Financial Fragility with SAM?

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Workshop on Housing, Credit and Heterogeneity: New Challenges for Stabilization Policies

Stockholm, September 2018

SAM: preventing the next crisis?

Shared Appreciation Mortgages (SAM):

- idea: index mortgage payments to house prices

- **pro**: may reduce defaults/foreclosures when house prices fall

- **con**: shift house price risk into financial sector $\Rightarrow$ fragility

Need structural macro model, since answer depends on:

- GE effects (e.g.house price volatility, price or risk)

- response of borrowers and lenders (e.g. risk taking)

- response of government policy (e.g. regulation, bail-outs)

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Agents

Model with housing and non-durable consumption. Three types of households:

- **Borrowers**: take out mortgages
  - ▶ subject to LTV constraint, repay/prepay/default

- **Intermediaries**: run banks and real estate companies
  - ▶ banks may default, then taken over by the government
  - ▶ bank lending restricted by regulatory leverage constraint

- **Depositors**: provide funds to banks
  - ▶ deposits insured by government

Mortgages

- **Mortgage**: geometrically declining payments until prepayment / default

- **SAM**: index the mortgage principal by a factor

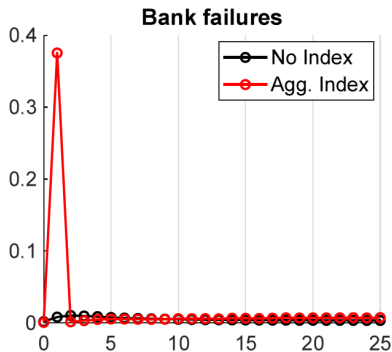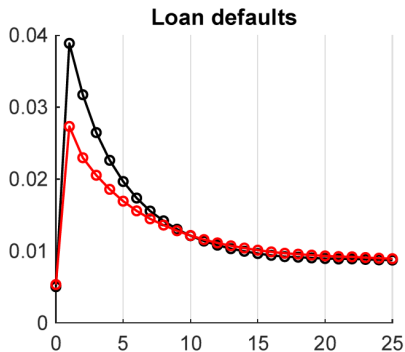$$\zeta_t = (p_t/p_{t-1})^\iota$$

where
  - p is the house price (or its local component)
  - $\iota \in [0, 1]$ controls the degree of indexation

Shock

Financial recession:

- Drop in aggregate endowment (income)

- Drop average housing quality (average house price)

- Increase in dispersion of housing quality (house prices)

National SAM

- Declining mortgage payments during financial recession *reduces* the incentive for *borowers* to default.
- Mortgages become riskier assets to bank; risk passed on to government via bank defaults.

Local SAM
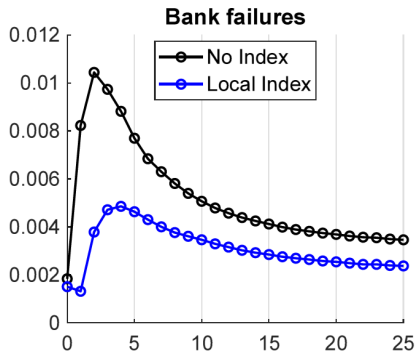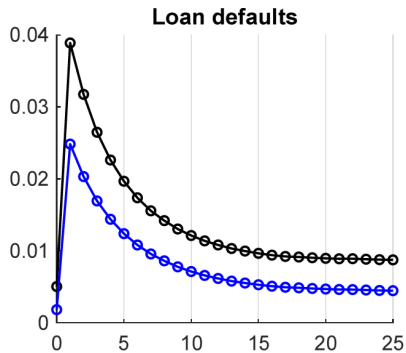
Comments

- Indexation versus default option

- Aggregate demand

- Government policy

- Model details

SAM indexation versus default option

- Mortgage payments state-contingent due to (i) default option and (ii) SAM indexation
  - ▶ Are these sources of payment risk fundamentally different?
  - ▶ In both cases lower house prices reduces payments.

- Why does SAM indexation create so much more financial fragility than the default option?
  - ▶ Seems a little counterintuitive.
  - ▶ Extent of default risk limited by stochastic default cost?
  - ▶ How well does the model capture the increase in mortgage delinquencies following the crisis?

Aggregate demand

Potentially important channel not present in the model:

- Borrowing-constrained households tend to have high Marginal Propensities to Consume.

- SAM might therefore be quite effective in boosting aggregate demand during a recession.

- This would feed back into a lower decline in house prices, dampening the increase in defaults and bank failures.

Government policy

- Introduction of SAM treated more or less as a policy option.
    - Realistically, are there legal constraints preventing SAM?
    - Are SAM mortgages in mutual interest of borrowers and lenders? Reason to ban SAM?

- Role of mortgage interest deductibility.
    - Incentive problem on household side: SAM increases risk premium on mortgages; encouraged via tax deductibility.

- Role or regulatory constraints.
    - If SAM makes mortgages riskier, it makes sense to give them higher risk weights in capital requirements.
    - Easy way to avoid the increased financial fragility?

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Model details

- Prepayment cost proportional to principal.

- Default and prepayment decision not allowed to depend on individual characteristics.

- Given equilibrium, how different would household behavior be if allowing them to default/prepay when in their own best interest?

- "cleaner" alternative: assume large family, as in Sterk (2015).

Conclusion

Very nice paper!