

Discussion of: Credit Constraints and Creditless Recoveries: An Unsteady State Approach

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Usual disclaimer applies: the opinions expressed in the discussion are those of the author and do not necessarily reflect the views of the Bank of Italy.



Goal of the paper

- Economic and macroeconomic implications of investment financed by risky imperfectly secured debt.
- Implications of occasional restrictions on unsecured borrowing for future credit, economic activity, and losses on bad loans.

The model

- Partial equilibrium model that takes into account of risk.
- Positive probabilities of both endogenous and exogenous defaults in the long run (stochastic steady state).
- Physical capital (financed by loans) versus human capital.
- Dilemma: after a negative credit supply shock, quick but risky or slower but financially safer paths of recovery?

Main results

- Multiple borrowing and investment solutions because of human capital.
- Probability of instability is not trivial.

Main results: intertemporal trade-off between current and future LGD

- Unsecured debt (extra leverage or bank money) allows debt rollover and survival for borrowers with insufficient cash positions.
- Thus, it reduces loss given default (LGD) in the current period.
- At the same time, unsecured debt creates a non-negligible default frequency and aggregate LGD next period.
- The latter would be impossible if the regulators issued restrictive measure against unsecured debt.

Main results: the role of initial states

- Agents that start from **relatively rich initial states** are found not to greatly benefit from limits on unsecured borrowing;
- they choose to behave prudently on their own and do not need an explicit policy to make them rely on human capital more than debt-financed physical capital.

Main results: initial states

- **Initially indebted and low-earnings** economies might benefit from a policy that limits future unsecured debt (at a very moderate cost in output terms);
- the reason is an immediate benefit from defaulting on the **current** debt stock, as the latter has a high probability of snowballing into even less sustainable indebtedness in subsequent periods.

Question: human capital

- What exactly is human capital in your model?
- Why investing in human capital is not risky? E.g., people borrow to study, and in many case default.
- How would results and policy prescriptions change under risky human capital?

Question: macroprudential policy and growth

- According to BIS Quarterly Review September 2017, two channels through which macroprudential policies could favor higher long-term growth:
 - macroprudential policies can limit/prevent the occurrence of financial crises, which are typically followed by slow recoveries and long periods of low productivity;
 - if macroeconomic (and financial) volatility reduces growth, and to the extent that macroprudential policies reduce such volatility, macroprudential policies should positively affect longer-term growth.

Question: macroprudential policy and growth

- According to BIS Quarterly Review September 2017, countries that more frequently use macroprudential tools, other things being equal, experience stronger and less volatile GDP growth.
- How do your results relate to this piece of evidence?

Question: initial conditions

- Macroprudential policies are designed to make financial crises less likely or less severe.
- Should macroprudential policies be about providing (optimal) incentives to the economy to locate in the more stable initial condition, i.e., the one featuring higher human capital?

Question: the costs of default

- One of the results is that for **initially indebted and low-earnings** economies there is an immediate benefit from defaulting on the current debt stock, as the latter has a high probability of snowballing into even less sustainable indebtedness in subsequent periods.
- Do defaulting firms have systemic implications?
- Can the long-run ergodic distribution be affected by the policy measures? For comparison: permanent macro-prudential measures, like lower LTV ratios, affect the long-run steady state under deterministic simulations (deterministic steady state).

Question: validation of the model

- Can you take the model to the data by matching some stylized facts (a credit squeeze + subsequent recovery)?

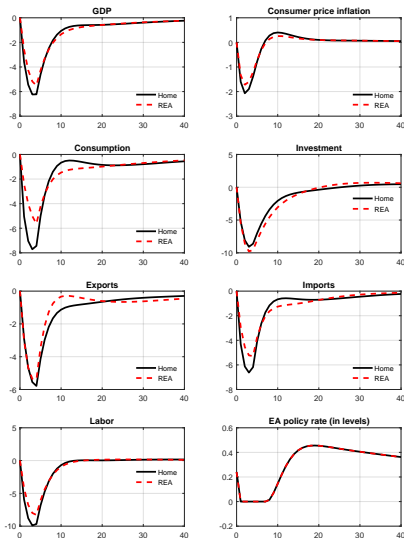
Non-linearities

- The recent financial crisis was the event that trigger of research on non-linearities:
 - zero lower bound on monetary policy rate;
 - forward guidance on monetary policy rate;
 - risk premia associated with possible future sovereign default;
 - default+high cost of borrowing following the default (ex-post punishment);
 - macroprudential issues measures.

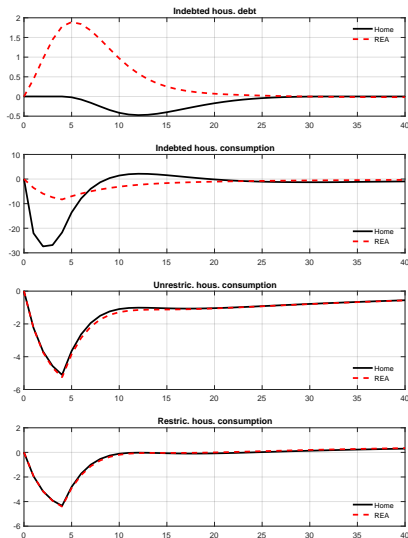
Non-linearities

- The aim was to use fully-fledged (large-scale) New Keynesian model (developed to analyze normal times) to assess crisis/exceptional times.
- Some results were delivered and fed the policy debates.
- Crucially, a common (i.e., the New Keynesian) framework was used.
- Charts in next slides are from a revised version of *Burlon, L., A. Gerali, A. Notarpietro, and M. Pisani, 2015. Inflation, financial conditions and non-standard monetary policy in a monetary union. A model-based evaluation. Temi di discussione 1015, Bank of Italy.*

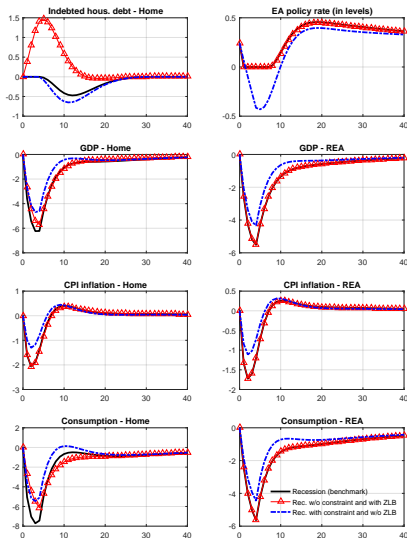
Negative demand shock. Macroeconomic effects.



Negative demand shock. Consumption and debt.



Negative demand shock. Role of constraints.



Non-linearities and **risk**

- Many models are solved under perfect foresight.
- Thus, non-linearities affect choices of households and firms, while uncertainty does not.
- Alexis's point: to address some questions, in particular those associated with systemic risk, models should be solved by taking into account both non-linearities **and** uncertainty.

Some solution methods

- Higher-order (local) approximations so to have risky steady-state.
- Global methods as suggested by Alexis, in a general equilibrium framework á la Mendoza.
- Last, but not least, global methods to solve small partial equilibrium model á la Alexis, and compare their results with those by large-scale models (models cross-fertilize each other).

Suggestion: general equilibrium, non-linearities and risk

- Why not solving a general equilibrium model for macroprudential policy in alternative ways, that differ for their capability of capturing systemic risk?
- Once solved, check if and to which extent the policy implications differ across alternative solution methods.

To conclude

- Very interesting and thoughtful contribution, it addresses a serious technical challenge, with possible non-trivial implications for macroprudential policy.
- I really enjoyed reading the paper.

THANKS!!