

# Limits to arbitrage during the crisis: funding liquidity constraints and covered interest parity

by Tommaso Mancini-Griffoli & Angelo Ranaldo

*Discussion by  
Dagfinn Rime*

*Norges Bank*

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# Overview on CIP arbitrage

- Early work: Major data-limitations
- Taylor (1987): CIP holds
  - ▶ Recent work confirms: role for **illiquidity**
  - ▶ Suggest compensation for following markets as explanation for tiny devs (Grossman and Stiglitz, 1980)
- Taylor (1989): Deviations during turbulence
  - ▶ Explanation: Credit limits and liquidity constraints
- Several papers on CIP during the crisis, e.g. Baba and Packer (2009)

# This paper

- 1 CIP deviations during the crisis
  - ▶ CIP-devs as a indicator of turbulence
  - ▶ Nice, as it avoids the discussion of “bubble”
- 2 Explain deviations
  - ▶ Distinguish between **Secured** and Unsecured arb
  - ▶ HUGE advantage! Helps narrow down explanations
  - ▶ Explanations relevant to the crisis. Broader than just CIP
    - ★ Unsecured = Counterparty risk
    - ★ Secured/collateralized = No counterparty risk
- 3 A positive, opposed to normative, analysis of policy

# 1. Data and documenting CIP devs

Nice data

- Especially the Repo-data
- Intraday snapshots:
  - BUT** How sure are you about synchronicity?
    - ▶ The CIP-deviations in Akram et al. (2008) are so small so it makes a difference when rates are sampled
- Aren't SWAP-markets more liquid than forwards?
  - ▶ Worry that TC are too high

# 1. CIP deviations

(I)

- CIP devs: negative profits before the crisis, and up to 4% profit during fall 2008
- Worry: 1-Week deviations are HUGE before the crisis (close to -0.5%)
  - ▶ Higher TC makes arb harder. Are TCs too large?
  - ▶ But, 1M look more reasonable!
  - ▶ Are short-deviations due to “liquidity” demands?  
Deviations in ON might be massive because it's not about arb

# 1. CIP deviations

(II)

- Similarity of secured and unsecured deviations *before* the crisis. As expected?
- Is secured arb common?  
CIP-gains very small (earlier papers): Why use valuable collateral for arb?
- Extended sample: Break in June 2009?

## 2. Funding Constraints or Risk Compensation?

- Extremely difficult to actually proxy, or distinguish, concepts.
- Authors do a very good job!
- Comments are about how clean these concepts are

## 2. Find: FUNDING CONSTRAINTS

- Gains from secured and unsecured arb are similar:
- Secured “don’t” have CP-risk  $\Rightarrow$  Liquidity constraints drive both
- ? What is driver of Liquidity constraints? Some changing RISK perceptions?
- ? Can it be compensation for risk of huge market drops?  
The risk of CP default can be correlated with the risk that collateral becomes worthless?
  - ▶ But guess collateral may actually *increase* when other markets drop?



## 2. RISK COMPENSATION

- Is it “New” risk since no compensation before crisis?  
Linearity/non-linearity
- **Contract risk:** default on the unsecured forward.  
Common to both. Difficult to measure, but  
significance of its proxy (FX vol) is not clear
- Can't ROLL-OVER RISK and *future* FUNDING  
CONSTRAINTS be related?  
Are arb-positions really rolled over?

## 2. Explanations

## (IV)

**Bottom Line:** Proxies for FUNDING CONSTRAINTS consistently give significant and expected results, while RISK factor's don't.

- What is the relative contributions WHEN contract risk apparently matters? Econ vs. stat signif.
- Estimation-sample? Crisis-period?  
If not: Expect some parameter-instability

# Minor

- LIBOR-rates: What is meant literally wrt to arb-opportunities?  
LIBOR a survey rate, not observed continuously.  
Issue of synchronous prices.
- **Roll-over risk:** Relevant for risk-taking, but for arbitrage?
- Figure 2: How is average relative spread calculated?

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