Arbitrage Capital of Global Banks

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Overview

- The 2008-09 crisis was characterized by a short-term wholesale funding dry-up
  - run on the repo market and money market funds
  - use of short-term wholesale funding to finance long-term illiquid assets
  - fire sales of assets, credit contraction, financial distress

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  - BASEL III liquidity regulations
  - The 2014 MMF reform:
    - tie the share price to the value of the underlying portfolio
    - liquidity fee, gate redemptions
    - outflow from prime MMFs to government MMFs

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- **This paper:** studies the response of global banks to a negative unsecured wholesale funding shock induced by the 2014 MMF reform

Main findings

- A decline in unsecured wholesale funding in 2015
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  - Banks use short-term unsecured wholesale funding to finance liquid arbitrage positions
- Why is this finding important?
  - seems to suggest that liquidity regulations are effective

Comments

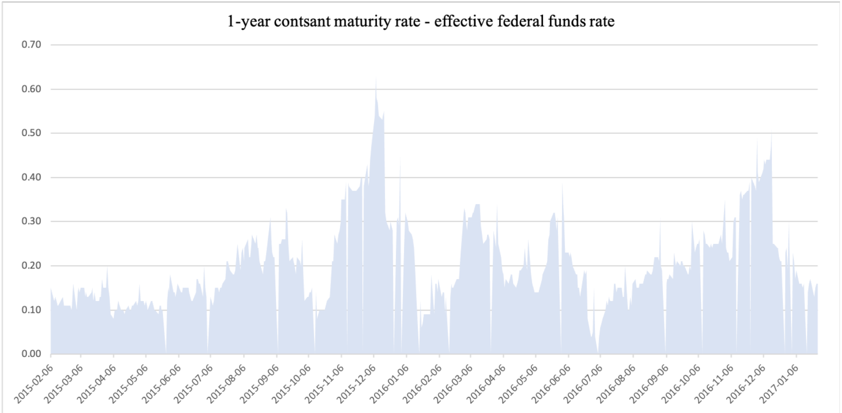
- Very important contribution to the literature
  - impressive data: transaction-level data on various wholesale funding instruments
  - documents important stylized facts on arbitrage activities of global banks
  - provides suggestive evidence on the effectiveness of liquidity regulations
- Discussion
  1. Concept of arbitrage capital and arbitrageurs
  2. Effect on loan supply
  3. External validity

Comment 1a: More detailed discussion of arbitrage capital

- Two types of arbitrage capital:
  1. IOER arbitrage: total amount of unsecured wholesale funds borrowed at a rate below the interest rate on excess reserves
  2. CIP arbitrage: borrow in unsecured dollar wholesale funding market, lend in foreign currency and hedge the foreign currency risk
- Given counterparty risk, should this strategy be considered as a pure arbitrage trade or general portfolio management of a bank?

Comment 1a: More detailed discussion of arbitrage capital

Invest in 1-year Treasury and hedge risk using a swap contract?



Source: FRED

Comment 1a: More detailed discussion of arbitrage capital

- A more nuanced discussion of arbitrage capital would be useful
- What kind of assets?
- Bank characteristics – ex ante liquidity positions of banks, size?
- Foreign vs domestic banks

Comment 1b: Active choice to invest in liquid assets or opportunistic behavior?

- Arbitrageurs are defined based on correlations between changes in reserve balances and unsecured wholesale funding outstanding
- What if lending opportunities drive the correlation between the two?
- Need to identify banks whose arbitrage positions are actively driven by liquidity concerns
- Can you exploit heterogeneity in bank liquidity positions pre-crisis to establish a causal link between wholesale funding and arbitrage activity?

Comment 2a: Intensity of treatment

Effect on loan provision is estimated using:

$$\Delta Y_{i,t} = \alpha + \beta \Delta hold^{Unsec}_{i,t} + \epsilon_{i,t} \tag{1}$$

$\Delta hold^{Unsec}_{i,t}$ is the change in bank i's unsecured funding from all prime money market funds

- The effect of a reduction in unsecured funding from Prime MMFs on lending will depend on:
  1. size of the funding shock
  2. reliance on unsecured funding from Prime MMFs
- Equation (1) captures 1. but not 2.
- Banks cut their lending less if they were not as reliant on short-term debt (Ivashina and Scharfstein, 2010)

Comment 2a: Intensity of treatment

U.S. PRIME MONEY-MARKET FUNDS AS A FUNDING SOURCE

Bank	Country	MMF reliance as of April 2011 (%)	Change in MMF reliance, April 2011 to June 2012 (%)
Eurozone:			
Deutsche Bank	Germany	7.65	2.4%
Rabobank	Netherlands	7.63	-2.7%
Societe Generale	France	6.25	-67.6%
ING Bank	Netherlands	5.14	-27.8%
Natixis	France	5.06	-100%*
Credit Agricole	France	4.28	-82.3%
BNP Paribas	France	4.25	-77.1%
Commerzbank	Germany	1.90	-100%*
Banco Bilbao Vizcaya Argentaria	Spain	1.25	-100%*
UniCredit	Italy	0.99	-100%*
Banco Santander	Spain	0.78	-100%*
Rest of Europe:			
Credit Suisse	Switzerland	4.92	41.9%
Barclays Bank	UK	4.37	-14.8%
Lloyds TSB Bank	UK	3.97	-62.3%
UBS	Switzerland	3.32	-49.4%
RBS	UK	2.29	-61.7%
HSBC	UK	1.49	n.a.

Source: Ivashina et al. (2015)

Comment 2a: Intensity of treatment

- Reliance on Prime MMFs computed as:

  [CD + CP + ABCP + Repo + Other short-term bank notes & deposits]/(short-term debt + deposits)

- Share of ABCP + Repo in Prime MMF portfolio 30% in December 2014 (Source: SEC)

- Share of unsecured funding from Prime MMFs (the focus of this paper) in total funding may be even lower

- Role of internal capital markets? (Cetorelli and Goldberg, 2011)

Comment 2b: Currency composition and maturity of loans

- Global banks finance dollar-denominated loans using dollar-denominated funding (Ivashina et al. 2015)
- Decline in wholesale dollar funding could have implications on dollar-denominated lending
- Similarly, results could be different for short-term vs long-term loans

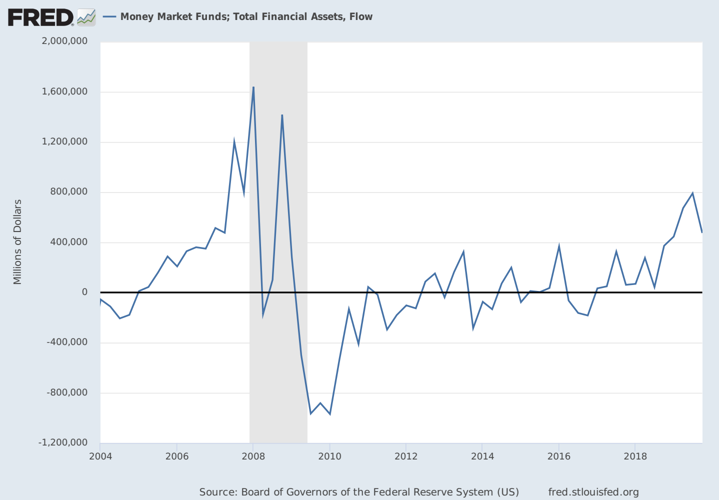
Comment 2c: Effect on income?

- How important are arbitrage profits for banks' cashflow?
- Given that banks had to cut down their arbitrage positions, what was the impact on the lost interest income and trading income?
- If a wealth shock, could differentially affect banks with and without financial constraints

Comment 2d: Medium-term effect on lending

- The sample period is October 2015 to October 2016
- Changes in loans might show up over a longer period

Comment 3a: Does the systemic nature of shock matter?



Comment 3b: Does the source of the funding shock matter?

- During the Eurozone crisis, wholesale funding dry-up was a result of MMFs' exposure to banks with asset-backed securities
- Could have made it difficult for banks to switch to other sources of funding

Conclusion

- Very important paper
  - highlights the changed role of short-term wholesale funding post crisis
  - global banks improved their liquidity ratios by using wholesale funds to invest in more liquid assets rather than reducing their wholesale funding positions
- Can leverage granular data to shed light on liquidity management of global banks