Banco de Portugal

Discussion of
"Financial Factors in Economic Fluctuations"
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* The opinions expressed here represent the views of the author and do not necessarily coincide with those of the Banco de Portugal or the Eurosystem.

Summary of the paper

What does this paper do?

1. Estimates several DSGE models for the euro area and the US:
   - Model with financial frictions (CEE+BGG+CCE)
   - Model with financial accelerator only (CEE+BGG)
   - Simple model (CEE)
2. Tests the out of sample forecasting performance of the models
3. Assesses the contribution of shocks, in particular financial, to business fluctuations

Main findings of the paper

1. Financial frictions amplify shocks.

2. BGG frictions account for a large source of business cycle fluctuations in EA and US. In particular risk shock and news have an important role

3. Introduction of frictions does not worsen the forecast performance of the model

Modifications of BGG

External finance premium $=$ f(monitori ng costs(μ), ω)

Banks are only fully repaid if $\omega_t \geq \overline{\omega}_{t+1}$; otherwise get partial repayment and incur monitoring costs.

Only a fraction γ_t of entreprene urs survives for next period.

CMR modificati ons of BGG :

$\Rightarrow$ Risk shock : var(ln(ω)) $= \sigma_t^2$; Wealth shock : γ_t, both stochastic and with signals.

$\Rightarrow$ R_t^e – nominal interest rate paid by banks on time deposits, decided in advance => Fisher effect

Comments on the model

- The model focuses on firms case. Not so aplicable for the household sector, but fluctuations in housing and associated financial frictions seem important for business cycles.

- Alternative approaches: collateral constraints (Kyotaki and Moore, 1997; Mendicino, 2008; Iacoviello and Neri, 2009).

Comments on the model

- Simple banking system: no bank capital constraints, bank risk
- Nevertheless, the model could be modified to address empirical features in credit markets:
  - Changes in bank risk taking (linked for instance to securitization and crisis) might be captured by shocks to monitoring costs
- Fisher-debt deflation – how relevant when inflation is moderate and model assumes rates on loans to be reset each quarter?

Comments on econometric approach

1. Data Issues
   - Is the Dow Jones a good measure of net worth?
   - External premium:
     - US: BAA-AAA corporate bonds;
     - Euro area: bank lending rates-yields on government and corporate bonds
   - Can we rely on these financial market data to measure risk?

Comments on econometric approach

2. Identification
   - Introduction of further frictions in already highly parameterised DSGE could raise identification problems and redundancies (see Canova and Sala, 2009). This analysis is important in order to avoid issues relating to observationally equivalent models.

   - Sugestion: use methods for checking for local identification proposed by Iskrev(2009).

What drives economic fluctuations?

- Risk shock displaces shock to marginal efficiency of investment as major shock behind economic fluctuations.

$$K_{t+1} = (1-\delta) + \xi_{i,t}(1-\Gamma(I_t / I_{t-1}))I_t$$

- Paper grounds the superior performance of the risk shock on being able to generate both investment booms and procyclical increases in the price of capital (stock market) while investment shock does not

Main sources of business cycle fluctuations in recently estimated DSGE models (GDP)

	US		Euro area	
	Shorter-term	*Medium to long-term*	*Shorter-term*	*Medium-to-long-term*
NAWM CCW(2008)			Risk premium; Export preferences; **TFP;** **Marginal efficiency of investment;**	**TFP;** **Marginal efficiency of investment;**
SW (2007)	Exogenous spending shock; Risk premium; **Marginal efficiency of investment.**	**TFP;** Wage markup		
CMR (2009)	FF: **Risk shock;** **Marginal efficiency of investment** Consumer preference shock. Simple Model: **Marginal efficiency of investment** **TFP**	FF: **Risk Shock** Simple Model: **Marginal efficiency of investment** **TFP.**	FF: **Risk shock;** **Marginal efficiency of investment** Simple Model: **Marginal efficiency of investment;** **TFP.**	FF: **Risk shock** Simple Model: **Marginal efficiency of investment;** **TFP.**

Economic nature of the risk shock

- The economic nature of the risk shock is not made explicit.
- Risk appears related to the external premium but model cannot forecast this variable well. Thus, more effort needed to show what is the nature of this risk
- Also some attention should be devoted into the precise specification of the risk shock as it tends to produce non-linearities that may be difficult to explain

Signals in wealth and risk shocks

Wealth ( ) and risk (σ) shocks are specified as reacting to news or signals:

$$\hat{\sigma}_t = \rho \hat{\sigma}_{t-1} + u_t$$

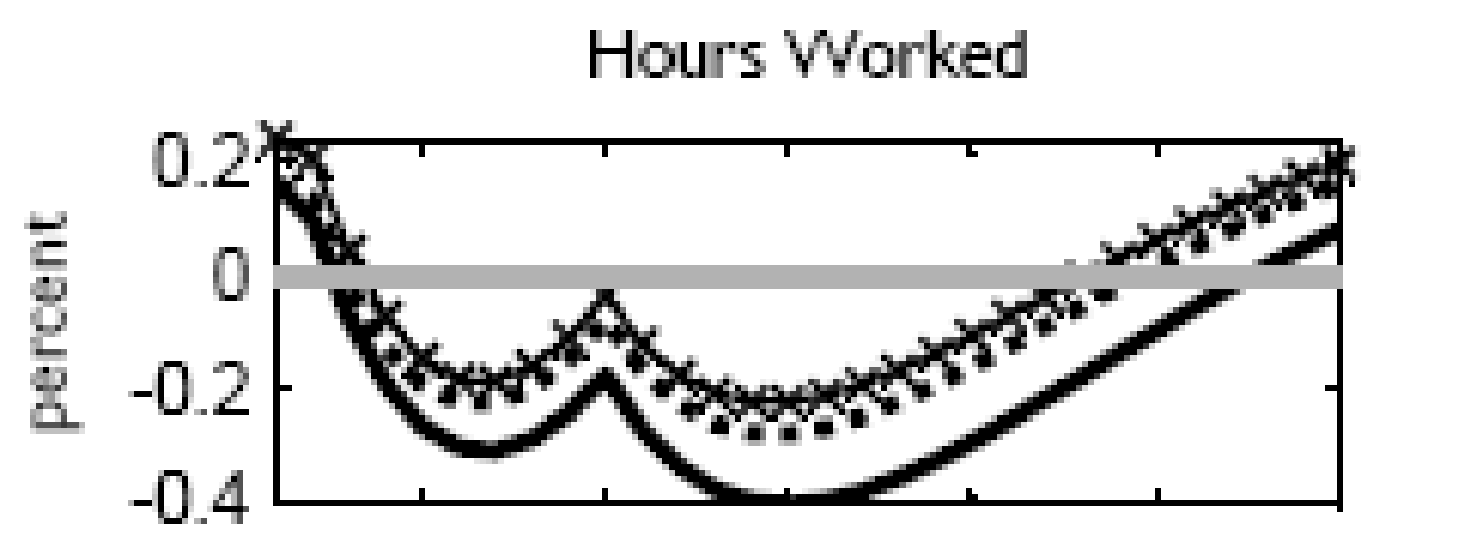
$$u_t = \xi_t^0 + \xi_{t-1}^1 + \ldots + \xi_{t-p}^p$$

p is set equal to 8 quarters.

Estimated ❒ for risk shock: 0.94 EA; 0.85 US.

Impulse responses to risk shock

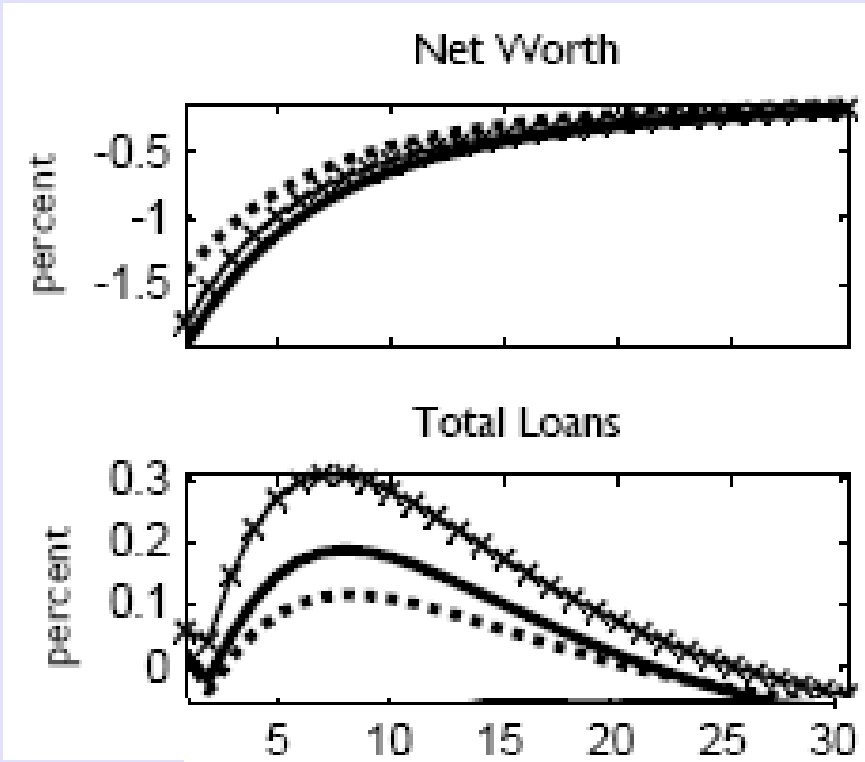
Euro area



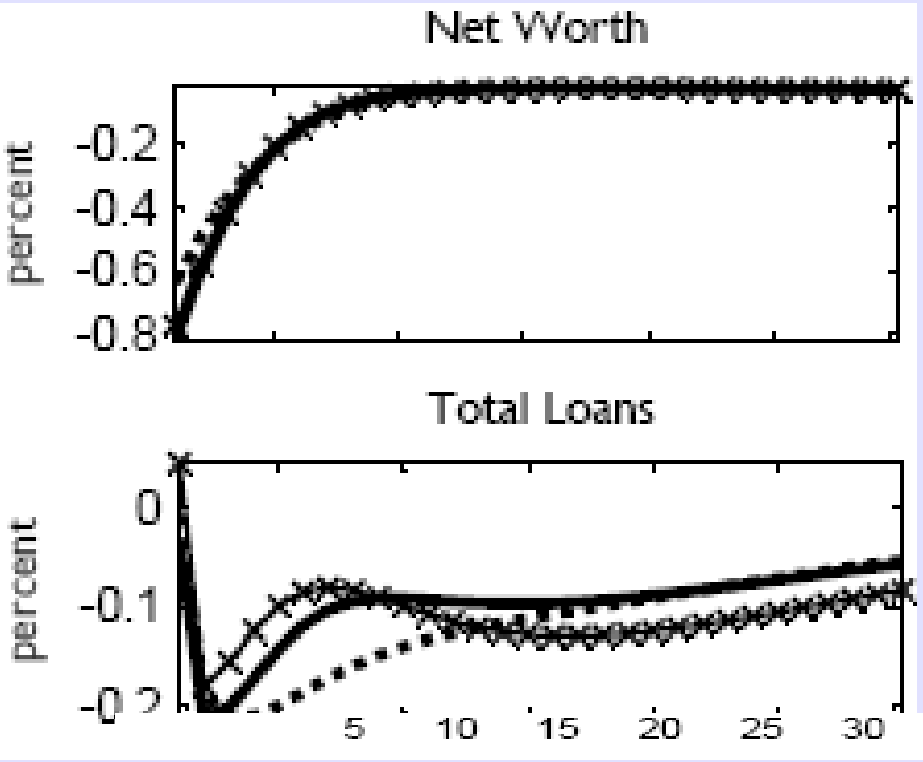
Response to monetary policy shock

Impulse responses to a monetary policy shock appear to show that loans rise in EA but fall in US. Could it be due to the Taylor rule that includes credit in EA?

EA



US



Conclusions

- Paper is an important contribution in the introduction of financial frictions in DSGE models and empirical modelling of EA and the US

- Risk shock and external finance premium seem important for economic fluctuation and this mirrors evidence in other research (Bloom, 2009; Gilchrist, Yankov, Zakrajsek, 2009)

- Parallel research on the functioning of the financial system, banks and asset prices may provide more answers on the nature of risk and also vulnerabilities and hopefully make external premium more forecasteable. Is this feasible?