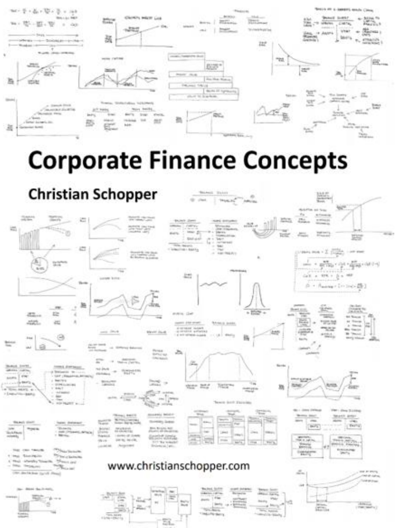
Shadow Banking

2015

For more concepts click on:

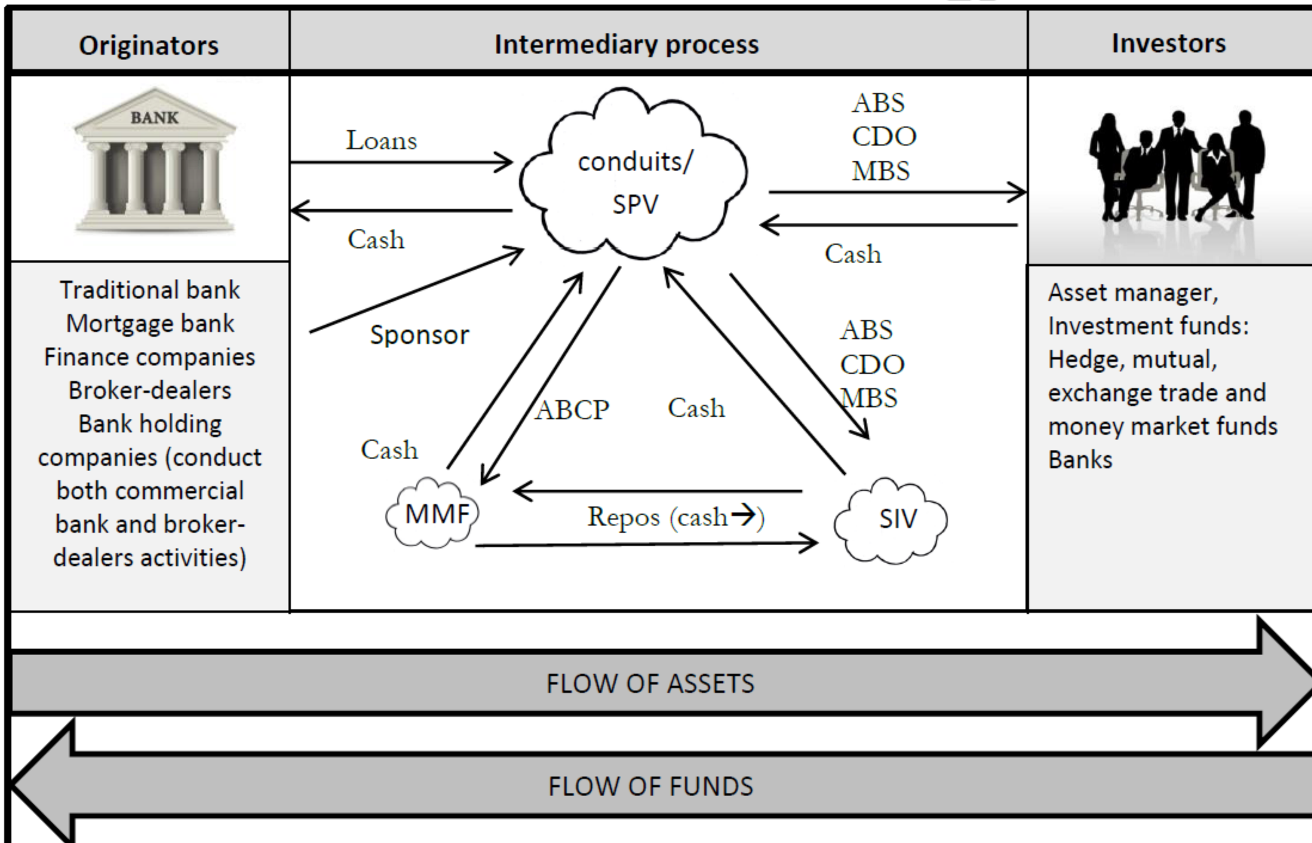


Introduction

Overview

- Since shadow banking has only recently become a large segment of financial services provision, its economic role is not yet well understood
- The Financial Stability Board **(**FSB, 2011) defines shadow banking broadly as "**credit intermediation involving entities and activities outside the regular banking system**"
- The two shadow banking activities that are most important economically and in terms of financial stability at present are ***securitization*** and ***collateral intermediation***
- While measures of shadow banking differ considerably, the system is large, comparable in size to traditional banking, and continuing to grow
  - Globally, shadow banking was US$ 75tn in 2013, or …
  - … on average 25% of financial assets and …
  - … approx 120% of aggregate GDP
  - It was enabled by advances in financial innovation and technology (e.g., securitization, and improved origination and distribution systems) and a favorable overall environment (low interest rates and a global savings glut)

In the Flow of Shadow Banking



Excursion: Special Investment Vehicle („SIV“)

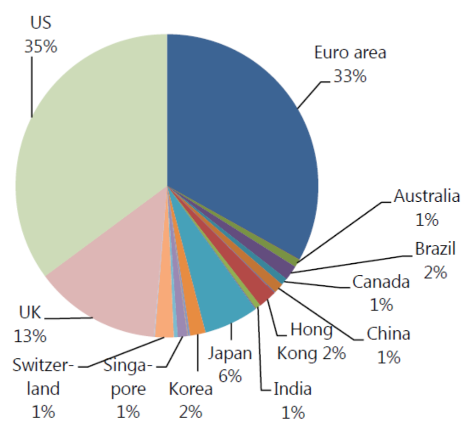
- An SIV is a non-bank financial institution **established to earn a credit spread** between the longer-term assets held in its portfolio and the shorter-term liabilities it issues …
  - … with significantly **less leverage** (10-15 times) **than traditional banks** (25-50 times)
- They are simple credit spread lenders
  - Frequently "lending" by **investing in securitisations** but also by investing in **corporate bonds**
  - **Funding** by issuing **CPs** and **MTNs**, which were usually rated AAA until the onset of the financial crisis
  - They did not expose themselves to either interest rate or currency risk and **typically held asset to maturity**
  - SIV's differ from ABS and CDOs in that they are **permanently capitalized** and have an active management team
  - They do not wind-down at the end of their financing term, but **roll liabilities** in the same way that traditional banks do
- They are generally established as offshore companies and so **avoid paying tax and escape** the **regulation** that banks and finance companies are normally subject to
- Until **changes in regulations around 2008**, they could be kept off the balance-sheet of the banks that set them up, escaping even indirect restraints through regulation
  - Due to their structure, the assets and liabilities of the SIV was more transparent than traditional banks for investors
  - By October 2008, **no SIVs remained active**

Size Estimates & Dynamics

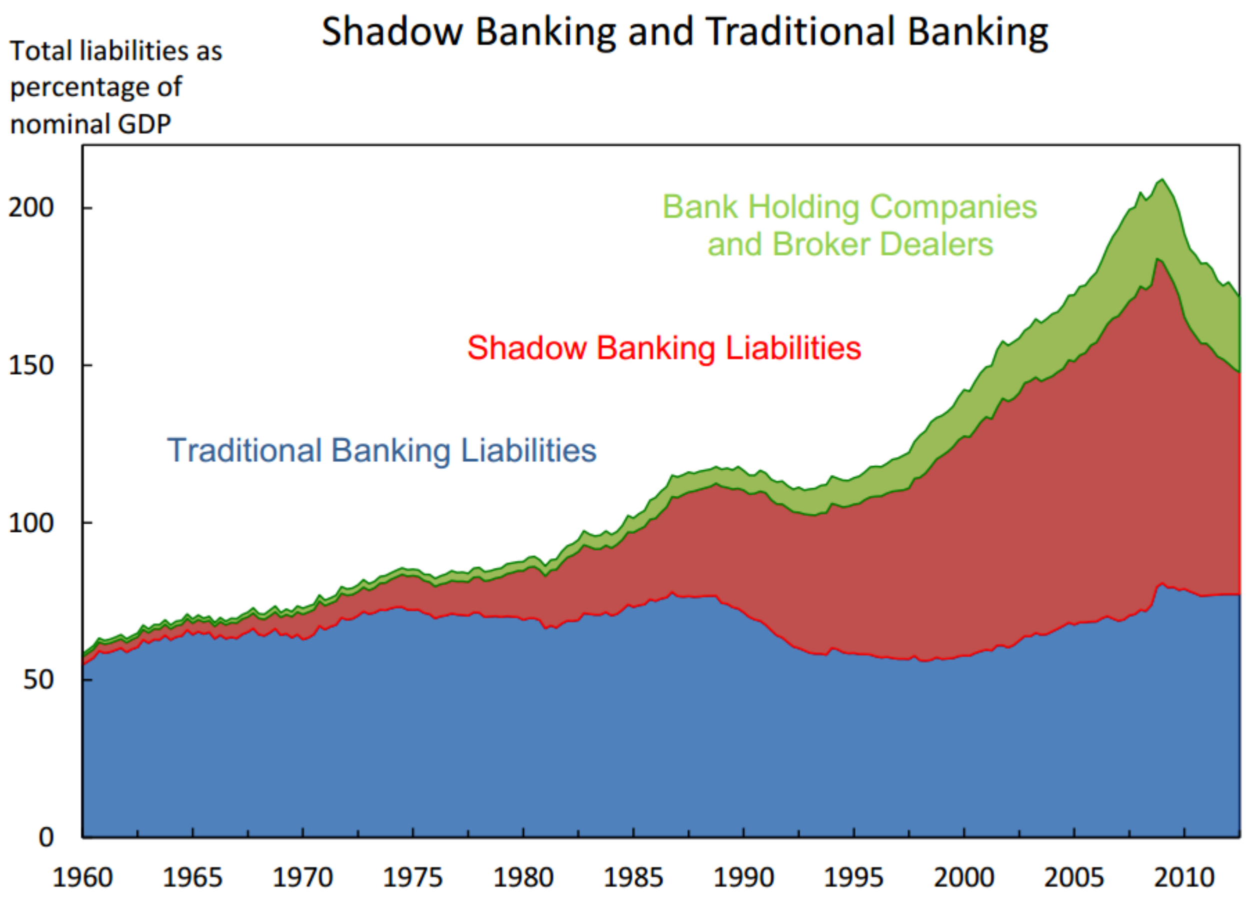
- The Financial Stability Board ("FSB") has been established to coordinate at the international level the work of national financial authorities and international standard setting bodies and to develop and promote the implementation of effective regulatory, supervisory and other financial sector policies in the interest of financial stability

- The Financial Stability Board ("FSB") estimated that, shadow banking rose from US$ 26tn in 2002 to **U$ 75tn in 2013**
  - In 2012, the Gross World Product ("GWP") totalled approximately US$ 84.9tn in terms of PPP, and around US$ 71.8tn in nominal terms
- In 2013 FSB estimates that shadow lending accounts for **25% of all financial assets**, compared with 50% in the banking system
- The US had the largest system of non-bank financial intermediation at the end of 2012 (back then: US$ 71tn) with assets of US$ 26tn, followed by the euro area (US$ 22tn), the UK (US$ 9tn) and Japan (US$ 4tn)

At end-2011

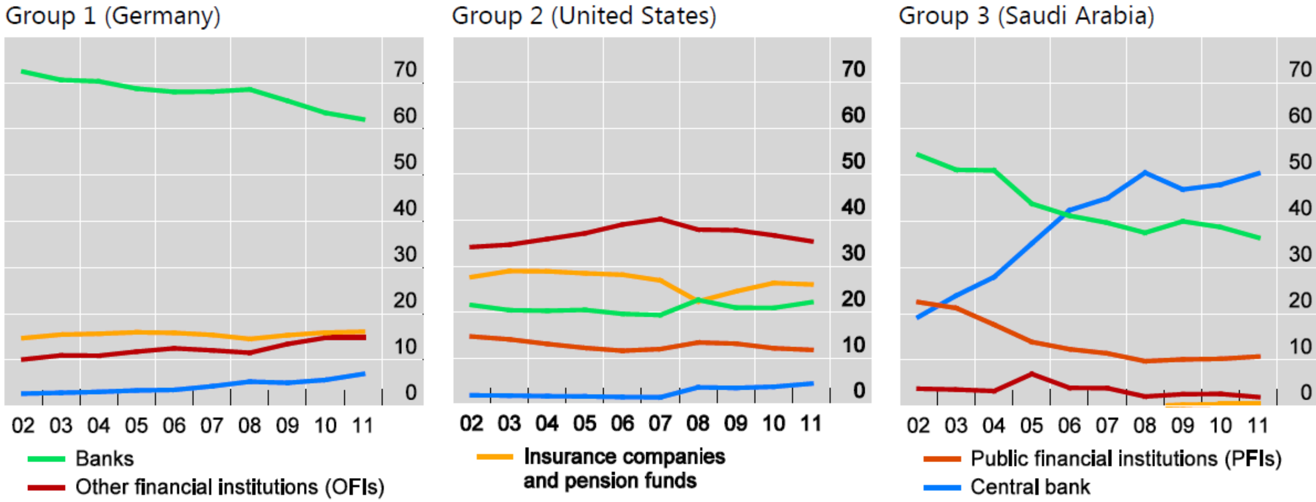


Size Estimates & Dynamics (cont´d)



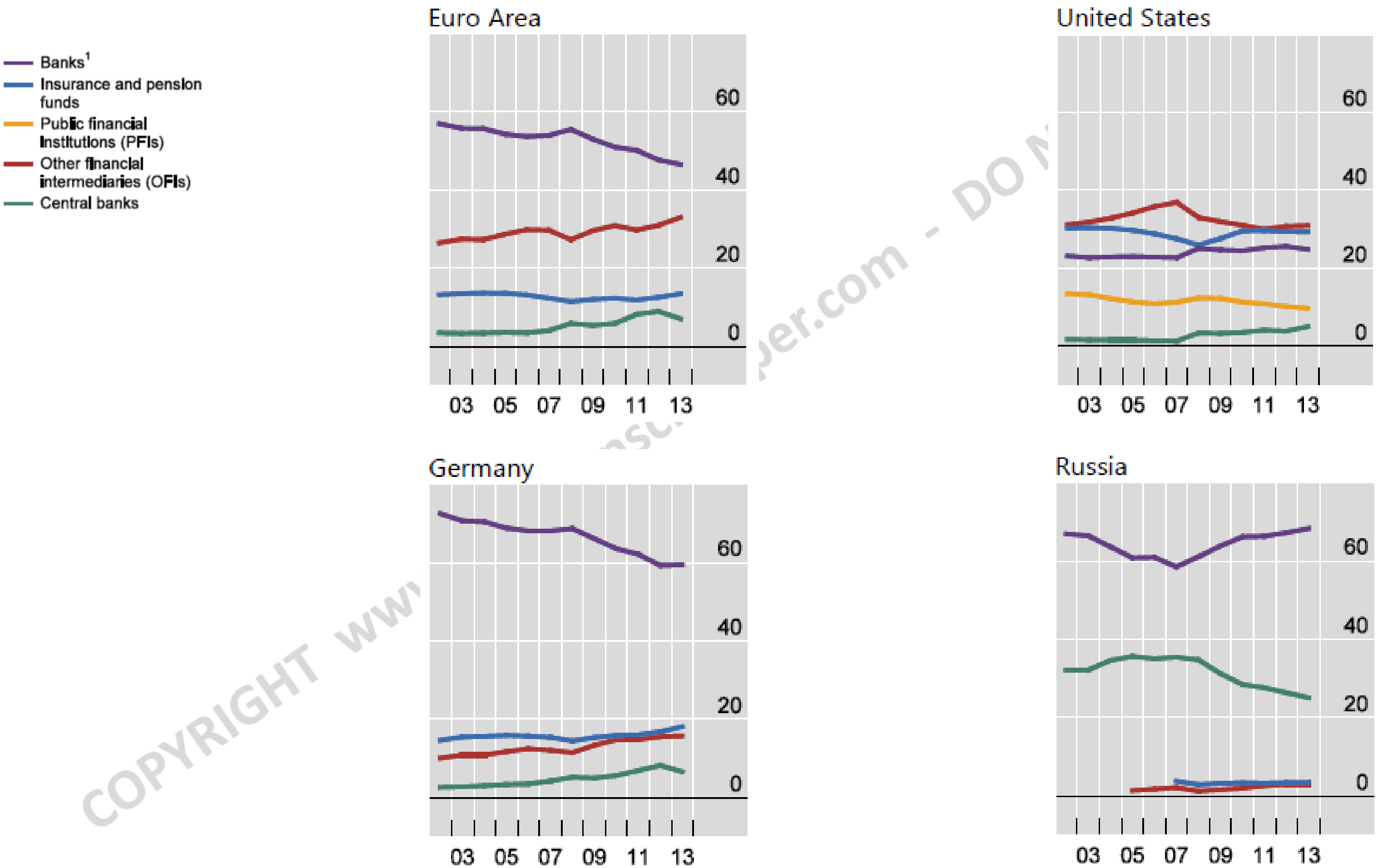
Size Estimates & Dynamics (cont´d)

- Financial structures in different jurisdictions vary quite substantially



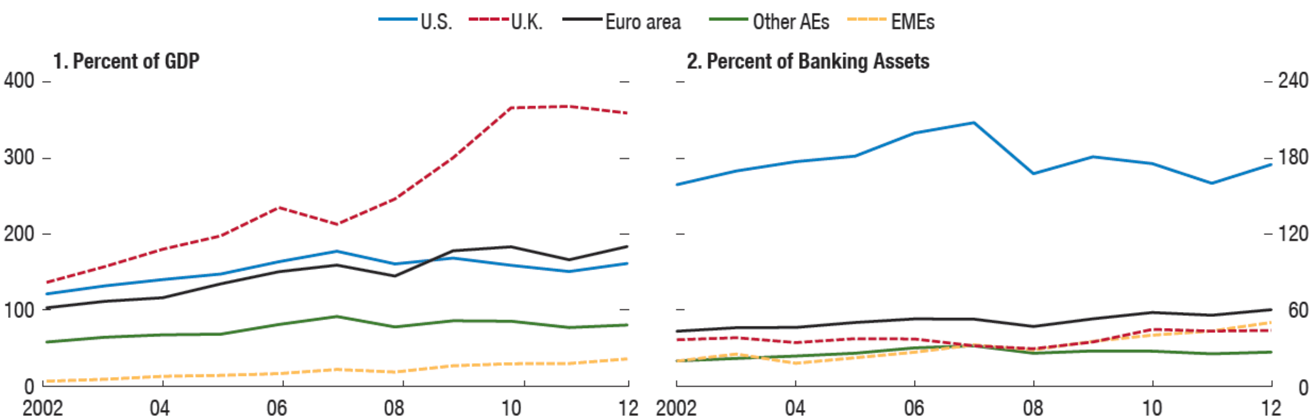
Source: National flow of funds data.

Size Estimates & Dynamics (cont´d)

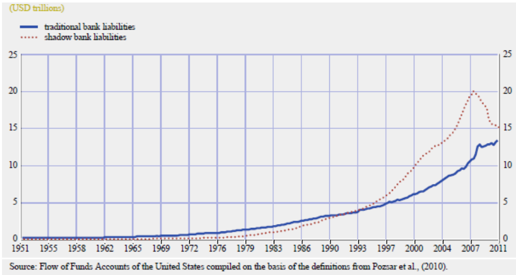


Size Estimates & Dynamics (cont´d)

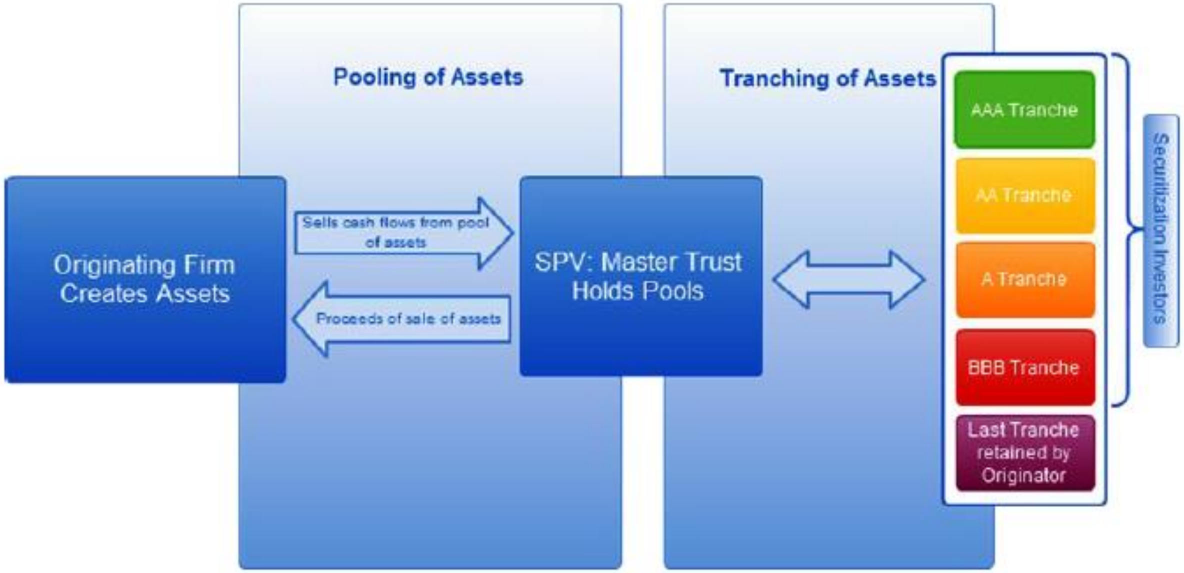
- **The United States, the euro area, and the United Kingdom have the largest shadow banking systems according to FSB data**
- **In the United Kingdom, shadow banking assets as a share of GDP are more than twice those in any other area, and only in the United States do shadow banking assets exceed those of the conventional banking system**
- **Shadow banking has been growing rapidly in emerging market economies**



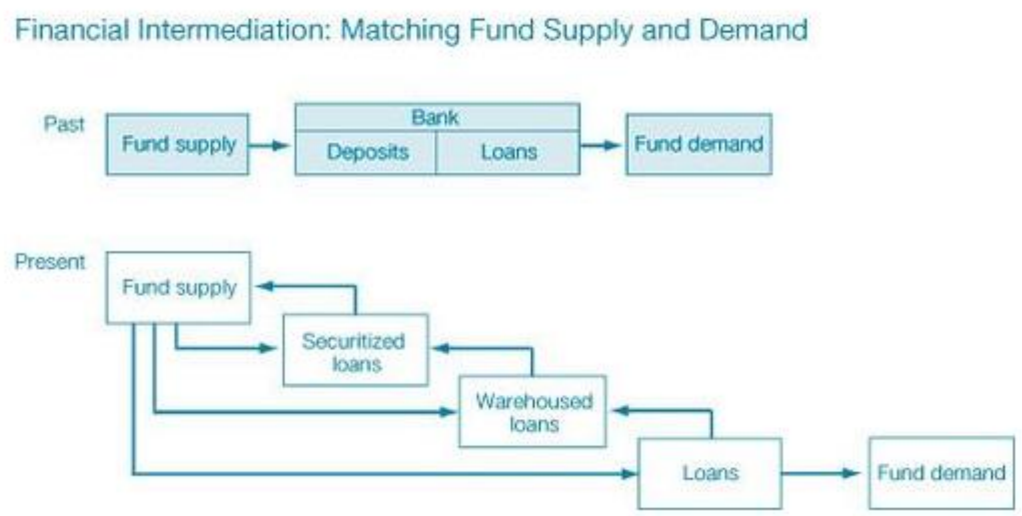
Sources: Financial Stability Board; IMF, World Economic Outlook database; and IMF staff estimates.
Note: AE = advanced economy; EME = emerging market economy. For sample coverage, see Table 2.3.



What is Securitisation?

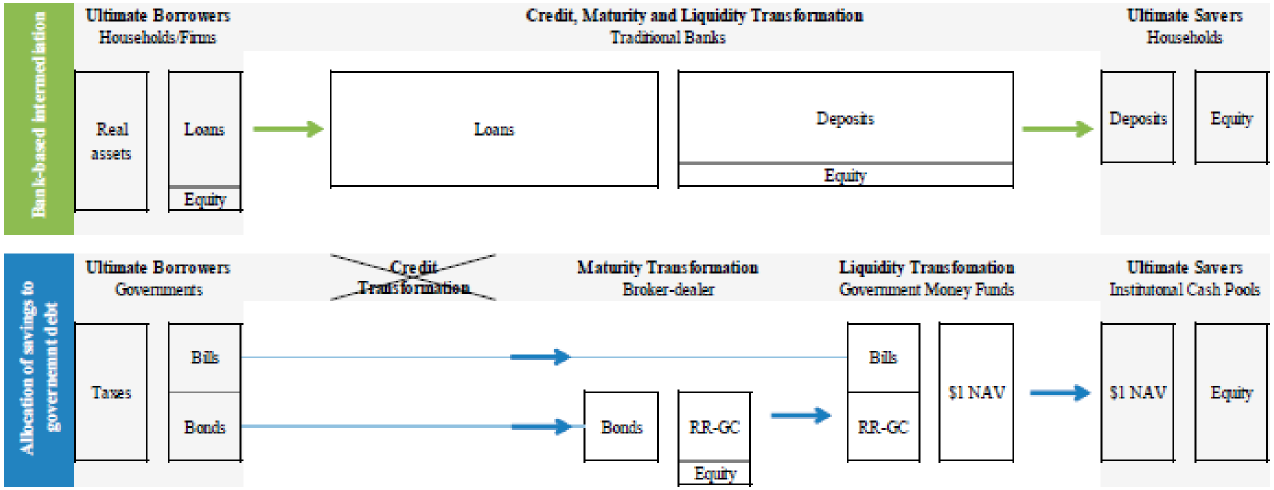


Traditional versus Shadow Banking Intermediation



Traditional versus Shadow Banking Intermediation

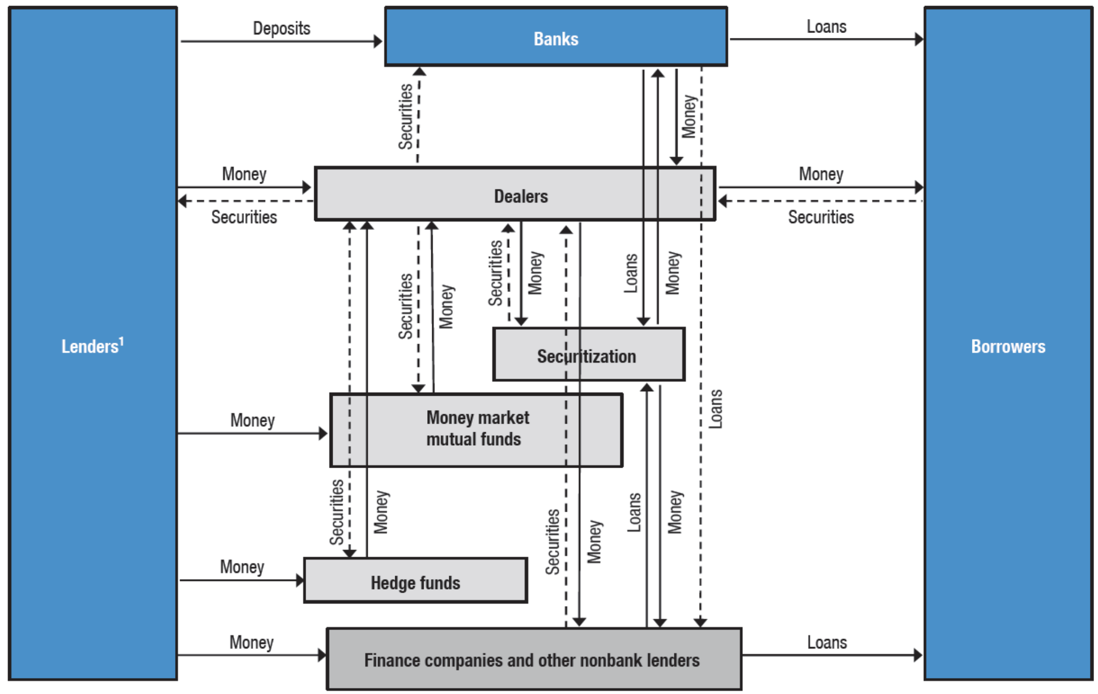
- The key difference between bank-based intermediation and securitization is that
  (i) banks transform risks on a single balance sheet, while
  (ii) in securitization the risks are supported by a chain of multiple balance sheets and various sources of capital and puts



- GC = general collateral (includes repo collateral such as Treasuries, agency debt, and agency mortgage-backed securities
- $1 NAV is the stable net asset value (a promise to repay at least $1 on $1 invested)
- RR = reverse repo

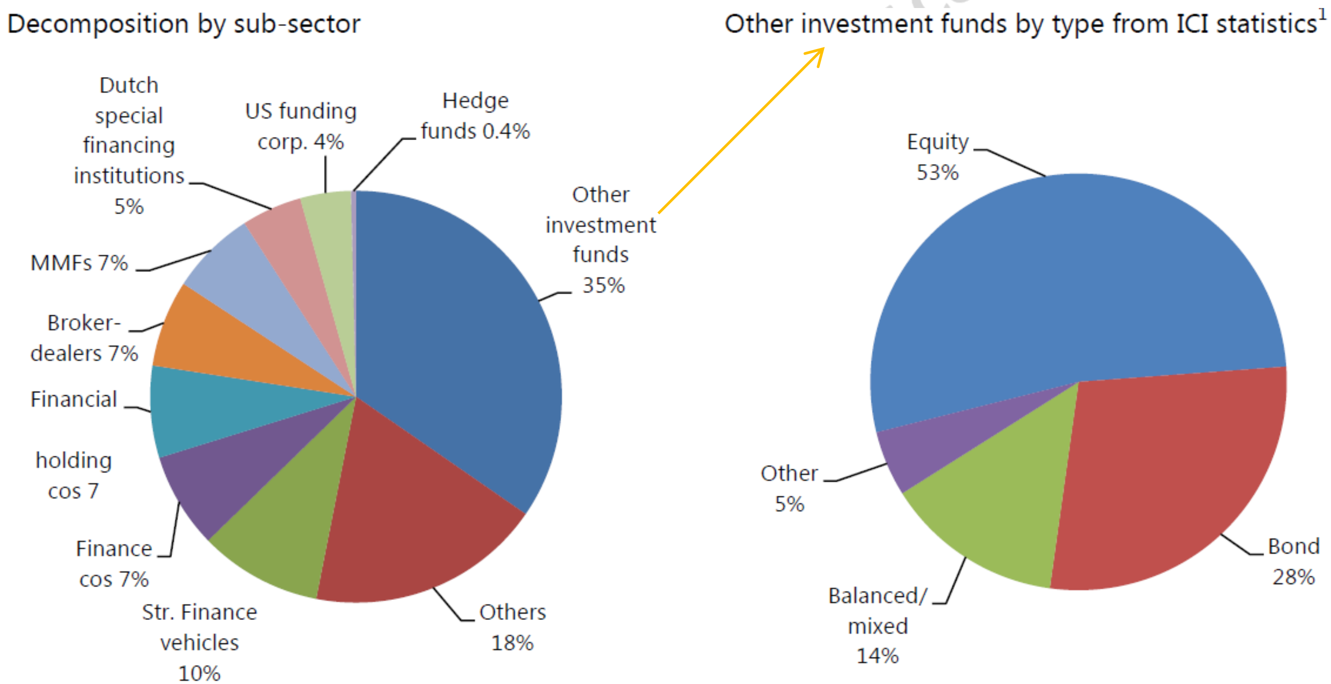
Traditional versus Shadow Banking Intermediation (cont´d)

- **In advanced economies, shadow banking typically involves a network of financial entities and activities that decompose the process of credit intermediation between lenders and borrowers into a sequence of discrete operations**
- **In developing economies, these chains are usually absent, with shadow banking taking a more straightforward intermediation role between ultimate lenders and ultimate borrowers**



Source: IMF staff illustration.
Note: This simplified representation of the financial sector shows the flow of funds from lenders to borrowers. It does not show the reverse flows, such as bank deposit withdrawals and money market mutual fund redemptions. The blue boxes represent the components of a bank-based economy, with the rest representing the shadow banking sector. The boxes on the outside characterize a simple shadow banking system as might be found in a less developed economy. The lighter colored boxes in the middle reflect the kinds of shadow banking activities and entities usually associated with more advanced economies, with dealers as the hub of most activity. This activity comprises issuing securities on behalf of borrowers (including securitization vehicles, finance companies, and other nonbank lenders), providing prime broker services to hedge funds, and conducting repurchase agreements and securities lending. Securitization vehicles do not generally involve borrowers directly. Securitized assets generally come from banks and nonbank lenders, and securities from dealers. See Annex 2.2 for details on the role of securitization.
[1]The lenders category includes institutional investors (such as insurance companies and pension funds) and official sector institutions (such as central banks and sovereign wealth funds).

Traditional versus Shadow Banking Intermediation (cont´d)

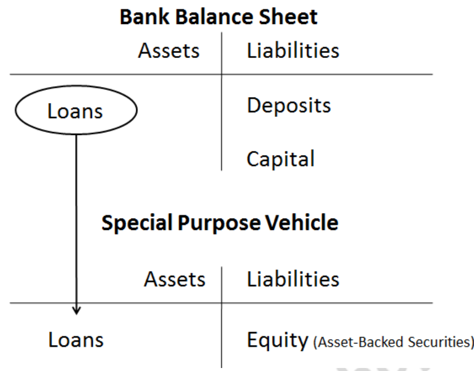


[1] Sample: 25 jurisdictions minus Indonesia, Saudi Arabia, Hong Kong, Singapore, for which data is not available.

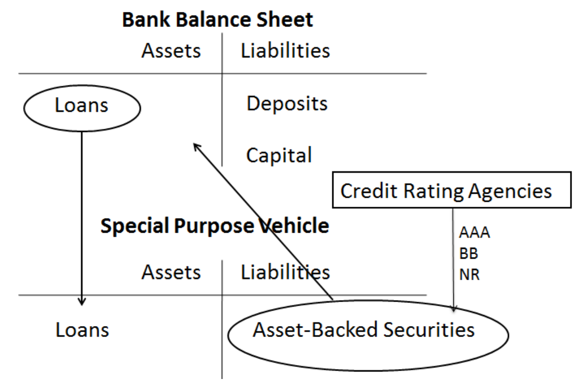
Sources: National Flow of Funds data; Investment Company Institute (ICI).

Banking Gets Exciting …

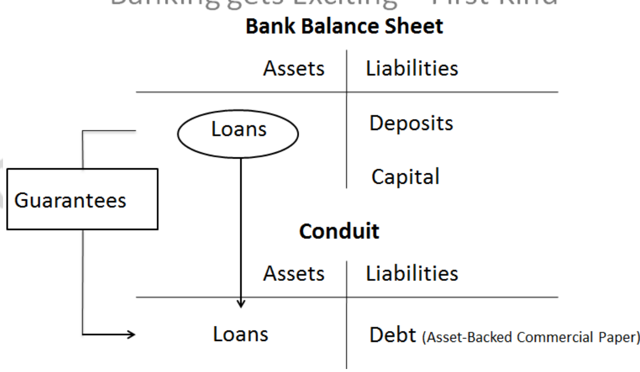
When Banking was Still Boring: Securitization



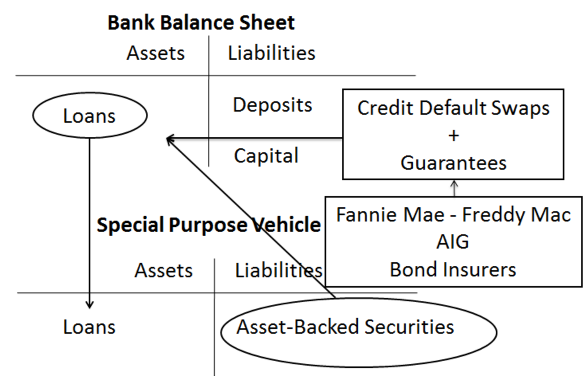
Banking gets Exciting – Second Kind



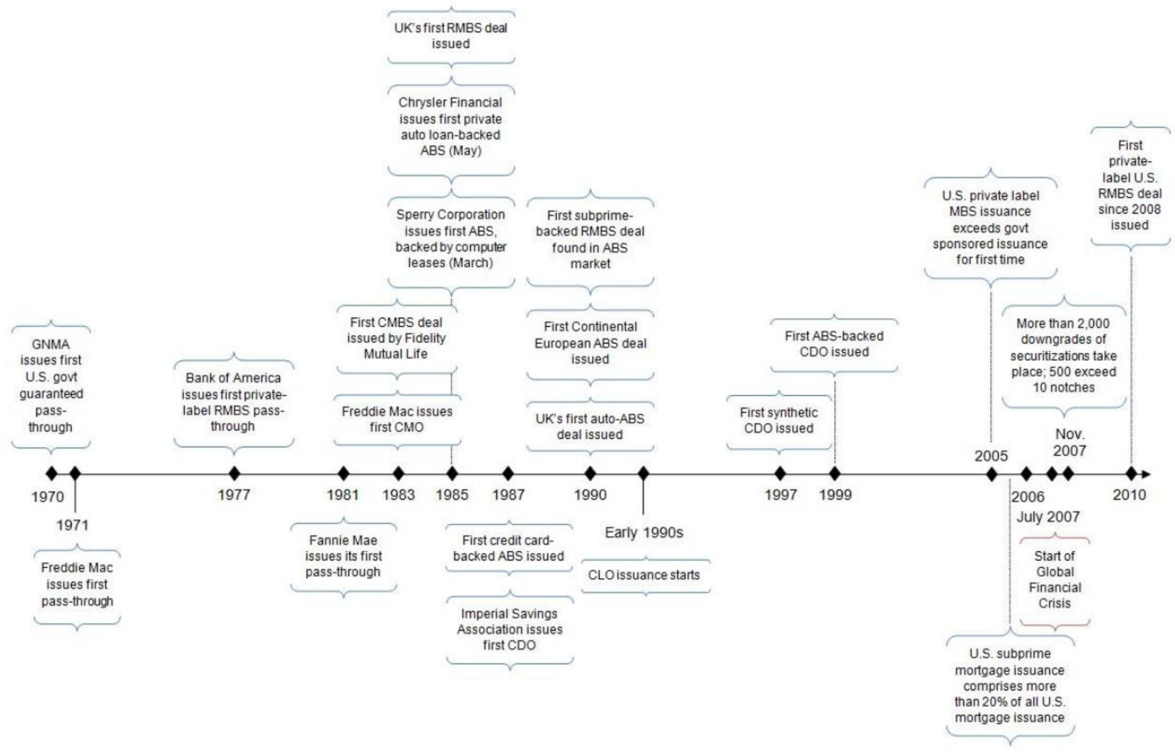
Banking gets Exciting – First Kind



Banking gets Exciting – Third Kind



Key Developments in Global Securitization Markets



Source: IMF staff.

Fannie Mae and Freddie Mac

- Although the term shadow banking is relatively recent, most of its components are not
  - Repurchase agreements have been in use since 1917
  - The first securitization transaction was executed in 1970
  - The first MMMF was established in 1971

- **Fannie Mae** was created in **1938** as the **collapse of the national housing market** in the wake of the Great Depression discouraged private lenders from investing in home loans
  - Fannie Mae was established to **provide local banks with federal money to finance home mortgages** to raise levels of home ownership and the availability of affordable housing

- Initially, Fannie Mae operated like a national savings and loan institution, allowing local banks to charge low interest rates on mortgages for the benefit of the home buyer

- Leading to the development of **-** what is now known as **-** the secondary mortgage market, Fannie Mae is **able to borrow money from foreign investors at favorable interest rates** because of the financial support by the U.S. Government
  - In essence, Fannie Mae makes a profit from the spread between the interest rates homeowners pay and foreign lenders charge

- In the 1970s **Freddie Mac** was created to prevent any further monopolization, **after the Fannie Mae' privatization**

Securitization Instruments

Funding Transactions
The underlying assets are loans, legal rights to specific assets (e.g., leased equipment), and rights to specific cash flows (e.g., cash flows from equipment leases).

Non-Funding Transactions[1/]
The underlying assets are securities, subordinated debt, SME loans, or obligations to make payments on derivatives contingent on certain events occurring, like CDS.

ABS	RMBS				CMBS	ABCP Conduits		CDOs					
Non-RMBS *Credit Cards, Auto Loans, Student Loans, and "Niche Product"*[2/]	**Private-label RMBS**			**Govern-ment-backed Lending**	**Commercial Mortgages**	Single- & Multi-seller Conduits	Arbitrage Conduits SIVs SIV-Lites	**CBOs**[6/]	**Hedge CDOs**[7/] *(usually synthetic)*	**CLOs**	**ABS-CDOs**		**TruPS CDOs**[9/]
	Subprime[3/] *("Home Equity Loans,*[4/] *Low Quality)*	**Alt-A** *(Inter-mediate Quality)*	**Prime Jumbo, Non-US Resid-ential Mort-gage Loans**	**U.S.: GSEs (FHLMC & FNMA) & GNMA** *Collateral: Conforming Mortgages* **Germany: KfW**[5/]		*Collateral: Claims on receivables, leases, etc.*	*Collateral: Securities*				**Cash CDOs**	**Synthetic CDOs**[8/]	
						Largely financed via the sale of highly rated ABCP							

This figure is intended to provide a broad overview of the markets for securitized fixed-income products. It is not meant to elucidate all dimensions of those markets, but rather to provide a taxonomy of the main product categories, relate the various market sectors and subsectors to each other, and list the main types of collateral and the main participants in some sectors.

Note: ABCP = asset-backed commercial paper; ABS = asset-backed security; ABS-CDO = asset-backed security-collateralized debt obligation; CBO = collateralized bond obligation; CDO = collateralized debt obligation; CDS = credit default swap; CLO = collateralized loan obligation; CMBS = commercial mortgage-backed security; FNMA = Federal National Mortgage Association; GNMA = Government National Mortgage Association; GSE = government-sponsored enterprise; KfW = Kreditanstalt für Wiederaufbau; MBS = mortgage-backed security; RMBS = residential mortgage-backed security; SIV = structured investment vehicle; SME = small- and medium-sized enterprise; TruPS = trust-preferred security.

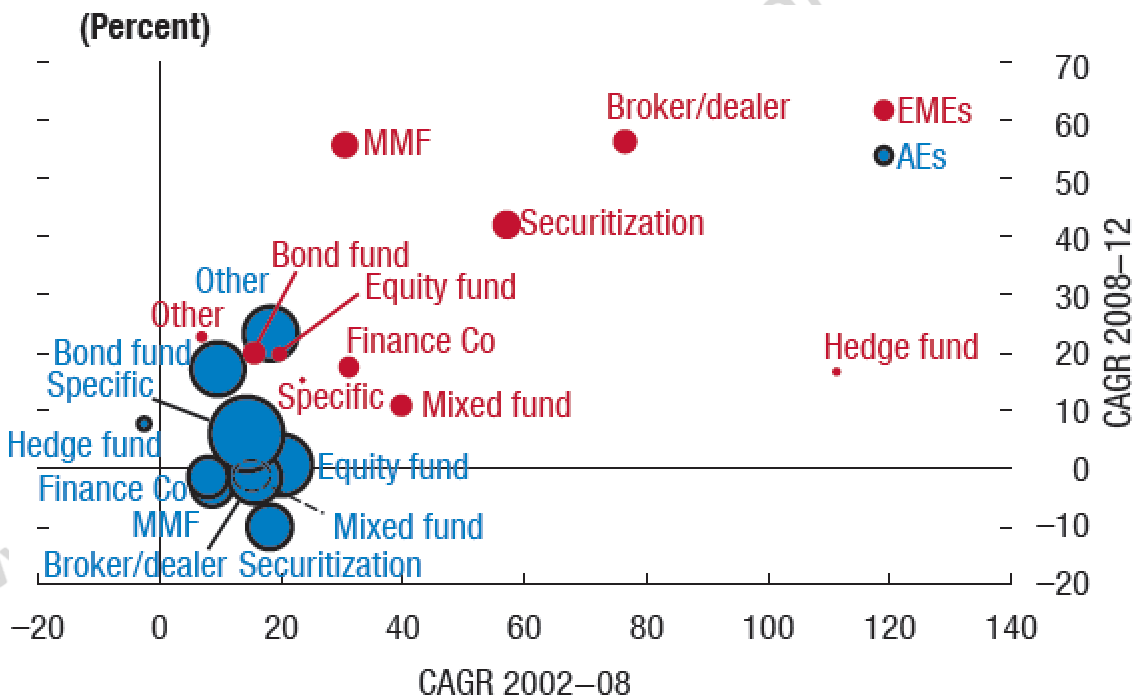
1/ CLOs, SME-ABS (sometimes subsumed under CDOs or CLOs), and TruPS are considered funding transactions if they are securitized directly from originator balance sheets, but are usually assembled by broker/dealers and asset managers independently of the originating bank(s), and in the case of traditional CLOs, involve tranches of *syndicated loans* which are traded.
2/ *Niche product* comprises mutual fund and legal fee securitizations, as well as securitizations of royalty payments and other recurring cash flows. Utility companies have used securitizations in the past to recover the cost of large projects, which became unviable ("stranded cost securitizations"), or of storm damages.
3/ Only subprime RMBS are part of the ABS market; Alt-A and jumbo-prime RMBS are part of and traded in the general private-label RMBS market.
4/ The fixed- income markets often use the terms *subprime* and *home equity loans* interchangeably. They are not the same as *home equity lines of credit (HELOCs)*, which are credit lines collateralized by second liens on borrowers' homes (often covering 10–20 percent of the value of the home). When demand for such financing rose in the early 2000s in unison with U.S. home prices, mortgage originators sometimes refinanced homeowners wishing to add a HELOC into new first lien loans, with a loan-to-value ratio (LTV) at origination of 90–100 percent (and sometimes more); these loans allowed the borrower to take out cash during the refinancing (*cash-out refinancing*) and often were high-interest subprime loans, reflecting their higher risk status.
5/ The collateral underlying each of KfW's PROVIDE transactions comprised mortgages from a single country, although the PROVIDE program eventually covered at least four European countries. The collateral had to obey certain restrictions on LTVs, debt-to-income ratios, and other loan characteristics. Most tranches of those deals were assigned a rating.
6/ CBO securitizations occurred where the underlying collateral was mainly corporate bonds. In the wake of the 2001 corporate credit crisis, most lost substantial value, and few were issued post-2001.
7/ Hedging transactions are often assembled by banks to hedge part of their activities; those could encompass CDS to hedge exposures from loans, credit valuation adjustments, and other sources.
8/ *Synthetic* refers to the fact that in these securitization structures, CDS on ABS tranches comprised most of the obligations of the CDO, with the CDO selling default insurance via CDS.
9/ TruPS are unsecured, subordinated debentures, which financial companies issued and which could be counted as Tier 1 capital. Initially issued by larger banks, TruPS issued by smaller banks were increasingly pooled into CDOs in the early 2000s. A few CDOs were launched based on pooled TruPS from smaller, even private, real-estate companies. TruPS CDOs lost significant value during the crisis, and the Dodd-Frank Act is restricting their ability to count towards Tier 1 capital, except for banks with less than US$500 million of assets (Day Pitney, 2010).

Excursion: Private Label Securities

- Non-agency or private-label MBS – like residential mortgage-backed securities (RMBS) or commercial mortgage-backed securities (CMBS) – are usually based on non-conforming loans, which **do not meet the criteria of the agencies**
- In addition to subprime mortgages, Alt-A and so-called jumbo loans (high-quality mortgages that were too large to be guaranteed by the GSEs) were also securitized as private-label RMBS
- The credit risk is relatively higher in the private label market because the losses on the mortgage loans must be absorbed directly by the investors
- Unlike agency transactions, there is **no guarantee** of timely or eventual payment of either principal or interest to such investors
- For investors, analysis of relative priority of cash flows as well as the credit risk of the underlying mortgage loans take a significant role in the private label market

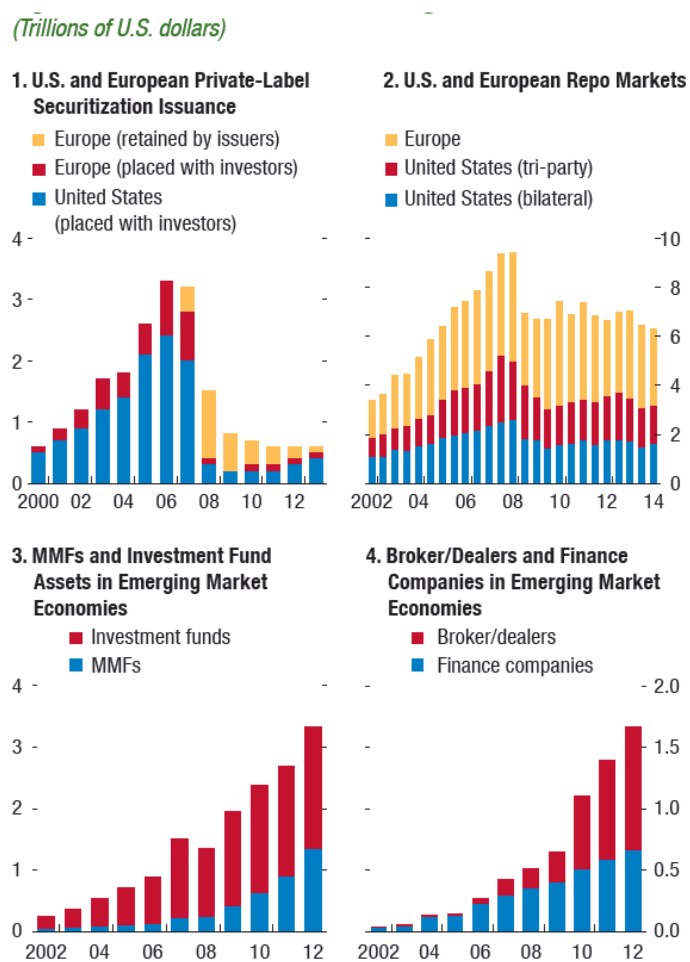
Growth in Selected Sub-Sectors

- The expansion of shadow banking was significantly driven by the growth of broker-dealer activities and finance companies as well as the growth of entities similar to MMFs



Growth in Selected Sub-Sectors (cont´d)

- **Until 2007, shadow banking activities in the United States and Europe had grown very rapidly, but many of them collapsed during the financial crisis**
- **Over time, the U.S. and European financial systems had come to rely increasingly on repo and securitization financing, through conduits and structured finance vehicles, …**
- **… while money market mutual funds (MMFs) and other funds benefited from inflows due to ample global liquidity**
- **An increase in shadow banking activities in emerging markets is a natural part of domestic financial deepening in these economies**



Growth in Selected Geographies

In **advanced economies**, nonbank lending is rapidly growing as banks are apparently withdrawing from certain activities in response to strengthened regulations

- ***Direct corporate lending in Europe and the United States***
  - New lenders comprise a wide range of non-bank entities, including pension funds and insurers
  - Moreover, U.S. entities (such as private equity and distressed debt funds) are increasingly providing European firms with long-term funding
- ***Peer-to-peer online lending platforms***
  - Small market is with substantial potential for growth is large
  - So far, most activity is taking place in the United States and the United Kingdom and is focused on loans to households and small businesses
- ***Mortgage servicing rights (MSRs)***
  - MSRs are rights to receive a portion of mortgage interest and fees collected from borrowers in return for administering loans; Banks have been selling MSRs to lightly regulated nonbank specialty servicing firms because of increased capital risk weights
  - MSRs carry significant short-term risks in terms of compliance and operational factors (such as interruption of servicing or delays in transfers)
- ***Derivative product companies (DPCs)***
  - DPCs are special-purpose companies set up by banks, jointly with private equity firms and hedge funds, to trade with non-affiliated counterparties in non–centrally cleared derivatives to avoid higher capital charges on the latter

Growth in Selected Geographies (cont´d)

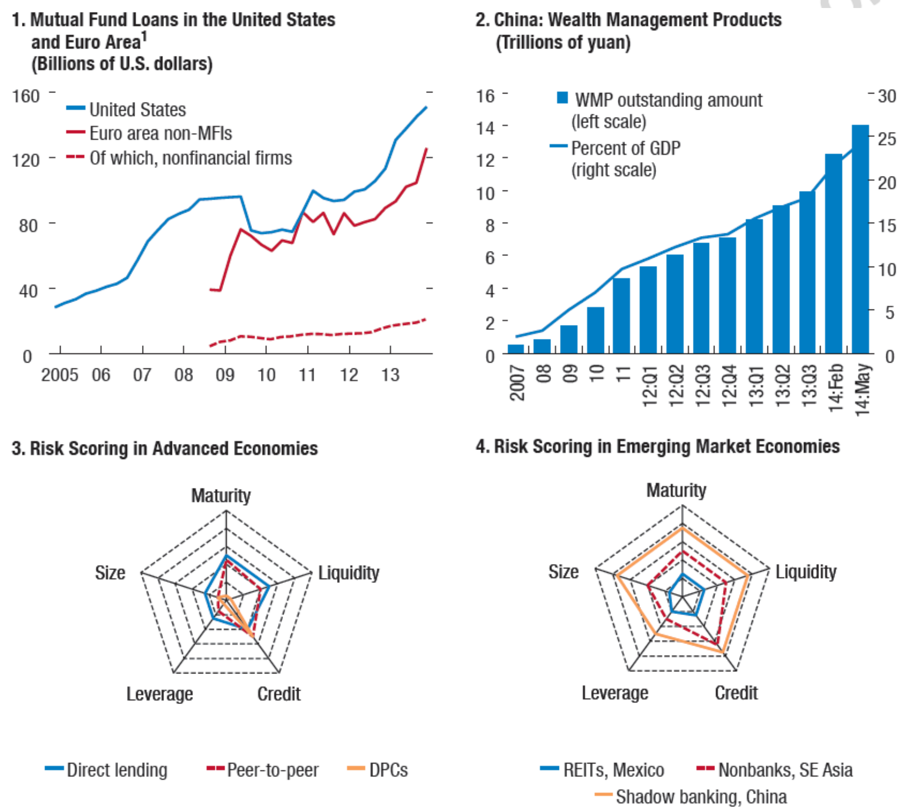
Among recent developments in **emerging market economies**, growth in shadow banking in China stands out

- ***Rapidly growing and varied shadow banking in China***
  - Shadow banking social financing had risen to 35% of GDP and is expanding at twice the rate of bank credit
  - Furthermore, retail payment platforms recently instituted a method of sweeping cash balances into MMFs that in turn may (partly) invest in short-term CPs issued by local government vehicles. The

- ***Real estate investment trusts (REITs) in Mexico***
  - Small relative to the financial sector (around 2.4% of banking) its importance is increasing rapidly
  - In 2013, REITs accounted for more than one-third of the funds raised by Mexican companies in the domestic equity market

- ***Lending by nonbanks in Southeast Asia***
  - In Malaysia, this activity accounted for roughly 25% of the increase in household debt since 2008, and in Thailand for nearly 30% of the increase since 2007
  - Because it has focused on lower- to middle-income households, it may be more risky than bank lending, although the authorities have taken mitigating action

Growth in Selected Geographies (cont´d)

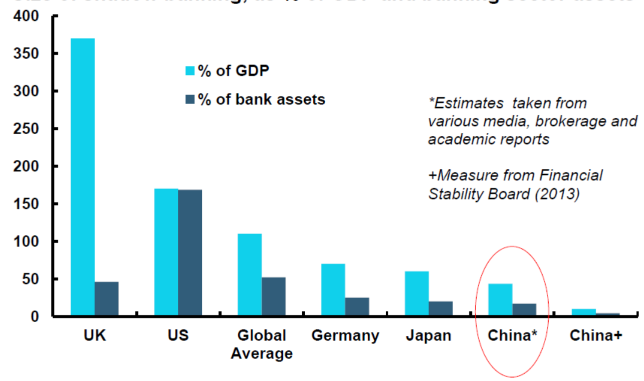


Sources: CEIC Data; China Banking Regulatory Commission; Haver Analytics; local media; and IMF staff calculations.
[1]In Europe, mutual funds are typically limited to participations.
Note: DPC = derivative product company; MFI = monetary financial institution; REIT = real estate investment trust; SE = southeast; WMP = wealth management product. Panels 3 and 4 depict qualitative risk scoring of new shadow banking activities from low (toward the center) to high (on the edges of the figures), based on discussions with market participants, policymakers, and IMF staff, and on various research reports.

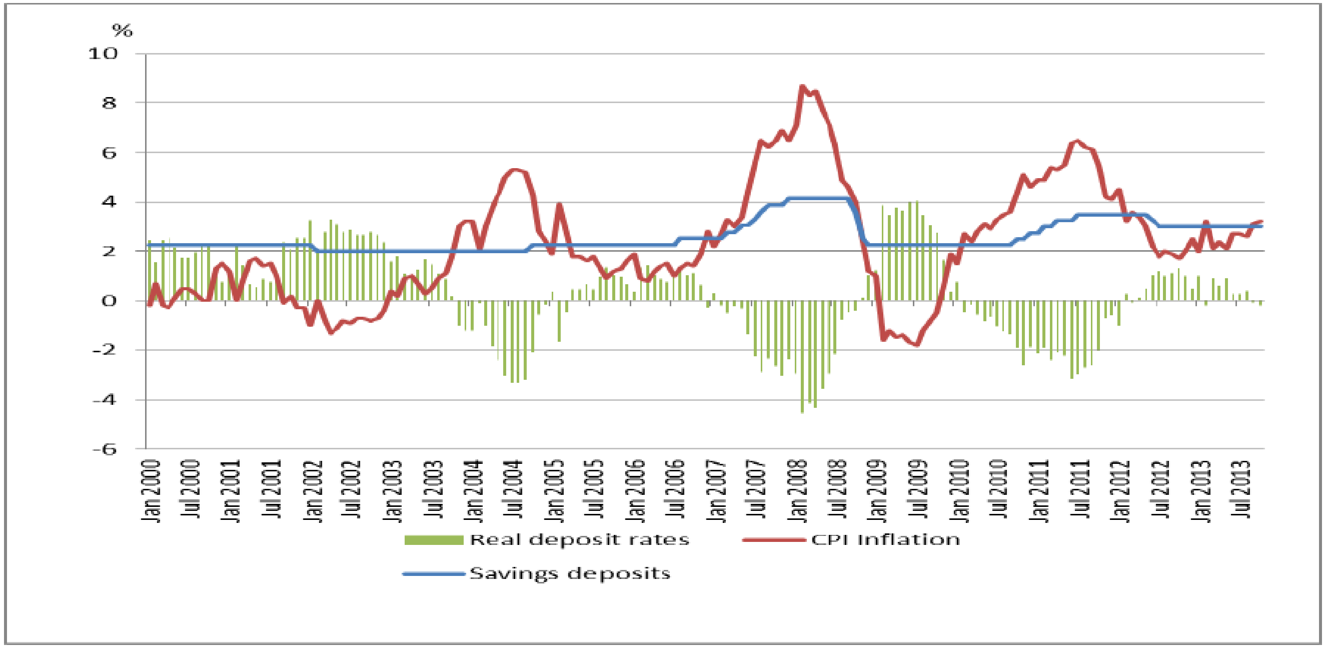
Excursion: Wealth Management Products in China

- China is second largest economy, biggest trading nation, has largest currency reserves and fastest growing middle class
- China will be a dominant player in global finance
- Its financial system is in fast transition
- Financial structure changed dramatically due to fast growth of non-bank finance
- Credit intermediation outside the formal banking system experienced rapid growth since the global financial crisis
  - Non-bank finance 45% of total social finance (2013) versus ~ 0% (2003)
  - Non-bank finance 40% of GDP (2013) versus ~ 0% (2003)

Size of shadow banking, as % of GDP and banking sector assets



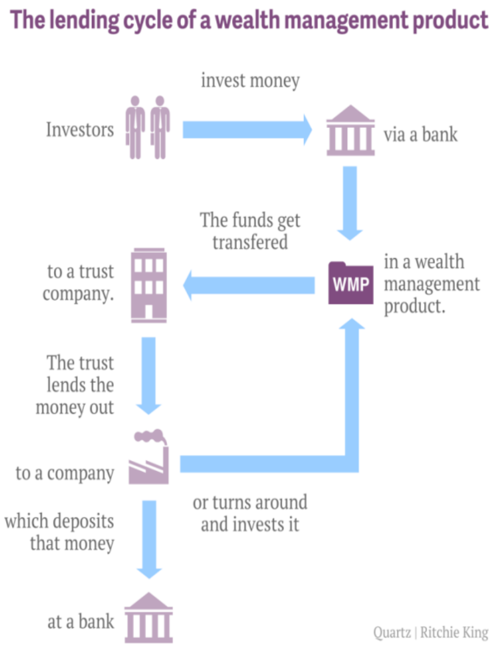
Excursion: Wealth Management Products in China (cont´d)

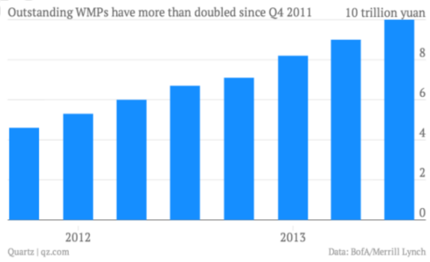


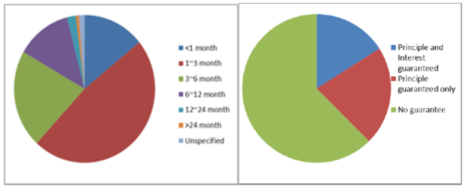
Excursion: Wealth Management Products in China (cont´d)

Shadow Deposits

- Chinese banks market these high-interest-rate accounts (shadow deposits / WMPs) as an alternative to savings accounts, …
- … as the annual yields of deposits are limited by the government to 3%
- WMPs offer higher rates as based on riskier loans typically extend via intermediaries / trust companies that are not allowed to accept deposits or formally loan out money, but are allowed to manage it …

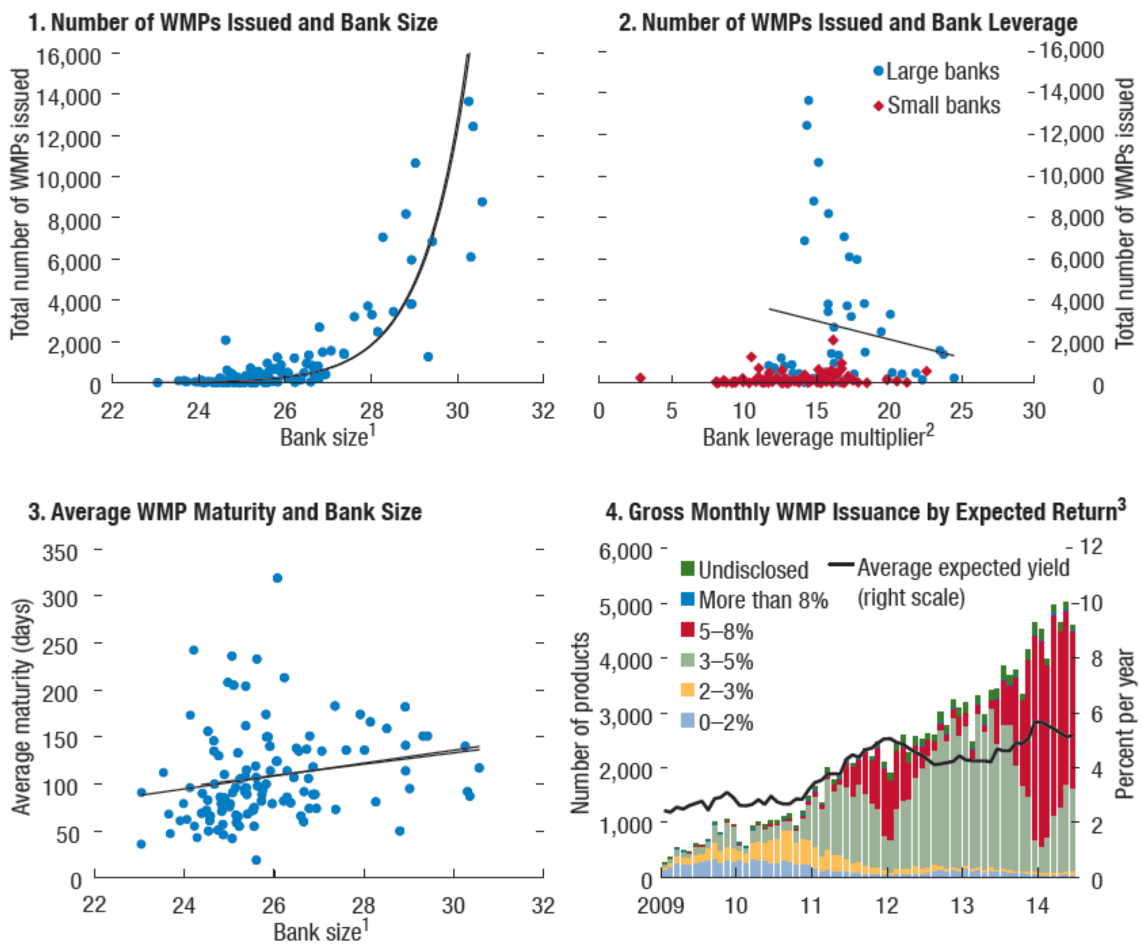






Excursion: Wealth Management Products in China (cont´d)

- **The growth of WMPs is related to the size of Chinese banks, implying that they may generate potentially higher financial stability risks for large banks.**



Assets / Equity

Excursion: Wealth Management Products in China (cont´d)

	China	United States
Products	WMPs, trust products, trust loans	MMF, securitization
Product Structure and Characteristics	Simple Backed by risky loans (TP) Invests in interbank market (WMP)	Financial design Pooling and tranching (securitization) Backed my high quality loans (MMF)
Investors	Retail investors High net worth individuals, firms	Institutional investors Financial institutions
Selling Platform	Traditional banks	Capital markets
Risk Transfers	No effective risk transfer Banks are not liable by contract	Through security design ABCP: Pooling of commercial papers ABS: Senior tranche with loss absorption by junior claims

Drivers of Shadow Banking

Observations suggest that a **search for yield, regulatory arbitrage, and complementarities with the rest of the financial system** play a role in the growth of shadow Banking

1. When government bond yields are low and investors are looking for **higher-yielding** assets, the shadow banking system often supplies those assets
   – The international dimension of this effect points to the role of shadow banks in intermediating capital flows

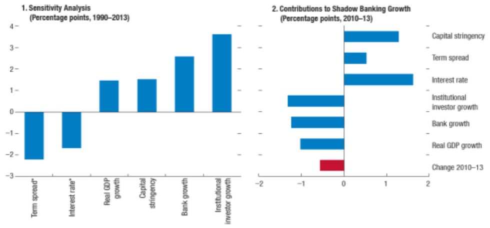
2. Tighter bank **regulation** encourages institutions to circumvent it through nonbank intermediation

3. Growth of shadow banking can be **complementary** to the rest of the financial system
   – In emerging markets, the growth of pension funds and insurance companies has often come along with the growth of investment funds and other non-bank intermediaries
   – In the United States, shadow banking grew from the demands of so called institutional cash pools for alternatives to insured deposits and safe assets
   – However, to some extent, this, too, can be regarded as a special case of a reaction to regulations (that is, limits on deposit insurance) in an environment of ample liquidity

Drivers of Shadow Banking (cont´d)

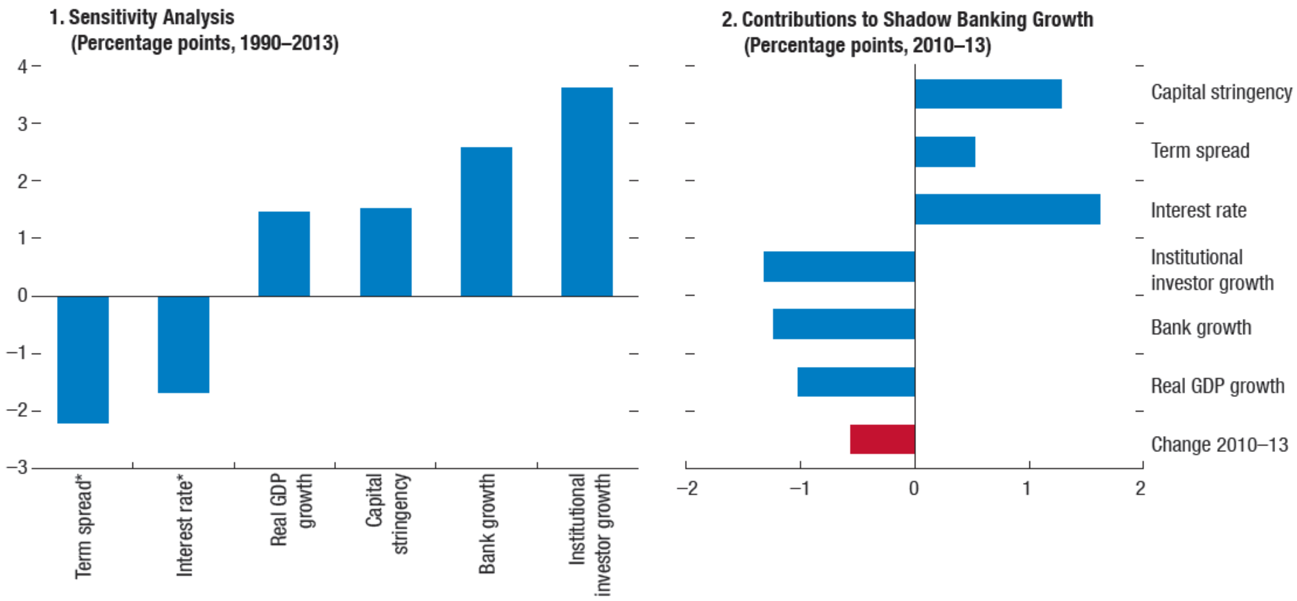
Empirical Evidence

- ***Bank regulation***
  - More stringent capital requirements are associated with stronger growth of shadow banking
  - Banks have an incentive to shift activities to the nonbank sector due to regulatory changes
- ***Liquidity conditions***
  - A negative correlation of shadow banking growth with term spreads and interest rates becomes considerably stronger after 2008
- ***Institutional cash pools and financial development***
  - Stronger growth of institutional investors is associated with higher growth in shadow banking
- ***Growing banking sector***
  - Countries with higher banking sector growth rates tend to experience higher growth of shadow banking, again suggesting complementarities
  - Alternatively, the results could reflect a general trend in financial deepening driven by other factors



Drivers of Shadow Banking (cont´d)

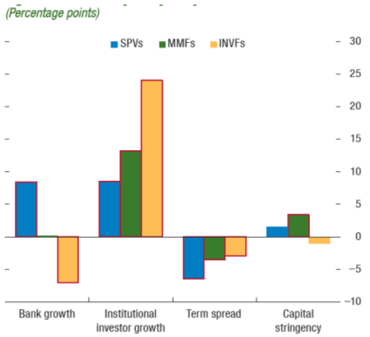
- **Panel 1 shows the impact on growth rates for shadow banking (flow of funds measure) of a 1 standard deviation shock in each of the shown dependent variables (* = post-2008)**
- **Panel 2 shows the contribution to the change in average shadow banking growth rates from 2010 to 2013 of the changes in each of the listed independent variables over the same period**



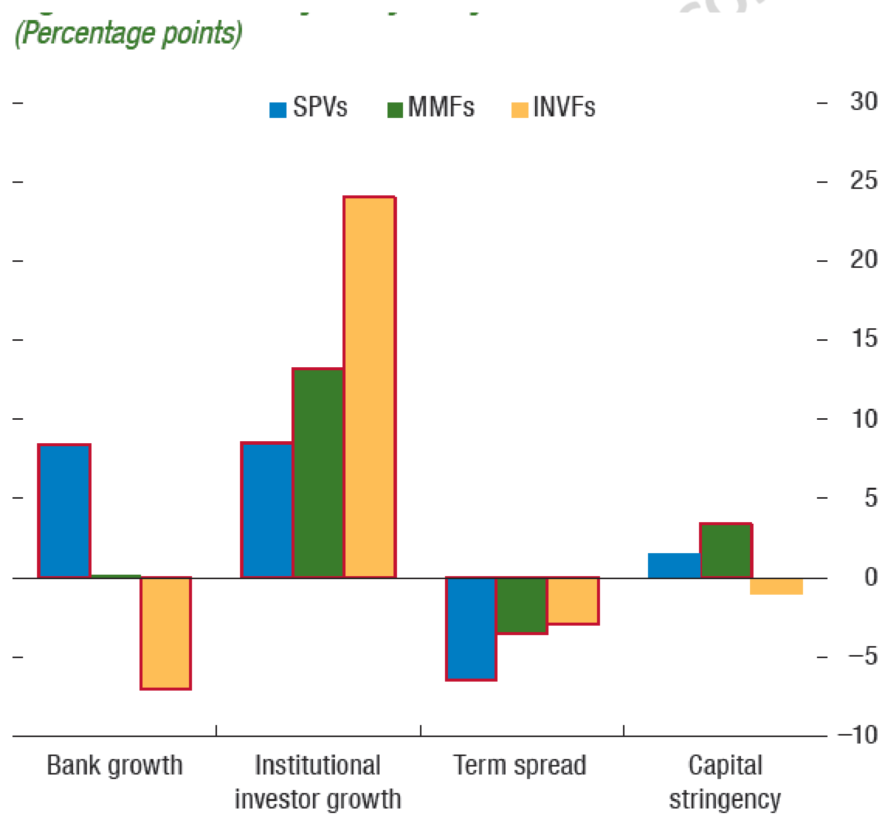
Drivers of Shadow Banking (cont´d)

- ***MMFs and investment funds***
  - Banking growth is not important in explaining the growth of MMFs
  - However, the growth of MMFs and investment funds is strongly associated with the growth of institutional investors, which supports the cash-pool demand hypothesis
  - Similarly, the compression of the term spread (capturing search for yield) plays only a small role for MMFs and investment funds

- ***Securitization***
  - The growth of private-label securitization via SPVs is strongly associated with growth of the banking sector, probably because SPVs are frequently sponsored or owned by banks
  - As expected, the growth of institutional investors is less correlated with the growth of securitization
  - Securitization growth is more strongly (and negatively) associated with the term spread than are MMFs
  - The impact of capital regulations is less important for securitization than for MMFs

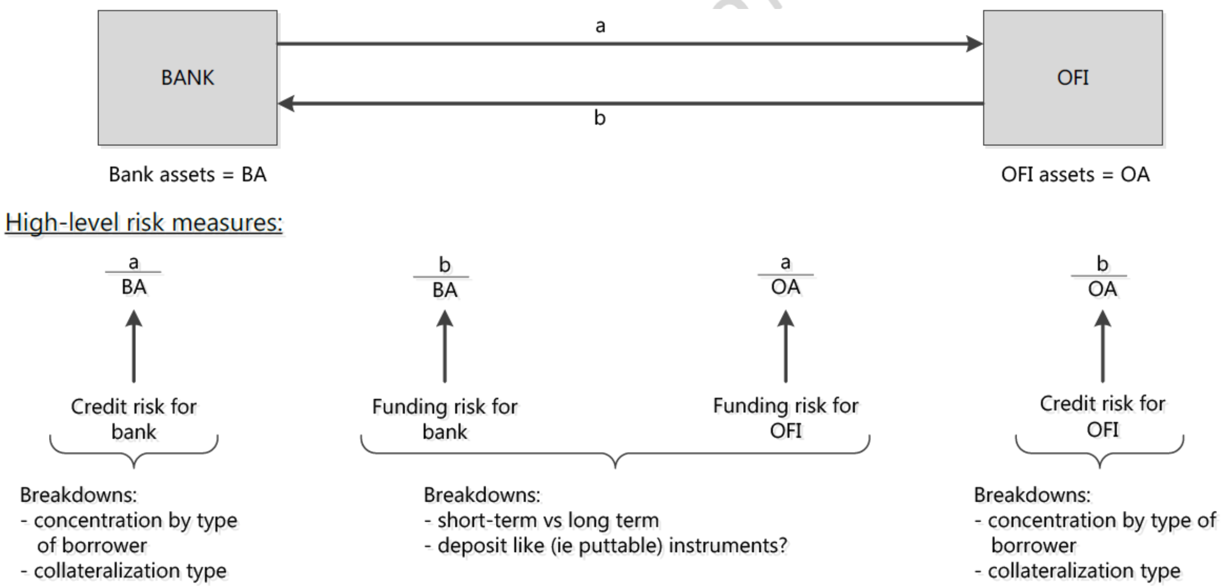


Drivers of Shadow Banking (cont´d)



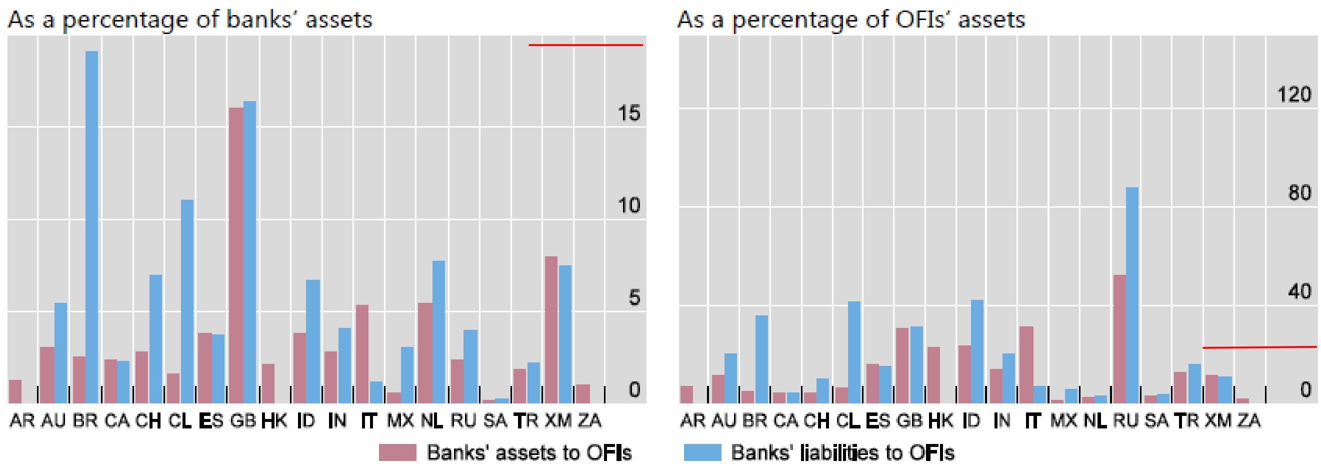
Interconnectedness - Banks and Shadow Banking

- **Systemic risks can arise not only from shadow banking entities but also from interconnectedness between banks and shadow banking entities**
- **Two such measures are direct credit exposures and funding dependence on each other**
- **Conceptually, both banks and shadow banking entities pose credit and funding risks to each other that depend on the size and maturity structures of their assets and liabilities, concentration levels by sub-sector, and type of collateralisation (if any) of the lending instruments**
- **Currently a breakdown by these categories is not available in most of the participating jurisdictions**



Interconnectedness - Banks and Shadow Banking (cont´d)

- **The risk associated with interconnectedness between the two sectors is larger for NBFIs in relative terms than for banks in most jurisdictions, as revealed by the higher ratios shown in the right-hand chart, compared to the left-hand chart.**



AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CL = Chile; ES = Spain; GB = United Kingdom; HK = Hong Kong; ID = Indonesia; IN = India; IT = Italy; MX = Mexico; NL = Netherlands; RU = Russia; SA = Saudi Arabia; TR = Turkey; XM = Euro Area.

[1] Net of assets and liabilities prudentially consolidated into a banking group where the relevant data are available. Some of the figures may therefore not be directly comparable. Note that 'banks' refer to the broader category of 'deposit-taking institutions'.

Sources: National financial accounts data; other national sources; ECB.

Risk and Regulation

- So far, the (imperfectly) measurable **contribution of shadow banking to systemic risk** in the financial system is substantial in the United States but remains modest in the United Kingdom and the euro area
  - In the United States, the risk contributions of shadow banking activities have been rising, but remain slightly below pre-crisis levels
  - Evidence suggests the presence of significant cross-border effects of shadow banking in advanced economies
  - In emerging market economies, the growth of shadow banking in China stands out

- Assessing risks associated with recent developments in shadow banking remains difficult, largely because of a **lack of detailed data**
  - It is not clear whether the shift of some activities (such as lending to firms) from traditional banking to the non-bank sector will lead to a rise or reduction in overall systemic risk
  - However, indications suggest that, as a result, market and liquidity risks have risen in advanced economies

- Overall, the continued expansion of finance outside the regulatory perimeter calls for a more encompassing approach to **regulation and supervision** that combines a focus on both activities and entities and places greater emphasis on systemic risk and improved transparency

Risk and Regulation (cont´d)

- Shadow banking tends to flourish when **tight bank regulations** combine with **ample liquidity** and …
- … when it serves to **facilitate the development** of the rest of the financial system
  - The current financial environment in advanced economies remains conducive to further growth in shadow banking activities
- Most broad estimates point to a recent pickup in shadow banking activity in the euro area, the United States, and the United Kingdom; narrower estimates to **stagnation**
  - Securitization has seen a decline, whilst traditionally less risky entities such as investment funds have been expanding strongly
- In emerging market economies, shadow banking continues to grow strongly, outstripping banking sector growth
  - To some extent, this is a natural byproduct of the deepening of financial markets, with a concomitant rise in pension, sovereign wealth, and insurance funds

Risk and Regulation (cont´d)

Usefulness of a definition depends on the extent to which it covers relevant risk dimensions

- ***Run risk**:* Since shadow banks perform credit intermediation, they are subject to a number of bank-like sources of risk, including run risk
  - Stemming from credit exposures on the asset side combined with high leverage on the liability side, and liquidity and maturity mismatches between assets and liabilities
  - These risks are greater at shadow banks not having no formal official sector liquidity backstops and not being subject to bank-like prudential standards and supervision

- ***Agency problems**:* The separation of financial intermediation activities across multiple institutions in a complex shadow banking systems aggravates agency problems

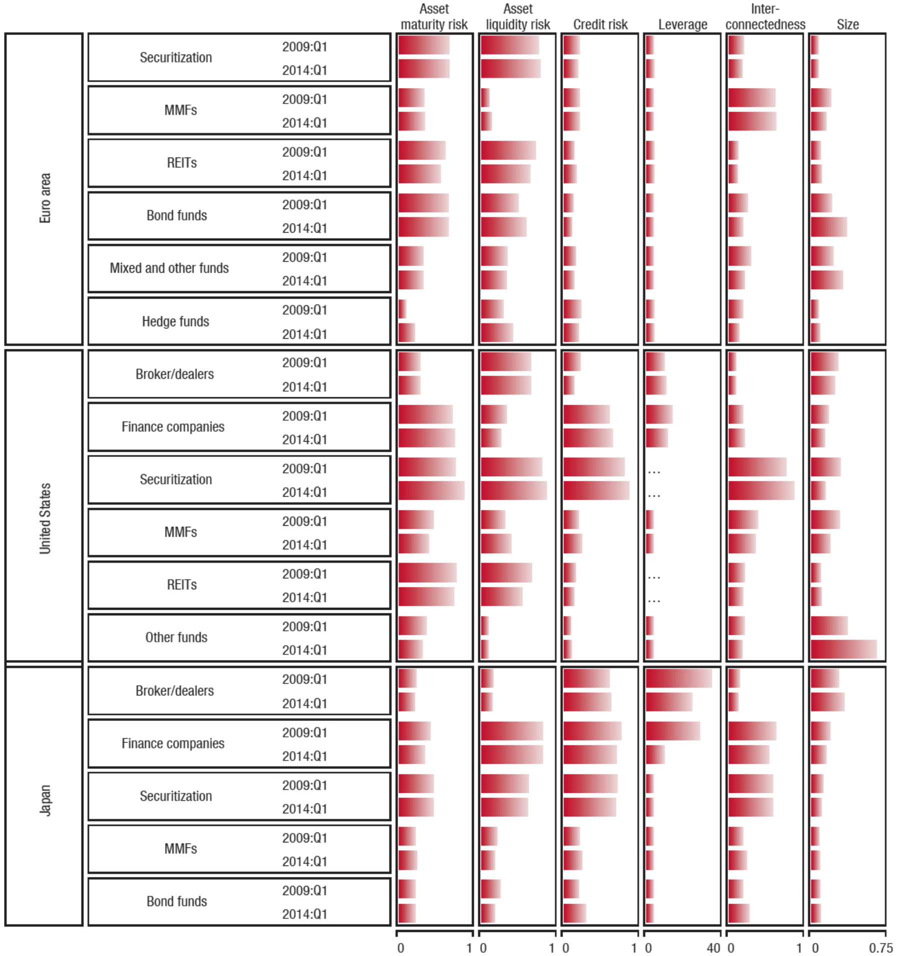
- ***Opacity and complexity**:* These constitute vulnerabilities, since during periods of stress, investors tend to retrench and flee to quality and transparency

- ***Leverage and pro-cyclicality**:* When asset prices are buoyant and margins on secured financing are low, shadow banking facilitates high leverage
  - In periods of stress, the value of collateral securities falls and margins increase, leading potentially to abrupt deleveraging and margin spirals

- ***Spillovers**:* Stress in the shadow banking system may be transmitted to the rest of the financial system through ownership linkages, a flight to quality, and fire sales in the event of runs

Risk and Regulation (cont´d)

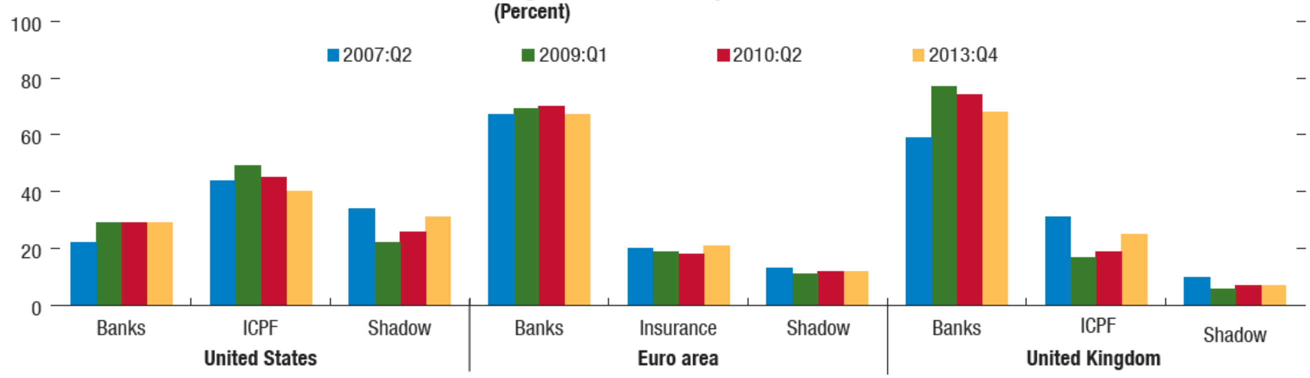
- In the euro area and the United States, traditionally less risky activities have been growing the fastest since 2009, but to some extent, they are taking on more liquidity risk
- In the euro area, bond, mixed, and other funds grew strongly, whereas securitization and the size of MMFs fell
- These funds tend to be exposed to some liquidity and maturity risk but score low on other risk dimensions
- At least in the euro area, however, bond funds now tend to hold less-liquid and longer-maturity assets than five years ago



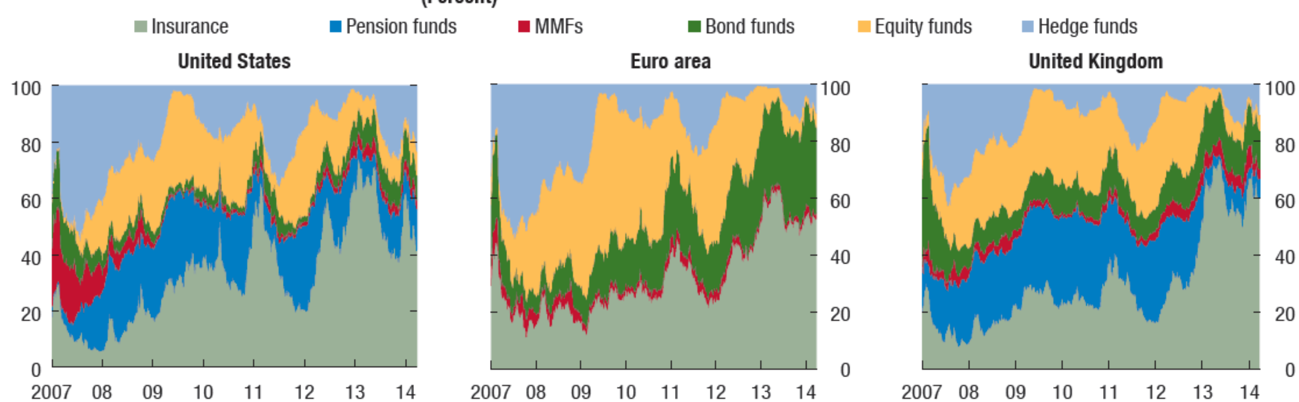
Risk and Regulation (cont´d)

- Nonbank financial intermediaries contribute substantially more to systemic risk in the United States than in the euro area or the United Kingdom
- In the euro area and the United Kingdom, the banking sector contributes relatively more to systemic risk because of its size and direct and indirect interlinkages
- The next most important systemic risks are related to pension funds and insurance companies — most likely because the euro area and the United Kingdom have more bank-based financial systems

1. Marginal Contribution to Systemic Risk
(Percent)



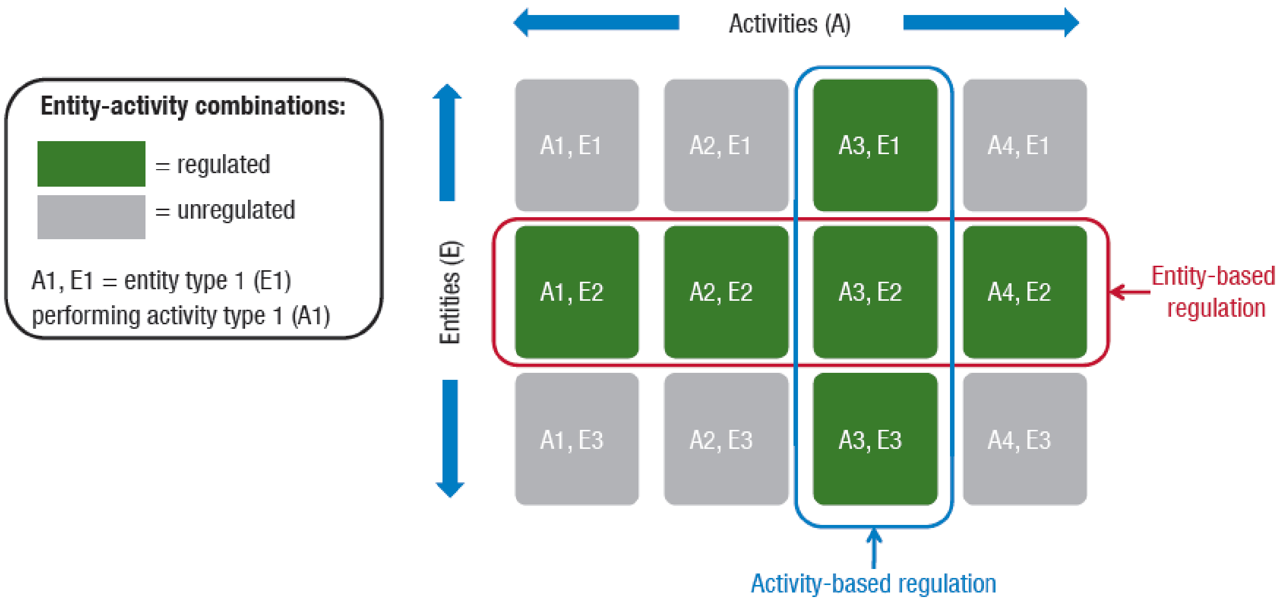
2. Contributions to Distress Vulnerability of Banking Sector
(Percent)



Risk and Regulation (cont´d)

- Policymakers will have to better integrate the entity and activity dimensions of shadow banking regulation
- Monitoring and risk identification should focus primarily on economic functions and activities, but regulation and supervision have so far mostly focused on entities
- This has been recognized by the FSB: Doing so may help overcome the boundary problem and reduce the scope for regulatory arbitrage

How to Regulate Shadow Banking?



Risk and Regulation (cont´d)

- **Schematic summary of the different definitions of and perspectives on shadow banking**

Definitions of Shadow Banking

Activities

- **Claessens and Ratnovski (2014):** All financial activities, except traditional banking, requiring private or public backstop to operate
- **FCIC (2010):** Unregulated or lightly regulated bank-like intermediation
- **Mehrling and others (2013):** Money market funding of capital market lending
- **Deloitte (2012):** Market-funded, credit intermediation system involving maturity or liquidity transformation through securitization and secured-funding mechanisms
- **Harutyunyan and others (forthcoming):** Noncore liabilities capturing nontraditional funding

Entities

- **McCulley (2007):** Levered-up financial intermediaries with liabilities perceived akin to bank deposits (“the whole alphabet soup”)
- **Ricks (2010):** Maturity transformation outside banking social contract
- **Acharya, Khandwala, and Öncü (2013):** Nonbank financial institutions that behave like banks, borrow short, leverage, and lend and invest long in illiquid assets, but less regulated
- **Pozsar and others (2013):** Entities that conduct maturity, credit, and liquidity transformation without government guarantee or access to central bank liquidity

Activities and Entities

- **FSB (2013c):** Credit intermediation involving entities and activities outside the regular banking system
- **Schwarcz (2012):** Provision of financial products and services by shadow entities and financial markets
- **Gorton and Metrick (2012):** Institutions, old contracts (repo), and more esoteric instruments (ABCP, ABS, CDO, and the like)
- **Kane (2014):** Entities with liabilities supposedly redeemable at par but without a government guarantee, and instruments that trade as if they have a zero performance risk

Risk and Regulation (cont´d)

BANK FOR INTERNATIONAL SETTLEMENTS

Press release, 11 December 2014

- The Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO) released today a consultative document on *Criteria for identifying simple, transparent and comparable securitisations*. The framework is available on the websites of the Bank for International Settlements and IOSCO.
- The purpose of these criteria is to identify - and to assist the financial industry's development of - simple, transparent and comparable securitisations structures, as well as to help parties involved in a securitisation transaction evaluate the risks of a particular securitisation as part of their due diligence on securitisations.
- Criteria promoting **simplicity** refer to the homogeneity of underlying assets with simple characteristics, and a transaction structure that is not overly complex.
- Criteria on **transparency** provide investors with sufficient information on the underlying assets, the structure of the transaction and the parties involved in the transaction, thereby promoting a more thorough understanding of the risks involved. The manner in which the information is available should not hinder transparency, but instead it should support investors in their assessment.
- Criteria promoting **comparability** could assist investors in their understanding of such investments and enable more straightforward comparison between securitisation products within an asset class.
- The proposed criteria have been mapped to key types of risk in the securitisation process: (i) generic criteria relating to the underlying asset pool (asset risk); (ii) transparency around the securitisation structure (structural risk); and (iii) governance of key parties to the securitisation process (fiduciary and servicer risk).

Selected Topics

Do Shadow Banks Add Value?

Diana Hancock and Wayne Passmore
Board of Governors of the Federal Reserve System

Conclusion

- Study based on a model-based methodology to define shadow banking

- "Traditional banks" originate loans and provide a management input that creates wealth for the borrower, …
- … whereas "shadow banks" provide actuarially-based funding to either seasoned borrowers, or to borrowers with easy-to-value collateral

- Competition between these two lending technologies results in shadow banks "cream skimming" particular types of loans from the banking system, which employs relationship-based technologies

- As a result of this cream skimming, it seems that banks invest fewer upfront resources into originating new loans, …
- … borrowers pay more for their loans and reduce their investments, …
- … and social welfare declines compared to a financial system composed only of traditional banks

- Simply put, because some borrowers can opt out of the banking system *ex post*, all borrowers are worse off

Conclusion (cont´d)

- The study is unique because there is a focus on the competition, and symbiotic nature, between two different technologies—relationship lending and actuarially-based loan financing
- In considering financial stability risks associated with shadow banking, these are more fragile than traditional banks because they are more susceptible to asset fire-sales and because the small margins associated with actuarially-based financing means that shocks in funding costs can result in large decreases in profits
- In contrast, traditional banks, which rely on relationship loans, tend to be financed using longer-term forms of financing and tend to have loan defaults that are less correlated with each other

Financial Crisis

Taking the Eagle Perspective ….

There are two key processes:

- ***Securitization chains*** which transform risky assets into safe and liquid claims through the tranching of claims and the use of puts from the main banking system; and
- ***Collateral chains***, which re-use collateral to reduce counterparty risk between borrowers and lenders
  - Unlike in one-way securitization chains, here the providers of collateral (hedge funds, real money, and custodians operating on behalf of the pension, insurance, and official sector) are scattered across the financial system

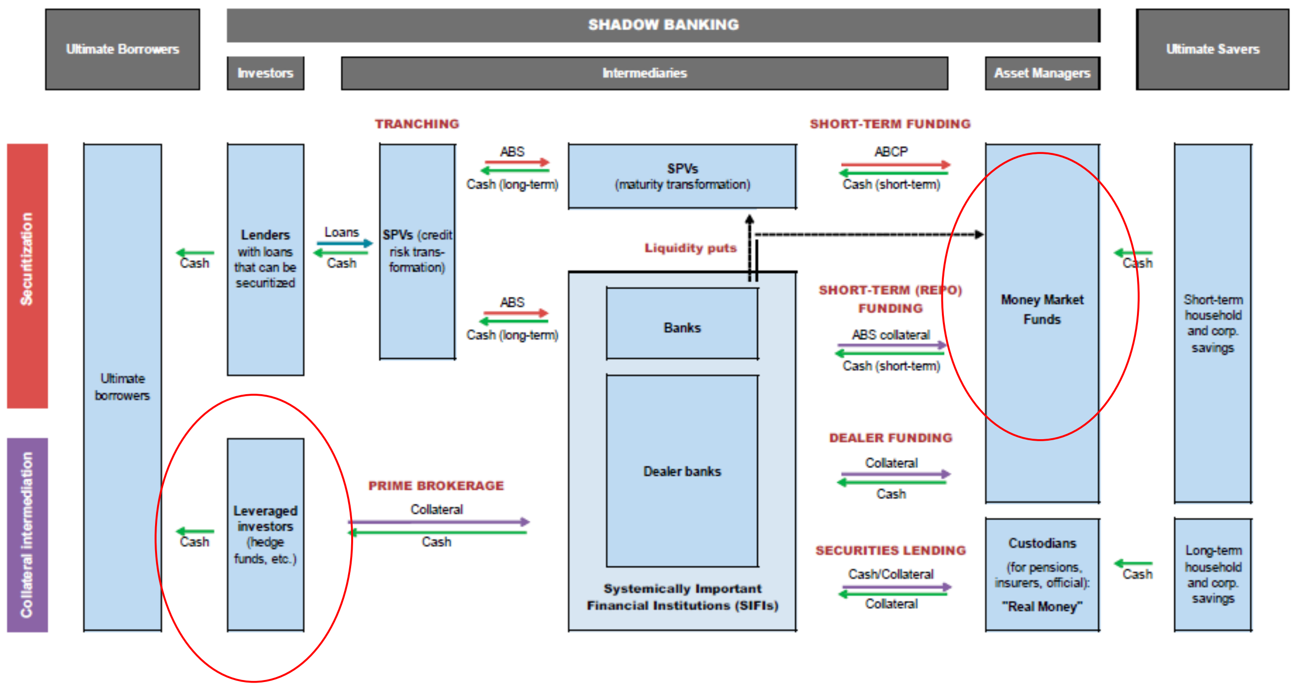
There are important links with regulated (bank) and semi-regulated (broker-dealer) entities, which commonly (for broker-dealers, always) are SIFIs (Systematically Important Financial Institutions):

- ***Commercial banks,*** which are active in securitization chains
  - They offer explicit and implicit support to SPVs, and also directly invest in safe tranches of securitized debt; and
- ***Dealer banks,*** which play a central role in intermediating collateral

The system links ultimate savers and borrowers:

- ***Ultimate savers***, which include s/t household and corporate savings and l/t household savings. The shadow banking system liaises with savers through the ***asset management complex*** (money funds and real investors: insurance, pension funds);
- ***Ultimate borrowers*** (corporations and households), and associated ***investors*** (lenders wishing to securitize assets and leveraged investors: primarily hedge funds) that seek to borrow against collateral

Excursion: The Securitisation and Collateral Chains



… Down on Two Major Groups …

Money Market Funds (MMFs)

- MMFs flourished in the US as an **alternative to bank deposits** to circumvent regulatory caps on bank interest rates
- As MMFs invest in short-term debt, they were an important **source of funding** for the shadow banking sector through purchases of certificates of deposits (**CDs**) and commercial paper (**CP**) and through **repo** transactions
- The main investor group are institutional investors

Hedge Funds

- Describes a wide variety of entities and business models
- Hedge funds were part of the complex network of financial **intermediaries** that was instrumental to the growth of shadow banking, either through their involvement in **securitisation** activities or in the **repo** market

… and the Repo Markets

Repos (i.e. sale and repurchase agreements), are similar to secured loans, albeit with the important difference that the **underlying assets** formally do **not just** serve as **collateral** **<u>but</u> legally change ownership**

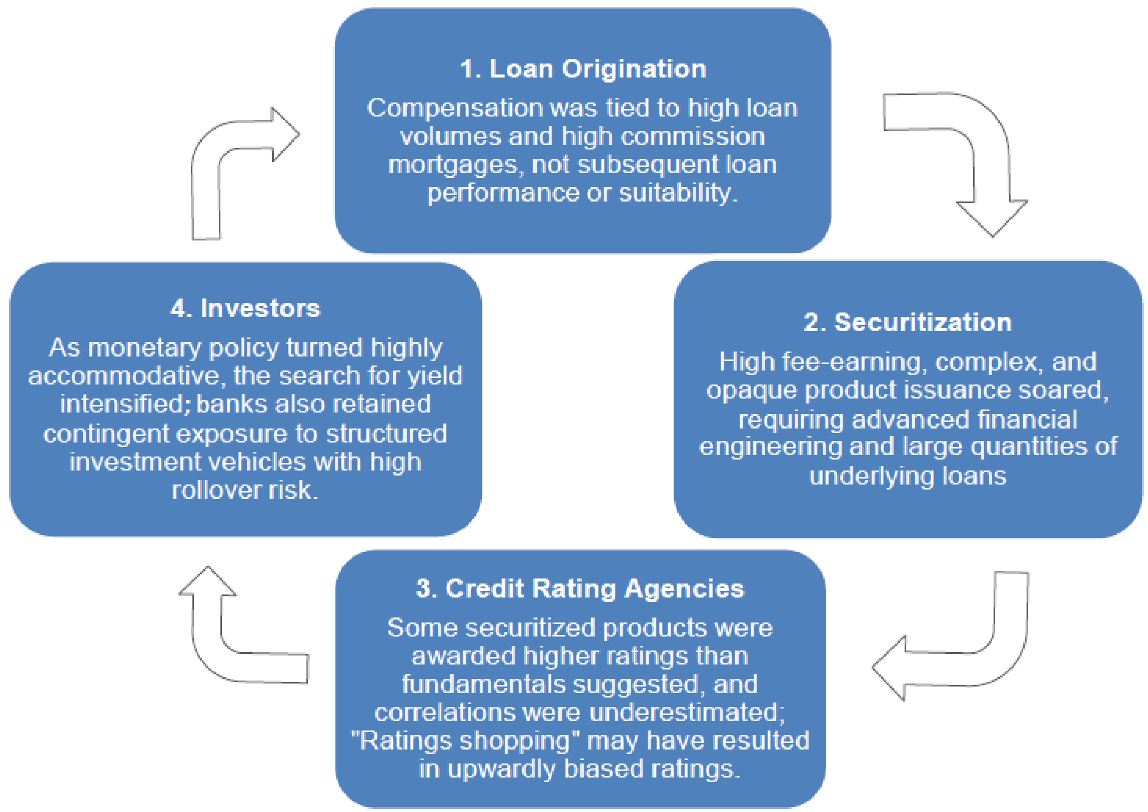
  - This implies **better protection** for the cash lender in case of the cash borrower's default

- Repos are thus important fund-raising instruments complementing alternative market tools such as unsecured loans or the issuance of short-term securities
  - About half of outstanding repos have a maturity of up to one month
- In **general collateral (GC) repos**, the collateral is a security chosen among a basket of securities, e.g. bonds issued by euro area central governments or corporates
  - These contracts are typically cash-driven, hence they are motivated by the funding or liquidity needs of the cash lender in the repo transaction
- By contrast, **special repos** focus on a specific asset demanded as collateral
  - They are securities-driven and may be part of short-selling strategies
  - Unlike GC repos, they do not primarily serve funding or liquidity purposes
- As regards the counterparties, most of the repo transactions in the euro area take place in the **interbank markets**
  - In the US, investment banks were among the most active players
  - An increasing share of repos is cleared via central counterparty clearing houses (CCPs)

Excursion: Money Market Funds and Breaking the Buck

- Money market funds are often thought of as cash and a safe place to park money that isn't invested elsewhere
  - Investing in a money market fund is a low-risk, low-return investment in a pool of very secure, very liquid, short-term debt instruments
  - In fact, many brokerage accounts sweep cash into money market funds until the funds can be invested elsewhere
- Money market funds seek stability and security with the goal of never losing money and keeping net asset value (NAV) at $1
  - This one-buck NAV baseline gives rise to the phrase "break the buck," meaning that if the value falls below the $1 NAV level, some of the original investment is gone and investors will lose money
- Since 1971, there was only one fund that broke the buck until the 2008 financial crisis
  - In 1994, a small money market fund that invested in adjustable-rate securities got caught when interest rates increased and paid out only 96 cents for every dollar invested
- In 2008 however, the day after Lehman filed for bankruptcy, one money market fund fell to 97 cents after writing off the debt it owned that was issued by Lehman
  - This created the potential for a bank run in money markets as there was fear that more funds would break the buck.
- Shortly thereafter, another fund announced that it was liquidating due to redemptions, but the next day the United States Treasury announced a program to insure the holdings of publicly offered money market funds so that should a covered fund break the buck …

The Self-Reinforcing Credit Intermediation Cycle



The Traces of the Recent Crisis: The Repo Market

- This time, the "**run**" happened **on the repo market** - … and not on banks
  - But how can be this proved, if a part of the securitization process, which is a vital part of the repo market, is located (issued) in a shadow infrastructure?
- The repo market was promoted by monetary authorities at different moments in time
  - In 1920s in the United States (U.S.),
  - … in 1970s in Europe, and …
  - … in 1990s in the United Kingdom (U.K.)
- It was **originally created as a monetary policy tool**
- But at the same time, the repo market (like other financial markets) is subject to
  - Counterparty credit risk,
  - Market risk (price volatility), and
  - Operational risk

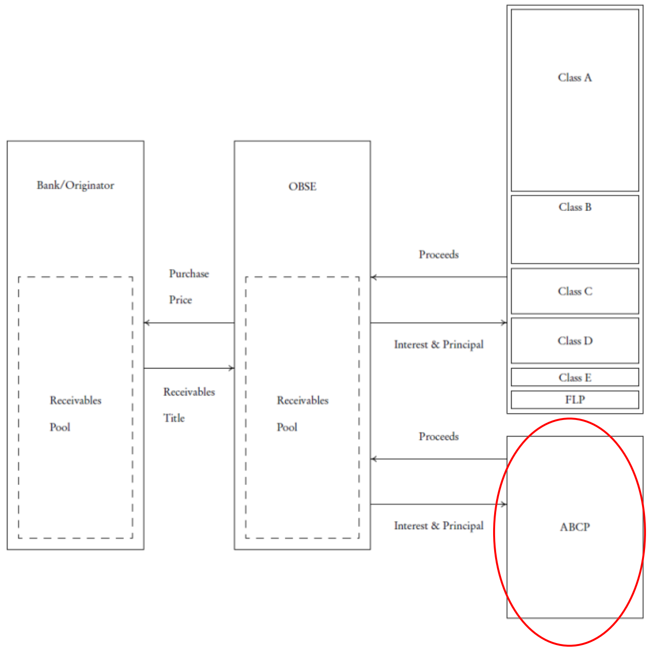
In Essence …

- In 2007 and 2008, repo lenders **lost faith in** the ballooning pile of mortgage securities they were taking as **collateral**, …
- … and then they lost faith in the **borrowers**
- They started calling their repo loans and **stopped** other short-term lending
- Almost overnight, credit markets ground toward a halt, thrusting the economy into a bad recession
- Where did all the "money" come from? -- By borrowing very short term – mainly by repo loans and selling asset-backed commercial paper

The Traces of the Recent Crisis: The Repo Market (cont´d)

- The run on the short-term debt, especially on the ABCP …
- … was de facto a *run on money market mutual funds…*
- *…* because these funds typically invest in short term commercial paper

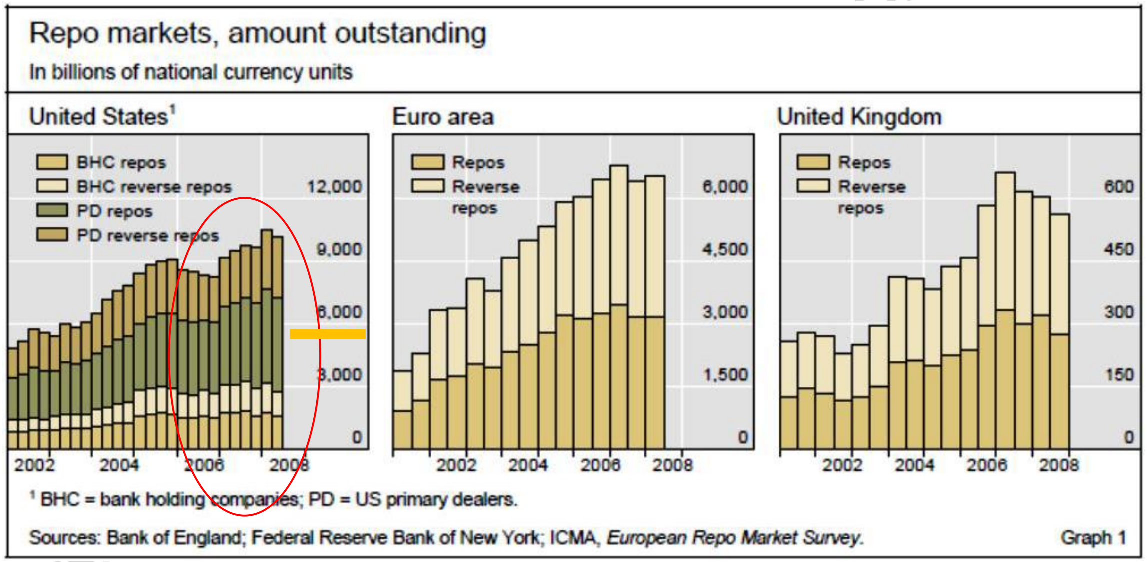
- *The run on* ABCP, which spread quickly to the interbank market …

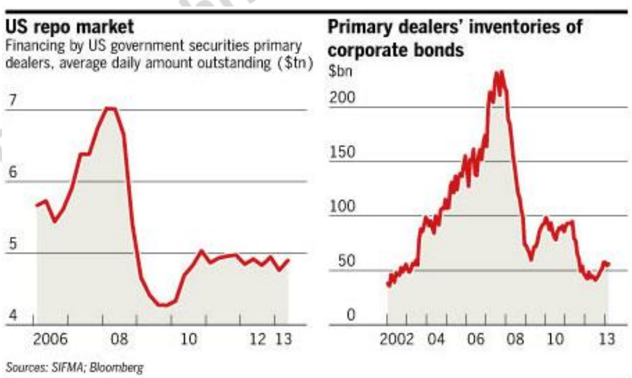


The Traces of the Recent Crisis: The Repo Market (cont´d)

- By **mid-2008** the gross market capitalisation of the **US repo market** exceeded US$ 10tn (including double-counting of repos and reverse repos)
  - … corresponding to around **70% of US GDP**
- The **primary dealers** are the most active participants
  - A **primary dealer** is a firm that buys government securities directly from a government, with the intention of reselling them to others, thus acting as a market maker of government securities
  - Use repos to finance much of the growth of their balance sheets …
  - … creating pro-cyclical leverage and …
  - … an exposure to refinancing risk
- In particular, the (former) **top US investment banks** funded roughly half of their assets using repo markets
  - … with additional exposure due to off-balance sheet financing of their customers
- While the US repo market is dominated by trading in US Treasuries, there are also active markets in bonds issued by US government-sponsored agencies (agencies), agency mortgage-backed securities (MBS) and corporate bonds
- Market participants suggest that, prior to the crisis, **non-government collateral contributed significantly** to the rapid growth of the US repo market

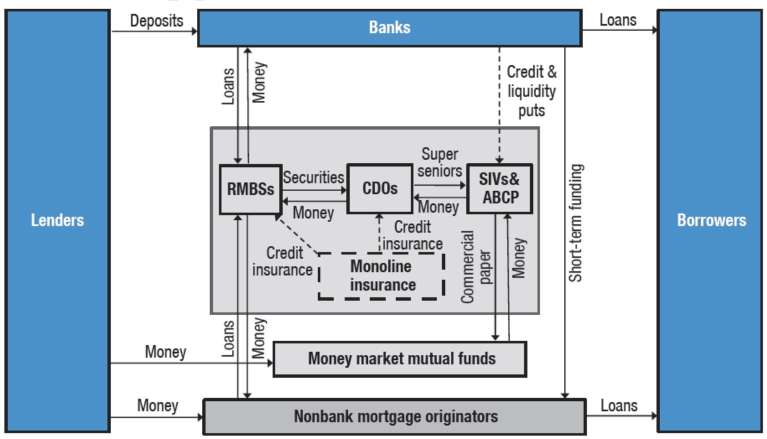
The Traces of the Recent Crisis: The Repo Market (cont´d)





The Traces of the Recent Crisis: The Repo Market (cont´d)

- Until 2007, US & European shadow banking activities had grown very rapidly
- Over time, financial systems had come to rely increasingly on repo and securitization financing, through conduits and structured finance vehicles, …
- … while MMFs and other funds benefited from inflows due to ample global liquidity
- Eventually, rapidly rising defaults in the U.S. housing market in **2007** led to a **liquidity crisis in** the markets for **private-label securitization and ABCP** as investors refused to roll over their holdings
- MMFs experienced a **run** in September **2008** after the default of Lehman Brothers, and **MMF sponsors were unable to absorb the losses**



The Traces of the Recent Crisis: The Repo Market (cont´d)

During the last decades the repo market has **grown** significantly **in size**, but also in **opacity**

- Size may be **overestimated** due to the reverse repo or **double-counting** of the dealer bank repo data, …
- … and the extensive **re-hypothecation** of collateral

- Note: The re-hypothecation (re-use) of collateral has implications for measurement of financial and monetary aggregates …
- … and for the analysis of financial institutions' balance sheets

- Until this day, there is **no official data** about the size of repo, neither data of the participation in repo from non-financial firms

Amid **new regulations**, big banks have quietly **retreated** from the business of **dealing in corporate bonds**

- Supplementary leverage ratios also force banks to set aside extra money to cover all the assets on their balance sheets, regardless of riskiness

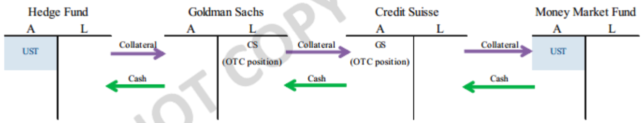
  That could force them to **reduce their activities in the "repo market"**, where banks and other financial companies loan out their assets in exchange for cash

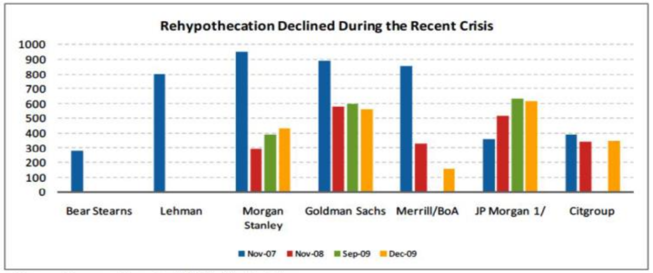
Excursion: Re-Hypothecation

- When a ***pledged-collateral* is permitted to be re-used** (off-balance item), …
- … it means that “the pledged collateral is not owned by these firms,…
- … but due to **re-hypothecation rights**, these firms are legally allowed to use the collateral in their own name”

- In other words, a U.S. bank that pledges/re-uses a collateral with a European Bank is not the owner of it, yet due to *re-pledge rights*, this bank can use the collateral in its own name, and vice versa

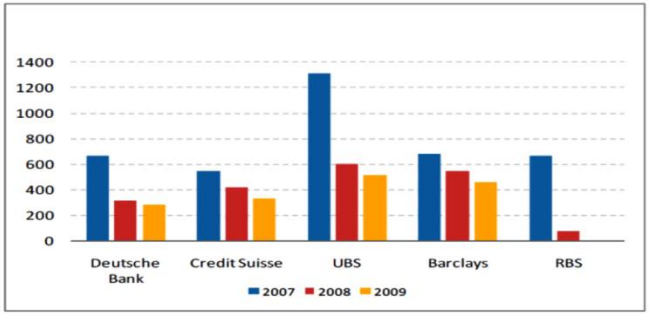
- It is evident that the interest, of the banking sector, in the re-hypothecation and thus in pledging collateral, is justified by the opportunity to extract more funding out of the traditional system





Source: Company Reports, IMF Staff calculations.
Note: JPMorgan data post Nov’07 includes Bear Stearns and WAMU; market sources indicate that JPMorgan may have benefited from being close to Fed; end-June’09 data shown in lieu of end-Nov. ‘08 data as latter wa not easy to disentangle.

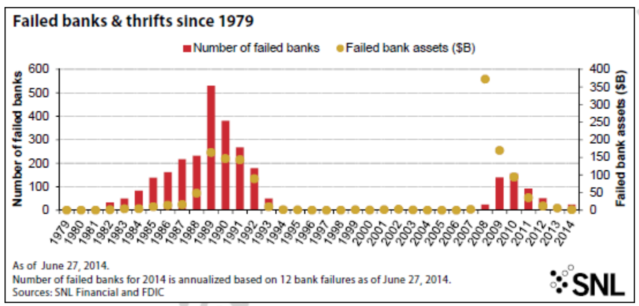
Figure 3.5: Collateral Received (Permitted to be pledged at Large U.S. Banks)
Source: Singh & Aitken (2010)

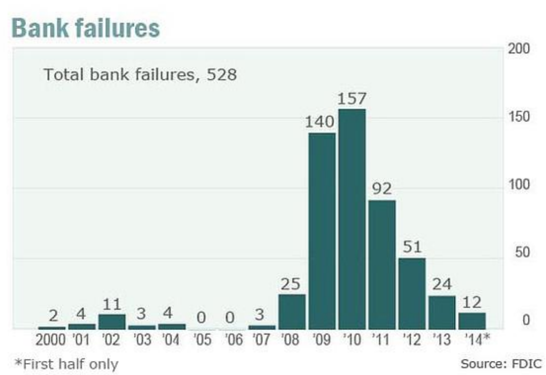


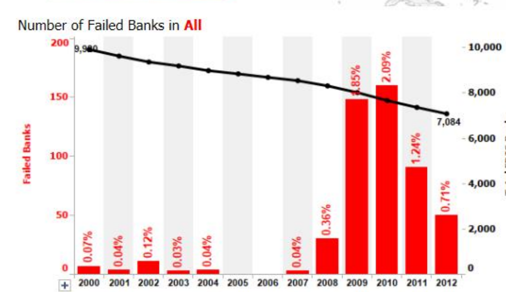
Source: Company Reports and IMF Staff Calculations.

Figure 3.6: Collateral Received (Permitted to be pledged at Large European Banks)
Source: Singh & Aitken (2010)

US Bank Failures

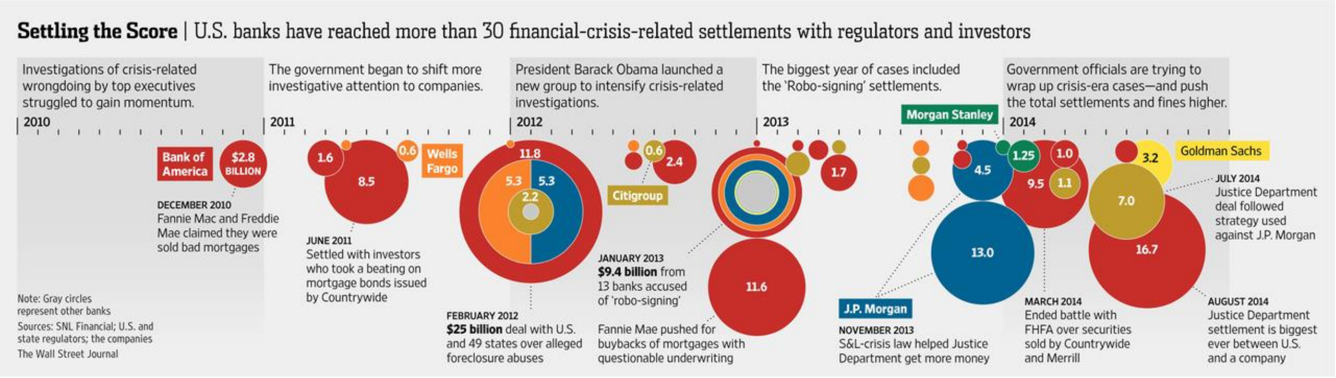






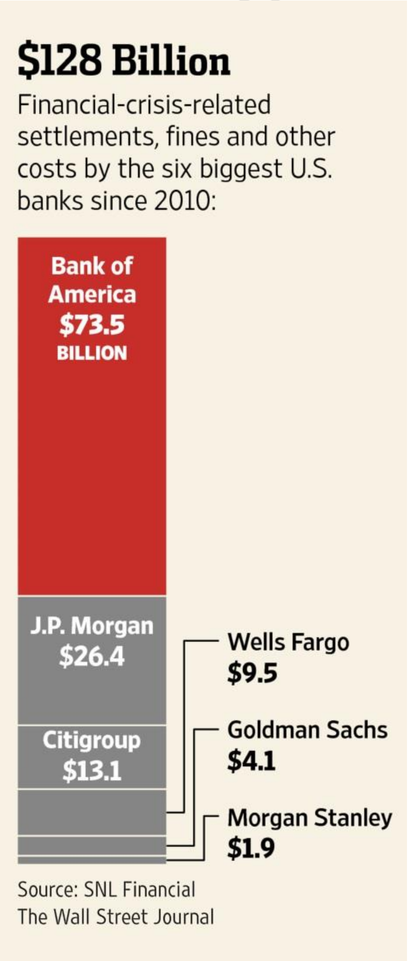
The Big Settlement

- Assistant U.S. Attorney Richard Elias was leafing through a pile of J.P. Morgan Chase documents while tending to his newborn son in 2012 when he found something that came back to haunt the three largest U.S. banks …
- In a memo, one J.P. Morgan employee warned her bosses they were putting bad loans into securities being created before the financial crisis hit …
- The U.S. attorney's office in Sacramento, Calif., soon started sending subpoenas to J.P. Morgan officials tied to the memo. Three months later, top Justice Department officials in Washington told investigative teams across the country to hunt for similar ammunition in tens of millions of documents from other banks, especially Bank of America and Citigroup …



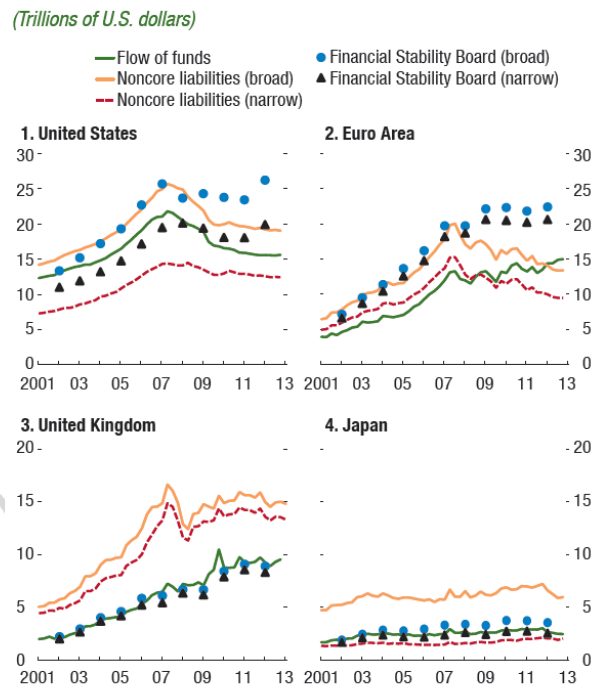
The Big Settlement (cont´d)

- Government officials say they wanted to punish the banks but not cripple them financially
- Bad blood runs especially deep at Bank of America and J.P. Morgan
  - They acquired Merrill Lynch, Countrywide Financial, Bear Stearns Cos. and most of Washington Mutual with government encouragement as it scrambled to contain the crisis
  - Most of the securities attacked by the government were created before those takeovers



Measuring Size

Alternative Measures of Shadow Banking

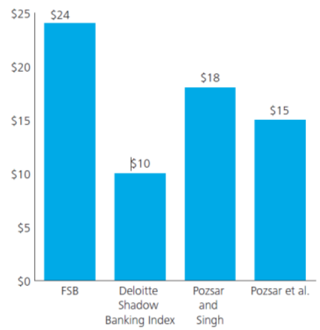


Sources: European Central Bank; Financial Stability Board (FSB); Haver Analytics; IMF, International Financial Statistics database; and IMF staff estimates.
Note: FOF = flow of funds. The FSB broad measure includes all nonbank financial intermediaries; this figure's proxy for the narrow FSB measure excludes equity funds, but not entities prudentially consolidated with banks (for example, structured investment vehicles and retained securitization). The broad (narrow) noncore liabilities measure includes (excludes) intra-financial-sector liabilities. For the definition of U.S. flow of funds shadow bank entities, see Adrian and Ashcraft (2012). For the definition of euro area FOF shadow bank entities, see Bakk-Simon and others (2012). Euro area noncore liabilities cover liabilities of banks and, within the nonbank financial sector, only liabilities of financial vehicle companies, which explains the decline after 2008.

US: The Difficulties to Estimate Size

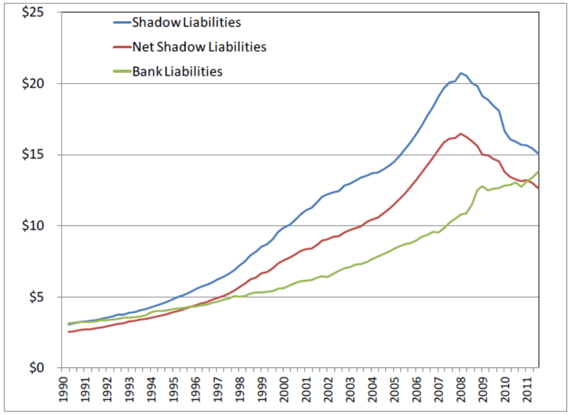
- The measures of the US shadow banking system, net and gross, are both computed from the Federal Reserve Board's flow of funds
- The gross measure sums all liabilities recorded in the flow of funds that relate to securitization activity (MBS, ABS, and other GSE liabilities), …
- … as well as all short term money market transactions that are not backstopped by deposit insurance (repos, commercial paper, and other money market mutual fund liabilities)
- The net measure attempts to remove the double counting

Exhibit 4. Estimates of the size of the U.S. shadow banking sector in 2010 (in $trillions)



Note: Pozsar, et al. (2010) and Pozsar and Singh (2011) measure liabilities while the FSB measures assets.

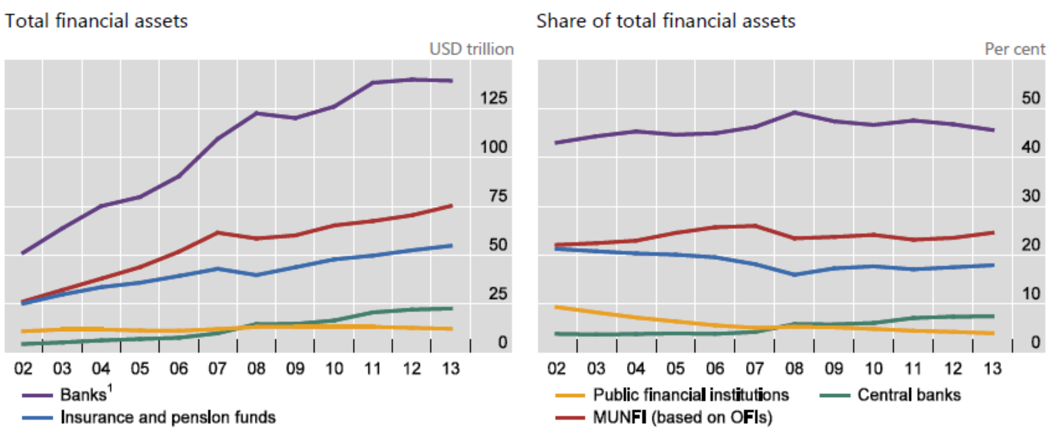
Sources: Financial Stability Board, Pozsar and Singh (2011), Pozsar, et al. (2010), and Deloitte Center for Financial Services.



Source: Flow of Funds Accounts of the United States as of 2011:Q3 (FRB) and FRBNY.

Europe: The Difficulties to Estimate Size

- **Non-bank financial intermediation is measured by total financial assets held by Other Financial Intermediaries (OFIs)**
- **OFIs include all non-bank financial intermediaries with the exception of insurance companies, pension funds and public financial institutions**
- **This broad measure is referred to as the Monitoring Universe of Non-Bank Financial Intermediation (MUNFI s)**
- **Focus is on balance sheet data of national financial accounts (Flow of Funds), that looks at all non-bank financial intermediation**



[1] Note that 'banks' refer to the broader category of 'deposit-taking institutions'.

Sources: National financial accounts data; other national sources.

Monitoring Universe of Non-Bank Financial Intermediation (MUNFI) *Broad measure*	Global financial assets of OFIs
Shadow banking system *Narrow measure*	Global financial assets of OFIs *minus* - Financial assets of non-bank financial entities not involved in bank-like credit intermediation. - Financial assets related to those non-bank financial entities that are prudentially consolidated into a banking group. - Financial entities whose activities do not exhibit risks associated with shadow banking including but not limited to maturity and liquidity transformation, and/or leverage.

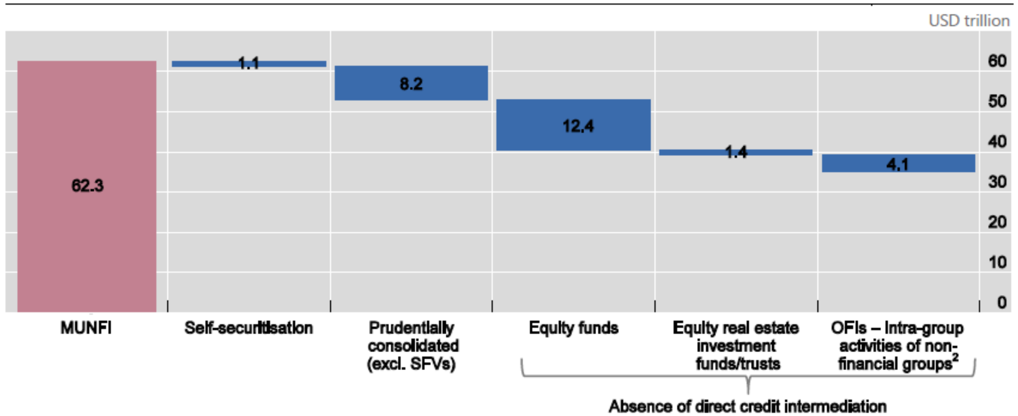
Narrowing Down to „Core“ Shadow Banking

- **Some of the MUNFI sub-sectors in the macro-mapping exercise are not directly engaged in credit intermediation activities such as Equity Investment Funds**

The determination of which entities are retained in the narrower measure is based on the entities meeting *all* of the following criteria:

- The entity must be part of a credit intermediation chain;
- It must not be consolidated into a banking group for the purposes of prudential regulation;
- It must exhibit risks associated with shadow banking including but not limited to maturity and liquidity transformation, and/or leverage

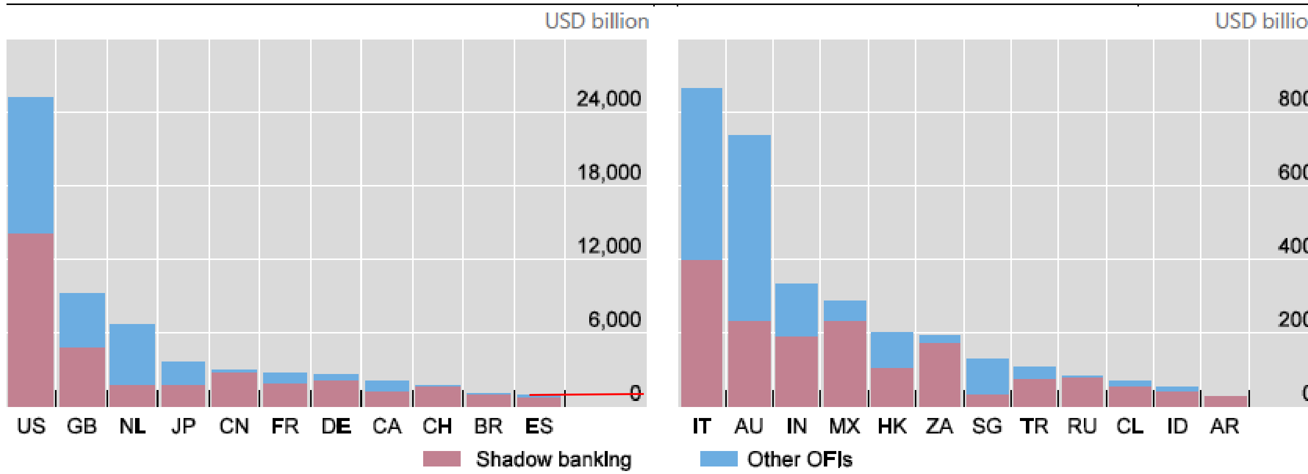
Shadow Banking in G20 Universe



[1] 23 jurisdictions reported more granular data for narrowing down. [2] OFIs which are part of a non-financial group and are created for the sole purpose of performing intra-group activities. This year, only Dutch non-financial SFIs are included in this narrowing down component.

Sources: National financial accounts data; other national sources.

Narrowing Down to „Core“ Shadow Banking (cont´d)



AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CN = China; CL = Chile; DE = Germany; ES = Spain; FR = France; GB = United Kingdom; HK = Hong Kong; ID = Indonesia; IN = India; IT = Italy; JP = Japan; MX = Mexico; NL = Netherlands; RU = Russia; SG = Singapore; TR = Turkey; US = United States, ZA=South Africa.

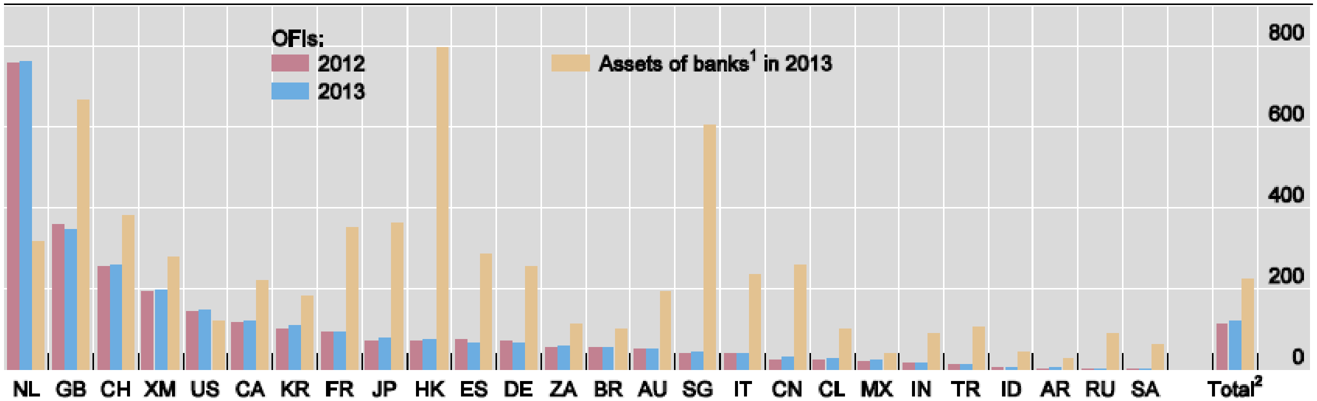
[1] The sum of the two bars gives the size of the MUNFI measure. [2] 23 jurisdictions reported more granular data for narrowing down.

Sources: National financial accounts data; other national sources.

Size of Non-Bank Financial Intermediaries

As a percentage of GDP, by jurisdiction

Exhibit 3-1



AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CN = China; CL = Chile; DE = Germany; ES = Spain; FR = France; GB = United Kingdom; HK = Hong Kong; ID = Indonesia; IN = India; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; RU = Russia; SA = Saudi Arabia; SG = Singapore; TR = Turkey; US = United States; XM = Euro Area; ZA = South Africa.

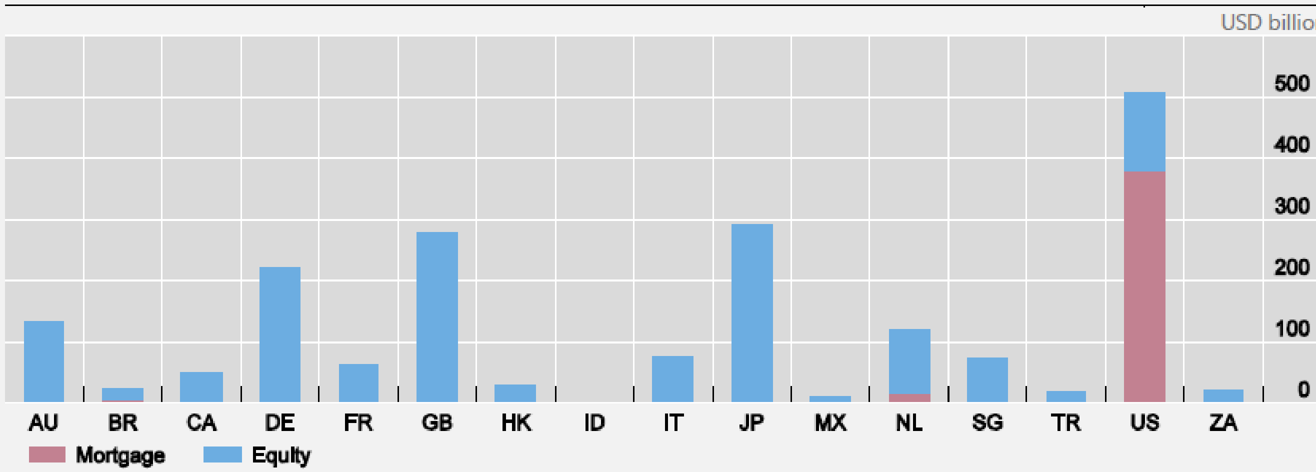
[1] Note that 'banks' refer to the broader category of 'deposit-taking institutions'. [2] 20 jurisdictions and euro area.

Please refer to the country case studies in the current and past publications of the Global Shadow Banking Monitoring Report for a detailed description of shadow banking in Canada, India, the Netherlands, Switzerland, South Africa, the United Kingdom, and the US.

Sources: National financial accounts data; other national sources; IMF.

Real Estate Investment Trusts and Funds

- **In the US, mortgage REITs, which aren't required to pay taxes if they pay out most of their earnings in dividends, invest in everything from government-backed securities to residential loans too large for federal programs and commercial property debt …**



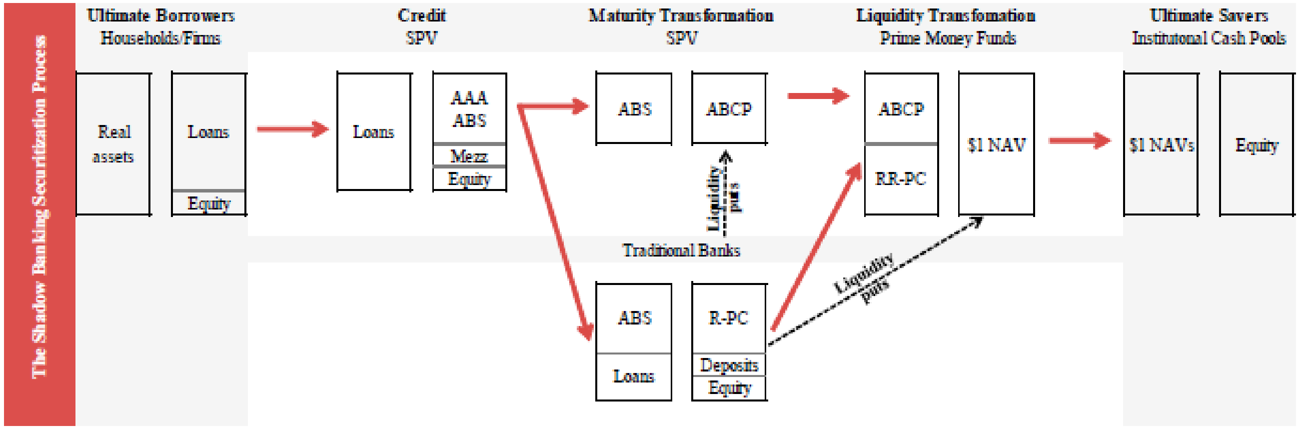
AU = Australia; BR = Brazil; CA = Canada; DE = Germany; FR = France; GB = United Kingdom; HK = Hong Kong; ID = Indonesia; IT = Italy; JP = Japan; MX = Mexico; NL = Netherlands; SG = Singapore; TR = Turkey; US = United States, ZA=South Africa.

Note: REITs assets in Indonesia are small. Data for Germany only includes open-ended Real Estate Investment Funds.

Source: National financial accounts data.

Appendix

The Shadow Banking Securitisation Process



- The credit transformation special-purpose vehicles (SPVs) have matched maturity funding and issue asset-backed securities (ABS) or collateralized debt obligations (not shown)
- The maturity transformation SPVs are funded short term (are maturity mismatched) and issue asset-backed commercial paper (ABCP) or other structured money market instruments, such as auction rate securities (not shown)
- Private collateral (PC) includes ABS, corporate bonds, and equities
- $1 NAV is the stable net asset value (a promise to repay at least $1 on $1 invested)
- R = repo; RR = reverse repo

Stages of Credit Intermediation by Shadow Banks

- Like the traditional banking system, the shadow banking system conducts credit intermediation
- However, unlike the traditional banking system, where credit intermediation is performed "under one roof"—that of a bank— …
- … in the shadow banking system, it is performed through a daisy-chain of non-bank financial intermediaries in a multi step process
- These steps entail the "vertical slicing" of traditional banks' credit intermediation process

	Function	Shadow Banks	Shadow Banks' Funding*
Step (1)	Loan Origination	Finance companies	CP, MTNs, bonds
Step (2)	Loan Warehousing	Single and multi-seller conduits	ABCP
Step (3)	ABS Issuance	SPVs, structured by broker-dealers	ABS
Step (4)	ABS Warehousing	Hybrid, TRS/repo conduits, broker-dealers' trading books	ABCP, repo
Step (5)	ABS CDO Issuance	SPVs, structured by broker-dealers	ABS CDOs, CDO-squareds
Step (6)	ABS Intermediation	LPFCs, SIVs, securities arbitrage conduits, credit hedge funds	ABCP, MTN, repo
Step (7)	Wholesale Funding	2(a)-7 MMMFs, enhanced cash funds, securities lenders, etc.	$1 NAV shares (shadow bank "deposits")

*Funding types highlighted in red denote securitized funding techniques. Securitized funding techniques are *not* synonymous with secured funding.

Stages of Credit Intermediation by Shadow Banks (cont´d)

Function	Intermediary	Funding
Origination of loans	Non-bank finance companies	CP MTN
Warehousing of loans	Single & multi-seller conduits	ABCP
Pooling & structuring of loans into ABS & issuance	SPV (but structuring by investment bank ABS syndicate desks)	Repo Sale of ABS
Warehousing of ABS	Conduits Investment bank trading books	Repo CP sale of CDO
Distribution & intermediation of ABS, CDO	Structured investment vehicles (SIV) Leveraged arbitrage vehicles Credit hedge funds	Repo ABCP MTN Bonds
End investment	Money market mutual funds Enhanced cash funds Securities lender Fixed-income mutual funds Pension funds Insurance companies	

The Government-Sponsored Shadow Banking Sub-System

- In the US, the seeds of the shadow banking system were sown nearly 80 years ago, with the creation the government-sponsored enterprises ("GSE"), which are comprised of the Federal Home Loan Banks (FHLB System, 1932), Fannie Mae (1938) and Freddie Mac (1970)
- The GSEs have embodied four intermediation techniques:
  - Term loan warehousing provided to banks by the FHLBs
  - Credit risk transfer and transformation through credit insurance provided by Fannie Mae and Freddie Mac
  - Originate-to-distribute securitization functions provided for banks by Fannie Mae and Freddie Mac
  - Maturity transformation conducted through the GSE retained portfolios, which operate not unlike SIVs

	Function	Shadow Banks	Shadow Banks' Funding*
Step (1)	Mortgage Origination	Commercial banks	Deposits, CP, MTNs, bonds
Step (2)	Mortgage Warehousing	FHLBs	Agency debt and discount notes
Step (3)	ABS Issuance	Fannie Mae, Freddie Mac through the TBA market	Agency MBS (passthroughs)
Step (4)	ABS Warehousing	Broker-dealers' trading books	ABCP, repo
Step (5)	ABS CDO Issuance	Broker-dealer agency MBS desks	CMOs (resecuritizations)
Step (6)	ABS Intermediation	GSE retained portfolios	Agency debt and discount notes
Step (7)	Wholesale Funding	2(a)-7 MMMFs, enhanced cash funds, securities lenders	$1 NAV shares (GSE "deposits")

*Funding types highlighted in red denote securitized funding techniques. Securitized funding techniques are *not* synonymous with secured funding.

Fannie Mae and Freddie Mac

- Fannie Mae was created in 1938 as the collapse of the national housing market in the wake of the Great Depression discouraged private lenders from investing in home loans
  - Fannie Mae was established to provide local banks with federal money to finance home mortgages to raise levels of home ownership and the availability of affordable housing
- Initially, Fannie Mae operated like a national savings and loan institution, allowing local banks to charge low interest rates on mortgages for the benefit of the home buyer
- Leading to the development of - what is now known as - the secondary mortgage market, Fannie Mae is able to borrow money from foreign investors at favorable interest rates because of the financial support by the U.S. Government
  - In essence, Fannie Mae makes a profit from the spread between the interest rates homeowners pay and foreign lenders charge
- In the 1970s Freddie Mac was created to prevent any further monopolization, after the Fannie Mae' privatization

The “Internal” Shadow Banking Sub-System

- The shadow banking system emerged from the transformation of the largest banks from low return on-equity (RoE) utilities that originate loans and hold and fund them until maturity with deposits, …
- … to high RoE entities that originate loans in order to warehouse and later securitize and distribute them, or retain securitized loans through off-balance sheet asset management vehicles

- The vertical and horizontal slicing enable Financial Holding Corporation-affiliated banks to conduct lending with less capital than if they had retained loans on their balance sheets

	Function	Shadow Banks	Shadow Banks' Funding*
Step (1)	Loan Origination	Commercial bank subsidiary	Deposits, CP, MTNs, bonds
Step (2)	Loan Warehousing	Single/multi-seller conduits	ABCP
Step (3)	ABS Issuance	SPVs, structured by broker-dealer subsidiary	ABS
Step (4)	ABS Warehousing	Hybrid, TRS/repo conduits, broker-dealers' trading books	ABCP, repo
Step (5)	ABS CDO Issuance	SPVs, structured by broker-dealer subsidiary	ABS CDOs, CDO-squareds
Step (6)	ABS Intermediation	SIVs, internal credit hedge funds (asset management)	ABCP, MTN, capital notes and repo
Step (7)	Wholesale Funding	2(a)-7 MMMFs, enhanced cash funds, securities lending subs.	$1 NAV shares (shadow bank "deposits")

*Funding types highlighted in red denote securitized funding techniques. Securitized funding techniques are *not* synonymous with secured funding.

The "External" Shadow Banking Sub-System

- The "external" shadow banking sub-system is a global network of balance sheets, with the origination, warehousing and securitization of loans conducted mainly from the U.S., …
- … and the funding and maturity transformation of structured credit assets conducted from the U.S., but also from Europe and offshore financial centers

- However, unlike the "internal" sub-system, the "external" sub-system is less of a product of regulatory arbitrage, and more a product of vertical integration and gains from specialization

- The "external" shadow banking sub-system is defined by
  - the credit intermediation process of diversified broker dealers;
  - the credit intermediation process of independent, non-bank specialist intermediaries; and
  - the credit puts provided by private credit risk repositories

The “External” Shadow Banking Sub-System (cont´d)

The Credit Intermediation Process of Diversified Broker-Dealers

- This process performs the very same credit intermediation functions as those performed by traditional banks or the credit intermediation processes of FHCs and DBDs
- The independent specialists-based intermediation process includes the following types of entities: stand-alone and captive finance companies on the loan origination side; independent multi-seller conduits on the loan warehousing side; and limited purpose finance companies (LPFCs), independent SIVs and credit hedge funds on the ABS intermediation side

	Function	Shadow Banks	Shadow Banks' Funding*
Step (1)	Loan Origination	Finance company subsidiary	CP, MTNs, bonds
Step (2)	Loan Warehousing	Independent multi-seller conduits	ABCP
Step (3)	ABS Issuance	SPVs, structured by broker-dealer subsidiary	ABS
Step (4)	ABS Warehousing	Hybrid, TRS/repo conduits, broker-dealers' trading books	ABCP, repo
Step (5)	ABS CDO Issuance	SPVs, structured by broker-dealer subsidiary	ABS CDOs, CDO-squareds
Step (6)	ABS Intermediation	Internal credit hedge funds, proprietary trading desks	Repo
Step (7)	Wholesale Funding	2(a)-7 MMMFs, enhanced cash funds, securities lending subs.	$1 NAV shares (shadow bank "deposits")

*Funding types highlighted in red denote securitized funding techniques. Securitized funding techniques are *not* synonymous with secured funding.

The "External" Shadow Banking Sub-System (cont´d)

The Independent Specialists-Based Credit Intermediation Process

- Standalone investment banks as they existed prior to 2008 were de-facto diversified broker-dealers (DBD)

- The DBDs vertically integrate their securitization businesses (from origination to
- funding), lending platforms, and asset management units, …
- … with the credit intermediation process of DBDs is similar to those of FHCs

	Function	Shadow Banks	Shadow Banks' Funding*
Step (1)	Loan Origination	Finance company subsidiary	CP, MTNs, bonds
Step (2)	Loan Warehousing	Independent multi-seller conduits	ABCP
Step (3)	ABS Issuance	SPVs, structured by broker-dealer subsidiary	ABS
Step (4)	ABS Warehousing	Hybrid, TRS/repo conduits, broker-dealers' trading books	ABCP, repo
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Step (6)	ABS Intermediation	Internal credit hedge funds, proprietary trading desks	Repo
Step (7)	Wholesale Funding	2(a)-7 MMMFs, enhanced cash funds, securities lending subs.	$1 NAV shares (shadow bank "deposits")

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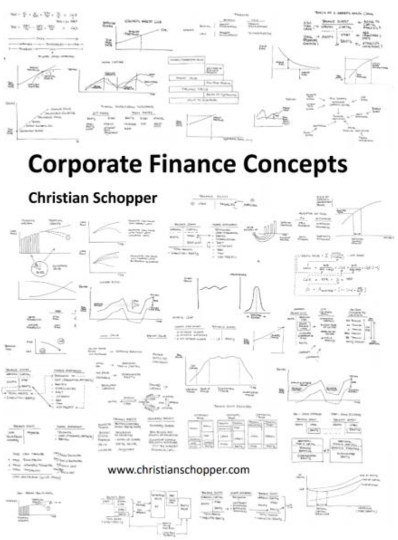
Contact

For more concepts click on:



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