Mortgage lending standards: Implications for consumption dynamics

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This paper

Question: To what extent do stricter mortgage lending standards affect consumption responses to unexpected shocks?

What we do: Dissect consumption responses (MPC) to shocks in a heterogeneous-agent model

- Model: Bewley-Huggett-Aiyagari model with housing, mortgages, and credit constraints
- Shock: one-period negative shock to liquid wealth (income)
- Lending requirements: loan-to-value (LTV) and payment-to-income (PTI)
- Policies: permanent and one-period temporary changes of lending requirements
- Our focus: immediate demand response

What we find

Permanently stricter LTV and PTI requirements **do not** materially affect consumption dynamics

- Aggregate consumption, and its dynamics, remain very similar
- Even the distribution of MPCs is unchanged
- Why?
  - Households desire for self-insurance is driven by deep parameters
  - Households adjust their behavior to the new constraints

Temporary stricter LTV and PTI requirements **do** affect aggregate consumption dynamics

- Dampens consumption fluctuations significantly
- Can be welfare improving on average, but only under very particular circumstances

Model

- Bewley-Huggett-Aiyagari life-cycle model, with overlapping generations
- Preferences: Households derive utility from non-durable consumption c and housing services s
- Assets: Houses h, liquid bonds b, and mortgages m
- Mortgage features: Long-term (non-defaultable) mortgages
  - Payment schedule with minimum payment $\chi_j m$
  - Household who stays in a house can deviate from the schedule, but incurs a fixed refinance cost ς^r
  - When taking up a new mortgage, the household must abide by two constraints:

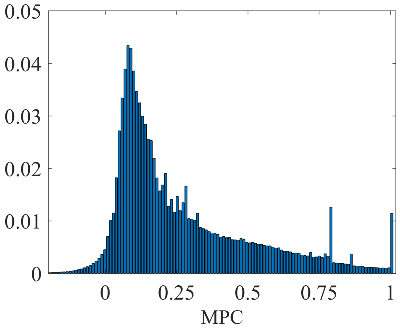
$$m' \leq (1-\theta) p_h h' \qquad \text{LTV requirement}$$

$$\left(\frac{\chi_{j+1} m' + (\tau^h + \varsigma^I) p_h h'}{z} \right) \leq \psi \qquad \text{PTI requirement}$$

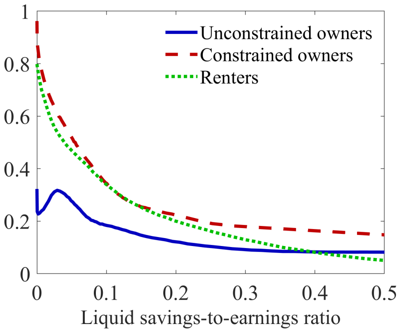
MPC in a housing model

- The model creates significant heterogeneity in consumption responses
- Credit constraints matter - generates wealthy hand-to-mouth consumers

(a) MPC distribution



(b) MPC across liquid savings-to-earnings

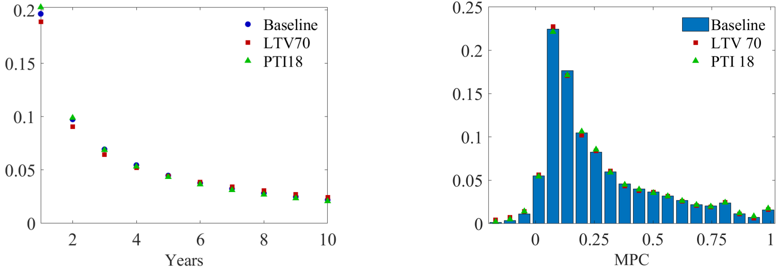


Can permanently stricter borrowing standards alter consumption dynamics?

	Baseline	Stricter LTV	Stricter PTI
Max LTV	0.90	0.70	0.90
Max PTI	0.28	0.28	0.18
House price	1	0.965	0.959
Rent	0.086	0.086	0.086
Homeownership rate	0.674	0.605	0.647
Median house-to-earnings ratio	2.259	2.164	2.134
Mean net worth age 75 over 50	1.637	1.401	1.633
Median loan-to-value ratio	0.339	0.147	0.250
Mean net worth, over mean earnings	1.381	1.477	1.379
Mean liquid savings-to-earnings	0.752	0.765	0.765

(A) Mean MPC over time

(B) Distribution of MPCs in $t = 1$



Why are permanent policies ineffective?

Precautionary savings:

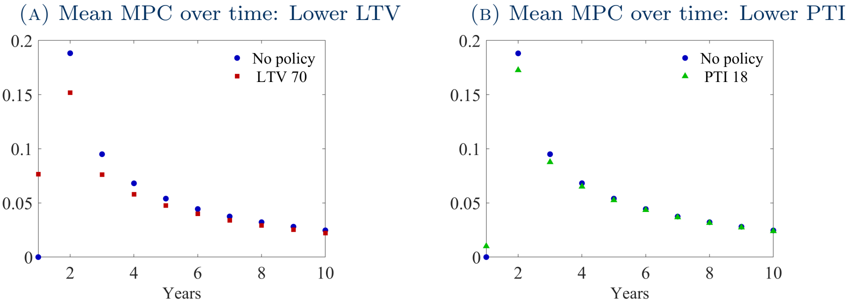
- Driven by the desire to insure against negative income shocks
- Largely governed by deep parameters (e.g., σ) rather than the regulatory environment

$\Rightarrow$ Households alter portfolio such that they are (on average) equally well insured

- Results are robust to changing the sign and magnitude of the shock
- Results are robust to stricter policies

Can temporarily stricter borrowing standards alter consumption dynamics?

Experiment: Tighten credit in $t = 1$, let households experience a negative shock in $t = 2$



- A temporarily tighter policy lowers consumption and increases savings in $t = 1$ compared to the baseline
- As a result, the fall in consumption is smaller than the baseline, both in $t = 2$ when the shock occurs and all subsequent periods

Concluding remarks

Permanently stricter LTV and PTI constraints do not materially affect the:

- Aggregate consumption dynamics
- Distribution of MPCs

Intuition: households' motive to self-insure is unchanged

Temporary stricter lending standards do alter consumption dynamics

- Tighter credit leads to more savings
- More savings make households better insured