

Managing a Housing Boom

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Discussion by

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Overview

- **Setup**
 - GE model with LTV/PTI limits that bind differently across mortgage market segments
- **Questions**
 - How do house prices respond to demand shocks?
 - How do changes in PTI/LTV limits in each segment affect house prices?
- **Key Results**
 - Fixed PTI limits less effective in moderating housing booms in two-segment model
 - Tightening PTI limits decreases housing demand by less in two-segment model
 - Effect of tightening LTV limits depends on which segment is targeted
- **My Take**
 - Great setup, a ton of interesting economics, well-suited for policy evaluation!
 - Do more to disentangle relative importance of different mechanisms
 - Provide more support for these mechanisms in the data

Focus of My Comments

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Simple Example: One Segment Only

One-segment model

- Income: $y = \$50\text{K}$
- Required consumption: $\bar{c} = \$25\text{K} \rightarrow$ assume yields no utility so also optimal
- Interest rate: $r = 0 \rightarrow$ will borrow as much as possible
- Borrowing limit: $m \leq \min\{2y, h\}$

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One-segment model

- Income: $y = \$50\text{K}$
- Required consumption: $\bar{c} = \$25\text{K}$
- Interest rate: $r = 0$
- Borrowing limit: $m \leq \min\{2y, h\}$
- Ideal house size: $h^* = \$125\text{K}$
 - Mortgage: $m^* = \$100\text{K} = 2y < h^*$
 - Down payment: $d^* = \$25\text{K}$
 - Consumption: $c^* = \bar{c} = y - d^* = \25K

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- Why a \$125K house and not \$126K?
 - This would cost another \$1K out of pocket and I need that money to eat!

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One-segment model, tighter PTI limit

- Borrowing limit: $m \leq \min\{1.5y, h\} = \min\{\$75\text{K}, h\}$

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One-segment model, tighter PTI limit

- Borrowing limit: $m \leq \min\{1.5y, h\} = \min\{\$75\text{K}, h\}$
- Dream house now costs me $\$125\text{K} - \$75\text{K} = \$50\text{K}$ and I can't eat!

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One-segment model, tighter PTI limit

- Borrowing limit: $m \leq \min\{1.5y, h\} = \min\{\$75\text{K}, h\}$
- Dream house now costs me $\$125\text{K} - \$75\text{K} = \$50\text{K}$ and I can't eat!
- So I dream smaller: $h^* = \$100\text{K}$
 - Mortgage: $m^* = \$75\text{K} = 1.5y < h^*$
 - Down payment: $d^* = \$25\text{K}$
 - Consumption: $c^* = \bar{c} = y - d^* = \25K

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- Dream house now costs me $\$125\text{K} - \$75\text{K} = \$50\text{K}$ and I can't eat!
- So I dream smaller: $h^* = \$100\text{K}$
- **Tightening PTI limit reduces housing demand**

Simple Example: Two Segments, Two Mechanisms

Segment 1: tight PTI, loose LTV

- Borrowing limit: $m \leq \min\{1.5y, h\} = \min\{\$75K, h\}$
- Chosen house size: $h^* = \$100K < \$125K$ dream house

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- Borrowing limit: $m \leq \min\{1.5y, h\} = \min\{\$75K, h\}$
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Segment 2: loose PTI, tight LTV

- Borrowing limit: $m \leq 0.9h$

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Mechanism 1: Substitution

- If I switch segments, I can still afford my dream house!
 - House: $h^* = \$125K$
 - Mortgage: $m^* = \$100K < 0.9h^*$
 - Down payment: $d^* = \$25K$
 - Consumption: $c^* = \bar{c} = y - d^* = \$25K$

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Mechanism 1: Substitution

- Tightening PTI limit does not reduce housing demand

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Mechanism 1: Substitution

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Mechanism 2: Constraint switching

- If I switch segments, I can dream even bigger!
 - House: $h^* = \$250K$
 - Mortgage: $m^* = \$225K = 0.9h^*$
 - Down payment: $d^* = \$25K$
 - Consumption: $c^* = \bar{c} = y - d^* = \$25K$

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Mechanism 2: Constraint switching

- Tightening PTI limit *increases* housing demand

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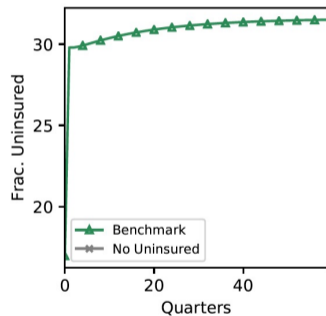
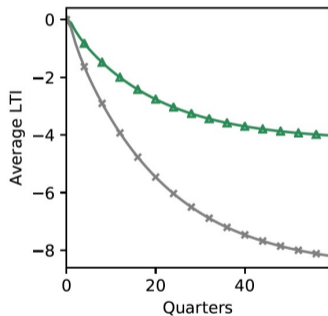
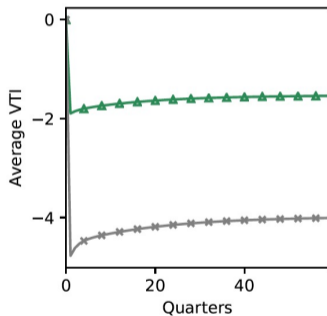
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What is the relative importance of these two mechanisms?

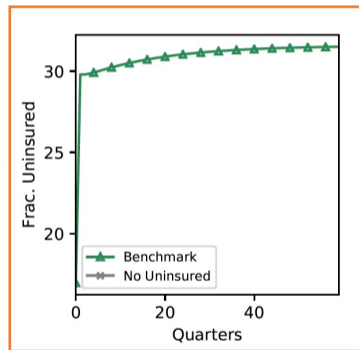
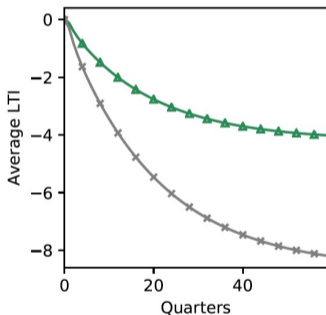
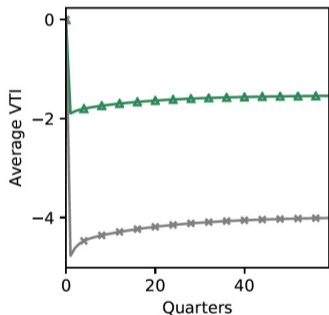
Key Result From the Paper

**Tightening the PTI limit in a two-segment model
reduces house prices and credit volume by less than it does in a one-segment model**



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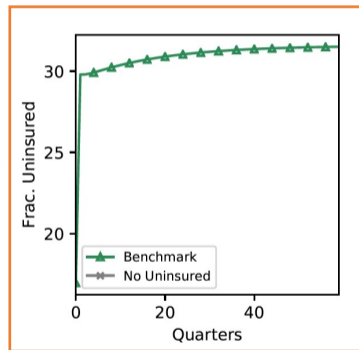
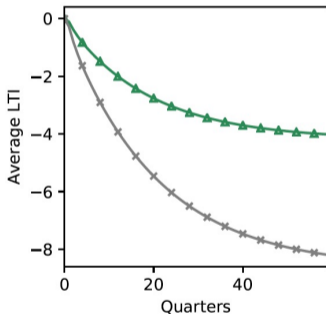
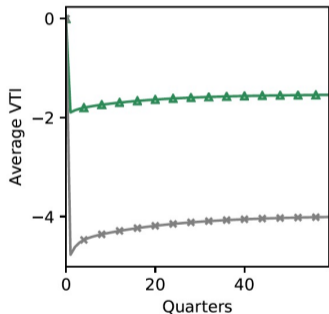
Tightening the PTI limit in a two-segment model reduces house prices and credit volume by less than it does in a one-segment model



How much of this is pure substitution-vs-increase in demand cond. on substituting?

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Can you provide empirical evidence for either mechanism in the data using the policy experiment you replicate in the model?

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