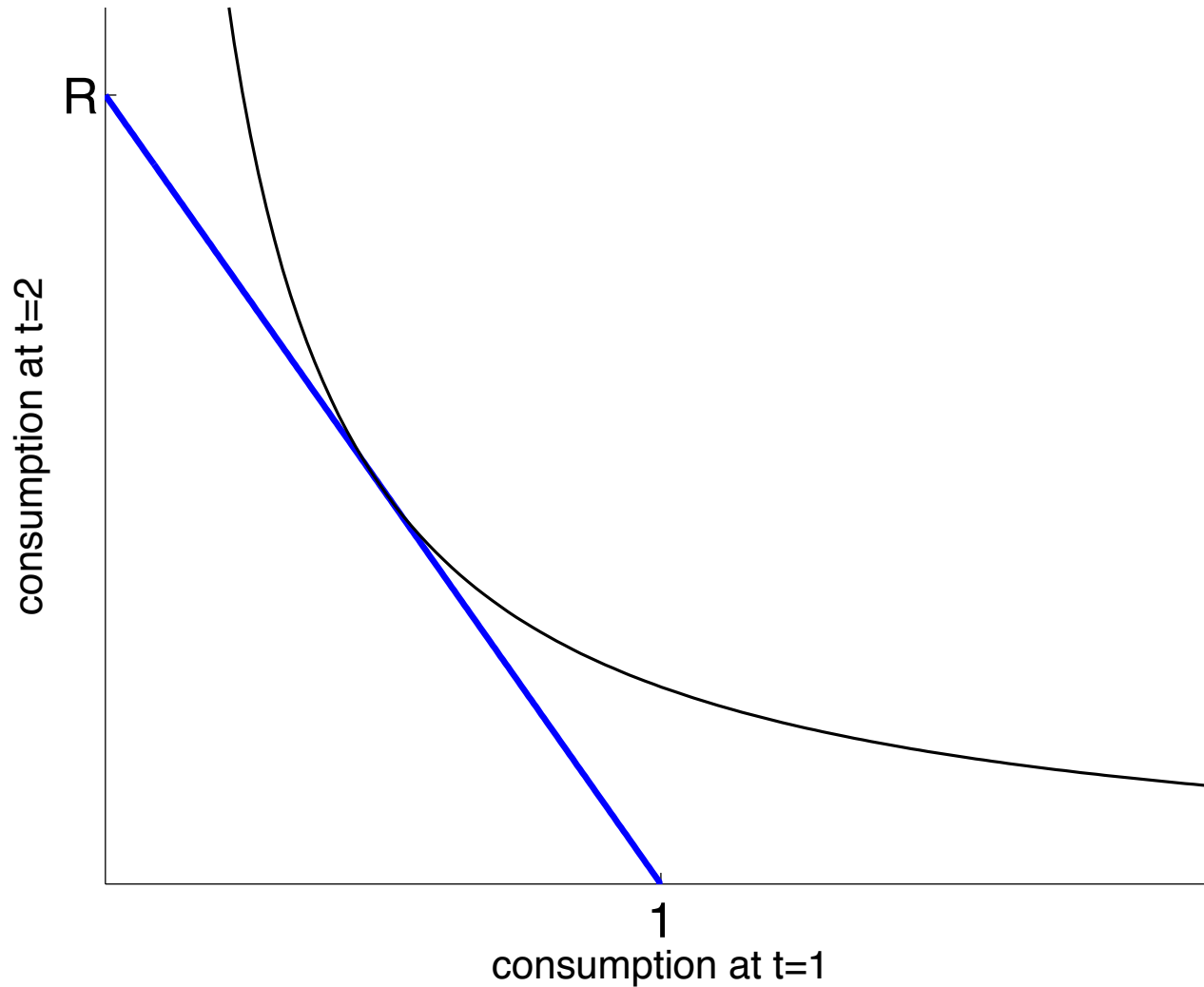
subject to:

$$t = 0 : \quad m_1 + a = 1$$

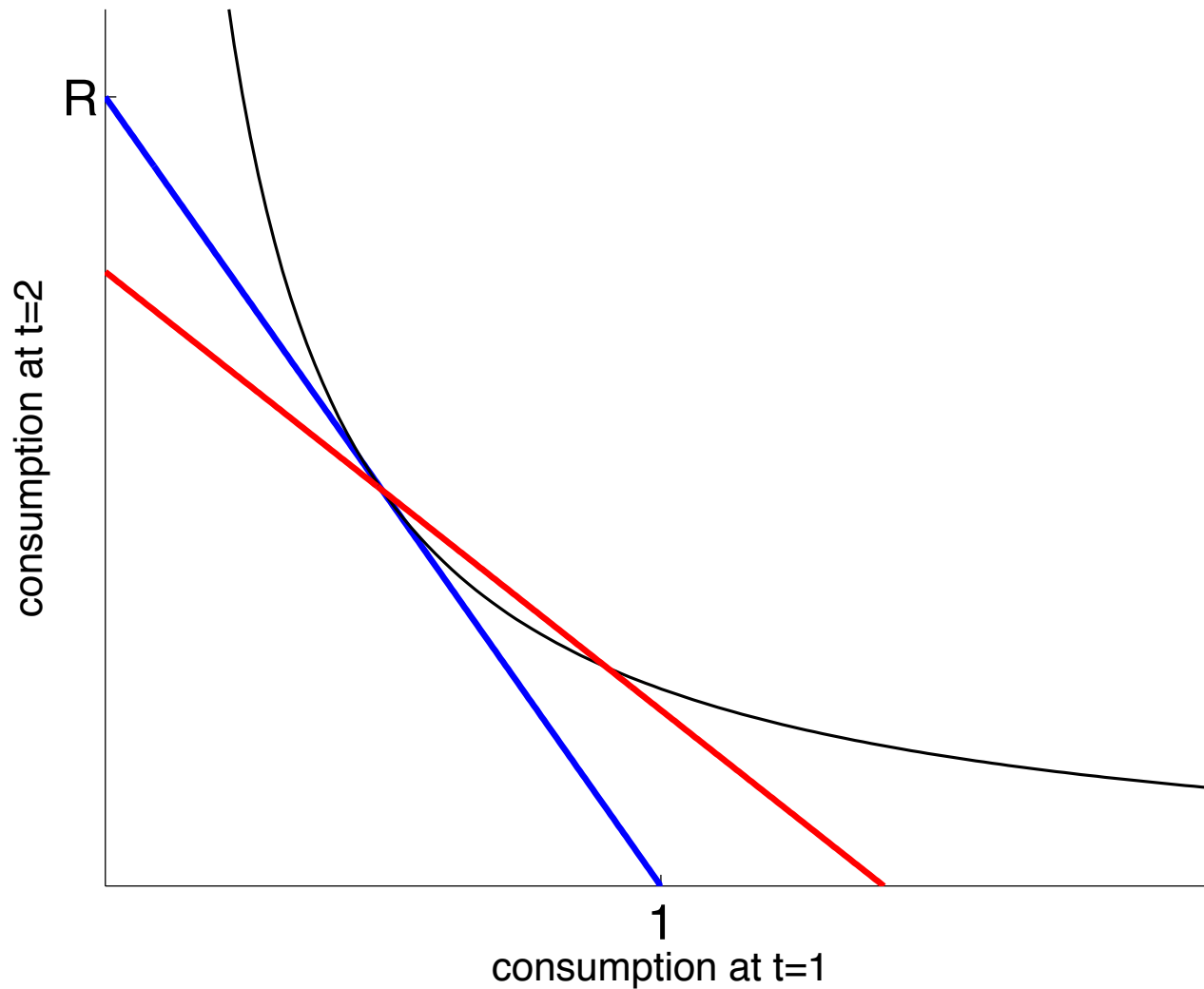
$$t = 1 : \quad c_1 + m_2 = y_1 + m_1$$

$$t = 2 : \quad c_2 = y_2 + m_2 + Ra$$

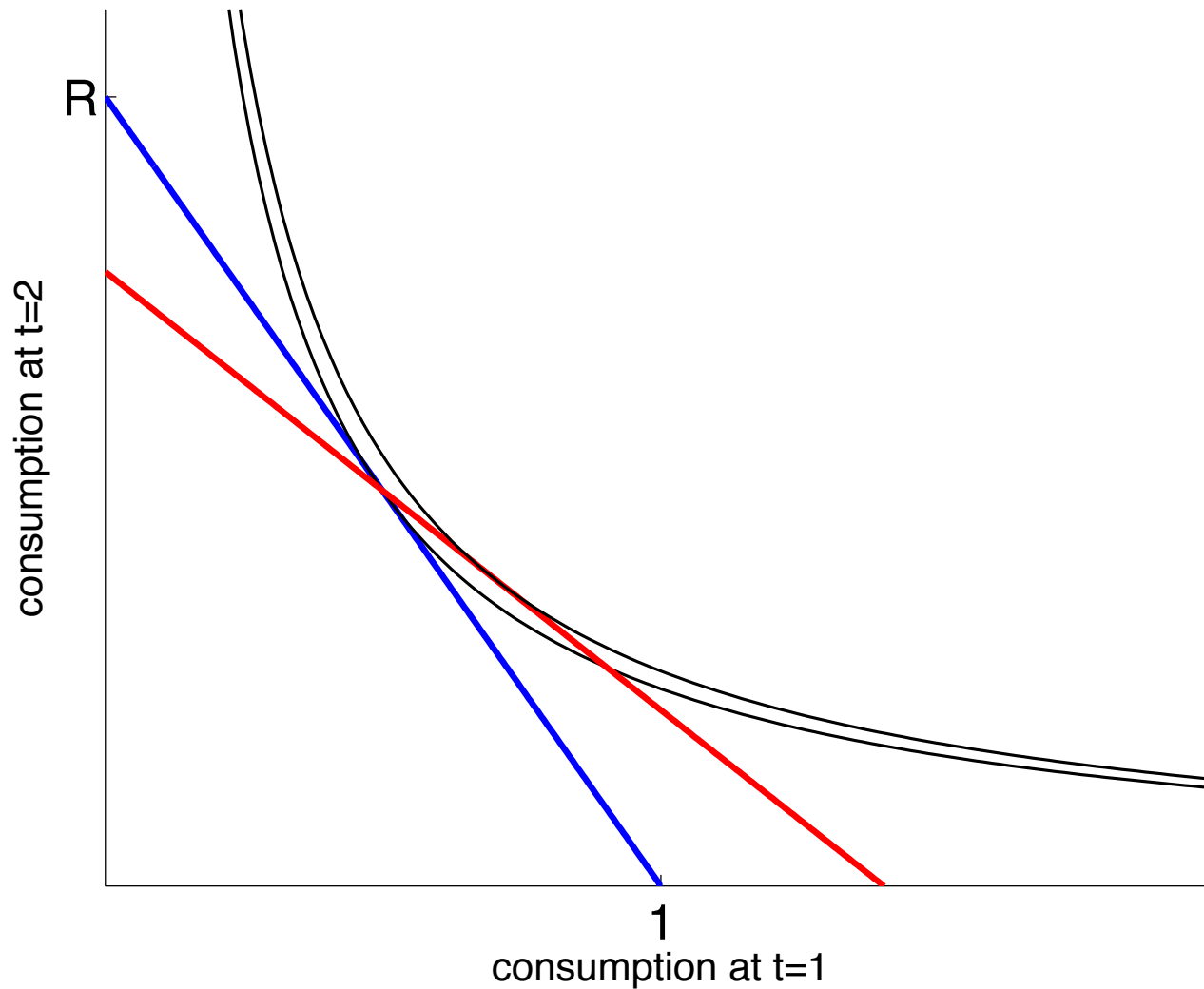
Optimal savings with an illiquid asset



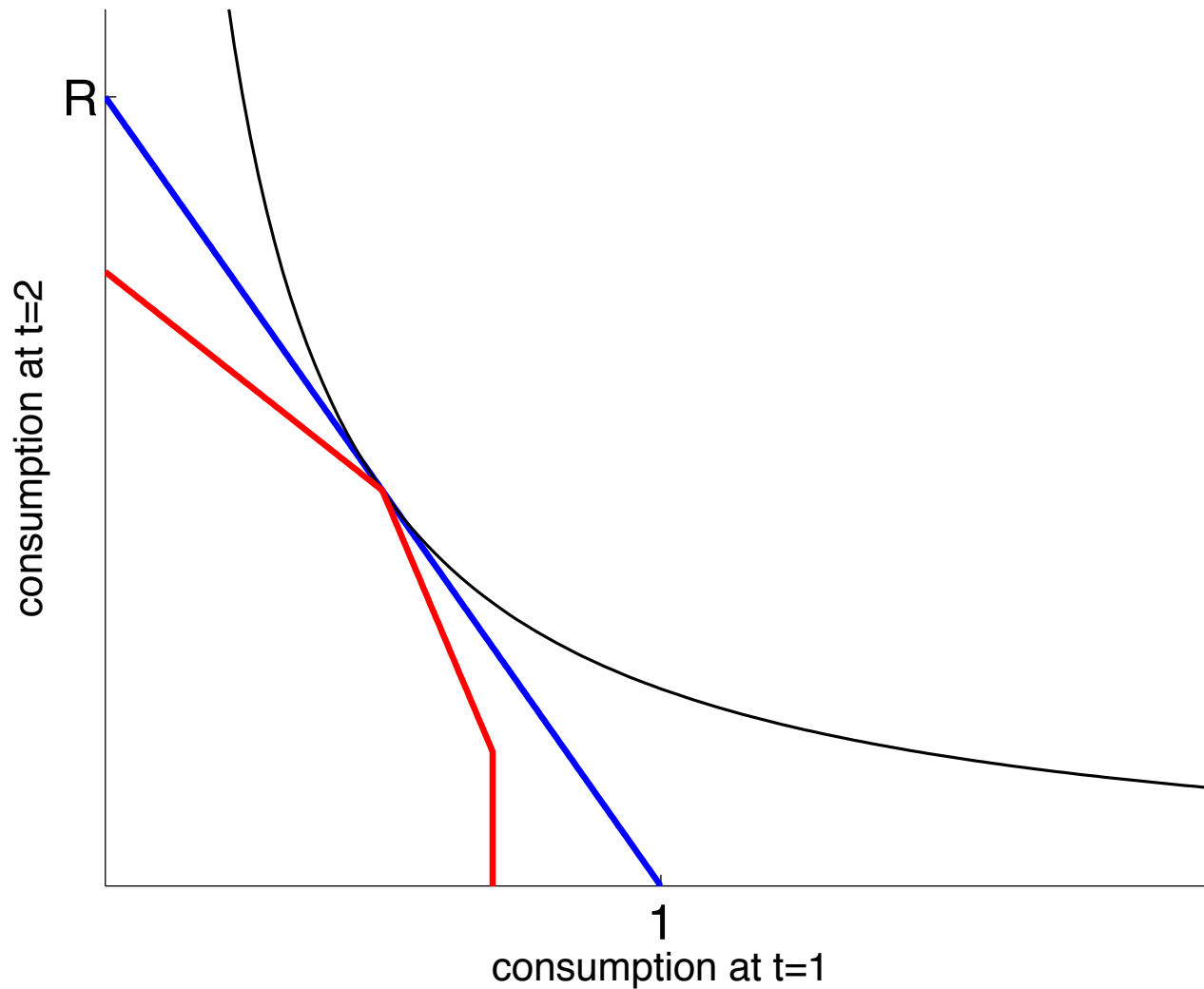
Optimal savings with an illiquid asset



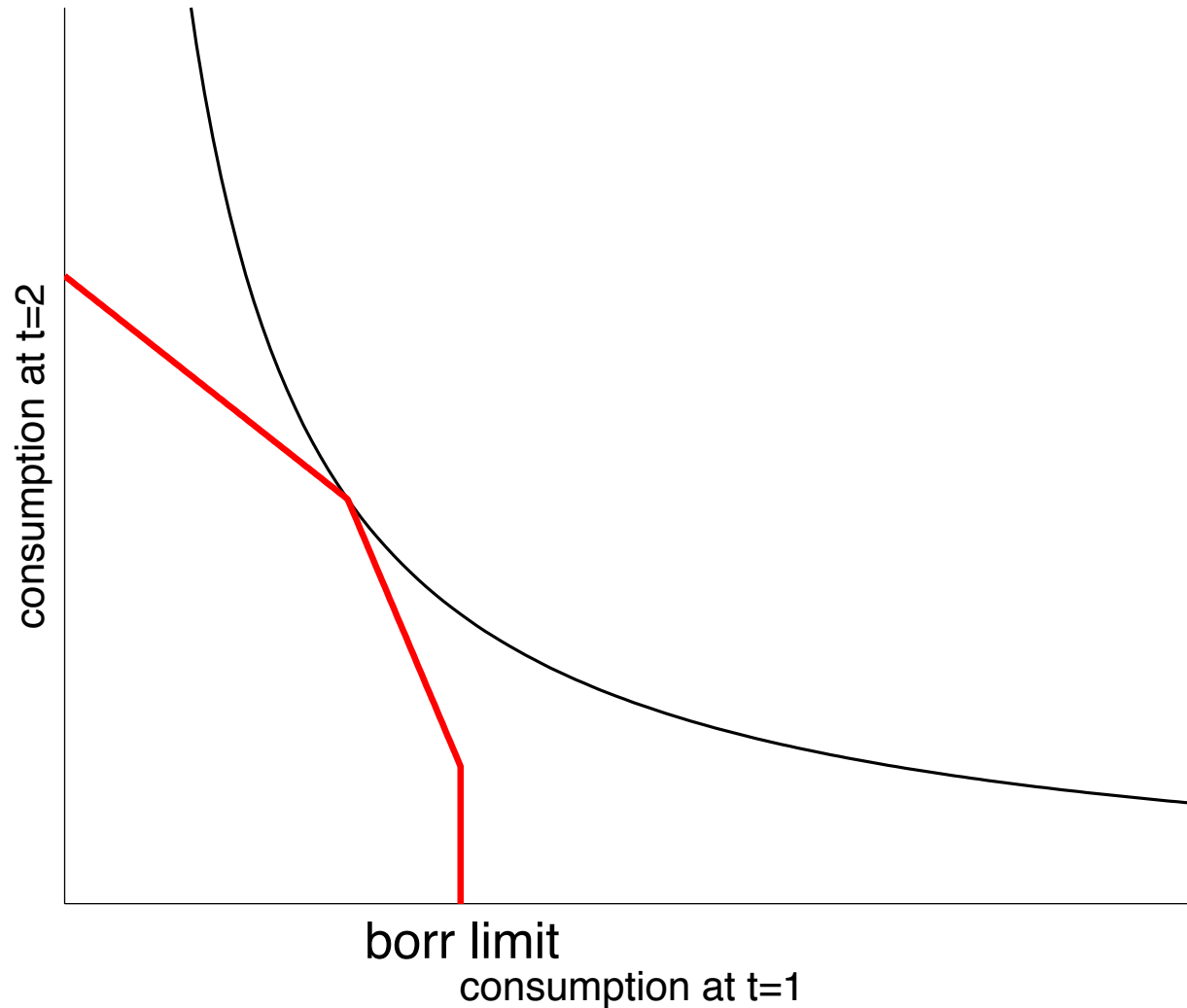
Optimal savings with an illiquid asset



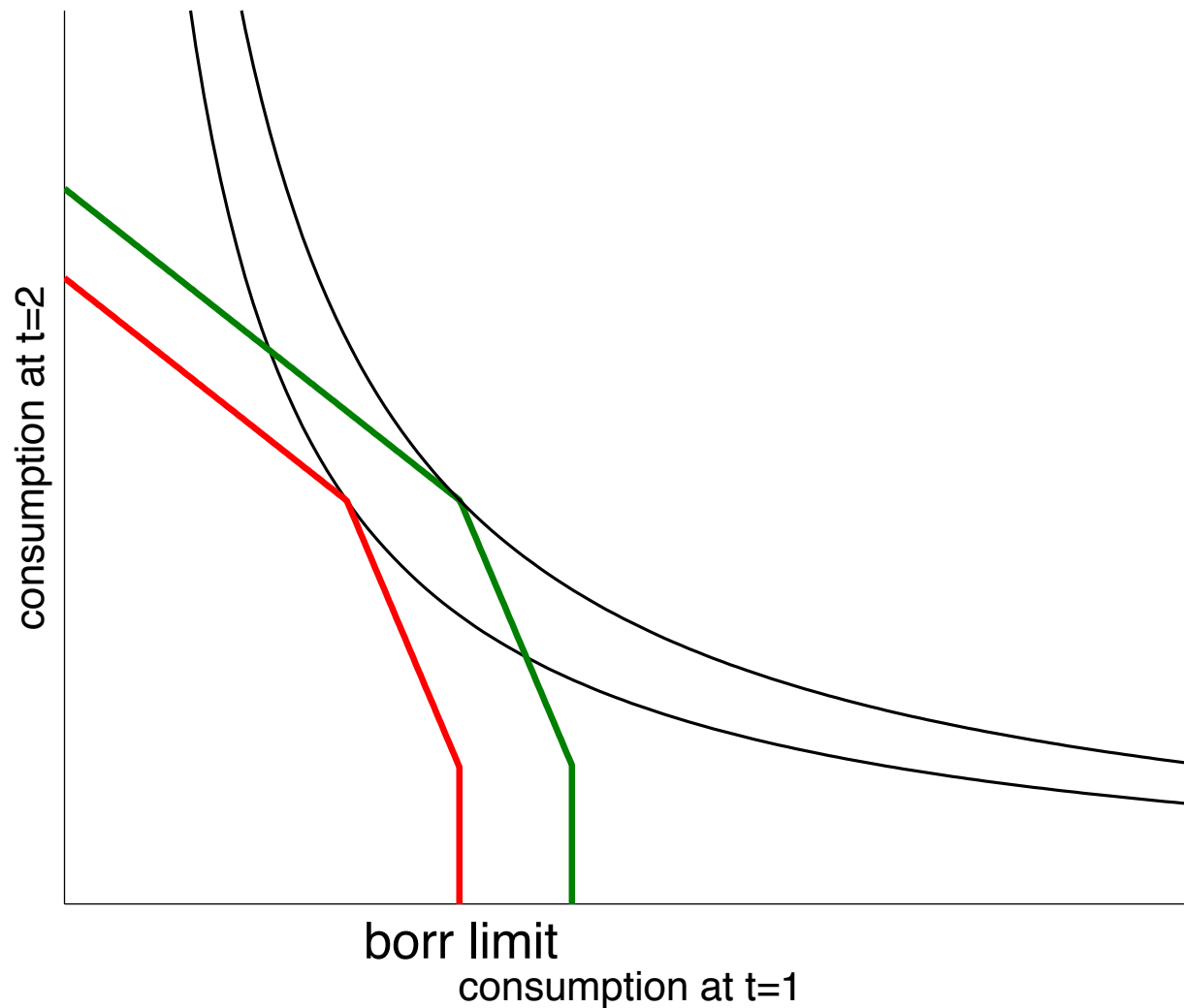
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Optimal savings with an illiquid asset



From theory to measurement

- Two kinks in household budget constraint:
 1. Zero liquid wealth ($m_2 = 0$)
 2. Credit limit ($m_2 = -\underline{m}$)
- HtM households end pay-period at one of these kinks

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- HtM households end pay-period at one of these kinks
- Mismatch in timing of c and y within a pay-period
- Survey data: HtM households may hold some liquid wealth:
 - HtM at zero kink have positive av. liquid wealth
 - HtM at credit limit have av. liquid wealth above limit

Identification of HtM in survey data

- Households with positive net liquid wealth:

P-HtM at the zero kink: $a_t = 0$ and $0 \leq m_t \leq m^*$

W-HtM at the zero kink: $a_t > 0$ and $0 \leq m_t \leq m^*$

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W-HtM at the zero kink: $a_t > 0$ and $0 \leq m_t \leq m^*$

- Households with **negative net liquid wealth**:

P-HtM at the credit limit: $a_t > 0$, $m_t < 0$, $m_t \leq m^* - \underline{m}$

W-HtM at the credit limit: $a_t = 0$, $m_t < 0$, $m_t \leq m^* - \underline{m}$

Bias in estimator of HtM share with $m^* = y_t/2$

1. Average balances: downward bias
 - It misses some HtM households
 - It never mistakes a N-HtM for HtM

Bias in estimator of HtM share with $m^* = y_t/2$

1. Average balances: downward bias

- It misses some HtM households
- It never mistakes a N-HtM for HtM

2. Balances at a random point during pay-period

- It misses some cases of HtM households
- It mistakes a N-HtM for HtM only if the household has liquid balances at the end of the pay-period $< y_t/2$ away from threshold

Survey data on household portfolios

- **United States:** Survey of Consumer Finances 1989-2010
- **Canada:** Survey of Financial Security 2005
- **Australia:** Household Income and Labour Dynamics 2010
- **United Kingdom:** Wealth and Assets Survey 2010
- **Germany, France, Italy and Spain:**
Household Finance and Consumption Survey 2008-2010

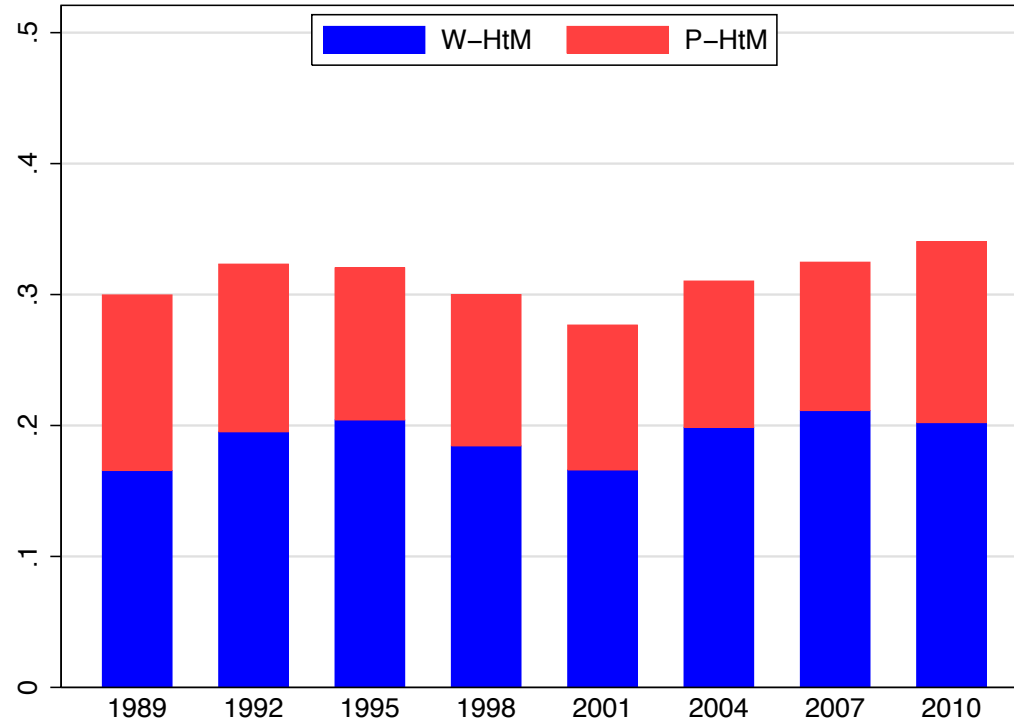
Sample selection: head 22-79 years, positive income

Sample size per survey: ~5,000 households (oversampling rich)

Empirical details

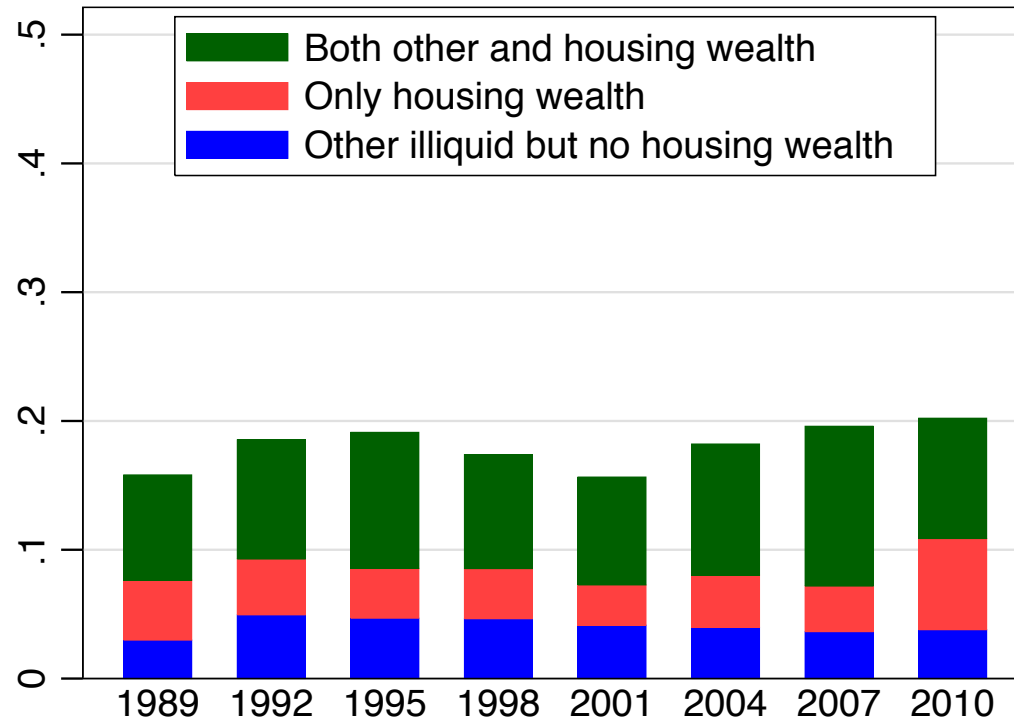
- **Pay-period:** Bi-weekly (supported by CEX)
- **Income:** All labor income plus government transfers that are regular inflows of liquid wealth, **before taxes**
- **Liquid wealth:** Checking, savings, money market and call accounts plus directly held mutual funds, stocks and corporate bonds, plus **imputed cash holdings**, net of **credit card debt**
- **Illiquid wealth:** Value of housing and real estate net of mortgages and HELOC, private retirement accounts, cash value of life insurance, certificates of deposit and saving bonds
- **Borrowing limit:** One month of income

How large is the share of HtM in the US?



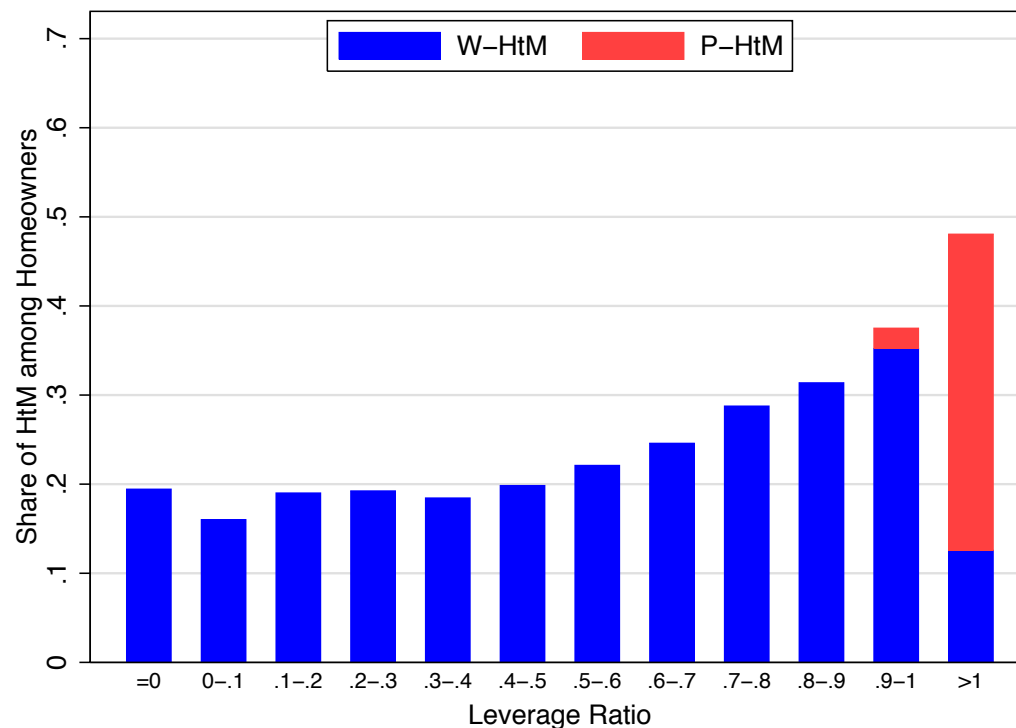
- 30% of US households are HtM, 2/3 of which are W-HtM

What is the portfolio composition of the W-HtM?



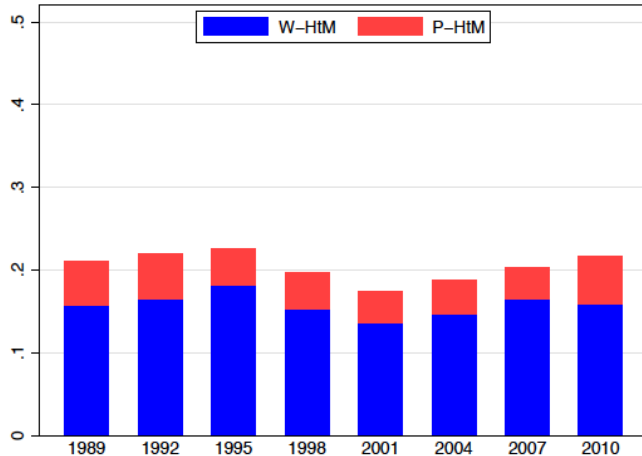
- Mostly homeowners, but 1/5 of W-HtM do not own real estate

W-HtM among homeowners, by leverage

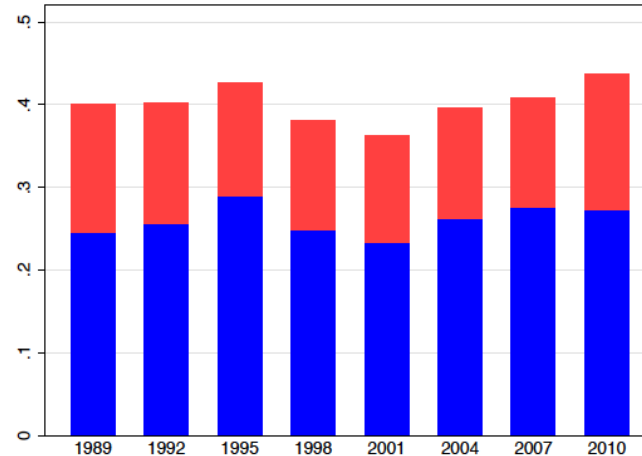


- Leverage ratio is a strong predictor of HtM status

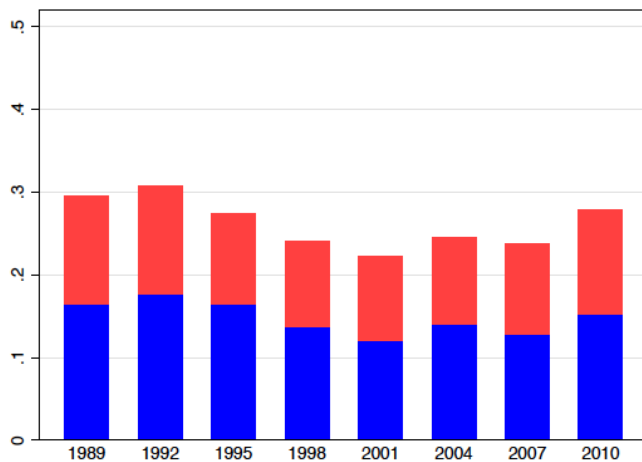
W-HtM are a robust feature of portfolio data



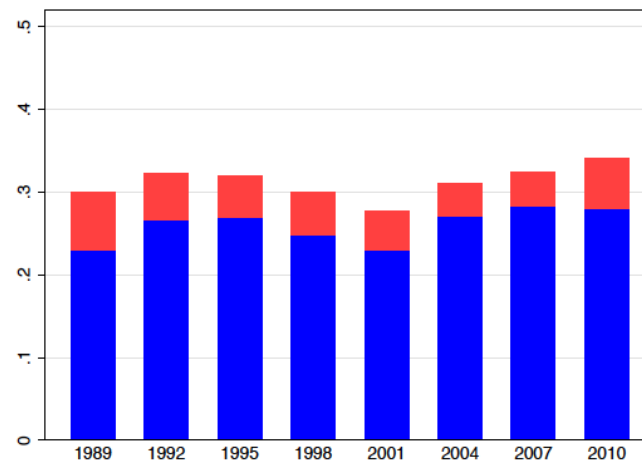
(a) Income-weighted share of HtM



(b) Pay-period of 1 month

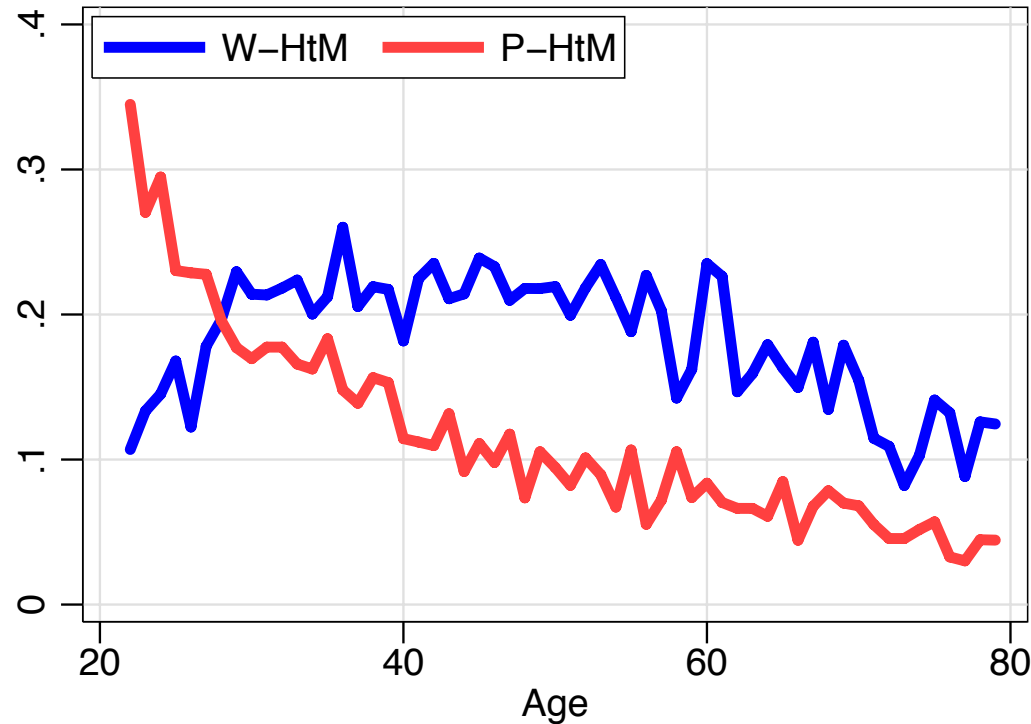


(c) Reported credit limit



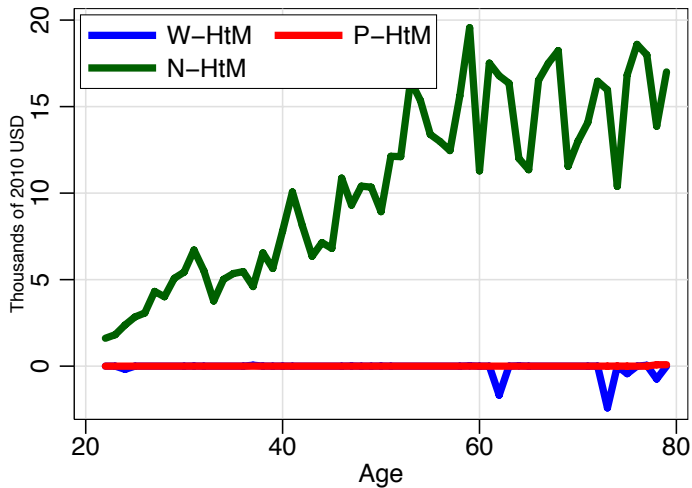
(d) Vehicles in illiquid wealth

Age profile of HtM households?

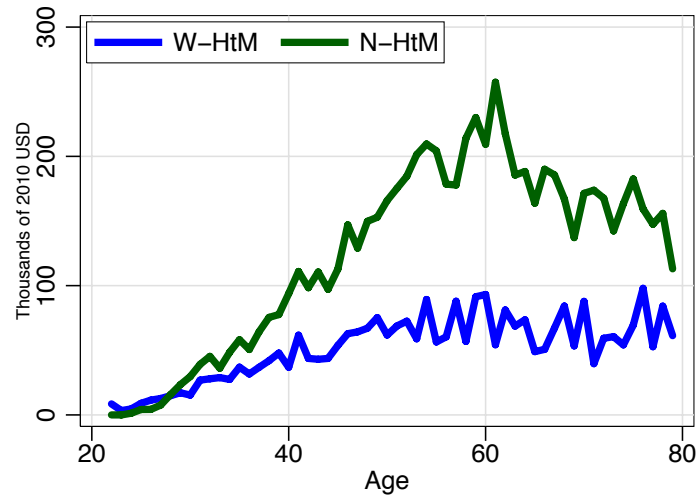


- P-HtM: young households
- W-HtM: middle-age households

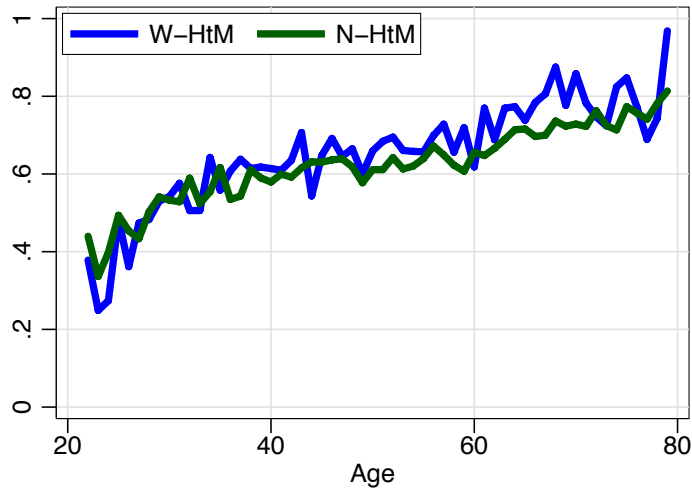
Do W-HtM look more like P-HtM or N-HtM?



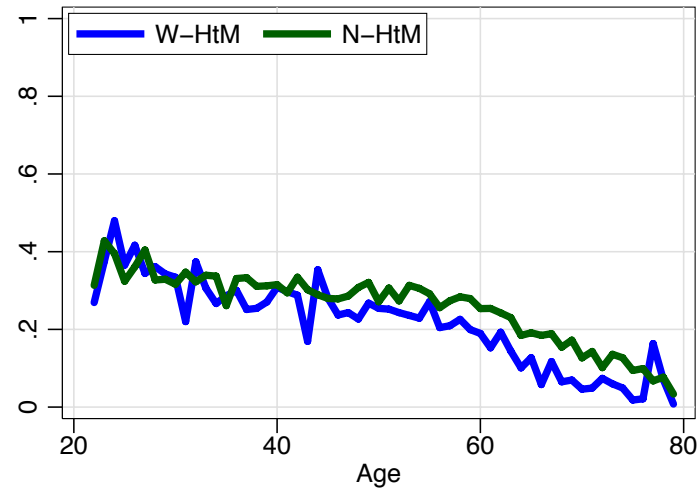
(a) Median net liquid wealth



(b) Median net illiquid wealth

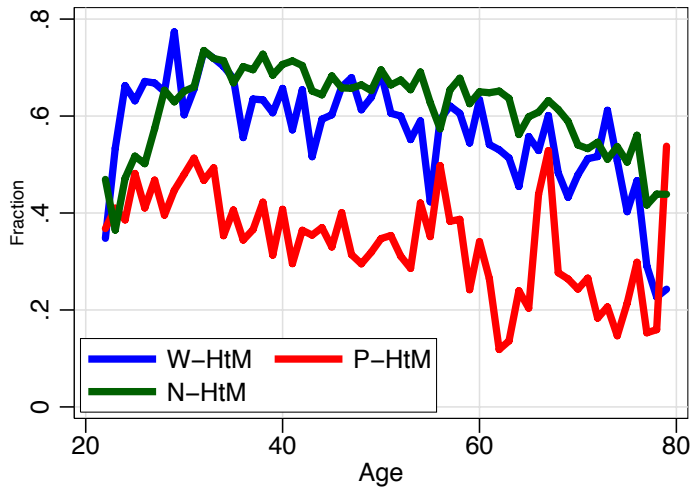


(c) Portfolio share: housing

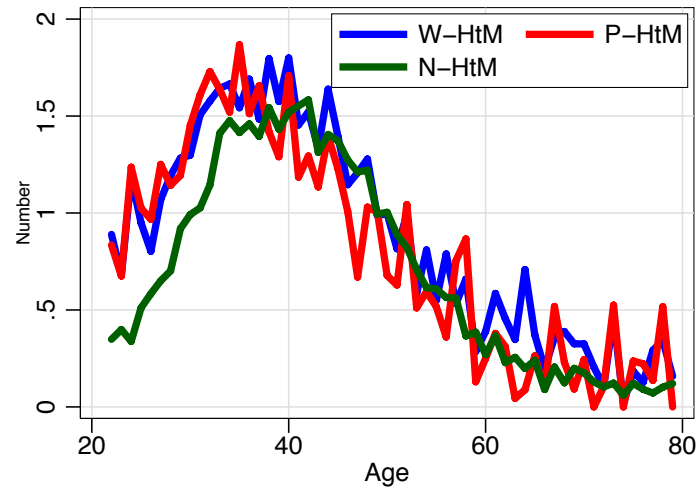


(d) Portfolio share: retirement accounts

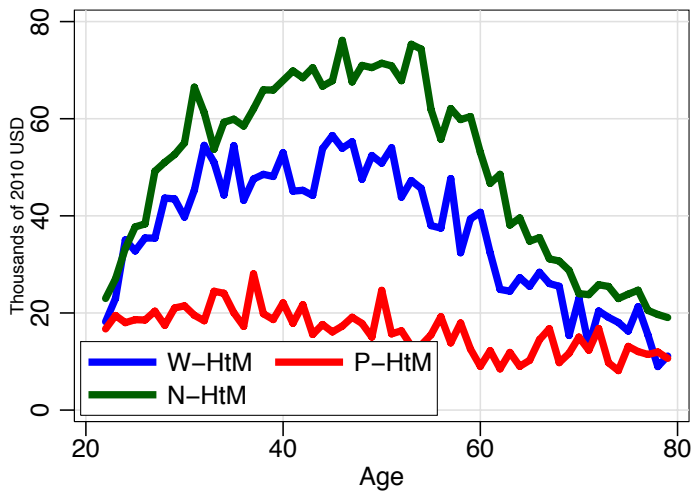
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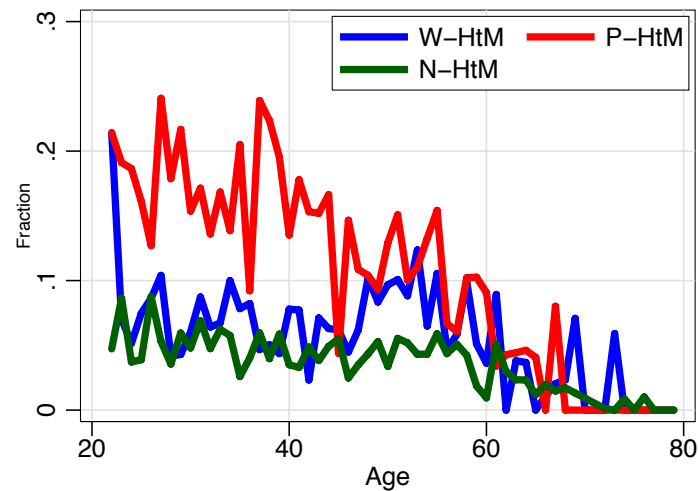
(a) Fraction married



(b) Number of children



(c) Median income



(d) Frac w/ unemp member

Persistence of HtM status

2007 to 2009	P	W	N
P	0.548	0.127	0.326
W	0.101	0.455	0.444
N	0.055	0.129	0.816
Ergodic	0.126	0.191	0.683

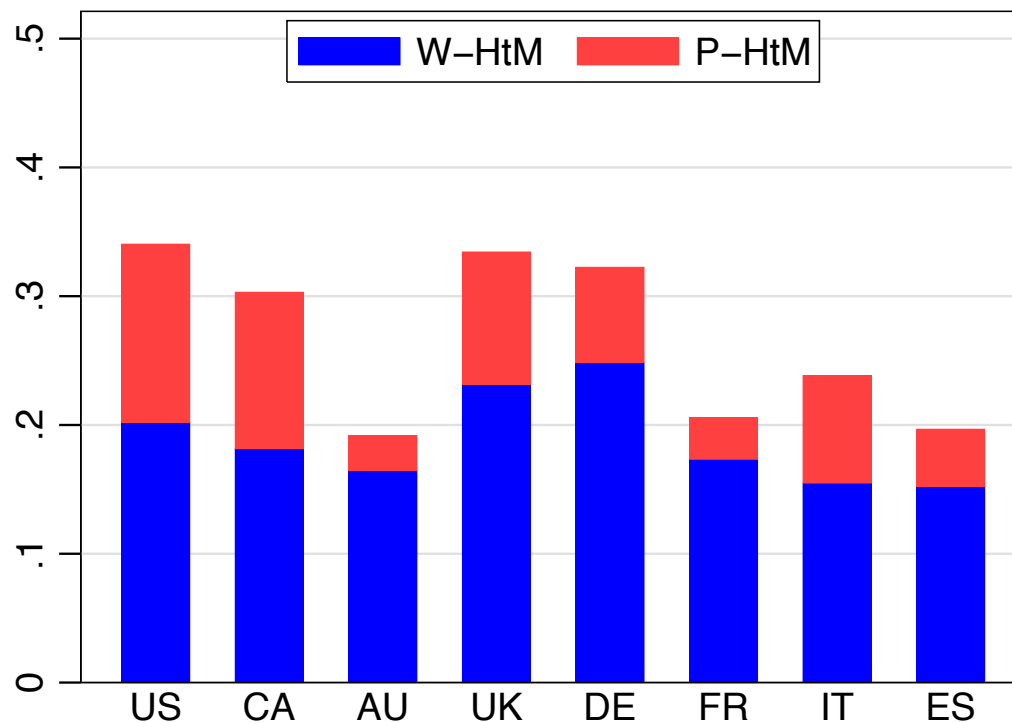
- Expected durations:

P-HtM status: 4.5 years

W-HtM status: 3.5 years

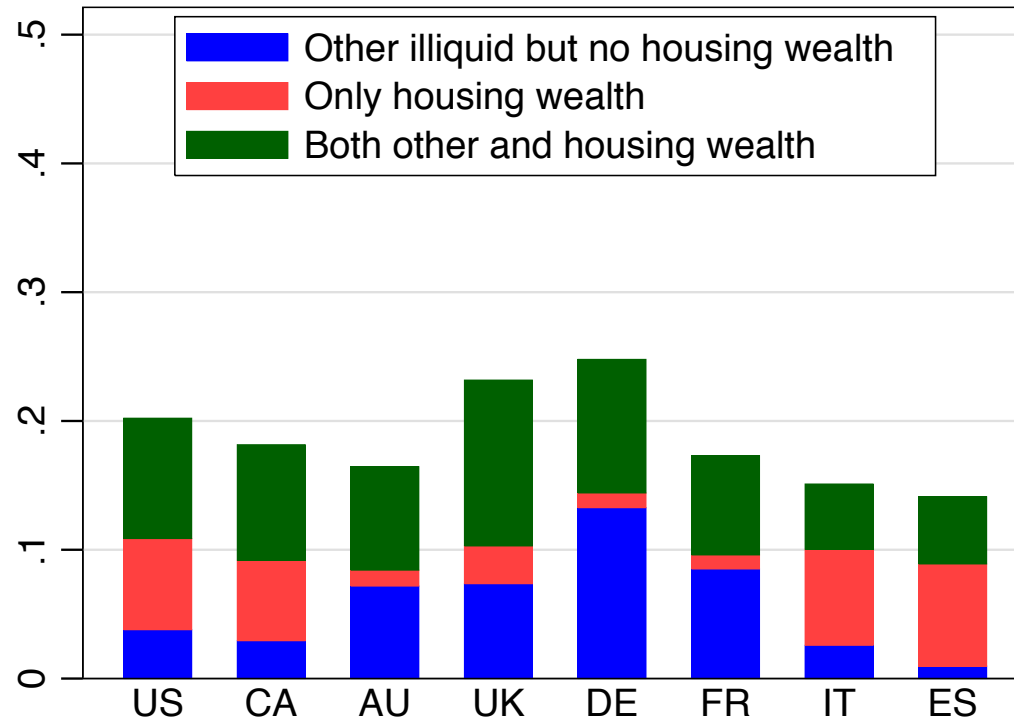
N-HtM status: 11 years

Share of HtM across countries



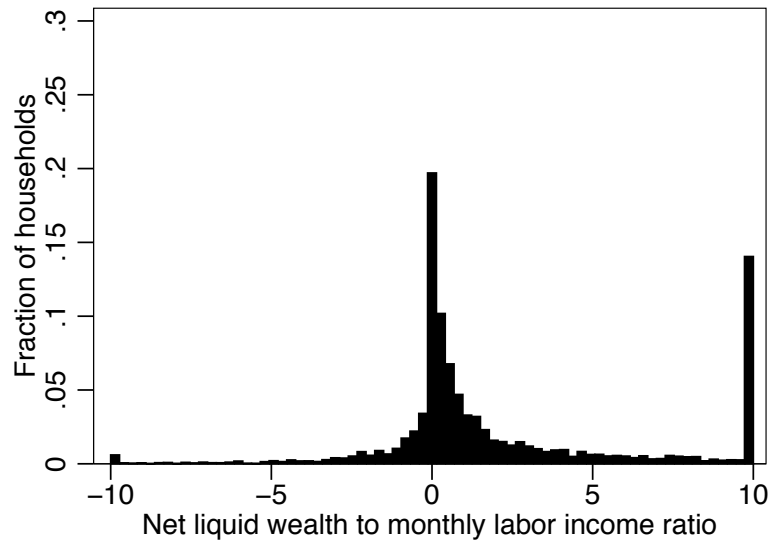
- Substantial cross-country variation in share of HtM
- In all countries, twice as many W-HtM as P-HtM

Portfolios of W-HtM across countries

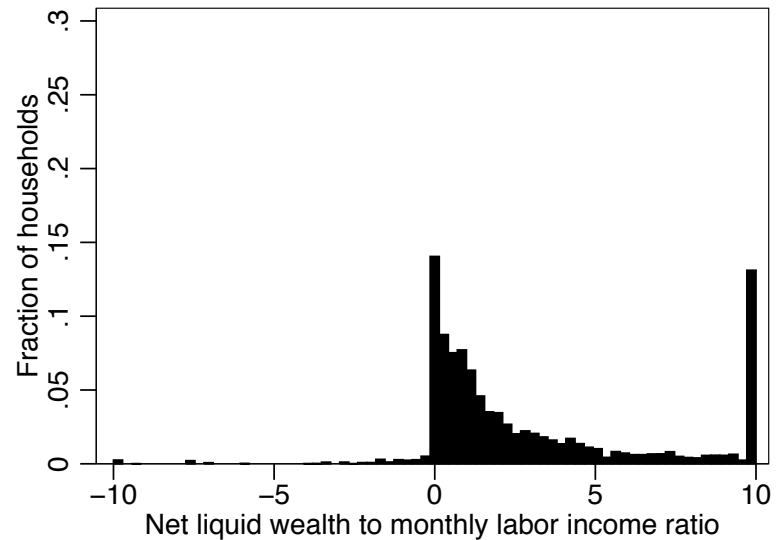


- Large differences in portfolio composition across countries

Liquid wealth holdings across countries



United States



Spain

- Higher liquid wealth in Europe possibly due to **lower credit availability**

MPC out of transitory income shocks

- Do W-HtM (and P-HtM) respond strongly to transitory y shocks?
- Challenges
 1. Require panel data on income, consumption and wealth
 2. Individual income shocks are not directly observed

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- Challenges
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- Solutions
 1. Bi-annual data from 1999-2011 waves of PSID
 2. Identification strategy from Blundell-Pistaferri-Preston (2008)

BPP identification strategy

- Residual log income is sum of random walk + IID components

$$\Delta y_{it} = \eta_{it} + \Delta \varepsilon_{it}$$

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- Then MPC can be estimated as:

$$\widehat{\text{MPC}}_\varepsilon \equiv \frac{\text{cov}(\Delta c_{it}, \Delta y_{i,t+1})}{\text{cov}(\Delta y_{it}, \Delta y_{i,t+1})}$$

Results of BPP estimation

	3 HtM groups			2 HtM groups	
	P-HtM	W-HtM	N-HtM	HtM-NW	N-HtM-NW
MPC out of transitory income shock	0.243	0.301	0.127	0.229	0.201
	(0.065)	(0.048)	(0.036)	(0.054)	(0.030)

- W-HtM have largest point estimate for MPC
- Significantly different from estimated MPC for N-HtM
- Split based on net worth uninformative

Implications of W-HtM for fiscal policy

- Failure to treat W-HtM as distinct group leads to distorted view of the effects of fiscal policy:
 1. Aggregate consumption response to lump-sum transfer (FSP)
 2. Size asymmetry in response to FSP
 3. Effects of targeted FSP (e.g. age targeting, income targeting)
 4. Cross country differences in aggregate C response to FSP

Three alternative frameworks

SIM-2: Standard Incomplete Markets model with 2 assets

- Kaplan and Violante (2014): transaction cost of \$1,000
- Three types: P-HtM, W-HtM and N-HtM

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SIM-1: Standard Incomplete Markets model with 1 asset

- One asset version of KV, calibrated to net worth
- Fewer HtM: misses all W-HtM

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SP-S: SPender-Saver model

- Spenders ($c = y$) and Savers (forward looking as in SIM-1)
- Correct number of HtM, but exaggerates their MPC (=1)

MPCs out of \$500 in each model

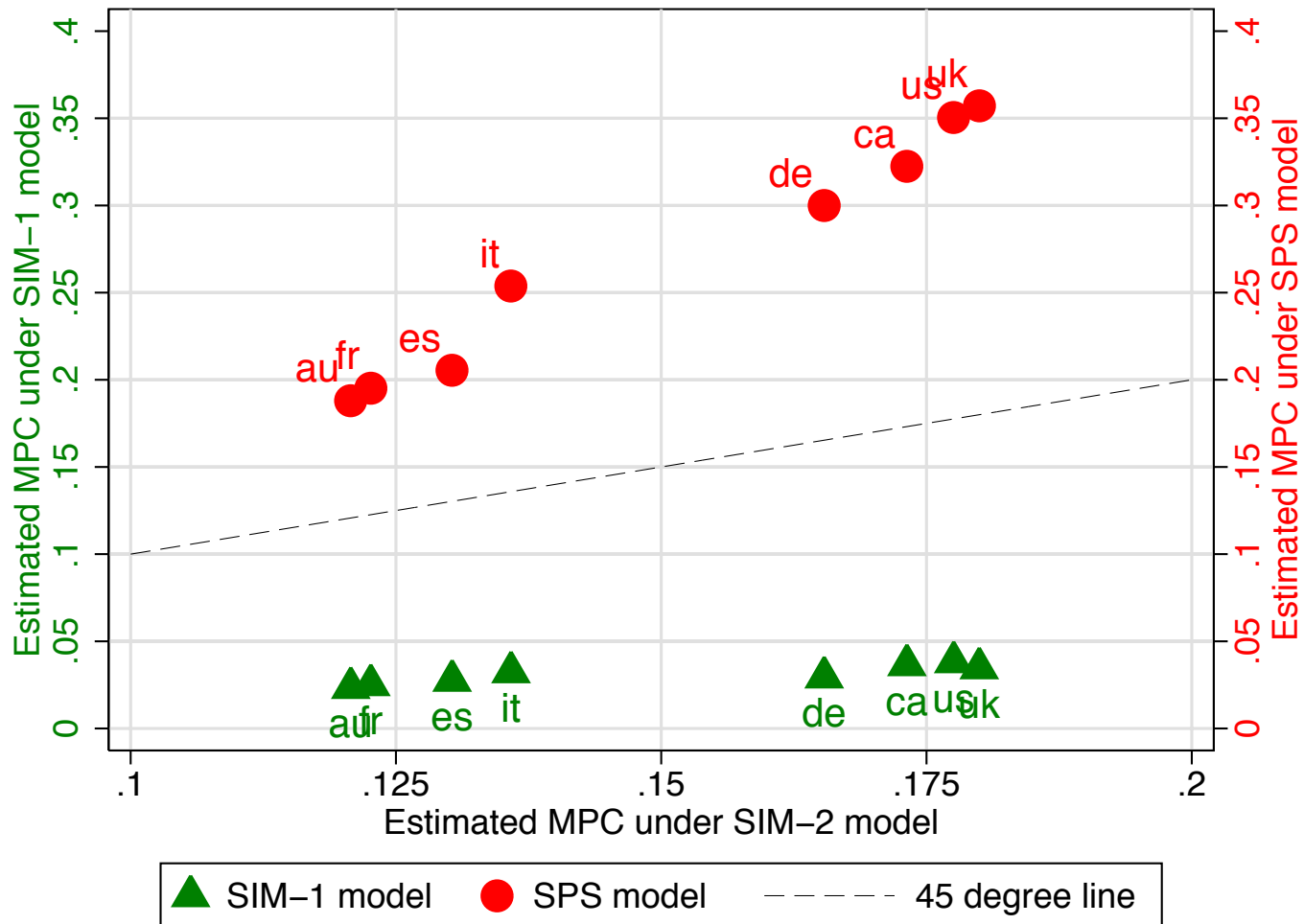
	SIM-2			SIM-1		SP-S	
	P-HtM	W-HtM	N-HtM	HtM	N-HtM	HtM	N-HtM
Average	0.35	0.44	0.06	0.14	0.02	1.00	0.02
Low income	0.34	0.37	0.16	0.15	0.04	1.00	0.04
Middle Income	0.38	0.44	0.09	0.11	0.02	1.00	0.02
High income	0.31	0.52	-0.02	0.12	0.01	1.00	0.01
Age <= 40	0.38	0.42	0.08	0.16	0.02	1.00	0.02
Age 40-60	0.30	0.42	0.01	0.11	0.01	1.00	0.01
Age>60	0.39	0.51	0.13	0.04	0.04	1.00	0.04

- Use group shares from 2010 Survey of Consumer Finances (US)

Aggregate quarterly MPC

Transfer size	SIM-2	SIM-1	SP-S
\$500	0.18	0.04	0.35
<u>Size asymmetry</u>			
\$50	0.29	0.05	0.35
\$2000	0.05	0.03	0.35
<u>Income targeting</u>			
\$500 - bottom tercile	0.26	0.07	0.50
\$500 – top tercile	0.20	0.03	0.34

Cross-country differences in aggregate MPC out of \$500



Not all HtM households are created equal ...

P-HtM	W-HtM
1/10 population	1/5 population
young	middle age
low income	middle income
no wealth	substantial illiquid wealth
	portfolio like N-HtM
persistent state	more transient

... and it matters!

P-HtM	W-HtM
small shocks: high MPC	small shocks: high MPC
large shocks: high MPC	large shocks: small MPC
target low income	target middle income