

**Discussion of Boz, D'Erasmus and Durdu  
"SOVEREIGN RISK AND BANK BALANCE  
SHEETS"**

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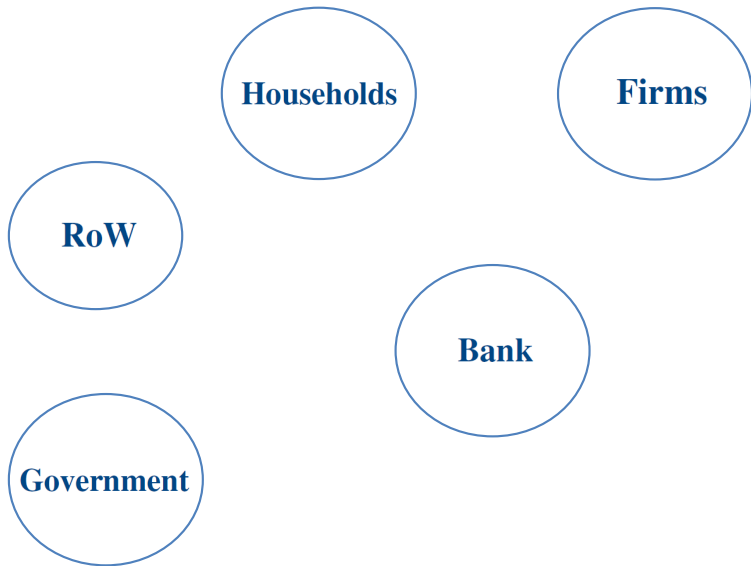
# INTRODUCTION

- Ambitious paper on very important topic
- Banks-sovereign nexus in a quantitative model
  - Predictions for sovereign and private sector rates, bond holdings (domestic vs. foreigners), ...
  - Macroeconomic effects of Basel III?
- Nice exercise, many people are thinking about these issues

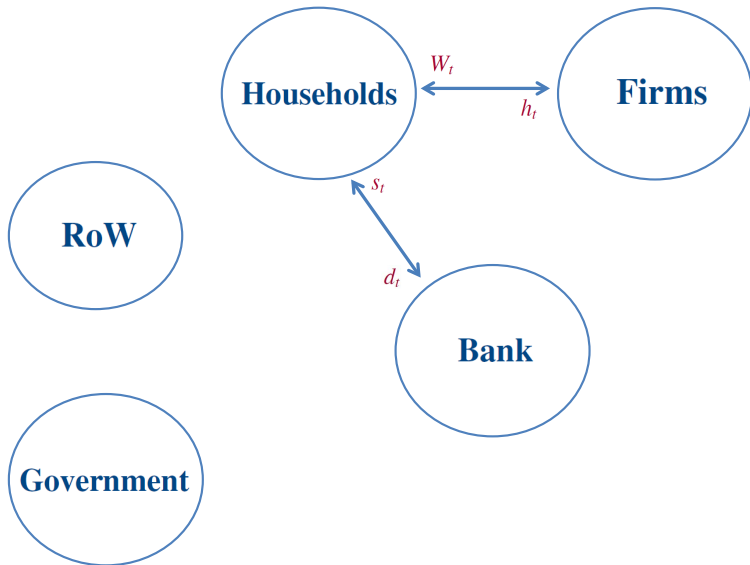
## OUTLINE OF THE DISCUSSION

- Overview: Flow of funds, bank's problem, policy experiments
- Three remarks:
  - Sovereign and private sector borrowing costs
  - Home bias and risk weights
  - Paper needs more focus
- Conclusion

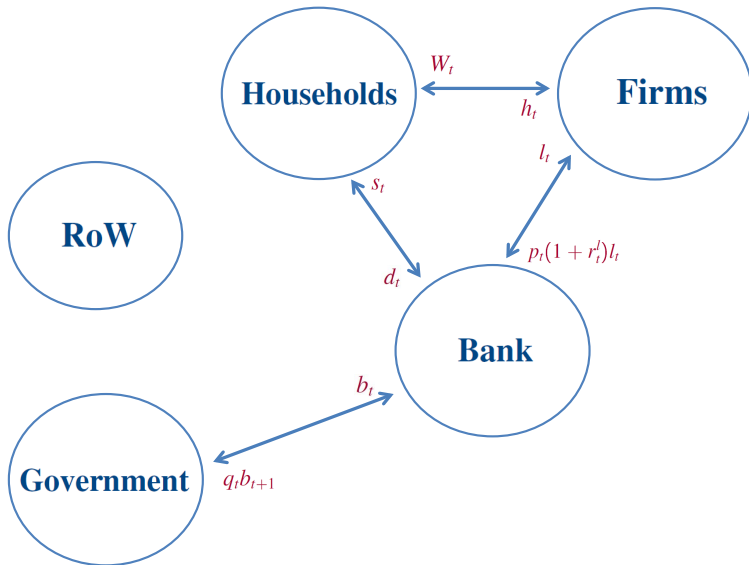
## **FLOW OF FUNDS**



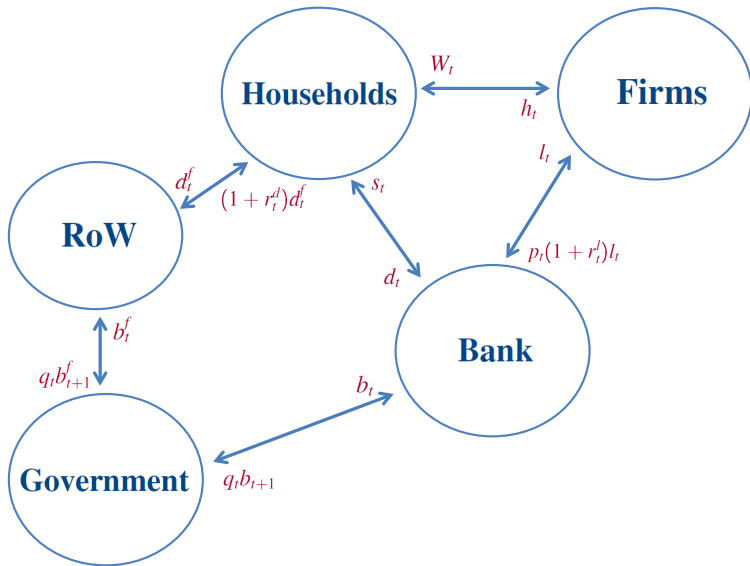
## FLOW OF FUNDS



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## BANK'S PROBLEM (NO GOV DEFAULT)

- Choose assets (gov bonds, loans) and liabilities (equity, deposits)
- $z'$  realizes. Successful firms pay back loan
- End of period, distribute payouts to households (no gov bonds)

$$W_{D=0}(b, B, z) = \max_{l, \tilde{s}, b'} \mathbb{E}_z \{ \tilde{R} [f(x) + W(b', B', z')] \}$$

$$b - \tilde{s} \geq \varphi(l + \omega qb')$$

$$x = (p \times r^l - r^d)l - (1 + r^d)(qb' - b) - r^d \tilde{s} - \tilde{\phi}(\tilde{s})$$

$$f(x) = x - \phi(x)$$



## DEMAND FOR BONDS AND EQUITY ISSUANCE

Bond demand:

$$\mathbb{E}_z \left\{ \tilde{R} \left[ f'(x) [-(1+r^d)q] + \frac{\partial W(b', B', z')}{\partial b'} \right] \right\} - \omega \varphi q \mu = 0$$

- Less payouts for households
- Liquidity value: gov bonds relax future capital requirements
- If constraint binds, more costly to finance them

Issuance of equity:

$$\mathbb{E}_z \{ \tilde{R} [f'(x)(r^d - \tilde{\phi}'(\tilde{s}))] \} + \mu = 0$$

- Issuing equity is costly
- Relaxes capital requirement when it binds

## BANK-SOVEREIGN NEXUS

- If government defaults, bank loses  $b$
- Bank pays higher issuance costs (finance firms + negative profits)
- Output declines

Output losses + market exclusion shape government's default incentives

No balance sheet effects in the run-up to a default (debt short term)

## POLICY EXPERIMENTS: $\varphi$

Suppose regulators increase  $\varphi$ . Then:

- Liquidity value of gov bonds increases
- Gov default less painful (two opposing effects)
- Bank pays less issuance costs

	Baseline	$\varphi = 0.06$ $\omega = 0$
Moment		
Bank cap. Ratio %	19.59	19.71
Bank Loans / Assets %	84.23	84.20
$r^{\ell}$ %	23.740	23.725
$b/B$ %	82.47	90.39
$B/y$ %	12.84	11.96
Def. Probability %	0.973	1.159
$\sigma(c)$ %	1.76	1.62
$\alpha(b, B, z)$ %		0.0342

## POLICY EXPERIMENTS: $\omega$

Suppose regulators increase  $\omega$ . Then:

- Bond demand by bank declines
- Gov default less painful (less commitment for the government)

	Baseline	$\varphi = 0.06$ $\omega = 0$	$\varphi = 0.04$ $\omega = 1$
Moment			
Bank cap. Ratio %	19.59	19.71	19.27
Bank Loans / Assets %	84.23	84.20	84.54
$r^l$ %	23.740	23.725	23.742
$b/B$ %	82.47	90.39	79.41
$B/y$ %	12.84	11.96	13.05
Def. Probability %	0.973	1.159	1.251
$\sigma(c)$ %	1.76	1.62	1.80
$\alpha(b, B, z)$ %		0.0342	-0.0050

## SUMMARY

- Changes in  $\phi$  and  $\omega$  affect bank leverage and default risk
- Decline in leverage lowers equity issuance costs
- Default risk typically increase

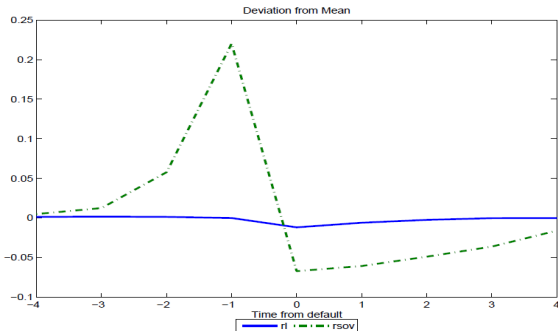
Model has little to say about equity issuance costs (reduced form)

It could say more about macroeconomic implications of sovereign risk

## REMARK 1: SOVEREIGN AND PRIVATE SECTOR RATES

In the model, sovereign risk irrelevant for firms' financing

Figure 12: Dynamics around Default: Interest Rates

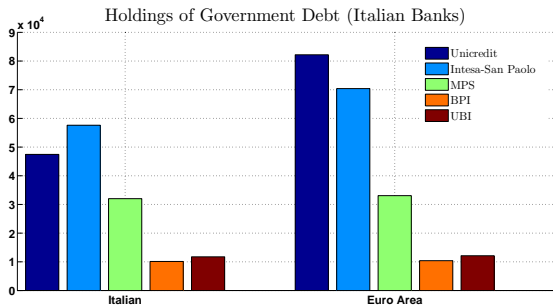


- Ample empirical evidence supporting the opposite
- Important for policy experiments

Authors need to correct for that (e.g. long term debt?)

## REMARK 2: HOME BIAS AND RISK WEIGHTS

In the model, domestic bonds (only) source of liquidity for bank



- Risk weighting sovereign debt may re-balance portfolios
- Default risk in the periphery affected
- Related to Chari, DAVIS and Kehoe (2014)

### REMARK 3: NEED MORE FOCUS

- At the moment, a mix between positive and normative analysis
- Positive analysis: model rich, but many features are reduced form. What are the empirical targets we aim at matching? Why?
- Normative analysis: mechanisms hard to grasp, too many moving parts
- Challenging to have both parts in one paper



## CONCLUSION

- Very interesting paper on very important research question
- Suggestions:
  - Introduce the “obvious” feed-back (sovereign risk  $\rightarrow$  firms’ financing costs)
  - Allow the bank to have another risk free asset in the background
  - Focus more the paper