Discussion of

How important are financial frictions in the U.S. and the euro area?

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Plan of the discussion

- Summary of the paper
- General comments
- Evidence on role of financial frictions in the U.S. and the euro area
- Identification of key parameters
- Assessment of the role of financial frictions
- Minor comments
- Some additional references

Summary of the paper (1)

- This paper evaluates the **importance of financial frictions** in credit markets for the business cycles of the U.S. and the euro area

- A DSGE with the financial accelerator (Bernanke, Gertler and Gilchrist, 1999) is estimated using Bayesian methods

- Results indicate that **financial frictions matter in both economies**. Financial frictions are larger in the euro area

Summary of the paper (2)

	U.S.	Euro area
I/Y	**0.17**	**0.16**
C/Y	**0.63**	**0.64**
Monitoring costs (fraction of Y)	**0.004**	**0.006**
External finance premium (percentage points per annum)	**2.4**	**3.6**

Summary of the paper (3)
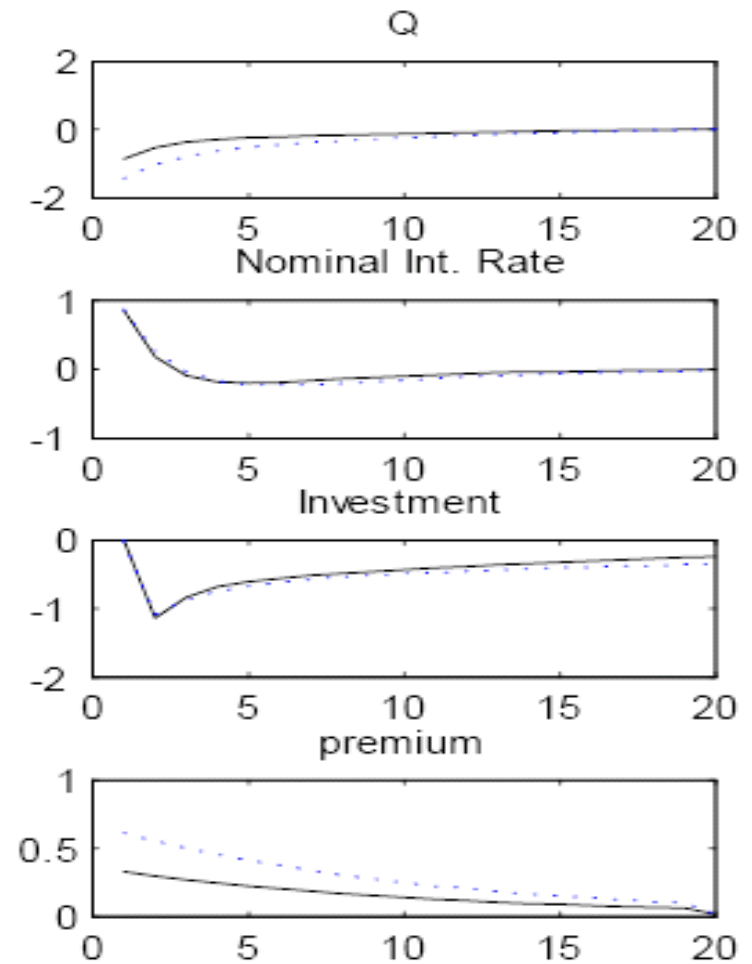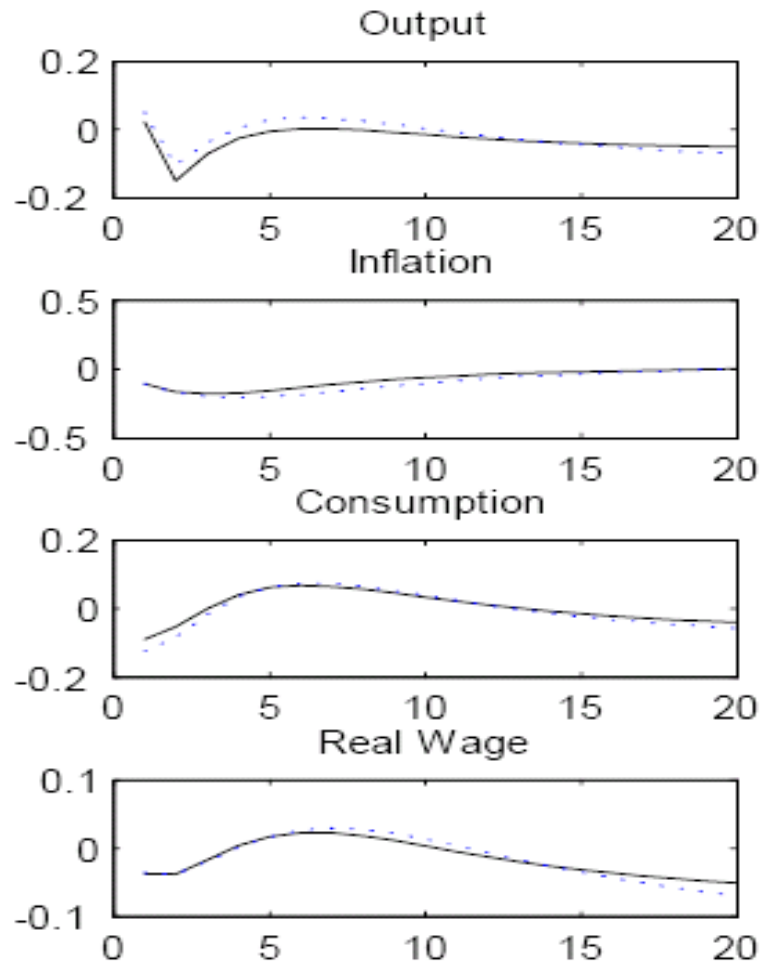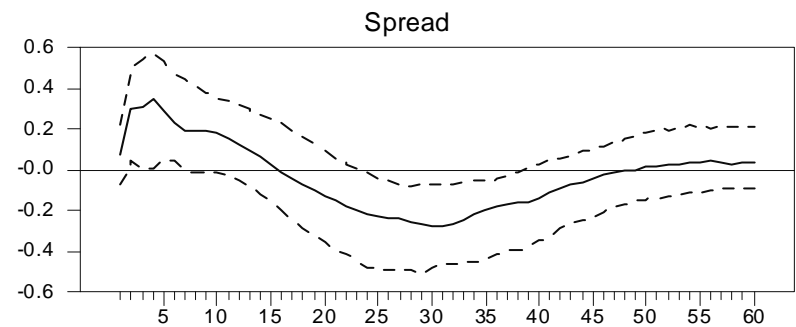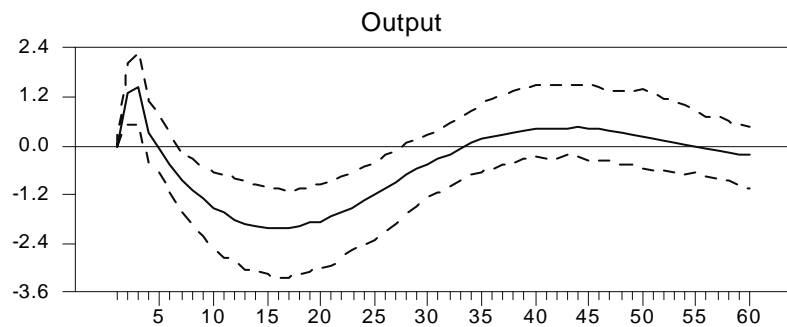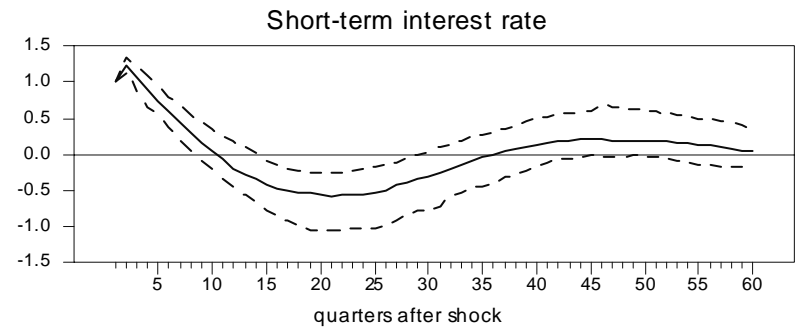

Solid: U.S., dotted: euro area

General comment

- The paper addresses an important issue: can we improve the **propagation mechanism** of shocks by adding **financial frictions** in state-of-the-art DSGE models?

- Virginia's effort is very **appreciated**

- These frictions do not imply, howevrer, significant differences in impulse responses to shocks, particularly monetary policy (these differences could be tested in a statistical sense)

- Overall, these type of financial frictions (**as they are currently modeled**) them **do not seem to add persistence** to current generation of models

Evidence on role of financial frictions in the U.S. and the euro area

- Some **evidence** that supports Virginia's findings
- Set up **VARs** using **high yield bond spreads** (BBB-AAA or BBB-10y government bonds) as measures of external finance premiums (Gertler and Lown, 2000)
- Sample period: 1996:12 – 2006:7 (monthly data: 116 observations)
- Recursive (Cholesky) identification of monetary policy shocks

Impulse response to monetary policy shock: Euro area

Commodity prices

Short-term interest rate

quarters after shock

Output

Spread

Price level

Effetive exchange rate
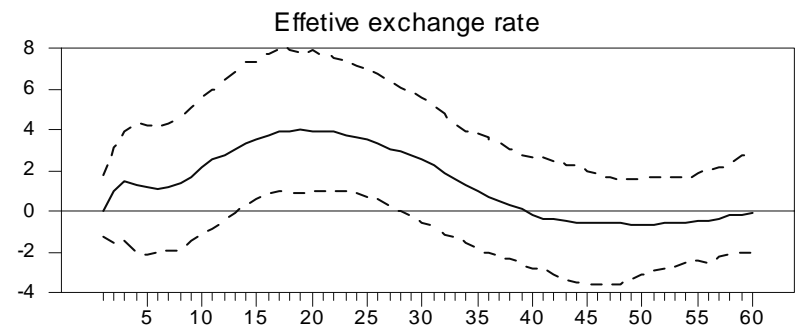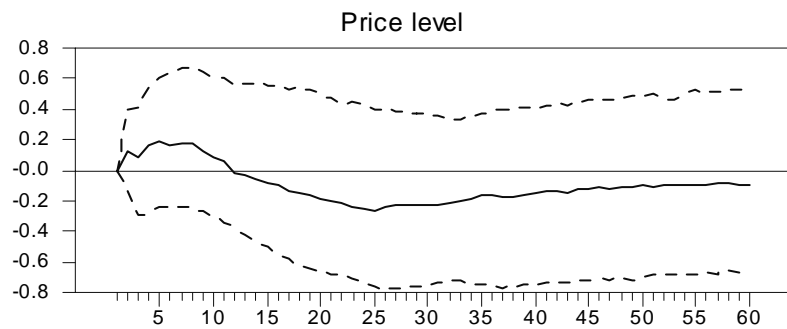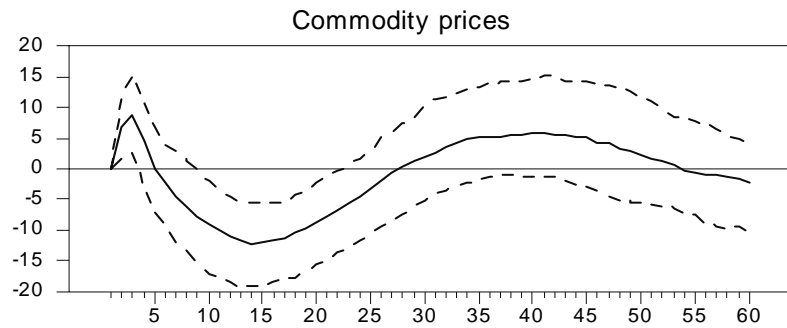
Note: .68 percent probability error bands

Impulse response to monetary policy shock: U.S.
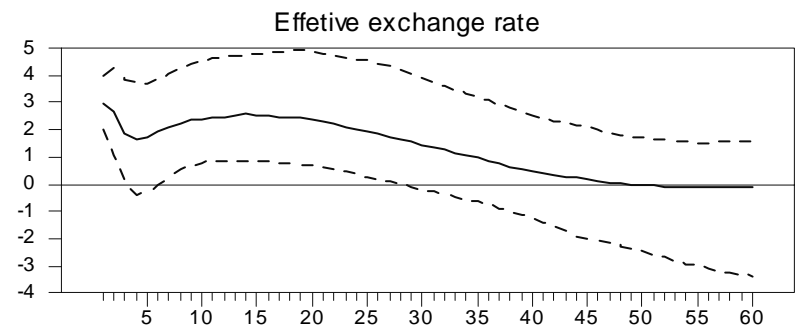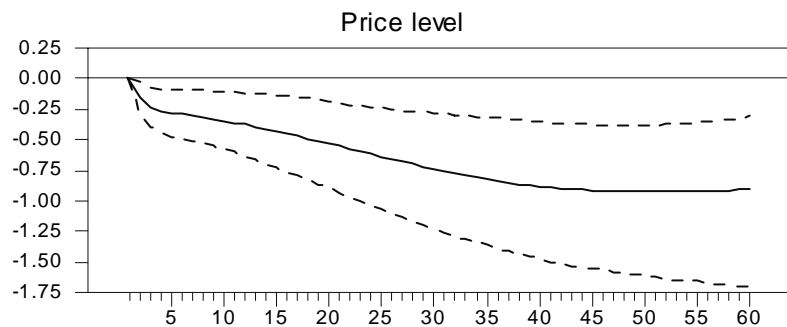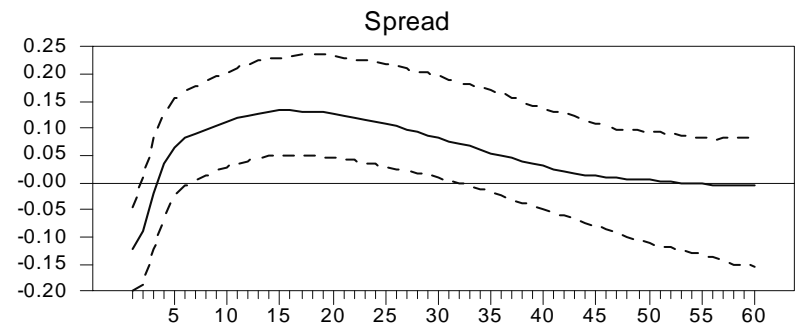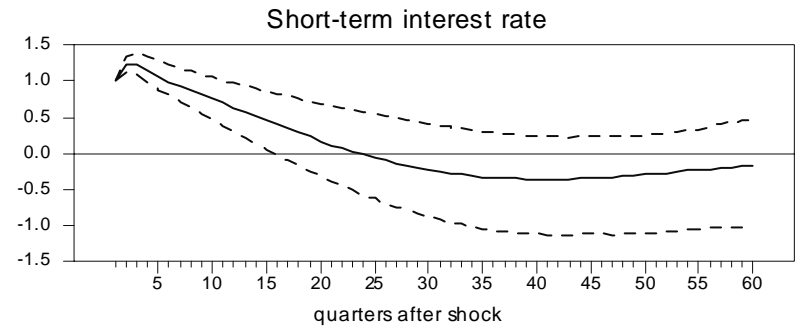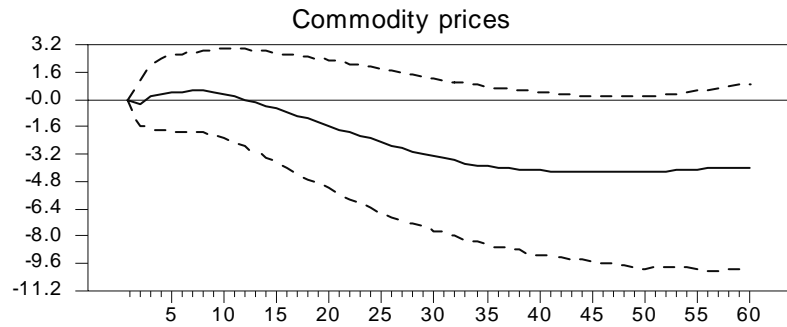
Note: .68 percent probability error bands

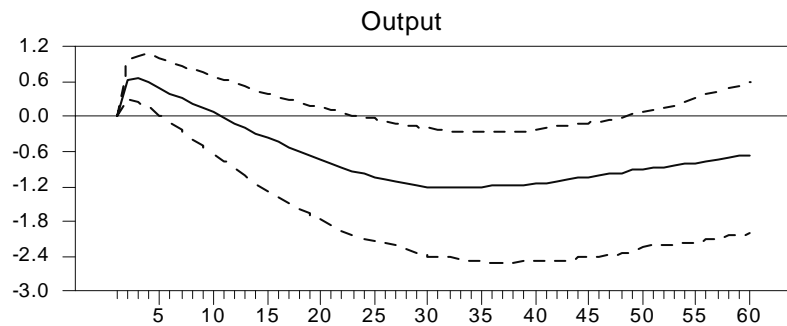# Evidence on role of financial frictions in the U.S. and the euro area

- Comparison of the responses of the spread in the U.S. and the **euro area** shows that **financial frictions might** indeed **be larger** in the latter economy, thus confirming Virginia's findings

- The larger the response of the external finance premium, the larger the financial frictions (see counterfactual exercise in Figure 10 of the paper)

Identification of key parameters (1)

- The marginal posterior distribution of some key parameters is very similar (sometimes coincides) with the prior distribution: **data** are **weakly informative**

- Any **assessment of the importance of financial frictions** must rely on a **clear identification** of the parameters related to these frictions

Identification of key parameters (2)

- Many papers assume adjustment costs for **capacity utilization** but they do not identify the relevant parameter. None of them uses capacity in the estimation. Large adjustment costs are crucial in smoothing the response of marginal costs (and inflation) to shocks (CEE, 2005)

Identification of key parameters (3)

- **Suggestion 1**: plot **likelihood** and posterior **profiles** in the neighborhood of the mode

- **Suggestion 2**: use **observables** that provide information on parameters governing financial frictions and other features. Christiano, Motto and Rostagno (2003) use a proxy for firms' net worth

- **Suggestion 3**: If parameters are not identified any better, then **assess robustness** of the results by changing the **priors** on the parameters that are not (or are weakly) identified

Identification of key parameters (4)

- **Suggestion** by Canova and Sala (2006): "…there is a simple diagnostic for detecting **lack of identification**. If prior information becomes more and more diffuse, the posterior of parameters with doubtful identification features will also become more and more diffuse."

- " ….. since **identification problems** have to do with the shape of the likelihood, they **do not disappear** when a **Bayesian approach** is employed."

- **Reverend Thomas Bayes** cannot solve all the problems

Assessment of role of financial frictions

- Assume that model NON-FA has implications for observables **Y1** and model FA has implications for a bigger set of observables, **Y** = (**Y1**; **Y2**)

- If **Y2** includes variables that matter only under the existence of financial frictions, then comparison by Bayes factor should be based on the marginal density of the common set of observables **Y1**

- To the extent that **Y2** helps in explaining better **Y1**, then I would like the Bayes factor to reflect this result.

Minor comments (1)

- Number of draws in the Metropolis algorithm: need to use a **larger number of draws** (see problems in potential reductions scale measures for some parameters) or run **more parallel chains**

- **Plot** the time series of the **draws** generated by the algorithm

- Plot **cumulative means and standard deviations** as an alternative way of assessing convergence of the algorithm

Minor comments (2)

- Calibration of priors for the **monetary policy rule** based on Clarida *et al.* (2000): Their benchmark estimates for the Volcker-Greenspan period are:

  $\gamma_\pi = 2.15$

  $\gamma_y = 0.93$

  $\gamma_R = 0.80$

- Net transfers to entrepreneurs w_e : is it **compensation for their labor**? Is it necessary to ensure that entrepreneurs always have a nonzero level of net worth (Carlstrom and Fuerst, 1997)?

- Calibration of **capital share**: for the U.S. Ireland (2003) points to a smaller value (around 0.20) then 0.33

Minor comments (3)

- Estimate, using the Kalman smoother, the **implied external finance premium** and compare it with available measures from data (De Graeve, 2006)

- **Time-varying parameters**. Justiniano and Primiceri (2006, p. 17) argue that "a natural explanation of the **Great Moderation** would be based on a reduction in financial frictions."

- **Counterfactual experiments** (Figure 10): why changing at the same time the parameters related to financial frictions and adjustment costs?

Minor comments (4)

- Definition of consumption in the measurement equations of the model: Is it the sum of households and entrepreneurs' consumption?

- What role does net worth play when there are no financial frictions? (p. 16) Is it recursive to the rest of the model?

Some additional references

- "The External Finance Premium and the Macroeconomy: US post-WWII Evidence" by F. De Graeve

- "Financial accelerator effects in UK business cycles" by S. Hall

- "The monetary transmission mechanism: Evidence from the industries of five OECD countries" by L. Dedola and F. Lippi

Some additional references

- Dedola and Lippi (2005). VAR evidence on 5 OECD countries (France, Germany, Italy, the UK and the US) plus sectorial analysis of determinants of maximum response of output

- "….The economic significance of variables related to firms' borrowing capacity (size and leverage) indicates a non-negligible quantitative role of credit frictions, confirming the predictions obtained from quantitative general equilibrium models, e.g. Bernanke et al. (1999)."

The end

- Thanks a lot for the opportunity to discuss a nice and well-done paper