The 2007/09 turmoil: a challenge for the integration of the euro area money market?

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The views expressed in this paper are our own and do not necessarily coincide with those of the ECB
• This paper studies the impact of the financial market crisis on the euro money market(s).

• Main thesis: asymmetric information has played a large role.

• Focus of this paper: effects on cross-border integration (within the euro area) of the money market.

• Preliminary analysis!
1. Motivation of the paper
2. Cross-border integration of the money market: theory
3. The integration of the euro area money market since 2007
4. Conclusions
1. Motivation of the paper

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1. Motivation: Euro money market integration

Since 1999: single monetary policy

- Monetary policy decisions should affect all countries in the same way
- First step in transmission from monetary policy rate decisions to real economy
- Same interest rate in all countries → integration of money market is important → liquidity should flow freely from country to country
I. Motivation: Euro money market integration

Early 1999

- Very fast convergence of interest rates

- No comprehensive euro area wide dataset (OTC)

- Reference rates:
  - EONIA (unsecured, overnight)
  - EURIBOR (unsecured, other maturities)
  - EONIA: Stable, low dispersion
1. Motivation

• Data source used in this paper: e-MID
  - electronic trading system for money market transactions
  - Located in Italy
  - Participants both domestic (Italian) and foreign
  - Unsecured transactions (different maturities)
  - Transaction level data

• Literature on euro money market
  - Analysis of recent trends in e-MID: Angelini, Nobili, Picillo (2009)
I. Motivation

• We study effect of financial turmoil on integration of euro money market (New issue)

• Important in turmoil: asymmetric information about counterparty exposures (Heider et al 2009)

• Effects of asymmetric information may have been especially relevant in cross-border context
  – see Freixas and Holthausen 2005
1. Motivation of the paper
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2. Cross-border integration

Freixas and Holthausen (RFS, 2005)

- Two country model
- Each country faces liquidity shock
- There is asymmetric information about banks’ solvency across borders
- An integrated interbank market can help to smooth domestic liquidity shocks (stabilize money market interest rates)
2. Cross-border integration

Freixas and Holthausen (RFS, 2005)

Asymmetric information across borders may hamper integration of money markets:

• Foreign banks would pay a premium reflecting higher uncertainty about their solvency

• Because of the information premium, a segmented equilibrium exists

• An integrated equilibrium may coexist with an equilibrium with segmentation, if the information premium is not too high
2. Cross-border integration

Freixas and Holthausen (RFS, 2005)

As of 2007 (before August) the euro money markets appeared to have been fully integrated (same interest rates). Three cases can be distinguished:

• **No problems of asymmetric information. Single money market**
• **Banks with good rating borrow cross-border. Cross-border interest rates slightly above those prevailing in the liquidity rich country**
• **Rate convergence due to activity of large money-centre banks (TBTF). Small banks borrow in domestic market. Large banks borrow cross border.**
2. Cross-border integration

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3. Integration of the money market since 2007

After August 2007 / September 2008 we have the following testable hypotheses:

H1. Turmoil had no impact

H2. Switch to segmented market
   a. Market breakdown
   b. Two-tier system
Data source: e-MID

• Electronic trading platform for unsecured money market transactions operating in Italy

• Some facts:
  – Ca 17% of total turnover in EUR unsecured money market (ECB, 2004)
  – Share had declined since start of turmoil
3. Integration of the money market since 2007

Methodology

• Compare volumes of Italian (domestic trades) and non-Italian banks (cross-border trades)

• Study spreads between
  – Interest rates charged for domestic trades
  – Interest rates charged for cross-border trades

• The combination of both will allow us to draw inferences on the structure of the money market
Share of cross-border volumes

In e-MID, unsecured segment
• Turmoil had different impact on money market volumes for domestic and cross-border trades

• ‘Full integration equilibrium’ (many banks trade cross-border) broke down

• Did a segmented market emerge?
  – Study interest rates!
Spread paid on cross-border transactions

Average spread (bp) paid by foreign banks when borrowing in the e-MID market
Spread paid on cross-border transactions

- Evolution of spreads:
  - 2002-2003: foreign banks paid a small premium (~1 bp)
  - 2004-2006: premium disappeared (~ 0 bp)
  - 2007 (first phase of turmoil): foreign banks get a discount (- 1 bp)
  - 2008 (post-Lehman): foreign banks pay large premium (+ 14 bp)
  - 2009: foreign banks continue paying premium (2-3 bp)
Three stages of money market integration

2003-early 2007
• Full money market integration

Late 2007 (early turmoil phase):
• Sharp decline in cross-border volumes; lower than average interest rates
• Fewer, better known (less risky) banks trade
• Two tier system (can achieve integration)

Post-Lehman
• Further decline in cross-border volumes, and
• Strong rise in foreign premia.
• Two-tier system breaks down; segmented markets
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Financial turmoil impacted on integration of euro money market through increase in (cross-border) asymmetric information

- **After August 2007:**
  - Lower volume in cross-country borrowing
  - Trading activity of many banks is replaced by two-tier structure

- **After September 2008:**
  - Further decline in cross-border volumes
  - Two-tier structure breaks down
4. Conclusions

Caveats:

- **Are e-MID data representative for euro area?**
  - Possibly: integration achieved in other parts of money market

- **Missing information: cross-country panel of interest rates**
  - Do interest rates diverge across countries?

THANK YOU!
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Annex: EONIA vs. e-MID

![Line chart showing turnover in overnight segment for EONIA and e-MID from Jan-07 to Nov-09. The chart compares the two segments in EUR million, with a clear visual distinction between the two.](image-url)
Empirical evidence:
- Volumes in the EONIA panel increased
- Volumes in the e-MID declined

Provide evidence of:
- Borrowers switching from an electronic dealership market (transparent) to an over-the-counter bilateral market which is more opaque
- Evidence of the emergence of asymmetric information in the money market