



Shadow banking and macroprudential regulation

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*Shadow Banking: Financial Intermediation beyond
Banks*

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Supply and demand

- Funding mainly from institutions and corporates seeking 'safe' yields – huge growth in managed assets
- On supply side, much of the activity comes from *regulatory arbitrage*: developing organisational forms and transaction strategies that avoid regulation
- But also are *not formally supported by safety nets*
- *And yet may require bailouts* – moral hazard and a form of implicit subsidy



What's the risk?

- Intermediation has gone from regulated banks to shadow banks without prudential regulation, deposit insurance, or lender of last resort (LOLR)
- Using volatile short-term funding (wholesale market) to finance long-maturity assets generates liquidity mismatch as well as maturity mismatch
- Worse: financial innovation (some generated to avoid regulation) that created opaque securities, often held in banks' off-balance-sheet vehicles
- Hence more incentive for lenders to 'run' and more rollover risk for borrowers
- Substantial exposures of banks to shadow banks

Concerns about systemic risk lead us to stress interconnections between banks and shadow banks

Distribution of EU institutions' exposures to shadow banking entities by country of domicile and type of shadow banking entity (*weighted by size of exposure*)

Country / type of 'shadow banking entity'	1. UCITS MMFs	2. Non-UCITS MMFs	3. Non-MMF investment funds	4. Finance companies	5. Broker-dealers	6. Credit insurers/ financial guarantors	7. Securitisation	8. Non-equivalent banks / insurers	9. Other	Total
DE	0.0	0.0	3.7	1.0	0.0	0.0	1.2	0.0	0.4	6.3
ES	0.0	0.0	0.0	0.3	0.0	0.1	0.3	0.0	0.1	0.7
FR	0.7	0.0	0.5	0.6	0.0	0.0	2.2	0.0	0.4	4.5
GB	0.0	0.4	2.5	2.0	0.4	0.5	2.2	0.0	2.4	10.5
HK	0.1	0.0	0.5	0.0	0.6	0.0	0.0	0.0	0.1	1.3
IE	0.0	0.0	0.8	0.7	0.0	0.0	4.5	0.0	0.3	6.3
JE	0.0	0.0	0.2	0.1	0.0	0.0	2.7	0.0	0.0	3.0
JP	0.0	0.0	0.2	0.1	0.6	0.0	0.0	0.4	0.2	1.5
KR	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.9	0.5	2.6
KY	0.0	0.0	3.4	0.7	0.0	0.0	1.8	0.1	0.5	6.5
LU	0.3	0.0	2.3	0.7	0.2	0.0	1.2	0.0	0.4	5.2
NL	0.0	0.0	0.2	0.6	0.0	0.0	1.5	0.0	0.1	2.5
RU	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.7	0.1	1.9
TR	0.0	0.0	0.0	0.4	0.0	0.0	0.0	3.0	0.0	3.5
US	0.7	0.2	4.0	8.2	0.3	0.3	7.1	1.6	4.7	27.1
EU other	0.1	0.0	2.0	1.4	0.0	0.0	0.4	0.1	0.3	4.4
RW other	0.0	0.1	1.9	1.2	0.6	0.6	0.8	4.4	2.5	12.1
Total	2.0	0.9	22.3	18.2	2.8	1.4	26.2	13.3	13.0	100.0

Source: Abad *et al.*, 'Mapping the interconnectedness between EU banks and shadow banking entities', ESRB Working Paper No. 40, March 2017



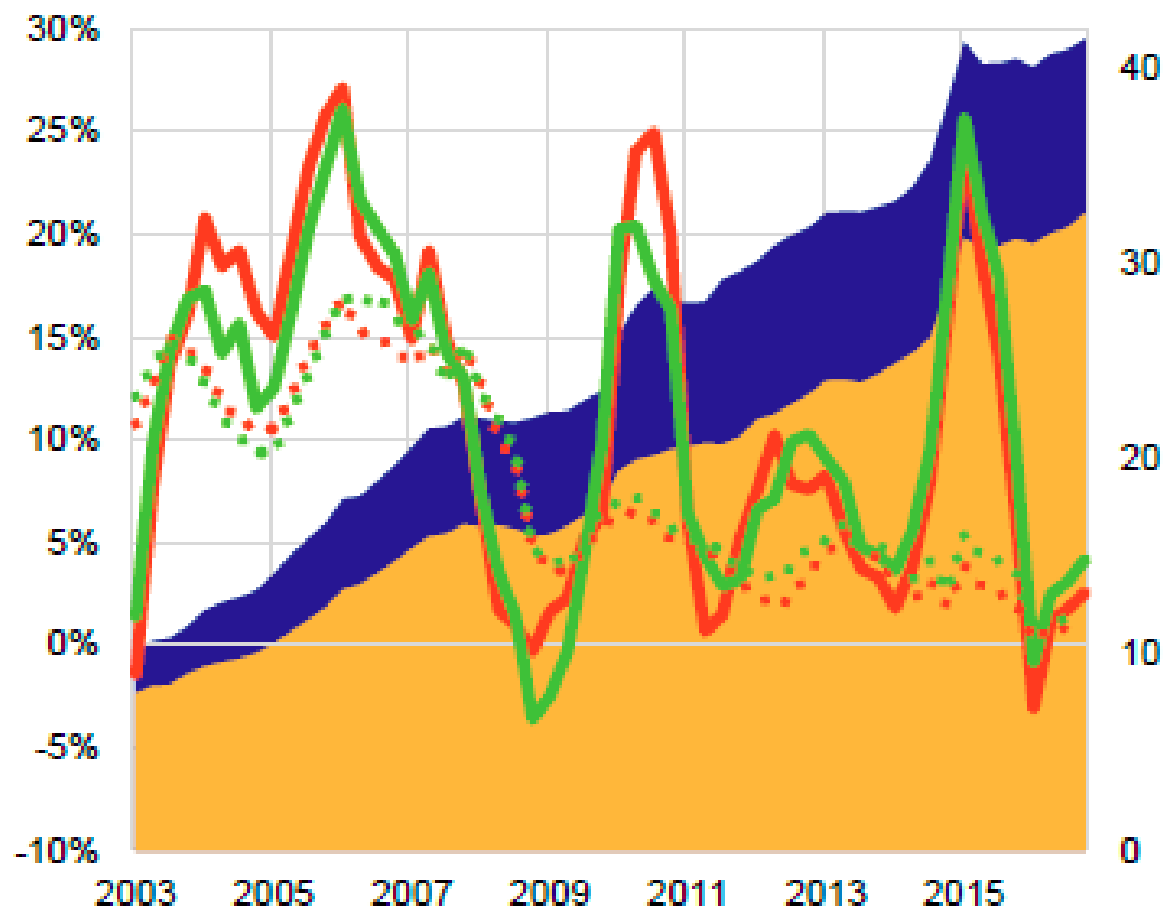
Shadow Banking in Europe

- Most important: financial vehicle corporations (FVCs), securities and derivatives dealers (SDDs), and hedge funds...
- ...because they have most maturity transformation, liquidity transformation, and leverage
- FSB and Tobias Adrian point to switch from shadow banking to market-based finance – but that's not clear in European data

Broad measure of EU and €-area shadow banking 2003-2016

(€ trillions and annual growth rates; last observation: Q4 2016)

- EU broad measure (rhs)
- euro area broad measure (rhs)
- EU growth rate (lhs)
- euro area growth rate (lhs)



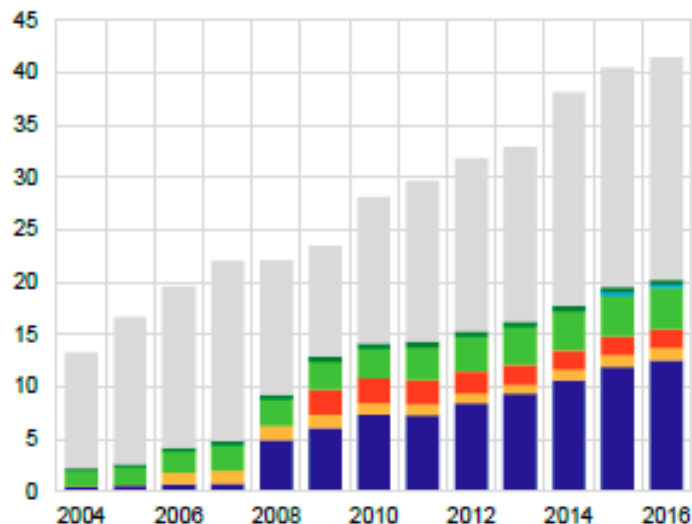
Data gaps: some measures of our ignorance

Chart A

Breakdown of EU investment funds and other financial institutions by type

(€ trillions; last observation: Q4 2016)

- non-MMF investment funds
- money market funds
- financial vehicle corporations
- special financial institutions
- non-securitisation SPVs
- captive financial institutions
- residual OFIs



Sources: ECB, Central Bank of Ireland, De Nederlandsche Bank, Nationale Bank van België/Banque Nationale de Belgique and ECB calculations.

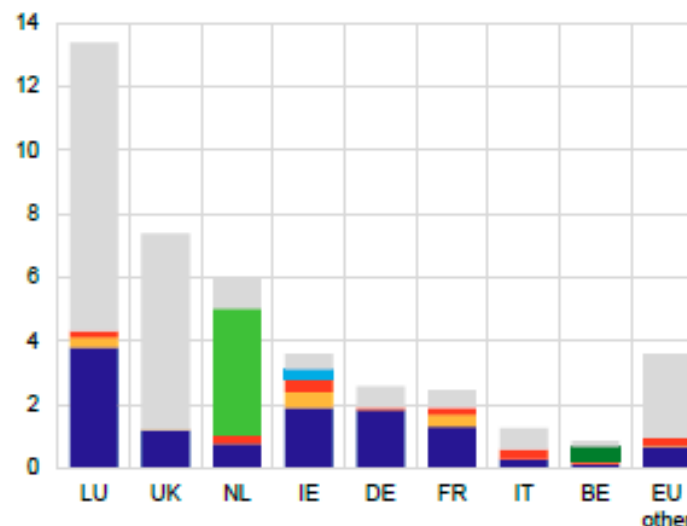
Note: Data on euro area MMFs commence in Q1 2006, data on euro area non-MMF investment funds in Q4 2008 and data on euro area FVCs in Q4 2009.

Chart B

Assets held by non-bank financial entities: breakdown by domicile and type of entity

(€ trillions, Q4 2016)

- non-MMF investment funds
- money market funds
- financial vehicle corporations
- special financial institutions
- non-securitisation SPVs
- captive financial institutions
- residual OFIs



Sources: ECB, Central Bank of Ireland, De Nederlandsche Bank, Nationale Bank van België/Banque Nationale de Belgique and ECB calculations.



ESRB *Shadow Banking Monitor*

- **Objective:** Assess components and structural vulnerabilities of the EU shadow banking sector
- **Approach**
 - **Entities-based mapping:** Examines investment funds (incl. MMFs), FVCs, Other OFIs (non-securitisation SPEs, SDDs and FCLs), and assesses their level of shadow banking engagement
 - **Activities-based mapping:** Focuses on horizontal shadow banking risks from financial markets which cut across entities (SFTs, derivatives, market liquidity issues)
 - **Focus:** Examine liquidity and maturity transformation, leverage, interconnectedness with regular banking system and credit intermediation



Where do risky shadow banking activities concentrate?

- Liquidity transformation: mainly real estate funds and bond funds
- Maturity transformation: bond funds
- Leverage: real estate funds and hedge funds
- Credit intermediation: corporate bond and loan funds

Risk metrics

Maturity transformation

Short-term assets / Total assets

Long-term assets / Total assets

Short-term liabilities / Short-term assets

Long-term assets / Short-term liabilities

Liquidity transformation

Non-liquid assets / Total assets

Short-term liabilities / Liquid assets

Short-term assets / Short-term liabilities (current ratio)

Liquidity mismatch: Liquid liabilities less liquid assets, as share of total assets

Leverage

Leverage = Debt / Total assets

Leverage multiplier = Total assets / Equity

Credit intermediation

Loans / Total assets

“Credit assets” (loans and debt securities) / Total assets

Interconnectedness with the regular banking system

Assets with credit institution counterpart / Total assets

Liabilities with credit institution counterpart / Total assets



Source: EU *Shadow Banking Monitor 2*, May 2017



Policy issues

- Risk monitoring – developing metrics, using EMIR, AIFMD and SFTR data
- AIFMD review 2018
- Investment fund liquidity and leverage
- Synthetic leverage
- Shadow banking use of credit derivatives
- Interconnectedness – but here as elsewhere, we should see both sides: we are concerned about the financial disintegration in Europe that followed the crisis, but we worry about systemic risk arising from interconnectedness