

Discussion of: A Policy Model to Analyze  
Macroprudential Regulations and Monetary Policy  
by Alpanda, Cateau and Meh  
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## **Background:** Canadian housing and mortgage market developments

- Real estate boom since 2000
  - Following 2007-2008 crisis, record low interest rates
  - Rise in household indebtedness worries policymakers
- ⇒ What policy tool is most appropriate to tame household indebtedness?

## **Discussion outline**

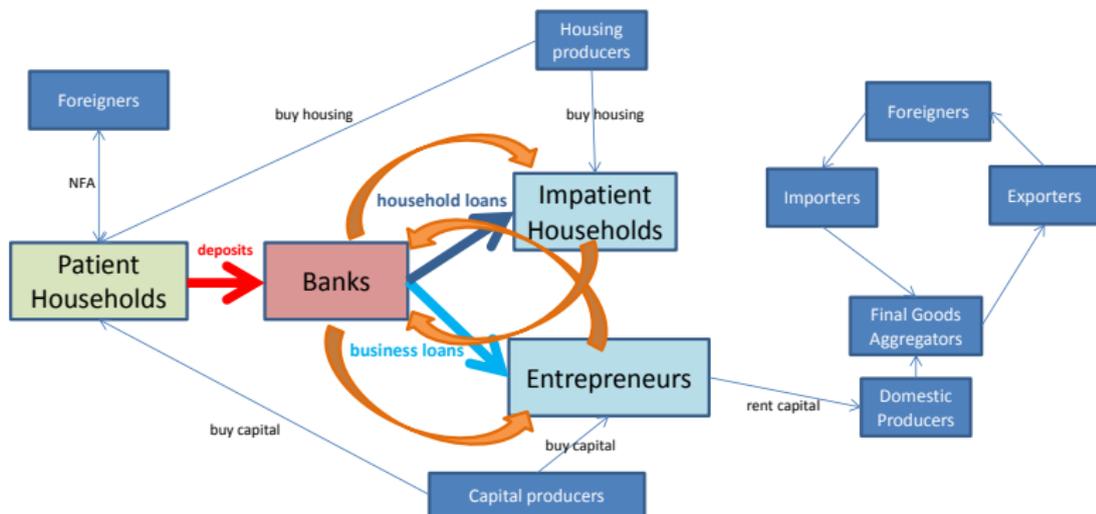
- Summary
  - ▶ Model
  - ▶ Results
- Comments
  - ▶ Consumption Dynamics following LTV shocks
  - ▶ Motivation for macroprudential policy?
  - ▶ Role of uncertainty
  - ▶ Welfare analysis

# Summary: Model - Contribution

- Builds on literature incorporating real-financial linkages into quantitative DSGE models
  - ▶ Carlstrom and Fuerst (1997), BGG (1999), Iacoviello (2005)
- Contributes to recent post-crisis agenda analyzing financial policy
  - ▶ Gertler and Karadi (2011), Gertler and Kiyotaki (2010), Curdia and Woodford (2011)
- **Novelty**
  - ▶ Joint analysis of LTV regulation, capital requirement and monetary policy in medium-scale DSGE with real, nominal and financial friction, featuring linkages between balance sheets of
    - banks
    - household borrowers
    - corporate borrowers

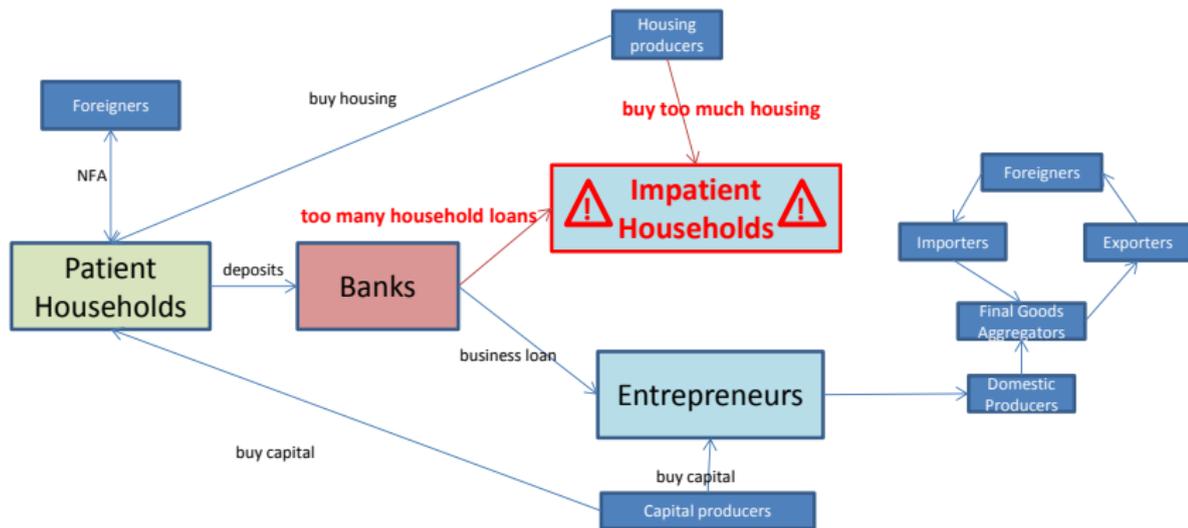
# Summary: Model - Key Frictions and Structure

- Key Frictions: monitoring costs  $\Upsilon$  when lending to
  - ▶ banks:  $\Upsilon_d$  decreasing in bank capital relative to cap. requirement
  - ▶ impatient HH:  $\Upsilon_l$  decreasing in net worth relative to regulatory LTV
  - ▶ entrepreneurs:  $\Upsilon_E$  decreasing in net worth relative to SS net worth
- Generates linkages between credit conditions faced by these sets of agents
- Structure



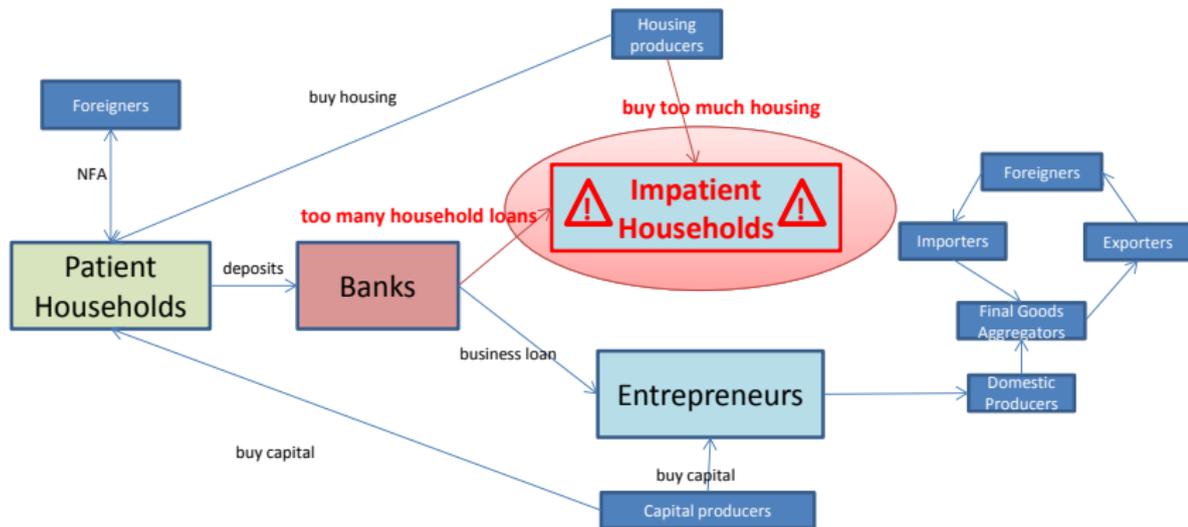
# Summary: Question & Results

- How to best deal with excessive household indebtedness?
  - ① household LTV (most targeted)
  - ② capital requirement (2nd most targeted)
  - ③ monetary policy (least targeted)



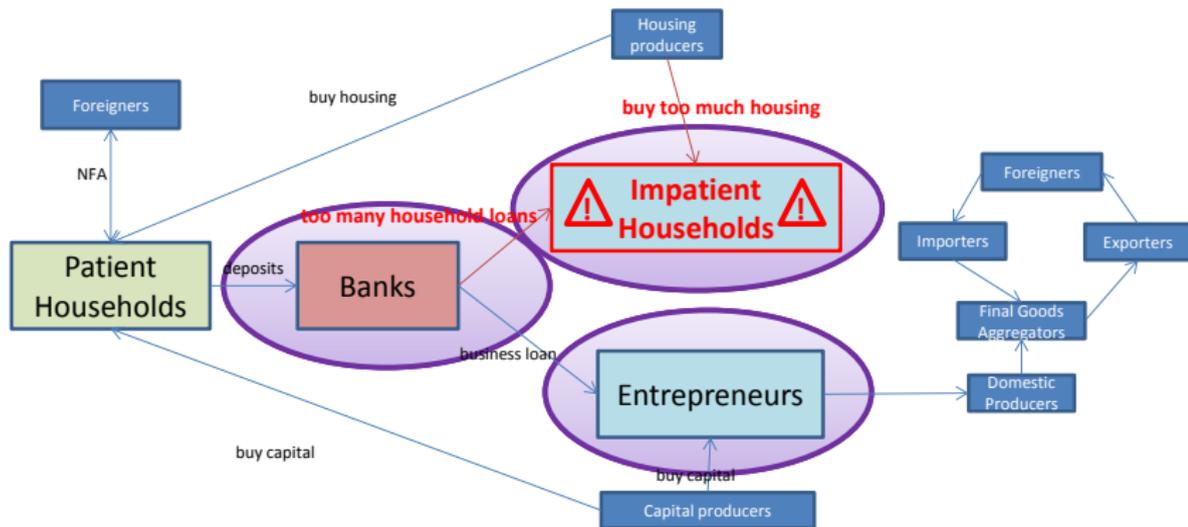
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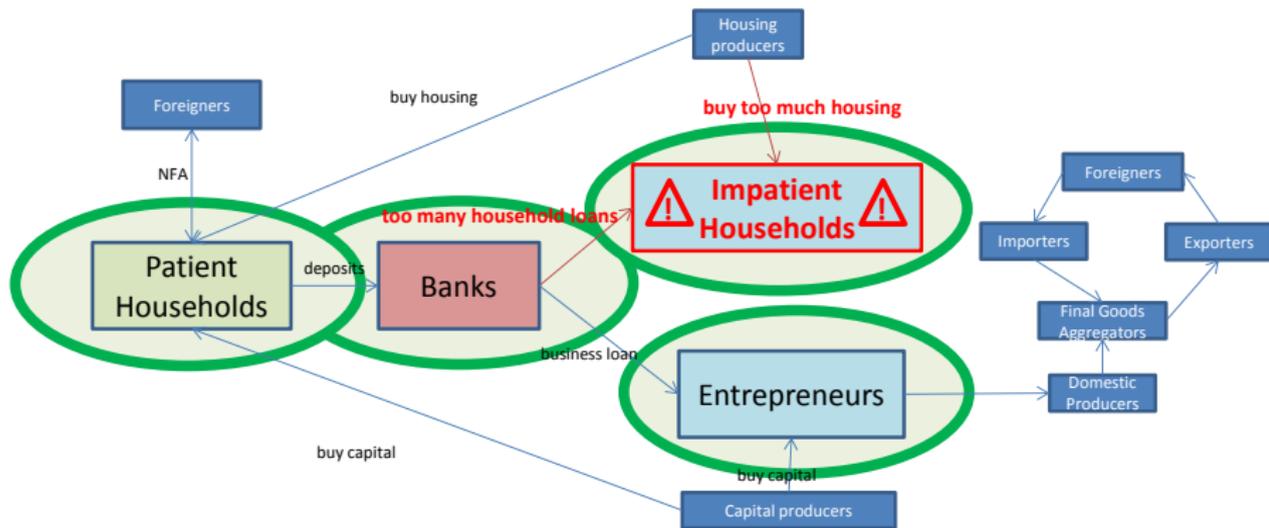
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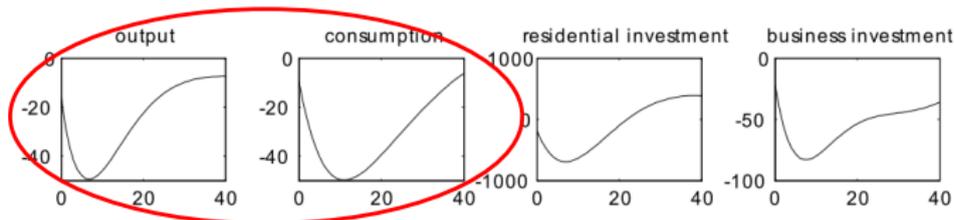
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  - ③ monetary policy (least targeted)  $\Leftarrow$  most costly



# Comment #1: Consumption Dynamics

- Impulse response suggests that output response to LTV ratio shock mainly reflects aggregate consumption response



- But
  - ▶ aggregate  $C = \text{impatient HH } C + \text{patient HH } C$
  - ▶ impatient HH  $C \downarrow$  while patient HH  $C \uparrow$  (?)
- Hence, consumption share of impatient HH is a key determinant of output cost of LTV shock
- Suggestions:
  - ▶ Provide more justification in the text for calibration of that share
  - ▶ Show disaggregated consumption response

## Comment #2: Motivation for Macroprudential Policy?

- We know what purpose monetary policy serves in this class of models, but why do we need macroprudential policy?
- Highly desirable to have theoretical foundations for macroprudential policy
- Different sources of market failures likely to be present in model
  - ▶ technological externalities
  - ▶ pecuniary externalities
  - ▶ aggregate demand externalities
- These might justify macroprudential interventions that take the form of constraints on leverage

# Comment #2: Motivation for Macroprudential Policy?

- Technological externalities: monitoring costs assumed to depend on economy wide leverage measures (as opposed to individual leverage)
  - ① First layer
    - Generic bank/impatient HH/entrepreneur doesn't internalize effect of its funding-lending/mortgage-housing purchase/borrowing-capital investment decisions on spreads faced by other banks/impatient HHs/entrepreneurs
  - ② Second layer (due to linkages between credit conditions)
    - Generic bank/impatient HH/entrepreneur doesn't internalize effect of its funding-lending/mortgage-housing purchase/borrowing-capital investment decisions on spreads faced by impatient HHs & entrepreneurs/ banks & entrepreneurs/banks & impatient HHs

⇒ Excessive leverage and spreads in market equilibrium

## Comment #3: Motivation for Macroprudential Policy?

- Pecuniary externalities: when making leverage decisions, agents influence future distribution of prices (and therefore net worth of other agents)
  - ▶ Banks/households/entrepreneurs do not internalize effect of their decisions on future distribution of net worth of banks, households and entrepreneurs across states of nature
  - ▶ See work by Lorenzoni (2008), Korinek (multiples), Bianchi (2011), Benigno et. al (2012), Bianchi and Mendoza (2013)
  - ⇒ Excessive leverage and net worth volatility in market equilibrium
- Aggregate demand externalities: in presence of nominal rigidities, distribution of wealth matters for aggregate demand through Keynesian channels
  - ▶ Banks/households/entrepreneurs do not internalize effect of their decisions on future aggregate demand across states of nature
  - ▶ See work by Farhi and Werning (2013), Korinek and Simsek (2013)
  - ⇒ Excessive leverage and aggr. demand volatility in market equilibrium

# Comments #3: Role of Uncertainty

- In model:
  - ▶ Leverage decisions are driven by spreads and differences in discount factors (but not influenced by risk)
  - ▶ Linearized solution features certainty equivalence (CE)
- But in practical discussion of macroprudential policy: **risk is everywhere!**
  - ▶ Why not model decisions of agents as true portfolio decisions (i.e. with a role for risk)?
  - ▶ Method developed by Devereux and Sutherland (2010,2011) to solve for portfolio choice in open-economy models could work here!
    - Local method, can be combined with Schmidt-Grohe and Uribe (2004) routine (or dynare)
    - Works well in medium to large models with multiple assets and agents
    - 1st order dynamics of non-portfolio variables does not feature CE

## Comment #4: Welfare Analysis

- Criterion for comparing policy interventions should ultimately be consumer welfare (not output cost)
- Welfare analysis
  - ▶ would be useful to confirm that LTV ratio beats capital requirement and monetary policy by measuring welfare consequences of all three interventions (can be done with 2nd order accurate model solution)
  - ▶ could help understand the distributional implications of MP policy (i.e. who wins/loses the most among patient and impatient households)
  - ▶ might force us to think harder about why there should be capital requirements and regulatory LTV in the first place (aren't these optimally set to 0 in current model?)