

Confidence Cycles and Liquidity Hoarding¹

V. Audzei

Discussion: Paweł Kopiec, Narodowy Bank Polski

¹The views presented in this paper are those of the author, and should not be attributed to Narodowy Bank Polski.

Brief summary

- Very interesting and original paper
- Elegant structure: simple model solved by paper & pencil \Rightarrow full-blown macro model
- It analyzes the macroeconomic effects of shifts in interbank market confidence and unconventional monetary policies
- Mechanism:



- Framework: an extended version of Gertler and Karadi (2011)
 - ▶ bounded rationality
 - ▶ heterogeneous banks

Brief summary

- Very interesting and original paper
- Elegant structure: simple model solved by paper & pencil \Rightarrow full-blown macro model
- It analyzes the macroeconomic effects of shifts in interbank market confidence and unconventional monetary policies
- Mechanism:

Decrease in expectations about market returns



Projects get more risky, higher counterparty risk across banks



Liquidity hoarding and lower volumes of interbank loans



Lower supply of loans to the real sector

- Framework: an extended version of Gertler and Karadi (2011)
 - ▶ bounded rationality
 - ▶ heterogeneous banks

Brief summary

- Very interesting and original paper
- Elegant structure: simple model solved by paper & pencil \Rightarrow full-blown macro model
- It analyzes the macroeconomic effects of shifts in interbank market confidence and unconventional monetary policies
- Mechanism:

Decrease in expectations about market returns



Projects get more risky, higher counterparty risk across banks



Liquidity hoarding and lower volumes of interbank loans



Lower supply of loans to the real sector

- Framework: an extended version of Gertler and Karadi (2011)
 - ▶ bounded rationality
 - ▶ heterogeneous banks

Contributions of the paper

- Macroeconomic models with a banking sector
 - ▶ **Moral hazard:** Gertler and Karadi (2011), Gertler et al. (2012), Gertler and Kiyotaki (2015), Bocola (2016), Gourinchas et al. (2017)
 - ▶ Costly intermediation: Curdia and Woodford (2011)
 - ▶ Illiquidity shocks and search and matching: Bianchi and Bigio (2014), Kopiec (2018)

- Origins of interbank market turmoils
 - ▶ **Counterparty risk:** Flannery (1996), Afonso et al. (2011), Heider et al. (2015)
 - ▶ Precautionary liquidity hoarding: Acharya and Skeie (2011)

- Depressed lending after the Great Recession
 - ▶ **Supply-side view:** Bernanke (2010), Gorton (2010), Stein (2010)
 - ▶ Demand-side view: Mian and Sufi (2015), Bianchi and Bigio (2014)

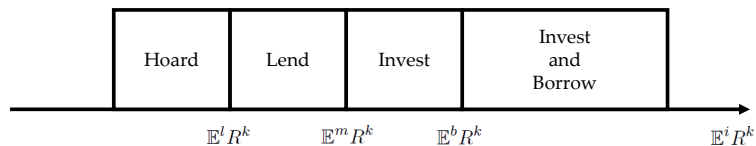
Issue: interbank market rate during crises

- There is a serious discrepancy between the theoretical and the full-blown macro model:
 - ▶ theoretical model: low market beliefs \Rightarrow low interbank rate
 - ▶ full model: low market beliefs \Rightarrow high interbank rate
- Prediction of the theoretical model is at odds with empirical evidence
- Interbank market risk is present in the theoretical model so the upward pressure on interbank rates is there...
- What is behind the downward pressure?

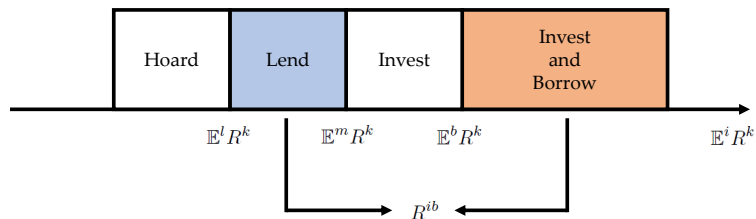
Issue: interbank market rate during crises

- There is a serious discrepancy between the theoretical and the full-blown macro model:
 - ▶ theoretical model: low market beliefs \Rightarrow low interbank rate
 - ▶ full model: low market beliefs \Rightarrow high interbank rate
- Prediction of the theoretical model is at odds with empirical evidence
- Interbank market risk is present in the theoretical model so the upward pressure on interbank rates is there...
- What is behind the downward pressure?

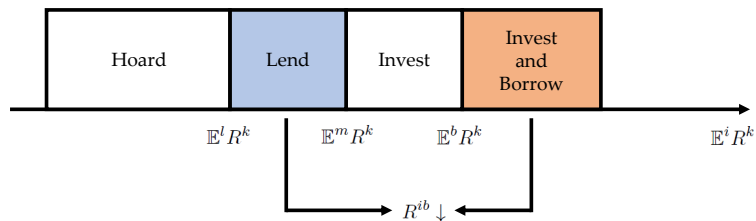
Theoretical model - normal times



Theoretical model - normal times



Theoretical model - confidence crisis



Fixing the problem

- Why interbank rates drop during the confidence crisis in the theoretical model?
 - ▶ Banks are free to choose their market position AFTER the materialization of a confidence shock
 - ▶ As a result, the pool of banks that borrow in the market shrinks (demand for interbank loans decreases)
- Is that a realistic scenario?
 - ▶ Not really...
 - ▶ Brunnermeier (2009): “On August 9, 2007, the French bank BNP Paribas froze redemptions for three investment funds, citing its inability to value structured products. Following this event, a variety of market signals showed that money market participants had become reluctant to lend to each other”
- My suggestion - modify the sequence of events, for example:
 - ▶ First: exogenous division of banks - borrowers and lenders
 - ▶ Second: confidence shock arrives
 - ▶ Third: trade in the interbank market takes place

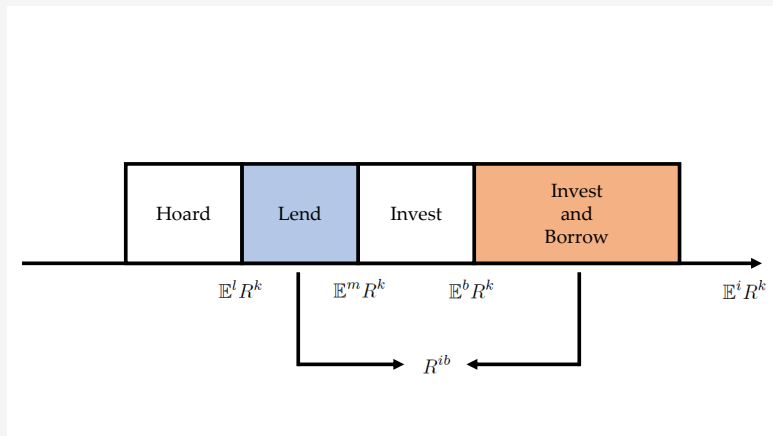
Fixing the problem

- Why interbank rates drop during the confidence crisis in the theoretical model?
 - ▶ Banks are free to choose their market position AFTER the materialization of a confidence shock
 - ▶ As a result, the pool of banks that borrow in the market shrinks (demand for interbank loans decreases)
- Is that a realistic scenario?
 - ▶ Not really...
 - ▶ Brunnermeier (2009): “On August 9, 2007, the French bank BNP Paribas froze redemptions for three investment funds, citing its inability to value structured products. Following this event, a variety of market signals showed that money market participants had become reluctant to lend to each other”
- My suggestion - modify the sequence of events, for example:
 - ▶ First: exogenous division of banks - borrowers and lenders
 - ▶ Second: confidence shock arrives
 - ▶ Third: trade in the interbank market takes place

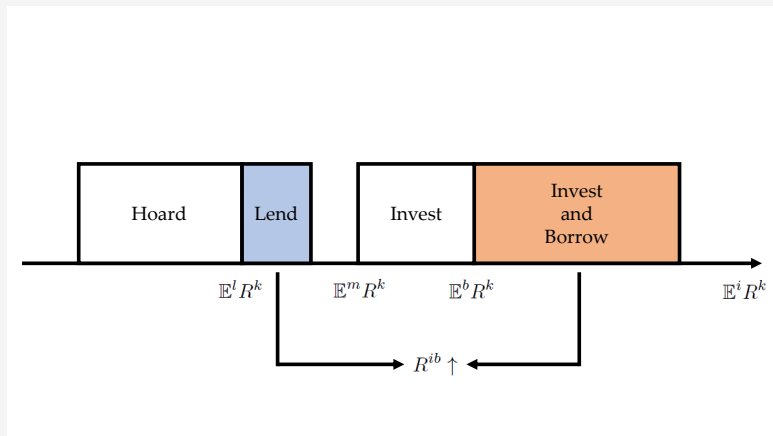
Fixing the problem

- Why interbank rates drop during the confidence crisis in the theoretical model?
 - ▶ Banks are free to choose their market position AFTER the materialization of a confidence shock
 - ▶ As a result, the pool of banks that borrow in the market shrinks (demand for interbank loans decreases)
- Is that a realistic scenario?
 - ▶ Not really...
 - ▶ Brunnermeier (2009): “On August 9, 2007, the French bank BNP Paribas froze redemptions for three investment funds, citing its inability to value structured products. Following this event, a variety of market signals showed that money market participants had become reluctant to lend to each other”
- My suggestion - modify the sequence of events, for example:
 - ▶ First: exogenous division of banks - borrowers and lenders
 - ▶ Second: confidence shock arrives
 - ▶ Third: trade in the interbank market takes place

Modified model - normal times



Modified model - confidence crisis



References I

- Acharya, V. V. and Skeie, D. (2011). A model of liquidity hoarding and term premia in inter-bank markets. *Journal of Monetary Economics*, 58(5):436–447.
- Afonso, G., Kovner, A., and Schoar, A. (2011). Stressed, Not Frozen: The Federal Funds Market in the Financial Crisis. *Journal of Finance*, 66(4):1109–1139.
- Bernanke, B. S. (2010). Causes of the recent financial and economic crisis: testimony before the Financial Crisis Inquiry Commission, September 2, 2010. Web Site 101, Board of Governors of the Federal Reserve System (U.S.).
- Bianchi, J. and Bigio, S. (2014). Banks, Liquidity Management and Monetary Policy. NBER Working Papers 20490, National Bureau of Economic Research, Inc.
- Bocola, L. (2016). The Pass-Through of Sovereign Risk. *Journal of Political Economy*, 124(4):879–926.

References II

- Brunnermeier, M. K. (2009). Deciphering the Liquidity and Credit Crunch 2007-2008. *Journal of Economic Perspectives*, 23(1):77–100.
- Curdia, V. and Woodford, M. (2011). The central-bank balance sheet as an instrument of monetary policy. *Journal of Monetary Economics*, 58(1):54–79.
- Flannery, M. J. (1996). Financial Crises, Payment System Problems, and Discount Window Lending. *Journal of Money, Credit and Banking*, 28(4):804–824.
- Gertler, M. and Karadi, P. (2011). A model of unconventional monetary policy. *Journal of Monetary Economics*, 58(1):17–34.
- Gertler, M. and Kiyotaki, N. (2015). Banking, Liquidity, and Bank Runs in an Infinite Horizon Economy. *American Economic Review*, 105(7):2011–2043.
- Gertler, M., Kiyotaki, N., and Queralto, A. (2012). Financial crises, bank risk exposure and government financial policy. *Journal of Monetary Economics*, 59(S):17–34.

References III

- Gorton, G. B. (2010). *Slapped by the Invisible Hand: The Panic of 2007*. Number 9780199734153 in OUP Catalogue. Oxford University Press.
- Gourinchas, P.-O., Philippon, T., and Vayanos, D. (2017). The Analytics of the Greek Crisis. *NBER Macroeconomics Annual*, 31(1):1–81.
- Heider, F., Hoerova, M., and Holthausen, C. (2015). Liquidity hoarding and interbank market rates: The role of counterparty risk. *Journal of Financial Economics*, 118(2):336–354.
- Kopiec, P. (2018). Interbank Market Turmoils and the Macroeconomy. MPRA Paper 85028, University Library of Munich, Germany.
- Mian, A. and Sufi, A. (2015). *House of Debt*. Number 9780226271651 in University of Chicago Press Economics Books. University of Chicago Press.
- Stein, J. (2010). Securitization, shadow-banking and financial fragility. *Daedalus*, pages 41–51.

The End

Thanks for your attention!