

**Foreign capital flows, credit growth and  
macroprudential policy in a DSGE model with  
traditional and matter-of-fact financial frictions  
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- What does the paper do?
- What else can it do?
- What is missing?

## What does the paper do?

- Very rich open-economy DSGE model for the analysis of the stabilization role of macro-prudential policy together with monetary policy:
  - Model tailored to describe features of the Brazilian economy;
  - Very rich model in all details: with appropriate modifications should be a benchmark for other central bank's models.
- .
- Several dimensions of macro-prudential policies are analyzed:
  - Reserve requirements;
  - Capital requirements, with different risk weights;
  - Endogenous capital requirements.

## What does the paper do?

- Financial friction: households can borrow on retail and mortgage loans up to their labor income (realistic assumption for Brazil) which is subject to an idiosyncratic shock

$$\varpi_{B,i,t}[(1 - \tau_{W,t})N_{B,i,t}W_t]$$

- $\varpi_{B,i,t}$  : labor income or pledgeability shock?
- The model can allow for default in equilibrium, in particular households can default first on retail loans and then on mortgage loans.

## What does the paper do?

- Capital of entrepreneurs is supplied by domestic and foreign investors:

$$N_{E,t} = N_{E,t}^{FDI} + N_{E,t}^S$$

where

$$N_{E,t}^{FDI} = N_{E,t} \frac{N_{E,t-1}^{FDI}}{N_{E,t-1}} + S_t FDI_t$$

allowing for a change in external investment to directly affect entrepreneurs financial's premium and capital accumulation.

- Moreover exporters are demanding foreign-currency loans to finance working capital.

Very rich intermediary sector:

## 1 Retail money market fund:

- allocate liquidity of savers towards different securities;
- can also invest in foreign bonds but faces a cost of portfolio adjustment, implying a UIP departure;

## 2 Banking sector:

- Divided in branches: deposit, commercial loans, housing loans, working capital loans;
- Banks aggregate branches and are subject to regulatory requirements:
  - Reserve requirements;
  - Capital requirement (AR(1) with high persistency);
  - Capital adequacy ratio and cost function evaluating deviations from minimum capital requirement.

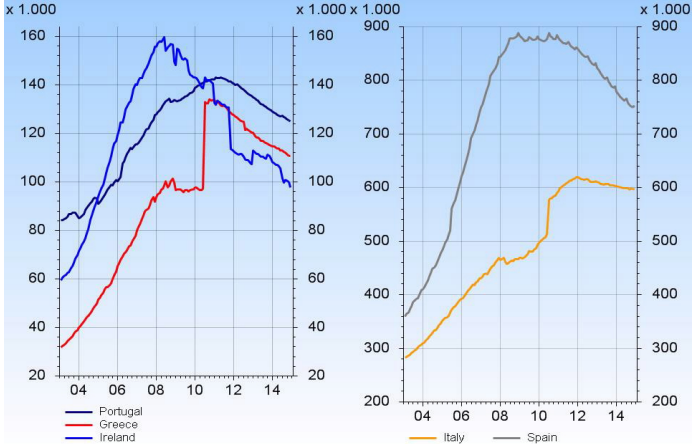
## What does the paper do?

- Study the macroeconomic impact of varying regulatory requirements;
- Compare it with the effects of a monetary policy shock;
- Study transmission mechanism of international shocks;
- Study the role of countercyclical capital buffer.

- Study more literally macro-**prudential** policies not just the macroeconomic impact of varying the regulatory framework
  - Macro-**prudential** policies should be in place either to avoid the occurrence of a financial crisis or to mitigate financial distress, but this should come at the cost of reducing growth in good times;
  - What is the **optimal** "level" of banking regulation from an ex-ante point of view? Are there inefficiencies (i.e. over-borrowing, over-lending?) in the competitive equilibrium that should be corrected by more banking regulation or other instrument?
  - Or, conditional on a financial-crisis event, what is the instrument that should have been put in place in order to mitigate its costs? And what are the costs of having this instrument during normal times?
  - Or, is there any instrument that can be use in a state-contingent way once the crisis occurs?

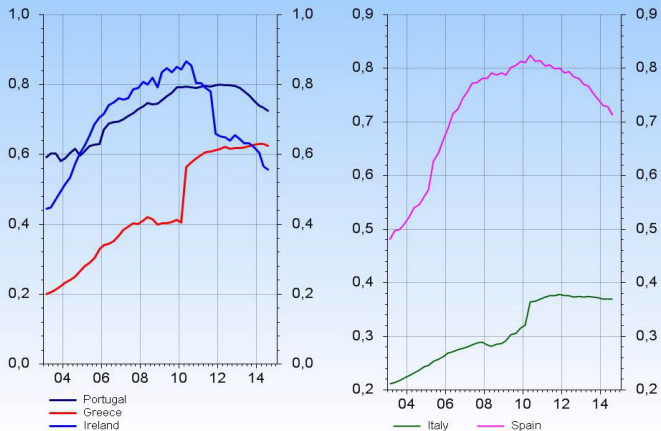


### Europe: Loans to Households



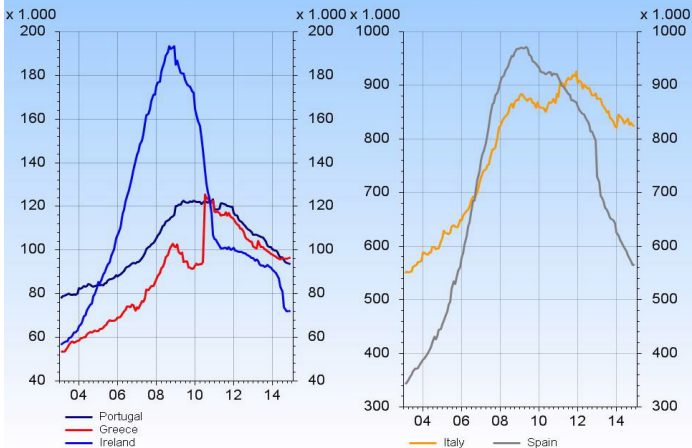
Fonte: Thomson Reuters Datastream

## Europe: Loans to Households



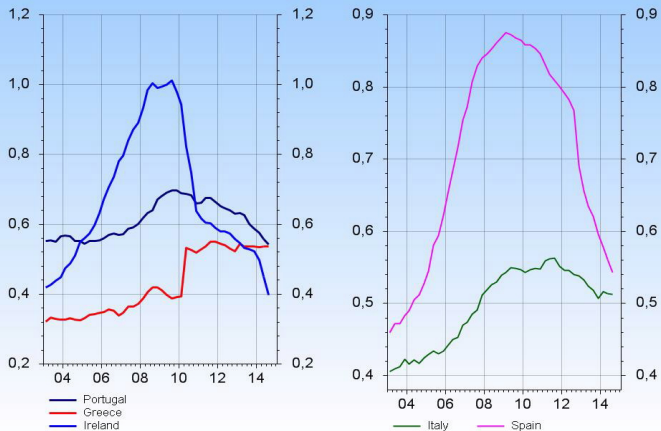
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## Europe: Loans to Non-Financial Corporations



Fonte: Thomson Reuters Datastream

## Europe: Loans to Non-Financial Corporations



Fonte: Thomson Reuters Datastream

- ⇒ Answering above questions requires a more appropriate modeling of a "crisis" event and a discussion of optimality criteria.
- Compare macro-prudential policies with other policies like tax on capital inflows or other restrictions on capital flows.
- Study role of managing foreign reserves for commodity exporters in absorbing financial shocks.

- General criticism to the current literature is that at the end financial crisis are rare event and not very costly from the models' welfare point of view.
- Why should we restrain growth during good times? At which point in time should we do it and through which instruments? Is banking regulation sufficient?
- ⇒ not much scope for macro-prudential policies.

## What is missing?

Long-term costs of financial crisis (see empirical analyses of Ball, 2014, Cerra and Saxena, 2008)

- **Baumol's disease:** abundant foreign capital and low real interest rate can lead to mis-allocation of human and physical capital towards low-productivity sectors (non-tradeable, housing sector) with long-term consequences on growth once bubble bursts (see Benigno G. and Fornaro (2013) on Spain)
- **Dutch disease:** increase in the economic development of natural resources can lead to decline in manufacturing sector
- **Secular stagnation I:** Debt deleveraging under the zero-lower bound can be costly and produce a persistent slump without any self-correcting force to full employment (see Eggertsson and Mehrotra, 2014).
- **Secular stagnation II:** A temporary falls in aggregate demand can lower long-run productivity and lead to a permanent fall in growth (see Benigno G. and Fornaro, 2015)

- Great framework for policy analysis.
- Still room for answering some critical questions about macro-prudential policies.
- Next generation of DSGE models with macro-prudential analysis should look more at long-term issues.