CITY UNIVERSITY LONDON

CITYPERC
City Political Economy Research Centre

EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

A Comparison of the US and European Shadow Banking Systems: What Can We Learn?

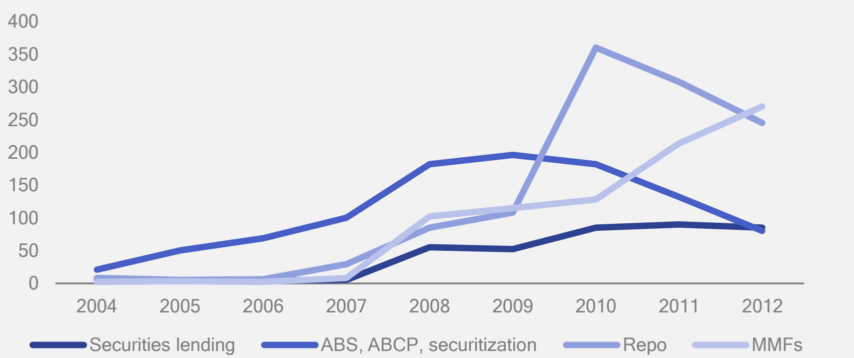
Antoine Bouveret
(European Securities and Markets Authority)

Outline

- Defining shadow banking
- Estimates of US and European shadow banking systems
- Main features
- Conclusion

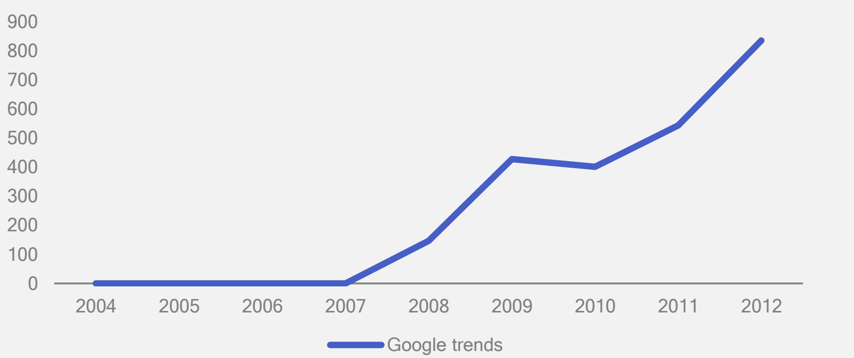
Shadow banking: a new concept?

A growing interest in shadow banking



Note: Number of articles referring to 'shadow banking' or 'financial stability' or 'systemic risk' and the specific components identified above in Business and Consumer Services or Banking and Credit or Accounting and Consulting or Insurance newspapers.
Sources: Factiva, ESMA.

A growing interest in shadow banking



Note: Search volumes in gogle for "Shadow banking". Based on weekly data indexed at 100 for the peak reached in 18 November 2012 and cumulated on a yearly basis.
Sources: Google ESMA.

Definitions

- McCulley (2007): "*unlike regulated banks […], **unregulated shadow banks** fund themselves with **un-insured** commercial paper, which may or may not be backstopped by liquidity lines from real banks. Thus, the shadow banking system is particularly vulnerable to runs*"
- Poszar (2008): "*The network of **highly levered** off-balance sheet vehicles*"
- Pozsar et al. (2010): "***financial intermediaries** that conduct maturity, credit, and liquidity transformation without access to central bank liquidity or public sector credit guarantees*"
- FSB (2011): "*a system of credit intermediation that involves entities and activities **outside the regular banking system**, and raises i) systemic risk concerns, in particular by maturity/liquidity transformation, leverage and flawed credit risk transfer, and/or ii) regulatory arbitrage concerns*"

Features

Objective

- Bank-like activities: liquidity, maturity and credit transformation
- Without banks safety nets: no deposit guarantee scheme, no lender of last resort
- Without banks prudential regulations such as capital requirements and Basel III NSFR and LCR
- Activities rather than entities
- Leverage

Subjective

- Regular banking system
- Systemic risk concerns
- Regulatory arbitrage
- Flawed credit risk transfer

"Behold! I have brought you a man"

Mapping the SBS in practice

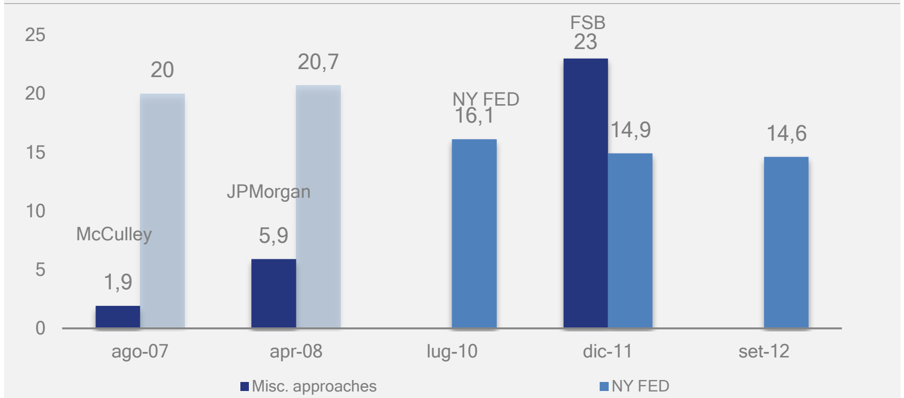
- Additive approach: individual components (ABCP, ABS, repo, MMF…)
- Subtractive approach: shadow banking defined as a residual (Other Financial Intermediaries as in FSB (2012) and ECB (2012))
- Activities vs entities
- Gross vs net (Pozsar et al. (2012))

Pros and cons

- Identification:
  - Additive approach: identification of all the components but may miss financial innovation and the systemic part of it, backward-looking
  - Subtractive approach: too encompassing (as leasing corporations part of the SBS?)
- Regulation:
  - Additive approach provides incentives for regulatory arbitrage
  - Subtractive approach mixes different activities
  - Identified market activities to be regulated (i.e. sec. lending) or rather economic activities (liquidity transformation or collateral intermediation) linked to a market-based credit system (Mehrling (2012))?

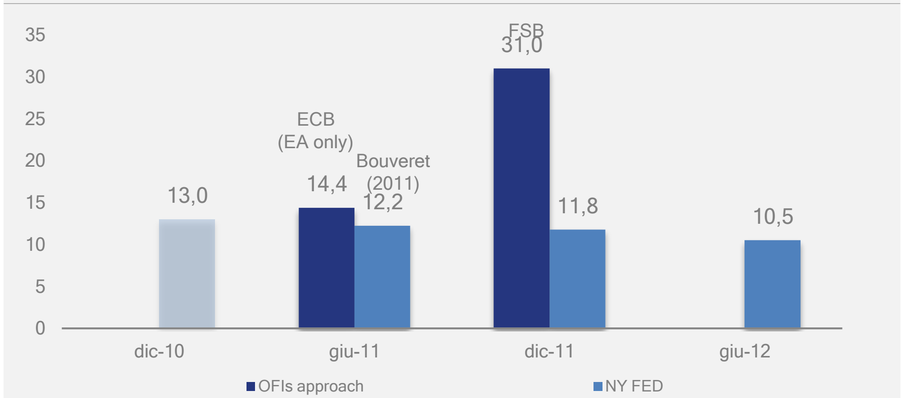
Size of US and EU shadow banking systems

US shadow banking system: "real time estimates" (USD tn)



Note: Data for August 2007: amounts outstanding of open commercial paper; April 2008: repos of broker dealers and hedge funds, ABCP and auction rate securities and tender-option bonds, July 2010: liabilities of ABS issuers, GSEs, and MMFs, pool of securities, repo , open commercial paper and securities lending; December 2011: liabilities of Other financial intermediaries. Shaded areas refer to estimates of the shadow banking system which were produced significantly after the

European shadow banking system: "real time estimates" (USD tn)

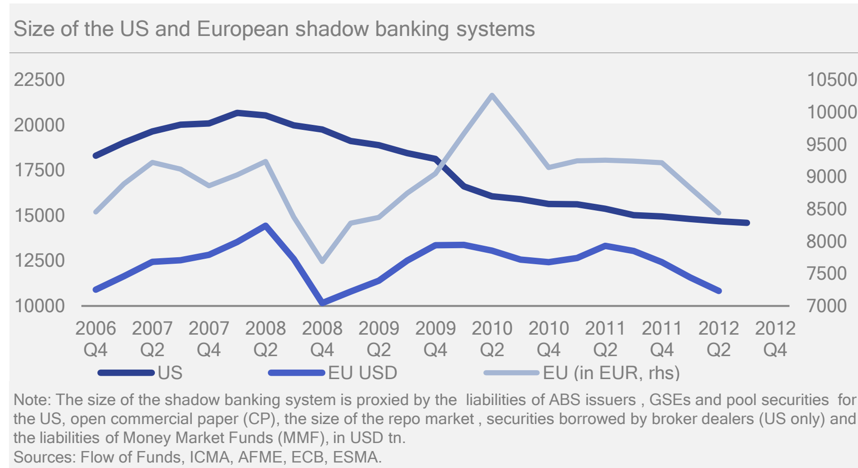


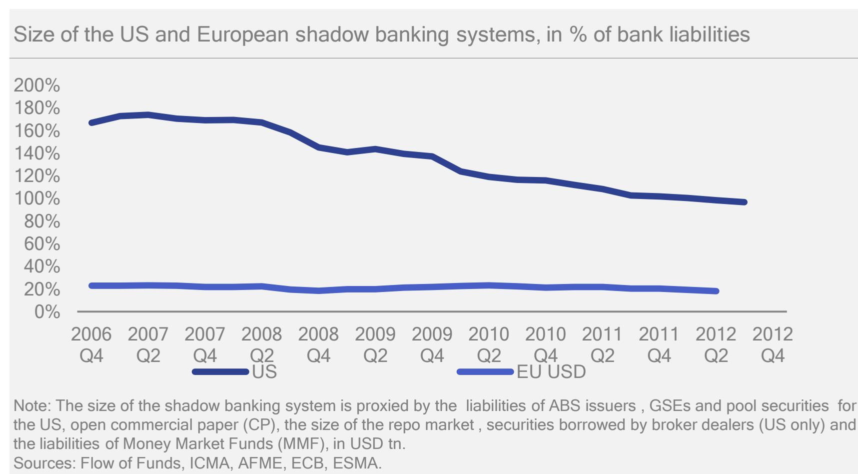
Note: Data for December 2010: amounts outstanding of ABCP and ABS, size of the repo market, liabilties of MMFs; June 2011: liabilities of Other Financial Intermediaires in the euro area . Shaded areas refer to estimates of the shadow banking system which were produced significantly after the observation date.
Sources: ICMA, ECB, AFME, ESMA..

Size and trends

- Absolute size : USD 14.6tn for the US vs 10.8tn for Europe
- While the US SBS collapsed, the European SBS remained roughly stable (-30% vs -8%)

- US as a market-based system, while in Europe, banks continue to the be the main source of credit (96% of bank liabilities vs 18%).





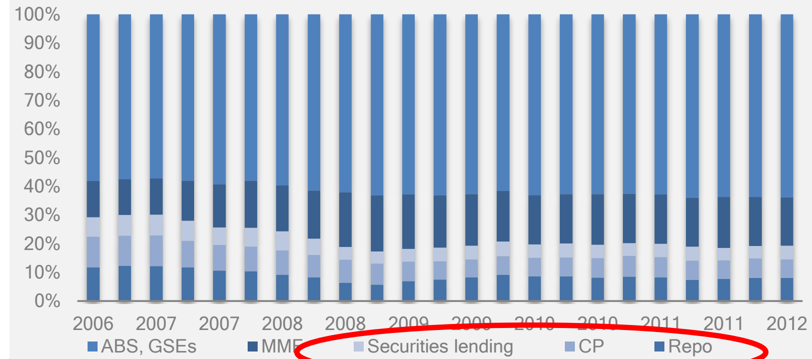
CITY UNIVERSITY LONDON
CITYPERC
City Political Economy Research Centre
cost EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

Composition

- Run on short term markets (repo, CP, securities lending): share decreased from 30% to 19% (-USD 3.2tn)
- Collapse of the US ABS market partly reduced by GSEs (-2.6tn for private ABS vs +0.8tn for GSEs)

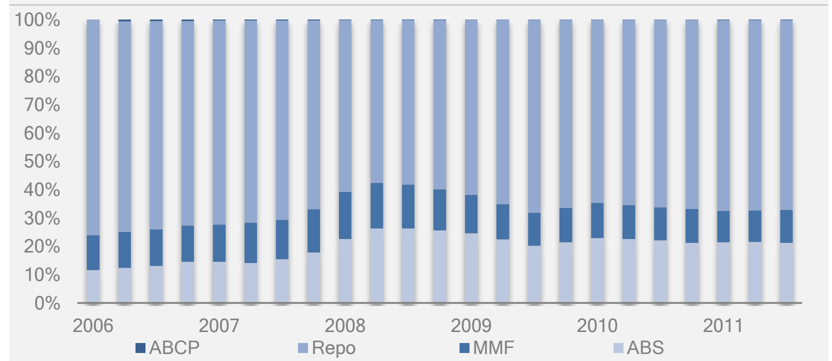
- Dramatic increase of ABS issuers in the European shadow banking system…in 2008, from 12% to 26%.
- Let’s take a closer look at securitization…

Composition of the US shadow banking system: shift to MMFs and GSEs



Note: The size of the shadow banking system is proxied by the liabilities of ABS issuers , GSEs and pool securities for the US, open commercial paper (CP), the size of the repo market , securities borrowed by broker dealers (US only) and the liabilities of Money Market Funds (MMF), in % of total.

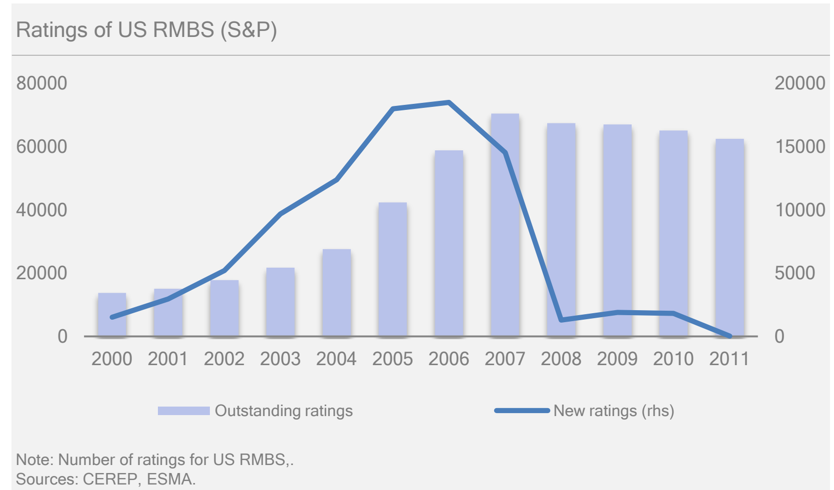
Composition of the European shadow banking system: shift to ...ABS!



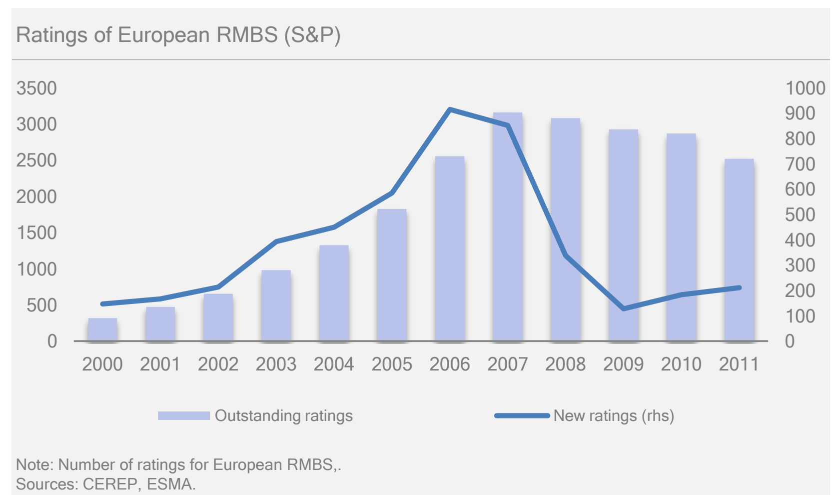
Note: The size of the shadow banking system is proxied by the liabilities of ABS issuers , open commercial paper (CP), the size of the repo market , and the liabilities of Money Market Funds (MMF), in % of total.
Sources: ECB, ICMA, FAME, ESMA.

Securitization and ratings

- Number of ratings burgeoned in 2005-2007 along with activity.
- US ABS: USD 7tn outs. in 2007, and RMBS ratings amounted to ~70500.
- Collapse in new ratings in 2008.

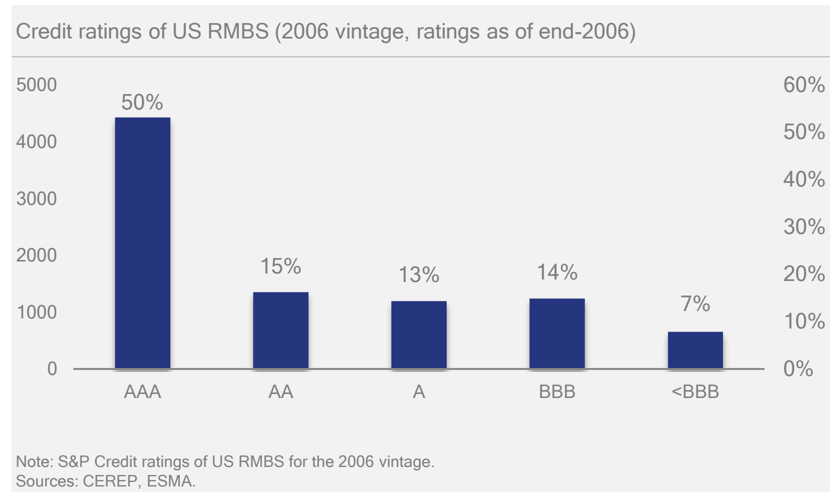


- Similar trends in Europe, but smaller in size.
- EU ABS: USD 3.2tn outs. in 2007, with ~3100 RMBS ratings.

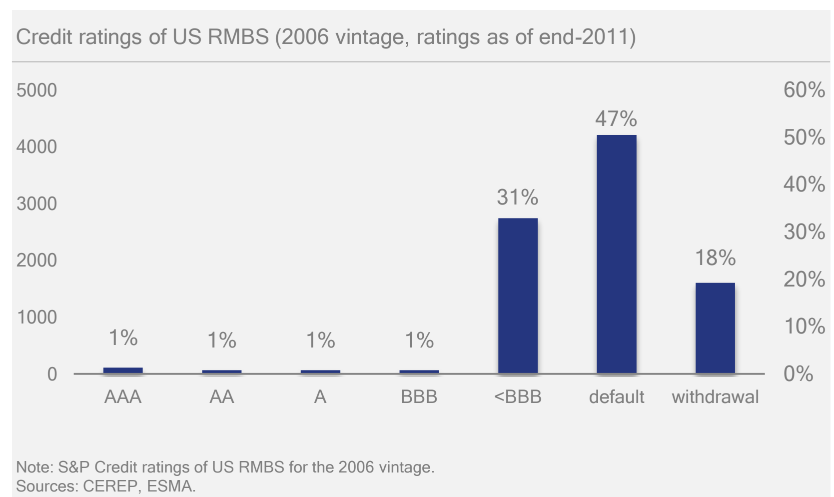


The rise and fall

- In 2006, 93% of US RMBS (2006 vintage) were investment grade and 50% were AAA.



- 5Y later, around 50% defaulted and only 4% remained investment-grade, among which 1% were AAA.

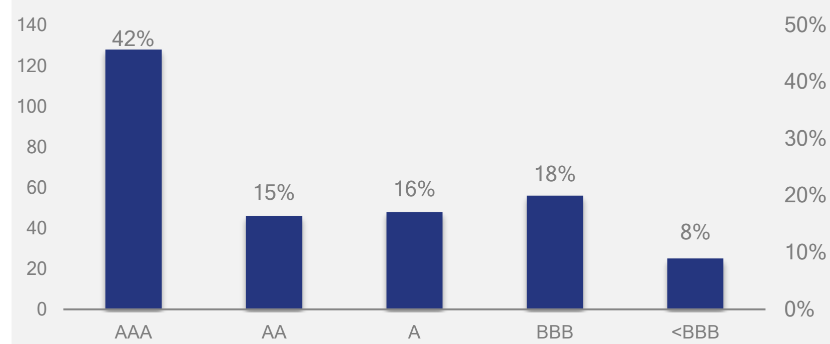


The rise and fall

- In Europe, 92% of RMBS were investment grade, and 42% AAA.

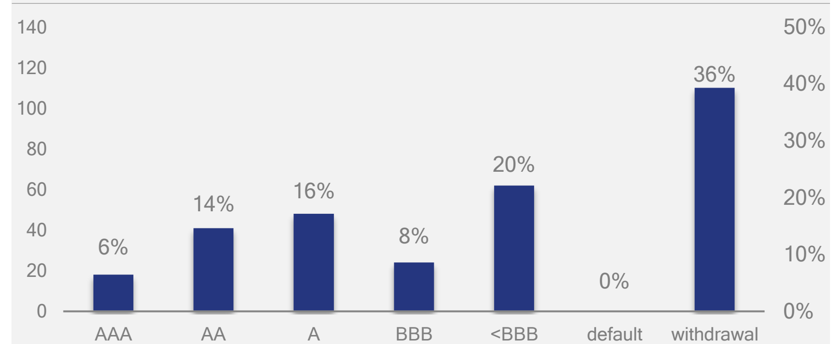
- 5Y later, around 50% defaulted and only 4% remained investment-grade, among which 1% were AAA.

Credit ratings of European RMBS (2006 vintage, ratings as of end-2006)



Note: S&P Credit ratings of European RMBS for the 2006 vintage.
Sources: CEREP, ESMA.

Credit ratings of European RMBS (2006 vintage, ratings as of end-2011)



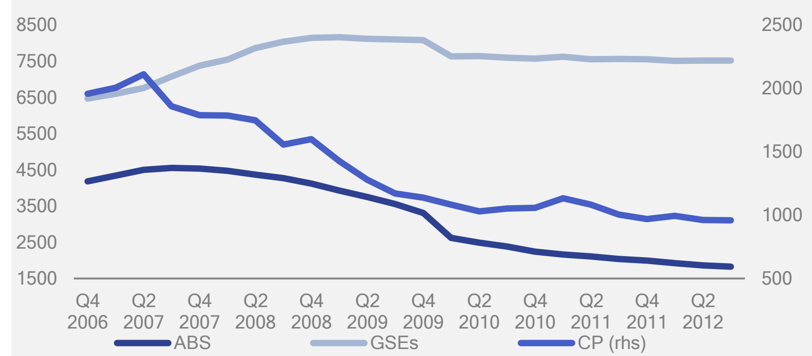
Note: S&P Credit ratings of European RMBS for the 2006 vintage.
Sources: CEREP, ESMA.

The role of institutions

- In the US, the ABCP and ABS market collapsed, despite policy action (FED's alphabet soup)
- GSEs provided some support during the crisis, but also incentives for the expansion of the SBS before the crisis.

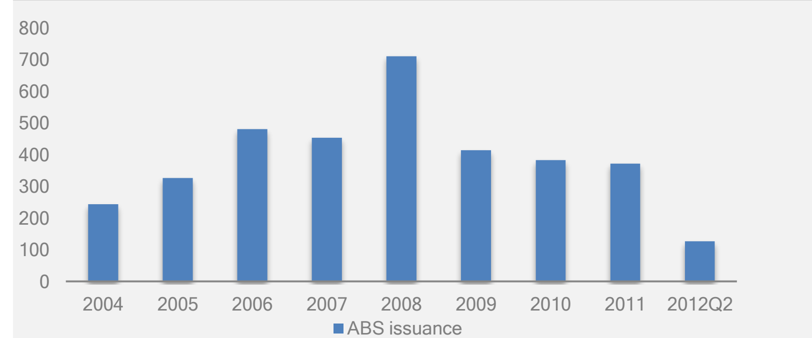
- In Europe, issuance of ABS peaked during the crisis.
- What were the drivers?

Collapse of the US ABCP and ABS market, support from GSEs



Note: Liabilities of ABS issuers ,GSEs are computed as liabilities of GSEs and GSEs pool securities, open commercial paper (CP), in USD bn.
Sources: Flow of Funds, ESMA.

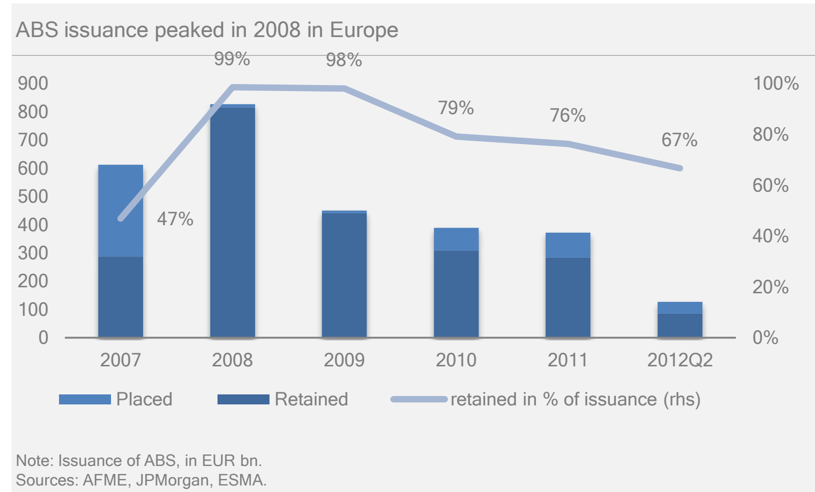
ABS issuance peaked in 2008 in Europe



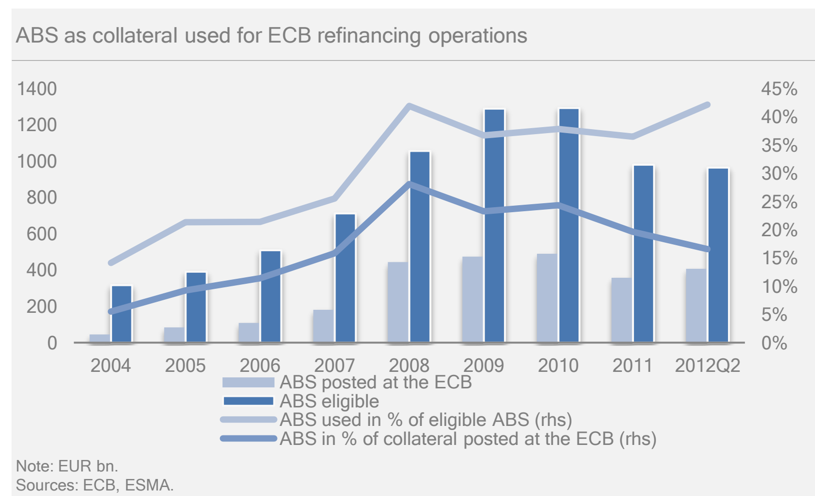
Note: Issuance of ABS, in EUR bn.
Sources: AFME, JPMorgan, ESMA.

The role of institutions

- Unlike FED and BoE, ECB monetary policy framework allowed for a wide range of collateral to be used for repo.
- Almost all ABS issued in 2008 were retained by the issuer…

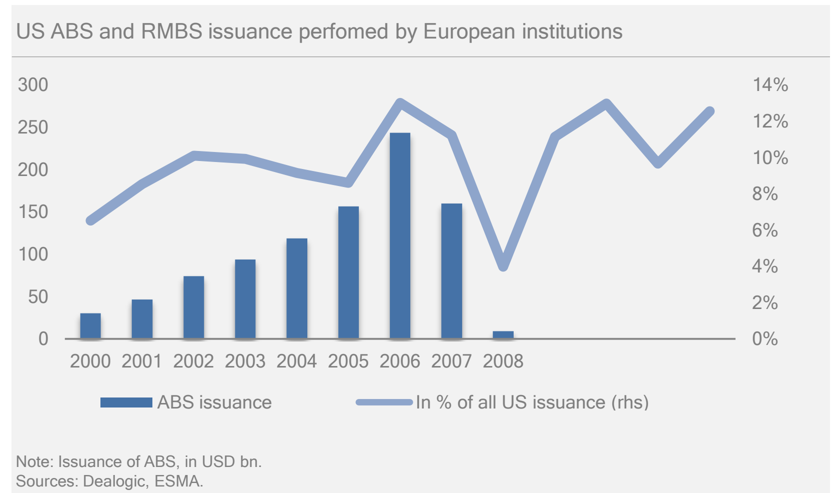


- … to be used as collateral for ECB refi operations
- ECB provided liquidity backstops to ABS issuers (banks)=public safety net



Interconnectedness 07-08

- European institutions were exposed to the US shadow banking system, as issuers of US ABS and MBS…



- …and main issuers of ABCP in USD.

ABCP sponsor location, 2007 (Shin, 2012)

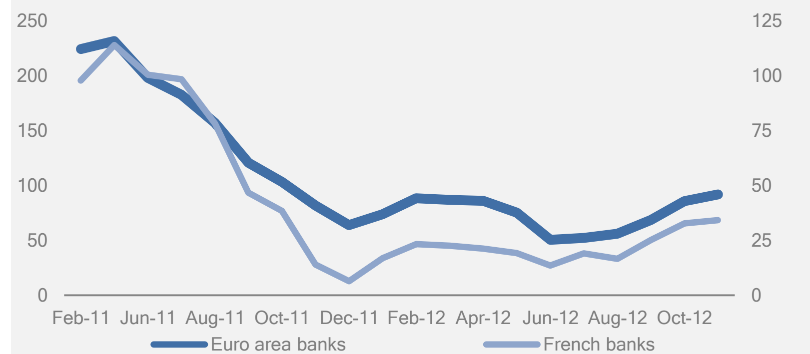
Country/Area	USD	In %
Europe	388	55%
Germany	139	20%
UK	92	13%
NL	56	8%
FR	51	7%
US	302	42%

Interconnectedness 11-12

- European banks get USD funding from US MMFs
- 'Run' on European banks from US MMFs, which cut their exposures by 90% on French banks between May-11 and June-12, resulting in a shortage of USD funding (100bn).

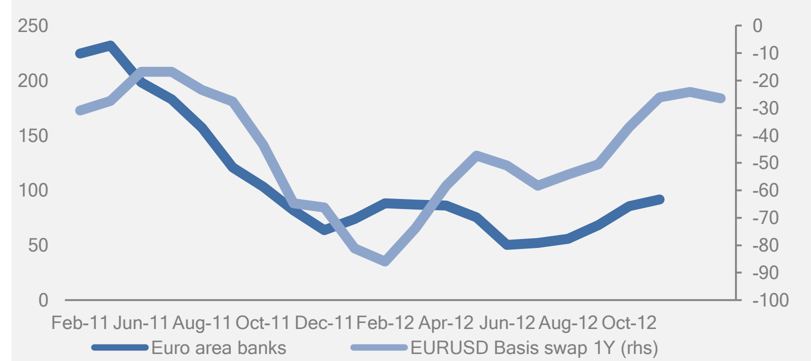
- Liquidity backstops provided by Central banks through dollar swaps.

US MMFs exposure to European banks



Note: Exposures of US 10 largest Money Market Funds to European banks, through repos, CD and CP, in USD bn.
Sources: Fitch, ESMA.

US MMFs exposure to European banks



Note: Exposures of US 10 largest Money Market Funds to European banks, through repos, CD and CP, in USD bn.
Sources: Fitch, Thomson Reuters Datastream, ESMA.

Conclusions

- Differences between US and European shadow banking systems partly linked to the institutional framework and the structure of the economy
- The European shadow banking system did not collapse...
- ...but due to interconnectedness, European banks spread the crisis to European financial markets.
- Monitoring the shadow banking system on a regional/domestic basis is necessary but not sufficient to grasp the structure of the system (more than just an addition!).
- Looking forward: role of the implementation of new regulations (Dodd-Frank vs EMIR on OTC derivatives) and differences in domestic regulations (ex: CNAV vs VNAV for MMFs).