

Market Confidence and Liquidity Hoarding

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Motivation

- Credit crunch and central banks policy

- No agreement about the policy effect in the literature:

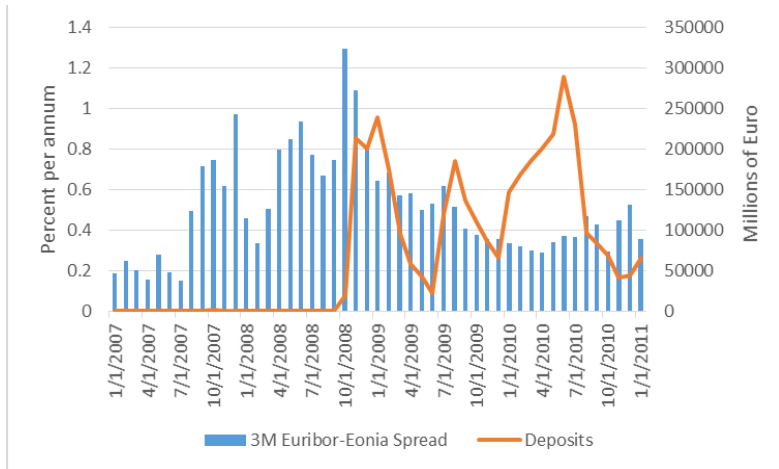
-Curdia and Woodford (2011) and Taylor and Williams (2009): was not efficient or irrelevant

-Del Negro et al. (2011) and Christensen et al. (2014), Gertler and Karadi (2011): helped avoid more severe recession

- Liquidity hoarding
- Change in sentiment

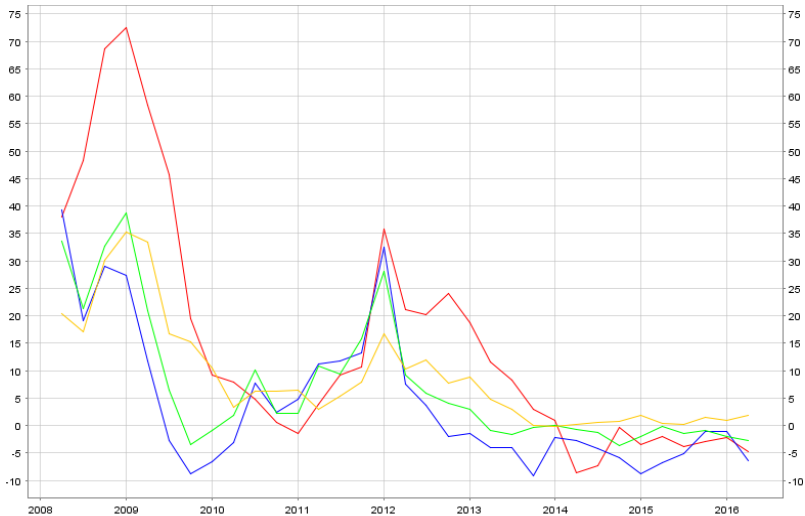
Motivation

Liquidity hoarding



Motivation

Impact on bank's lending standards



— Impact of general economic activity (Unit described in title) — Impact of liquidity position (Unit described in title)
— Impact of ability to access market financing (Unit described in title) — Impact of risk on the collateral demanded (Unit described in title)

Motivation

Paper contribution

- Counterparty risk in the interbank market
- Liquidity hoarding
- Policy exercises:
 - liquidity provision, targeted liquidity provision, declining policy rate, relaxing collateral constraints

Model

Overview

- DSGE framework (Gertler and Karadi (2011))
- Continuum of banks, indexed by i , lend to the real sector and to each other
- Two types of assets:
 - safe (reserves), pays R_t^{res}
 - risky, pays R_{t+1}^k
- Banks differ by their beliefs about risky asset return,
 $\hat{E}_t^i R_{t+1}^k \sim N(\bar{R}_t^{k,KF}, P_t^{KF})$

Model

Overview

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$$\mu_t = \rho_\mu \mu_{t-1} + v_t$$

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- Experts' opinions

$$\mu_t^i = \mu_t + \theta_t^i \quad (2)$$

Model

Bank's balance sheet

Assets	Liabilities
Manufacturers' claims	Deposits
Reserves	Interbank borrowing
Interbank lending	Net worth

Model

Bank's problem

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- L_t^i interbank loan

$$L_t^i = \begin{cases} 0, & \text{for lenders} \\ \lambda_b * (\text{net worth}), & \text{for borrowers} \end{cases}$$

Model

Bank's problem continued

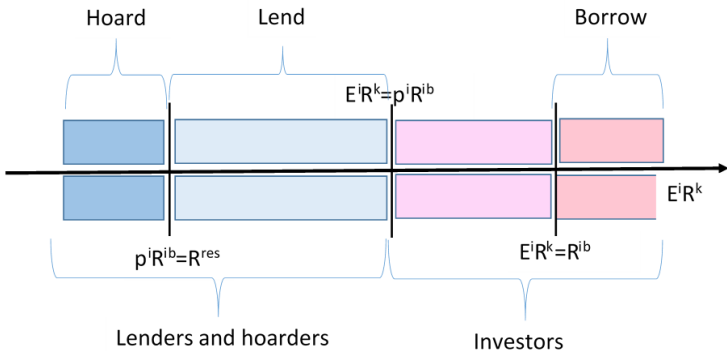
- Collecting the terms by α_t^i :

$$\alpha_t^i \left(\hat{E}_t^i R_{t+1}^k - p_t^i R_t^{ib} \right)$$

- $\alpha_t^i = 1$ for $\hat{E}_t^i R_{t+1}^k \geq p_t^i R_t^{ib}$, $\alpha_t^i = 0$ for $\hat{E}_t^i R_{t+1}^k < p_t^i R_t^{ib}$
- Note: for each lender all borrowers are identical
- $p_t^i = \text{Prob} \left(\hat{E}_t^i R_{t+1}^k (1 + \lambda_b) > R_t d_t + \lambda_b R_t^{ib} \right)$
- A lender lends if $p_t^i * R_t^{ib} > R_t^{res}$, hoards otherwise
- A borrower borrows if $\hat{E}_t^i R_{t+1}^k \geq R_t^{ib}$

Model

Interbank market and beliefs



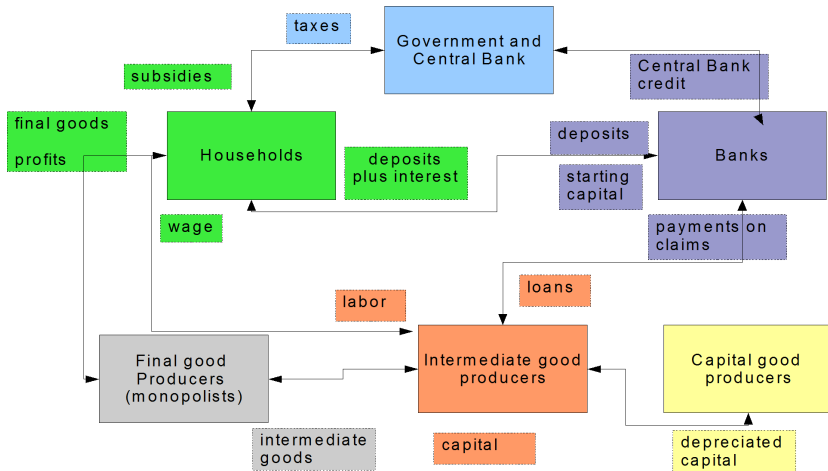
Model

Crisis and policy responses

- "Fundamental" shock: $\zeta_t = \rho_\zeta \zeta_{t-1} + \mu_t + \varepsilon_{\zeta,t}$
- Sentiment shock: $\hat{\mu}_t^i = \mu_t + \eta_t^i$
- Policy: $\nabla_t^p = \kappa^p \left(R_{t+1}^k - R_t - (\overline{Rk - R}) \right)$
 - untargeted $Q_t K_{t+1} + Res_t = D_t + \psi_t (Q_t K_{t+1} + Res_t)$
 - targeted $Q_t K_{t+1} + Res_t = D_t + \psi_t^{targ} Q_t K_{t+1}$
 - interest rate $R_t^{res} - \nabla_t^p$
 - collateral constraint $\lambda_b - \nabla_t^\lambda$
- Policy costs: $\tau \psi_t (Q_t S_t + Res_t)$ or $\tau \psi_t^{targ} (Q_t S_t + Res_t)$

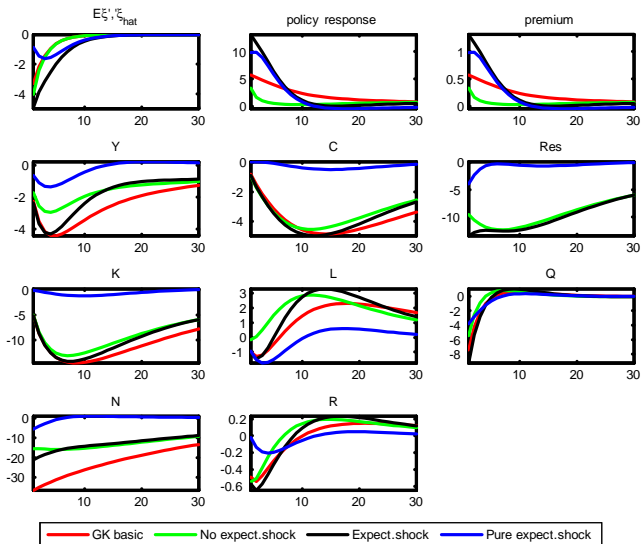
Model

Overview



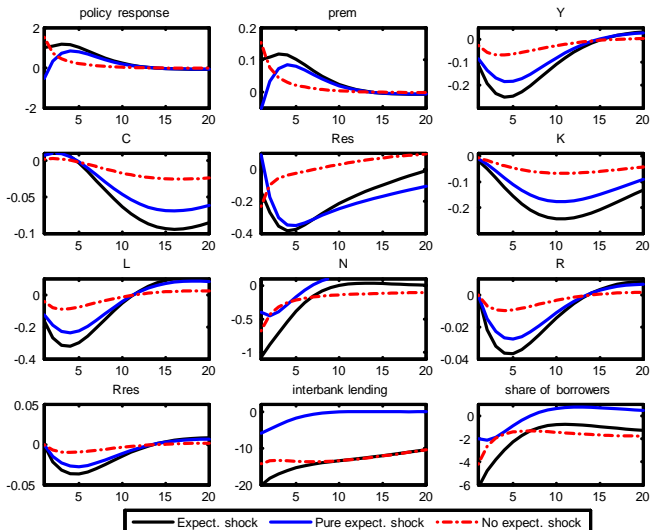
Results

Impulse Responses to Sentiment (5%) and Fundamental Shock (5%)



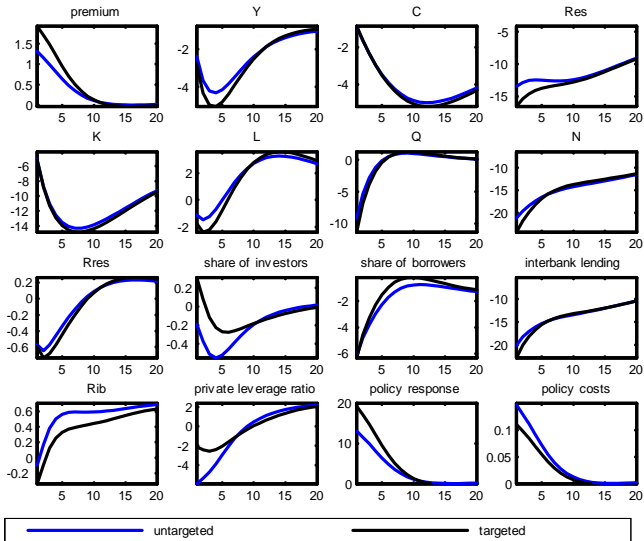
Results

Role of the interbank market



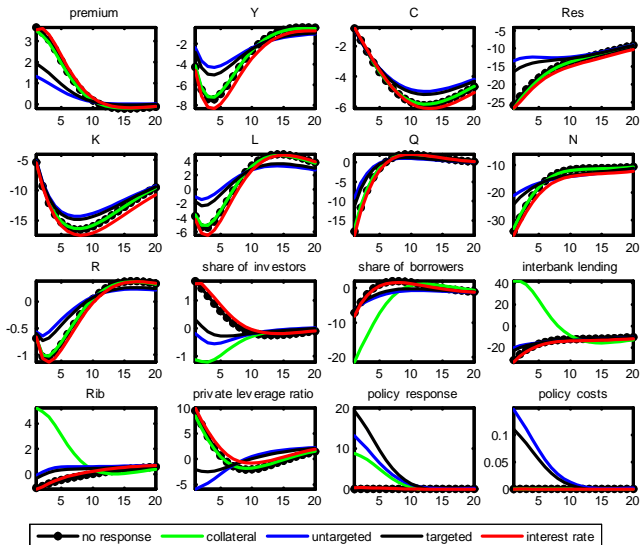
Results

Policy effects



Results

Policy effects continued



Conclusion

- Investors' expectations generate long and large responses in model variables
- Banks hoard some liquidity provided by central bank due to their low sentiment
- Liquidity provision mitigates crisis slightly, but does not stop it, nor decreases its duration

Future Work

- ?

Motivation

Investor Sentiment

