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Non-bank Financial Intermediation in the Next Crisis

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*Disclaimer: I sit on the General Board of the European Systemic Risk Board and chair two of its committees. Nothing in these slides nor in my oral remarks should be taken to represent the views of these bodies.

Road map

- Shadow banking
- Interconnectedness and systemic risk
- NBFIs – why worry?
- Regulation: where are the risks? what gaps in regulation?

Definitions

- See *EU Non-bank Financial Intermediation Risk Monitor, July 2019*
- Shadow banking
  - FSB: ‘credit intermediation involving entities and activities (fully or partly) outside of the regular banking system’ – very broad
  - ESRB: ‘entities of the financial sector except banks, insurance corporations and pension funds’ – are markets ‘entities’?
  - official terminology has now substituted ‘non-bank financial intermediation’ for ‘shadow banking’
- Policy: macroprudential and systemic risk rather than microprudential

Interconnectedness – the essence of systemic risk

- Financial stress and vulnerability → shocks may propagate across wholesale funding markets, derivatives markets, and securities financing transactions
- Theory: if negative shocks are small, a more densely connected financial network spreads risk and enhances financial stability. But *for a large shock, dense interconnections support transmission and propagation of shocks* (Acemoglu *et al.* 2015)
- What is a ‘large’ shock? Lehman and AIG – but not ‘taper tantrum’, ‘flash crashes’, Cyprus – what about Greece? LTCM? Interconnectedness is key.
- Systemic importance of shadow banks derives from their interconnectedness throughout the financial system and the contagion this can create.

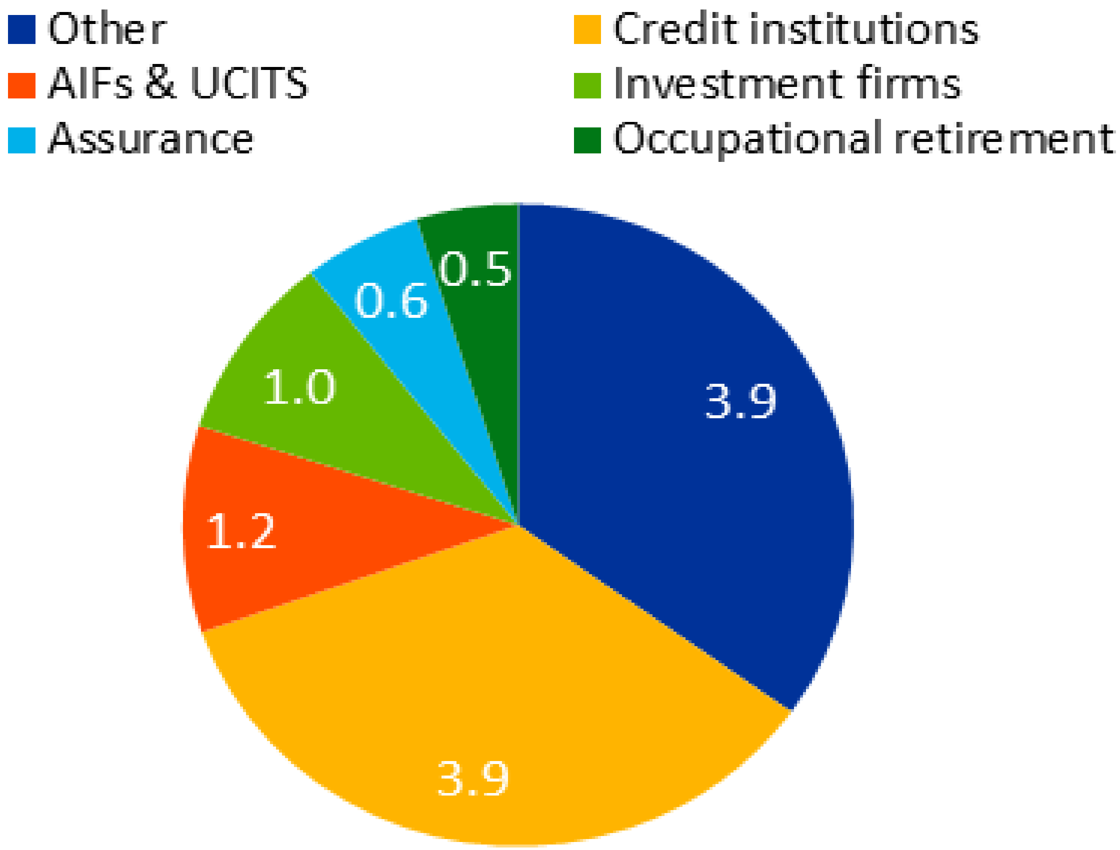
Direct and indirect interconnectedness

- Direct: counterparty relationships
- Indirect: entities with common exposures, collateral chains, reputational risk, step-in risk
- Direct: ownership – in Europe, banks and insurers have significant stakes in asset managers (chart below)

NBFIs

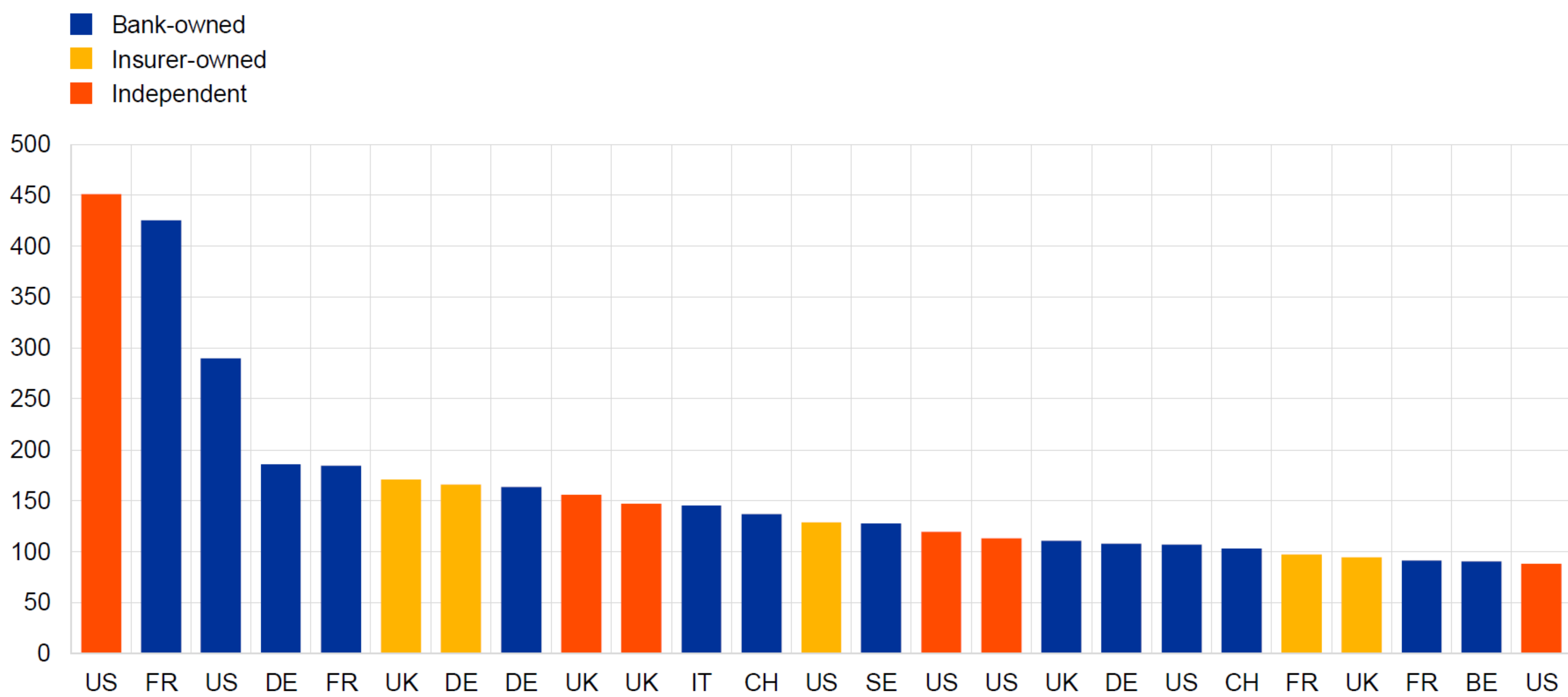
- Why worry? ‘They don’t have balance sheets.’ None designated as SIFIs (FSOC tried…).
- But they may have major derivatives exposures – LTCM, Lehman, AIG…(*e.g.,* currently 2/3 of gross notional Euribor IRS is held by asset managers, insurers and pension funds – see chart below)
- And they may have strong interconnections with banks
  - of the 25 largest asset managers in EU, 14 are owned by European banks, 5 by European insurers
  - of 128 banks reporting to EBA at end-2015, over 60% of their exposures to NBFIs were to entities outside EU (hence outside EU regulatory perimeter) (Table below)
- And asset managers may be so large that deleveraging provoked by debt repricing, or a run on one, with consequent fire sales, would destabilise markets and hit bank balance sheets
- Woodford funds, H2O are recent examples of runs (see 2 articles in *FTfm* 16.09.19)

Gross notional in the OTC EURIBOR interest rate swap market by the EMIR sector *(EUR tn* 2018*)*



Aggregate net assets of the top 25 asset management companies in the EU

(EUR billions)



Source: ESRB, *EU Non-Bank Financial Intermediation Risk Monitor,* No. 4, July 2019

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', 2019

NBFI recent growth muted, but key risks remain

Market size

- Long-standing NBFI growth trend temporarily interrupted by falling market valuations, but AUM in EU and euro area investment funds and other financial institutions still exceed € 40 trn

Key risk categories

- Risk-taking, liquidity risk and risks associated with leverage among some types of investment funds and other non-bank financial institutions
- Interconnectedness and the risk of contagion across sectors and within the non-bank financial system, including domestic and cross-border linkages
- Activities-related risks – procyclicality, leverage, and liquidity risk – created through the use of derivatives and securities financing transactions

Leveraged finance: Significant non-bank role

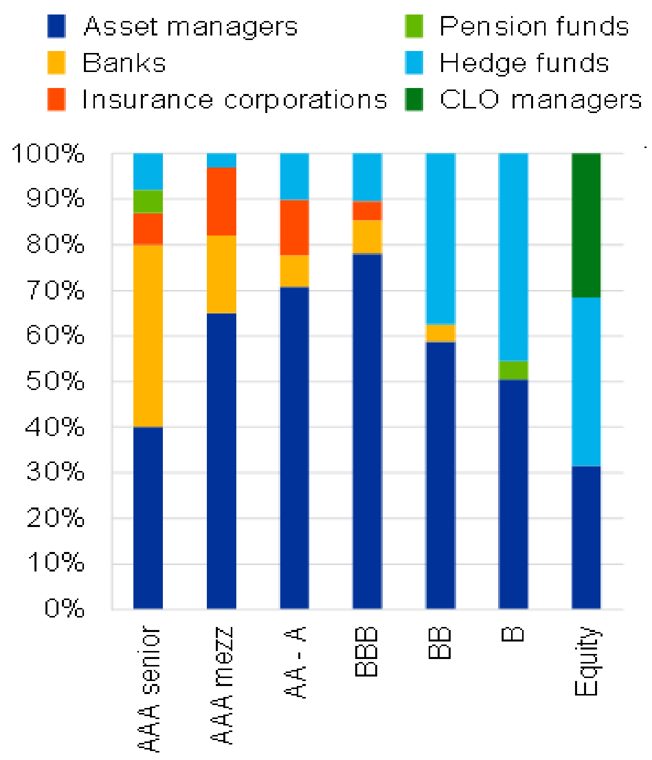
Growing market, falling loan standards

- Size: Leveraged finance market doubled over past decade, CLOs nearly doubled in 5Y: EUR 0.8tn in EU, EUR 2.6tn in US
- Quality: Underwriting standards deteriorated – 70% of EA issuance covenant-lite (2018)

Non-banks as key issuers, AMs and HFs as important investors

- Issuers: 70% of financing for leveraged loans in 2018 came from non-banks
- Buyers: Banks exposed to senior tranches, asset managers holding investment-grade tranches; hedge funds hold riskiest tranches

Buyers of European CLO tranches in the primary market by investor type and rating



Source: Fitch, Moody's, Credit Suisse and ECB calculations

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AIF industry heterogeneous, varying risks

AIFs 1/3 of EU fund industry

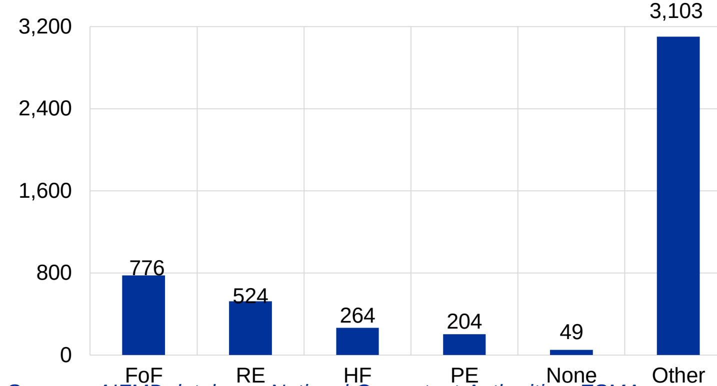
- Size: AIF assets of EUR 5tn (NAV)
- HFs: Hedge funds make up only 5% of AIFs (EUR 264bn), among wide variety of AIF types; 82% of HFs managed by UK AIFMs
- ‘Other’: mainly equity funds and fixed income funds

Leverage and liquidity risks limited, and concentrated

- Most AIFs operate with little leverage and limited liquidity risk
- Vulnerabilities fund-type specific
  - HF highly leveraged
  - RE funds exposed to liquidity mismatch

EU AIF industry: Only 5% HFs

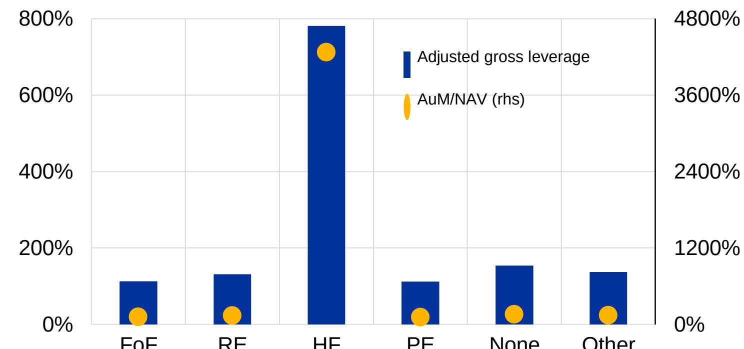
(EUR bn; last observation: Q4 2017)



Sources: AIFMD database, National Competent Authorities, ESMA.
Note: Net Asset Value by AIF type, in EUR bn, end-2017.

Leverage concentrated in HFs

(% of NAV; last observation: Q4 2017)



Sources: AIFMD database, National Competent Authorities, ESMA.
Note: Adjusted gross leverage by AIF type, in % of NAV, end-2017. Adjusted gross leverage does not include IRDs.

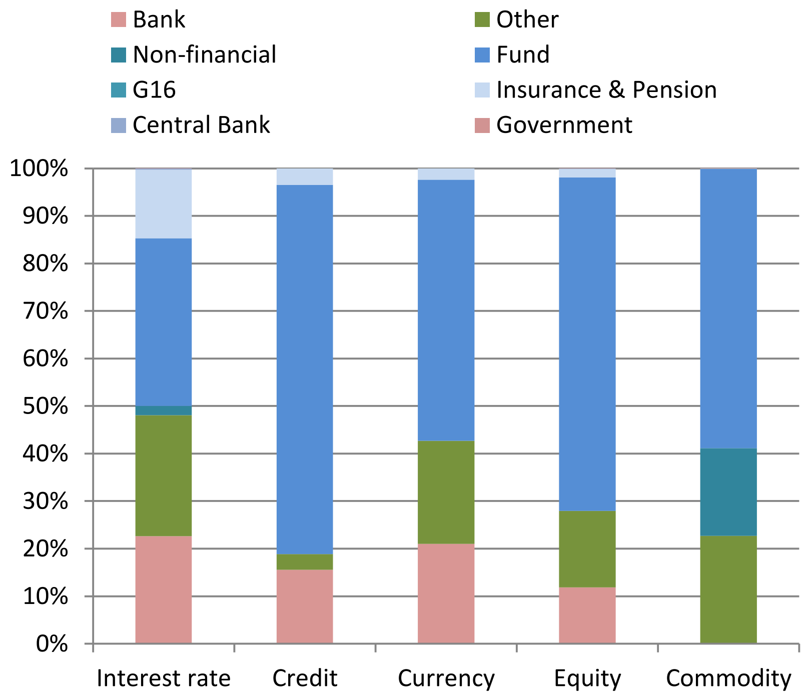
EU derivatives: Important role of non-banks

Derivatives market highly interconnected, also around CCPs

- Analysis: Exposure networks of CCPs, clearing members and their clients in EU
- Non-banks: NBFIs participate in central clearing mostly as clients of clearing members; high share in client clearing
- Clearing-member relations: Most clients have access to only one clearing member to clear their derivative contracts
- Portfolio homogeneity: Portfolios of clients which use multiple clearing members are highly similar

Percentage of notional value of clearing members' client trades by client sector, broken down by client type

(split by type of client, as a share)



Source: ESRB calculations, preliminary analysis

Note: Due to confidentiality of data the following types of institutions are not included in the chart: Credit: non financial, government; currency: non-financial, central bank; equity: non-financial, G16; commodity: bank, G16, central bank, other

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Risk activities

- HFs, FVCs, SDDs most engaged
- OFIs strongly engaged in risk transformation
- HFs strongly involved in market activities
- FVCs and SPEs most interconnected with banking
- Private debt funds strongly involved in credit and maturity transformation

	Investment funds									Other financial institutions			
	MMFs	Bond funds	Mixed funds	Equity funds	Hedge funds	Real estate funds	ETFs	Private equity funds[4]	Private debt funds	FVCs	SPEs	SDDs	FCLs
Market size													
EA AuM (EUR trillion)	1.1	3.1	2.9	3.0	0.4	0.7	0.8	0.4	n.a.	1.9	n.a.	n.a.	0.4
Summary assessment													
Engagement	◕	◕	◔	○	●	◕	◔	◔	◕	●	◕	●	◕
Risk transformation activities													
Credit intermediation	◕	◕	◔	○	◔	○	○	◔	●	●	◕	○	●
Maturity transformation	◕	●	◕	○	◕	◕	◔	○	○	◔	●	●	◔
Liquidity transformation	◕	◔	◔	○	◔	◕	◔	○	○	◕	◕	●	◔
Leverage[2]	○	◔	◔	○	●	●	○	◕	◕	●	◔	●	◕
Market activities[1]													
SFTs	◕	◕	◕	◔	●	○	◕	○	○	○	○	◔	○
Derivatives	◔	◔	◔	◔	●	◔	◔	○	◕	◕	◔	●	○
Reuse of collateral	◔	◔	◔	◔	●	◔	◔	○	◔	◕	◔	◔	○
Interconnectedness													
Interconnectedness[3]	◕	○	○	○	◔	◕	◕	○	○	●	◕	○	◔

Notes: The table summarises the assessment of engagement, where the colours of the circles reflect the intensity of the possible institutional engagement in the relevant areas of activity, according to the coding specified in the notes below. The colouring is judgement-based and informed by market intelligence and quantitative evidence.

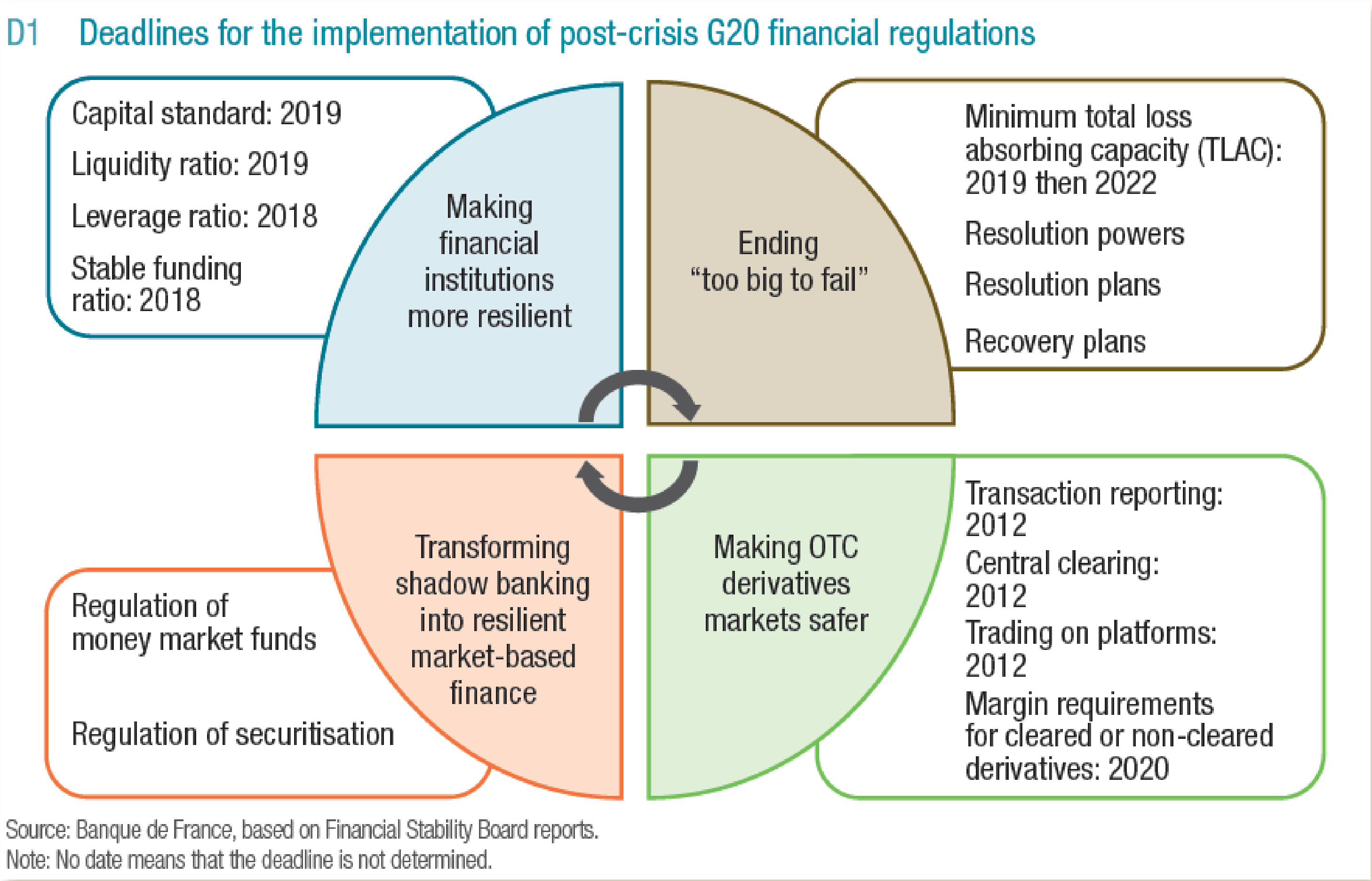
Source: ESRB, *EU Non-Bank Financial Intermediation Risk Monitor,* No. 4, July 2019

Regulation: where are the risks?

- ‘We find the EU shadow banking system to be highly procyclical…’*
- Liquidity transformation mainly in real estate funds and bond funds, maturity transformation particularly great in bond funds, leverage highest in real estate funds and hedge funds.
- Asset managers have corporate bond funds and increasingly do direct lending to non-financial corporations → classic risks associated with credit intermediation.
- Specific shadow banking risks – a particularly opaque form of interconnectedness is synthetic leverage
- Rising share of assets in ‘redeemable [‘open-ended’] funds’
- *Repo markets*: transactions between banks and SBs
- CCPs should reduce likelihood of systemic risk arising from failure of one counterparty and resulting chains of failure because of interconnectedness – but concentration risk!

*Off the Radar: Factors behind the Growth of Shadow Banking in Europe’, M. Hodula, A. Melecky, M. Machacek, Dec. 2018

Regulators have worked mainly on banks and OTC derivatives markets



What NBFI regulation is in place?

- UCITS: leverage limits, concentration limit, liquidity requirement, redemption gates
- Asset managers: redemption gates, liquidity requirements
- Money market funds: concentration limits
- Margin requirements for derivatives

Where are the gaps?

The major gap: still NBFIs

‘Financial Stability Oversight Council now has the responsibility to monitor and take actions to reduce systemic risk, including designating nonbank firms as systemic, and thus subject to prudential regulation and supervision, and assessing certain activities as systemic.’

We know how that turned out…

‘Policymakers should consider expanding the Fed’s authority as lender of last resort to nonbank financial firms, which have become critical participants in funding and capital markets.’

…*and that…*

Quotes from Alvarez, S., W. Dudley, and N. Liang (2018),“Nonbank Financial Institutions: New Vulnerabilities and Old Tools.” in Responding to the Global Financial Crisis: What We Did and Why We Did It, Brookings Institution, Sep. 11-12, 2018

Indeed, not moving fast…

- ‘A policy priority for the FSB is the further strengthening of the resilience and resolvability of CCPs. Its continuing work on financial resources and tools to support orderly resolution will lead to further guidance, on which the FSB will publicly consult during the second quarter of 2020.’ (Press Release 14.11.19)