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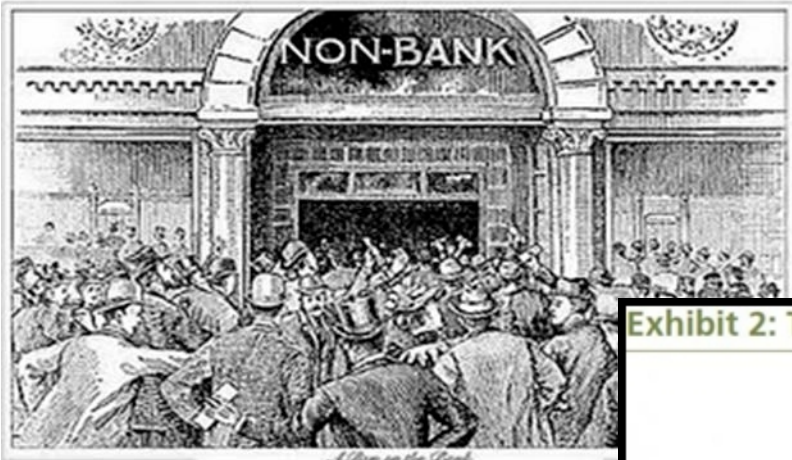
European Systemic Risk Board

European System of Financial Supervision

ESRB's shadow banking analysis and macroprudential policy beyond banking

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A Run on the Bank

ZHANG CHENG



Exhibit 2: The regulatory squeeze on banking

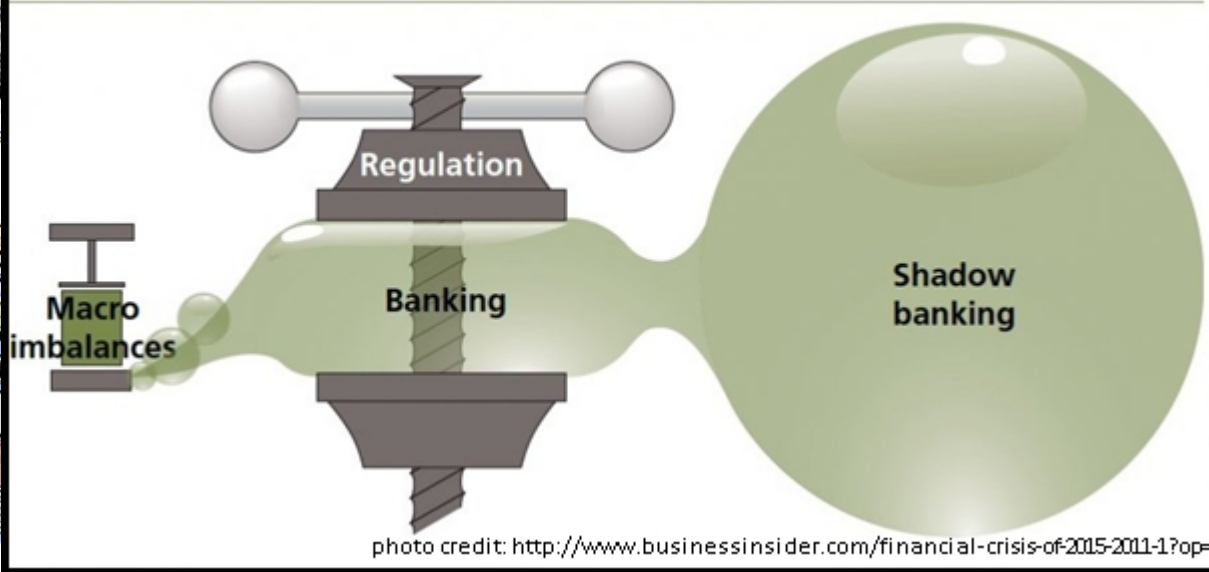
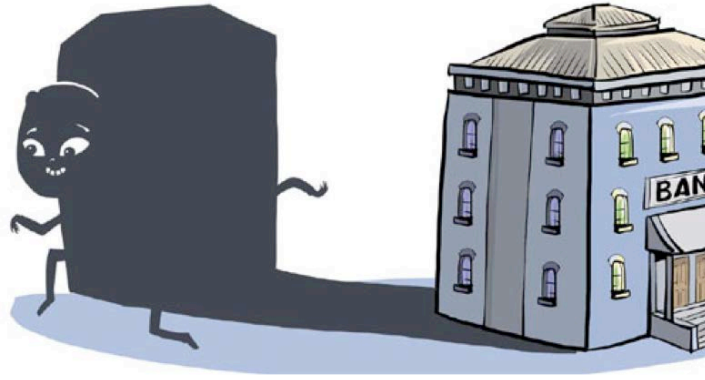


photo credit: <http://www.businessinsider.com/financial-crisis-of-2015-2011-1?op=...>



Terminology...in the flux...

- Shadow bank = broad measure, incl. OFIs, investment funds, MMFs
- Non-bank financial institution
- Market-based finance
- Beyond banking
- ...

Macroprudential policy beyond banking

- ESRB strategy paper “Macroprudential policy beyond banking” (published in July 2016)
 - analyses the current legal and institutional framework governing macroprudential policies beyond banking and
 - proposes a comprehensive policy strategy to address financial stability risks
 - presents short-term policy options and a long-term agenda for macroprudential policy beyond banking
- Risk monitoring framework for shadow banking is a key part of a broader macroprudential strategy beyond banking

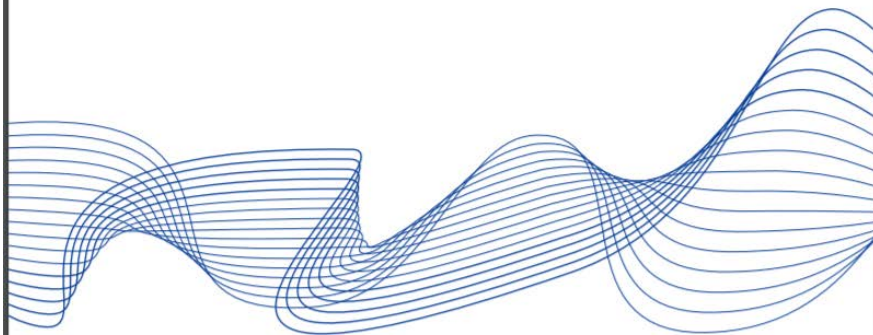
Available at:

https://www.esrb.europa.eu/pub/pdf/reports/20160718_strategy_paper_beyond_banking.en.pdf

EU Shadow Banking Monitor 2017

EU Shadow Banking Monitor

No 2 / May 2017

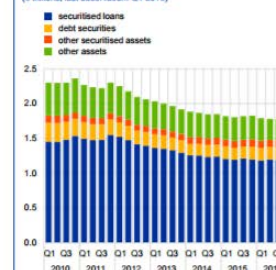


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4.2 Entity-based monitoring

Chart 6
Euro area FVCs' assets

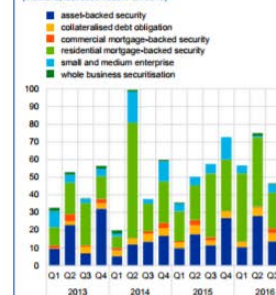
(€ trillions; last observation: Q4 2016)



Source: ECB.
Note: "Other assets" includes shares and other equity, financial derivatives and remaining assets.

Chart 8
European securitisation issuance by collateral

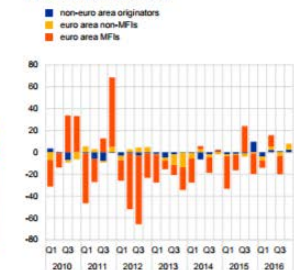
(€ billions; last observation: Q4 2016)



Source: AFME.
Note: "Asset-backed security" includes auto loans, credit card receivables, leases, loans and other receivables; certain public finance initiative securitisations are included within the category "whole business securitisation" as of Q4 2013. European covers all EEA countries and certain non-EEA countries located on the geographical European continent.

Chart 7
Loans securitised by euro area FVCs by originator

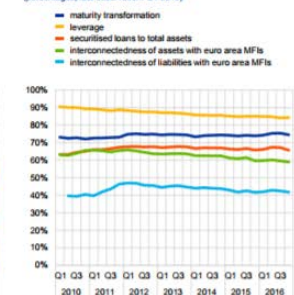
(€ billions; last observation: Q4 2016)



Source: ECB.
Note: Euro area FVCs' securitised loans by originator; transactions.

Chart 9
Euro area FVCs' maturity transformation, leverage, interconnectedness and credit intermediation

(percentages; last observation: Q4 2016)



Source: ECB.
Note: Data on MFI holdings of euro area FVC securities commence in Q2 2010.



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EU Shadow Banking Monitor No 2 / May 2017
Statistical overview

ESRB framework for shadow banking risk analysis

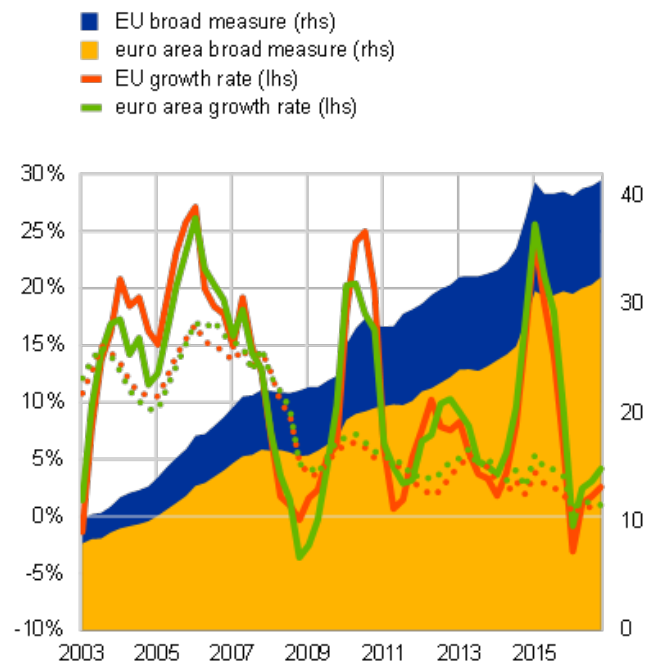
- **Risk-based approach:** Applies entity-based and activity-based approaches, mapping broad shadow banking system in EU
- **Entity-based mapping:** Approach examines investment funds (incl. MMFs), financial vehicle corporations (FVCs), Other OFIs (non-securitisation special purpose entities (SPEs), security and derivative dealers (SDDs) and financial companies engaged in lending (FCLs))
- **Activity-based mapping:** Approach focuses on horizontal shadow banking risks from financial markets which cut across entities (securities financing transactions (SFTs), derivatives))
- **Focus:** Liquidity and maturity transformation, leverage, interconnectedness with regular banking system and credit intermediation.
- **Significant data gaps** for some types of other financial institutions



EU shadow banking growth continued, but at slower pace in 2016

- **EU shadow banking at EUR 40tn**
 - EUR 40 trillion at Q4 2016, 38% of EU financial sector
 - 2.6% growth in 2016
 - 30% growth in shadow banking assets since end 2012-2016. Total assets of credit institutions declined by 6% over same period
 - Broad measure, incl. OFIs, investment funds, MMFs
 - See ESRB [EU Shadow Banking Monitor](#), No. 2, 2017

Broad measure of EU and euro area shadow banking (investment funds and OFIs)
(€trillion and annual growth rates; last observation: Q4 2016)



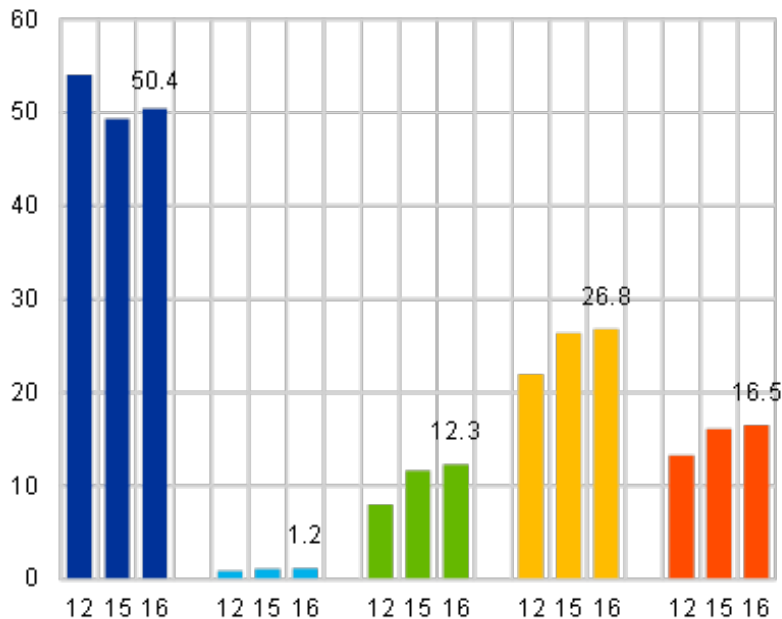
Sources: ECB and ECB calculations.

Notes: Annual growth rates based on changes in outstanding amounts are indicated with the continuous lines. Dotted lines indicate annual growth rates based on transactions – i.e. excluding the impact of FX or other revaluations and statistical reclassifications.

Structure of broad EU shadow banking system

EU financial sector; Q4 2016 (€ trillions)

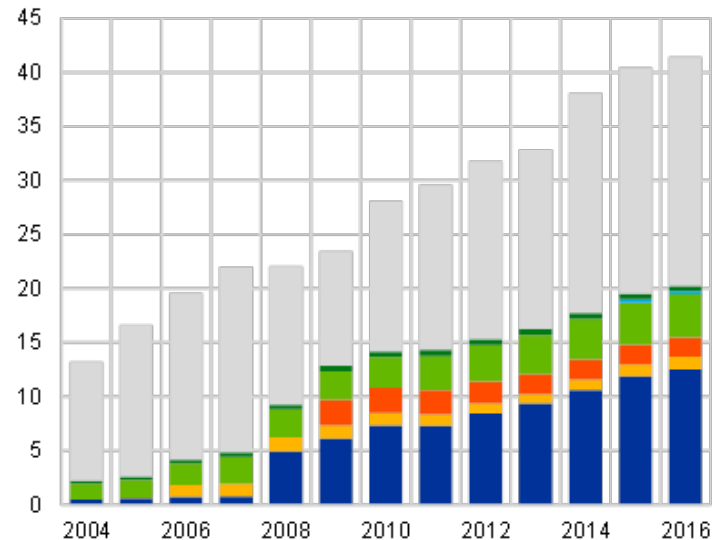
- monetary financial institutions (excluding money market funds)
- money market funds
- non-MMF investment funds
- other financial institutions
- insurance corporations and pension funds



Sources: ECB and ECB calculations.
 Note: Based on financial accounts data on the total financial assets of the financial sector of the euro area plus non-euro area EU Member States.

Breakdown of EU investment funds and other financial institutions by type (€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, National Bank of Belgium and ECB calculations.

Notes: Data for the total OFI sector are sourced from financial accounts statistics; data on investment funds, money market funds and FVCs are based on ECB monetary statistics. Data on special financial institutions, non-securitisation SPVs and captive financial institutions are incomplete and cover only particular countries. No further data breakdowns are available for the residual OFIs in the EU.



Overview of investment funds and OFIs

Entities: sectors and sub-sectors		Description	
Investment funds	Money market funds (S.123)	<i>Part of the monetary financial institutions (MFI) sector</i>	
	Non-MMF investment funds (S.124)	Bond funds	
		Equity funds	
		Mixed funds	<i>Allocated to investment policy according to assets in which they primarily invest</i>
		Real estate funds	
		Hedge funds	
		Other funds	
		Exchange-traded funds (ETFs)	<i>ETFs and private equity funds are included in the above types depending on the strategy of the fund</i>
Private equity funds			
Other financial institutions (OFIs)	Other financial intermediaries (S.125)	Financial vehicle corporations engaged in securitisation (FVCs)	<i>I.e. special purpose entities (SPEs) engaged in securitisation</i>
		Financial corporations engaged in lending (FCLs)	<i>E.g. financial leasing, factoring, hire purchase</i>
		Security and derivative dealers (SDDs)	<i>I.e. dealers on own account</i>
		Specialised financial corporations	<i>E.g. venture capital, export/import financing, central counterparties (CCPs)</i>
	Financial auxiliaries (S.126)	<i>E.g. insurance or loan brokers, fund managers, head offices of financial groups, financial guarantors</i>	
Captive financial institutions and money lenders (S.127)	<i>E.g. SPEs not engaged in securitisation, "brass plate" companies, holding companies</i>		

Key risks and vulnerabilities identified in the EU shadow banking system

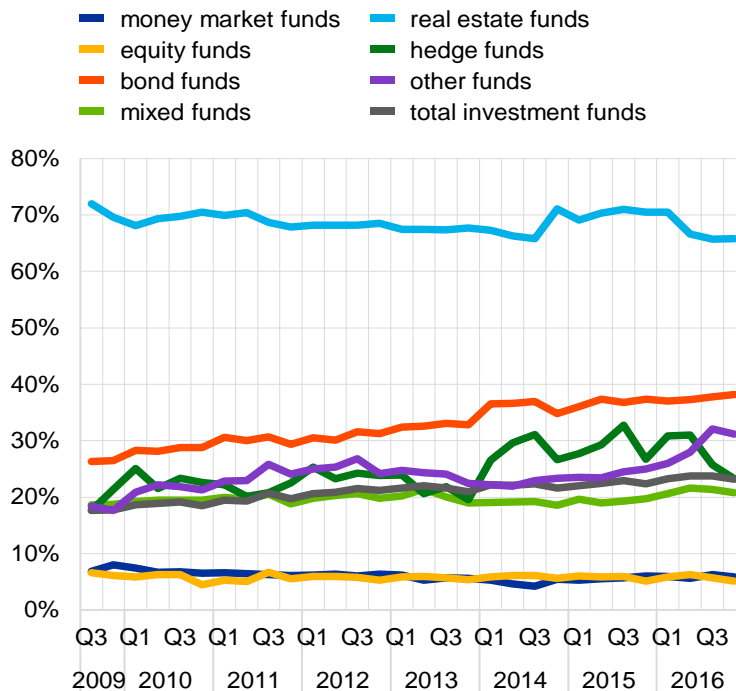
- **Liquidity risk and risks associated with leverage**
- **Interconnectedness and contagion risk** across sectors and within the shadow banking system, domestic and cross-border linkages
- **Risks related to the use of derivatives and securities financing transactions** (procyclicality, leverage, and liquidity risk)



EU investment funds: Liquidity transformation and financial leverage indicators

EU investment funds: Liquidity transformation

(LIQ1; last obs Q4 2016; %)

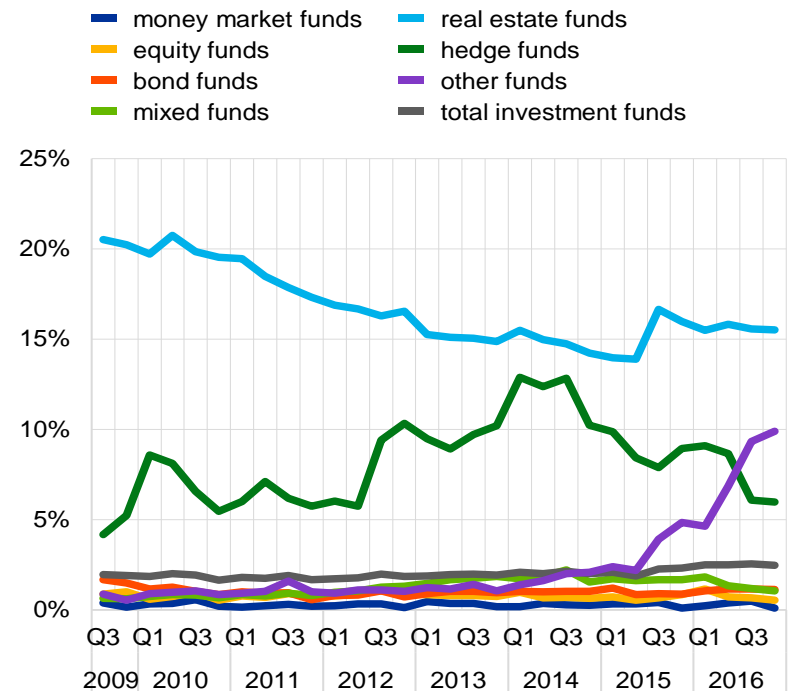


Source: ESRB EU Shadow Banking Monitor, No. 2 May 2017, based on ECB data.

Notes: Based on available data for the EU; Bulgaria, Croatia, Denmark, Sweden and the United Kingdom are not included. Total assets less liquid assets (deposits, sovereign bonds, debt securities issued by MFIs and equity and investment fund shares) as a share of total assets. Closed-end funds are not included. Estimates are made for holdings of non-euro area securities and funds not resident in the euro area.

EU investment funds: Financial leverage

(LEV1; last obs Q4 2016; %)



Source: ESRB EU Shadow Banking Monitor, No. 2 May 2017, based on ECB data.

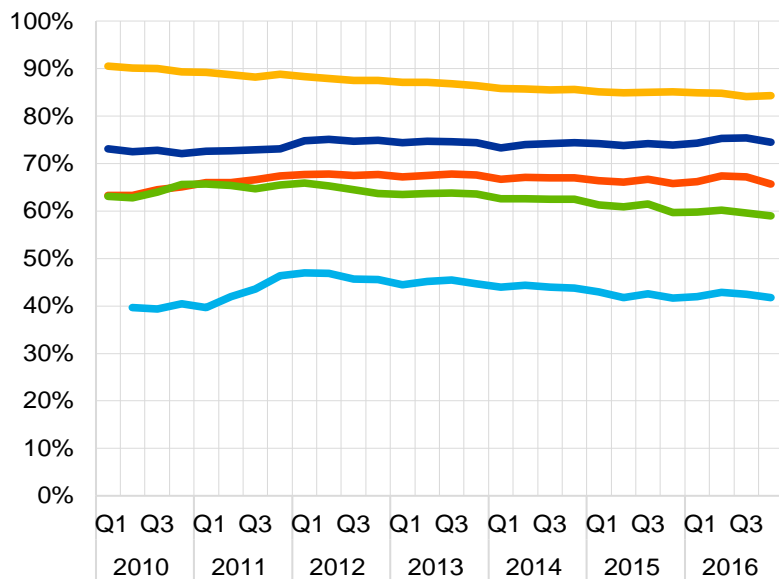
Notes: Based on available data for the EU; Bulgaria, Croatia, Denmark, Sweden and the United Kingdom are not included. Financial leverage is calculated as the ratio of loans received to total liabilities.



Overview of euro area financial vehicle corporations (FVCs)

Euro area FVCs' maturity transformation, leverage, interconnectedness and credit intermediation (%)

- maturity transformation
- leverage
- securitised loans to total assets
- interconnectedness of assets with euro area MFIs
- interconnectedness of liabilities with euro area MFIs

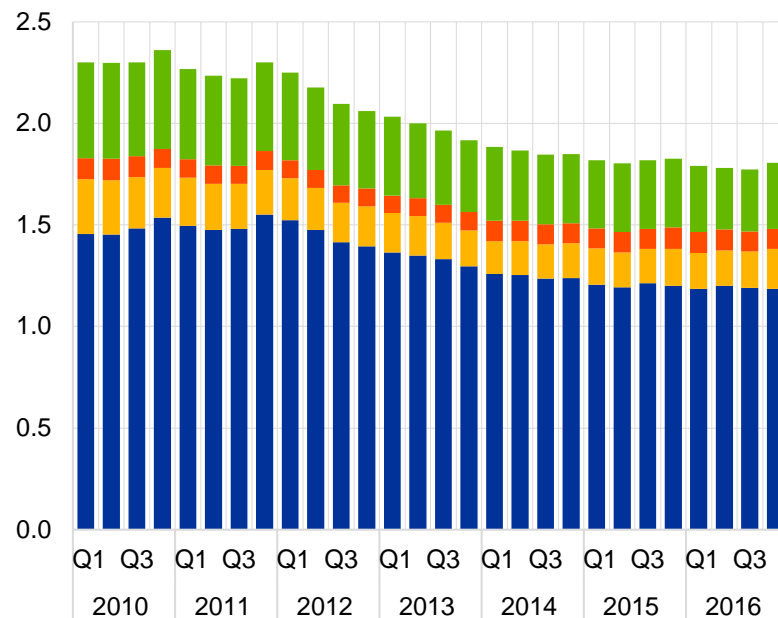


Source: ESRB EU Shadow Banking Monitor, No. 2 May 2017, based on ECB data.

Notes: Data on MFI holdings of euro area FVC securities commence in Q2 2010.

Euro area FVCs' assets (€trillions)

- securitised loans
- debt securities
- other securitised assets
- other assets



Source: ESRB EU Shadow Banking Monitor, No. 2 May 2017, based on ECB data.

Notes: "Other assets" includes shares and other equity, financial derivatives and remaining assets.

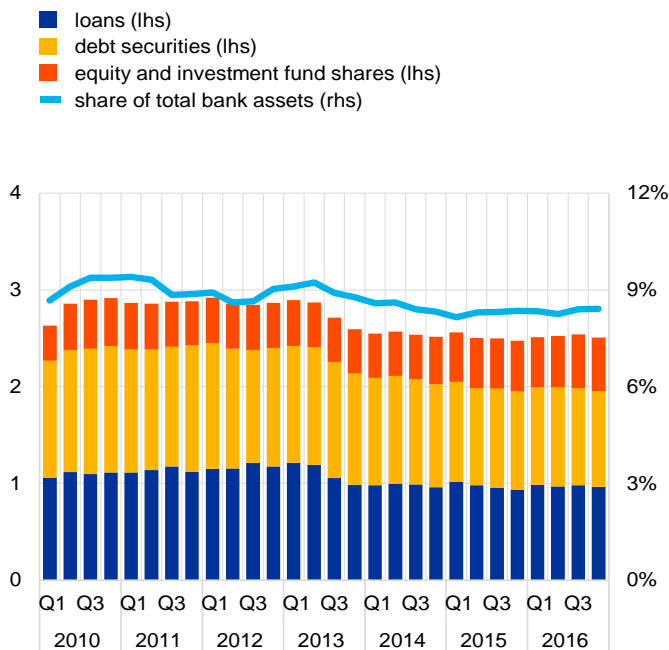


Strong interconnectedness between euro area credit institutions and investment funds and OFIs

- Credit institutions are highly interconnected with entities which comprise the broad measure of shadow banking

Euro area credit institutions' assets vis-à-vis euro area investment funds and OFIs

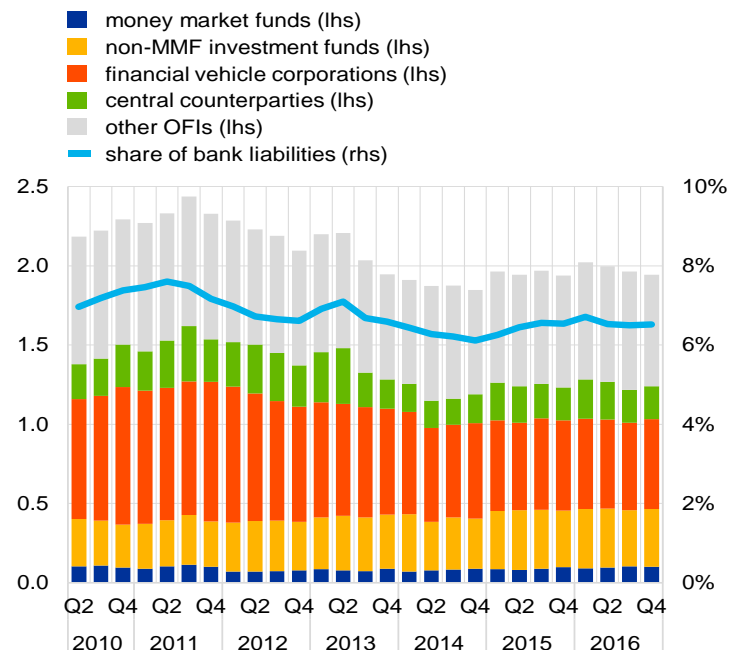
(lhs: EUR tn, rhs: %)



Source: ESRB EU Shadow Banking Monitor, No. 2 May 2017, based on ECB data.

Euro area credit institutions' deposits from euro area investment funds and OFIs

(lhs: EUR tn, rhs: %)



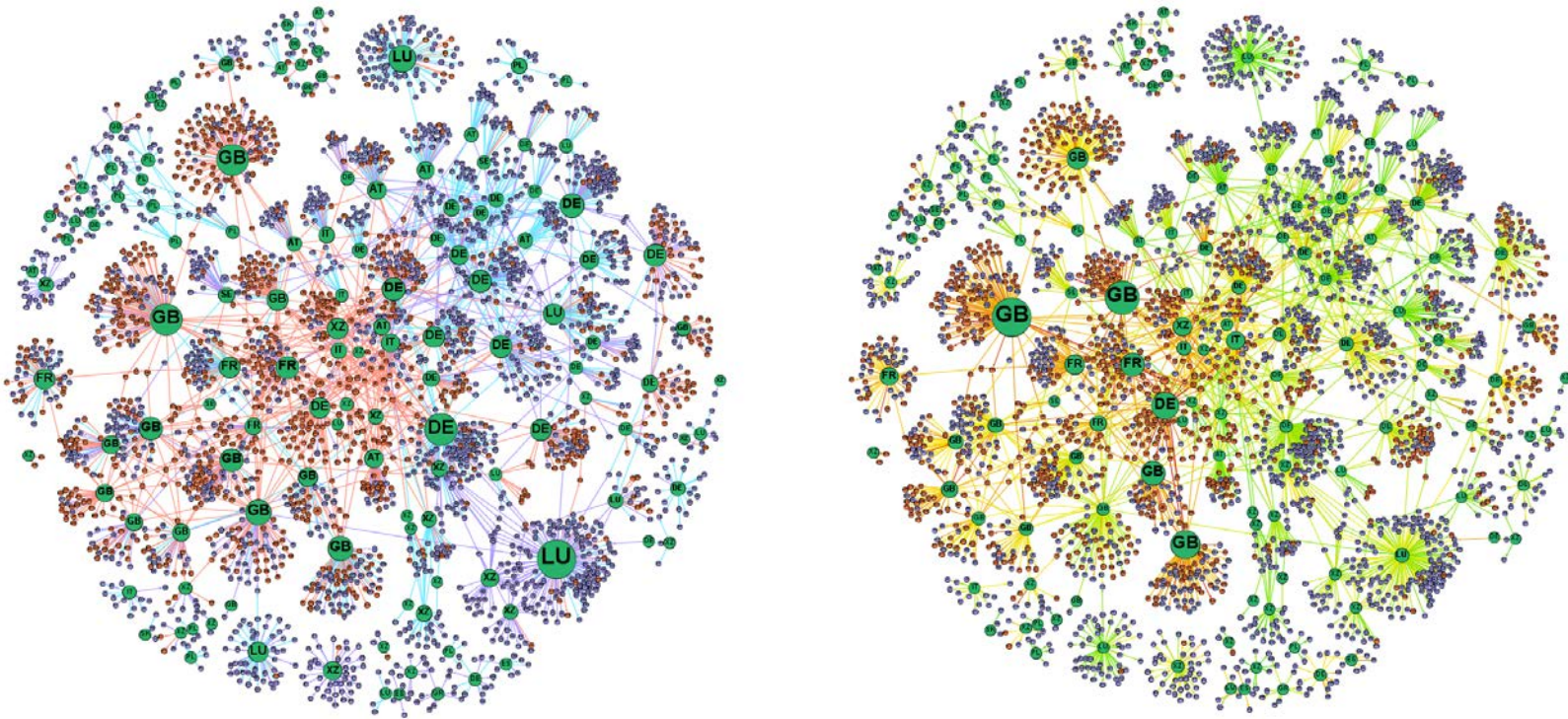
Source: ESRB EU Shadow Banking Monitor, No. 2 May 2017, based on ECB data.



EU banks are exposed to non-EU shadow banking entities

- Many EU banks have large cross-border exposures, in particular to non-EU domiciled entities

Exposures after exemptions and credit risk mitigation by country of shadow banking counterparty



Source: Abad, J., D’Errico, M., Killeen, N., Luz, V., Peltonen, T., Portes, R. and Urbano, T., “Mapping the interconnectedness between EU banks and shadow banking entities”, ESRB Working Paper No 40, 2017. Note: Data refers to individual exposures equal to or above 0.25 per cent of institutions’ eligible capital. Green nodes: reporting institutions (banks) labelled by country of residence. Purple and orange nodes: EU and non-EU domiciled shadow banking entities, respectively. The chart excludes investment firms and exposures greater than 25% of the institution’s eligible capital (the large exposure limit). **Left-hand panel:** Node size is proportional to degree centrality (the number of counterparties). Blue links represent domestic exposures (EU institution to a domestic shadow banking entity); purple links represent EU exposures (EU institution to EU domiciled shadow banking entity) and orange links represent non-EU exposures (EU institution to non-EU domiciled shadow banking entity). **Right-hand panel:** Node size is proportional to total exposures (sum of all individual exposures). Colour of link ranges from green to orange depending on the size of the individual exposure (green links: smaller exposures, orange links: larger individual exposures).

Way forward in shadow banking risk analysis

- Continue to complement global initiatives such as FSB Global Shadow Banking Monitoring Report by employing EU wide regulatory data to monitor developments within EU shadow banking system
- Use of micro-data to complement sectoral data *e.g.* new regulatory data (AIFMD data on alternative investment funds, EMIR data on derivative transactions, SFTR data on SFT transactions) to further develop monitoring framework
- Risk monitoring: Extend breadth and depth of risk indicators and metrics
- Improve coverage and meta-data (*e.g.* consolidation of entities)
- Assess the geography of risk (*e.g.* interconnectedness, cross-border issues)



2nd ESRB Annual Conference

21-22 Sept, 2017 in Frankfurt am Main

Programme:

https://www.esrb.europa.eu/news/schedule/2017/html/20170921_2nd_annual_conference.en.html

Webcast:

<https://www.esrb.europa.eu/news/webcast/html/index.en.html>

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