

Shadow Banking: Economics and Policy

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The views presented are those of the authors,
do not necessarily reflect those of IMF or IMF policy

Shadow banking is large...

**Pozsar, Adrian,
Ashcraft and Boesky
(FRB NY)**

US in March 2008: \$20tn
US in 2010: \$16tn

**Pozsar and Singh
(December 2011)**

US at end 2007: \$25tn
US at end 2010: \$18tn

Bouveret (July 2011)

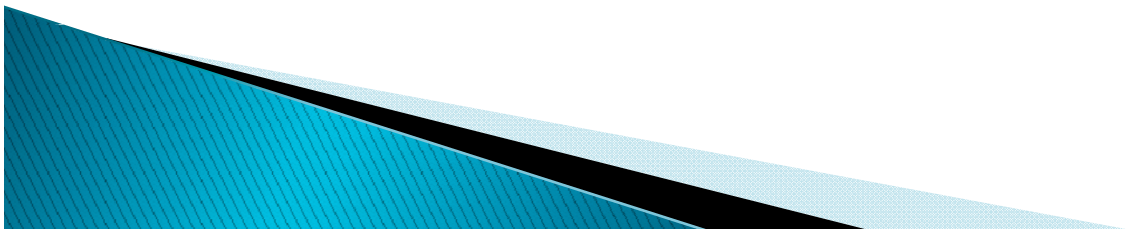
Europe in March 2008: \$13tn
Europe at end 2010: \$13tn

FSB (October 2011)

Global in 2002: \$27tn
Global in 2007: \$60tn
Global in 2010: \$60tn, of which
• US: \$24tn
• Europe: \$22tn

.. But what is Shadow Banking?

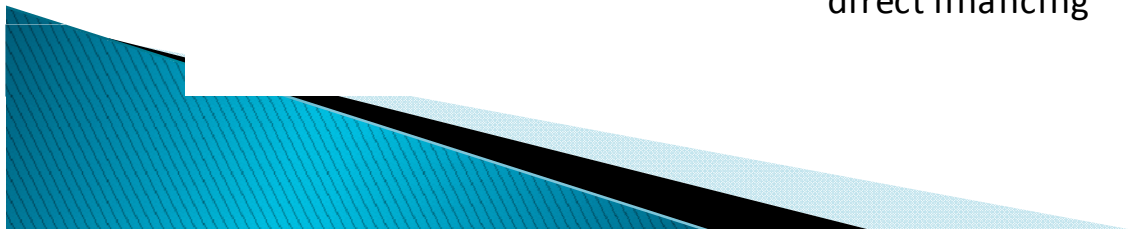
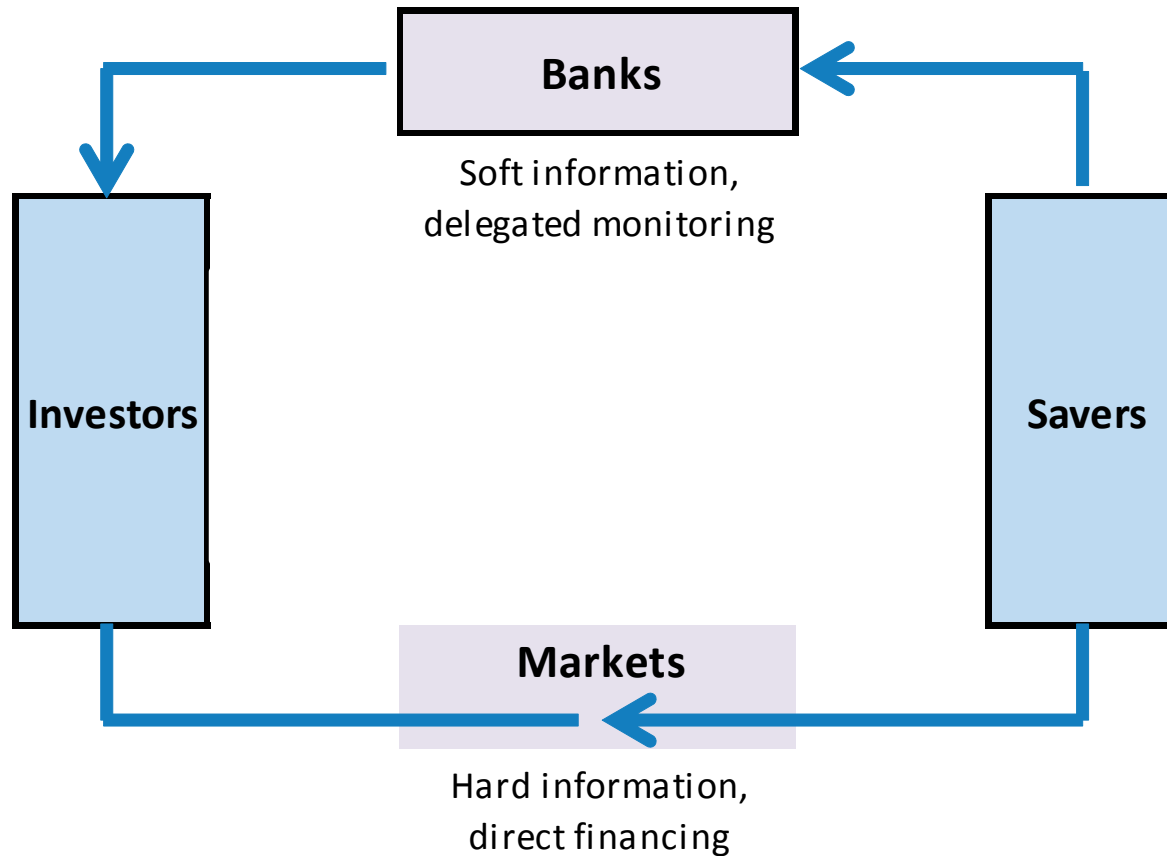
- ▶ “Shadow banking = securitization”
 - Securitization is dead, is SB dead?
- ▶ FSB: “credit intermediation involving entities & activities outside the regular banking system”
 - If we expand the regulatory perimeter, no more issues?
- ▶ Think about economic role of Shadow Banking: its function in providing financial services



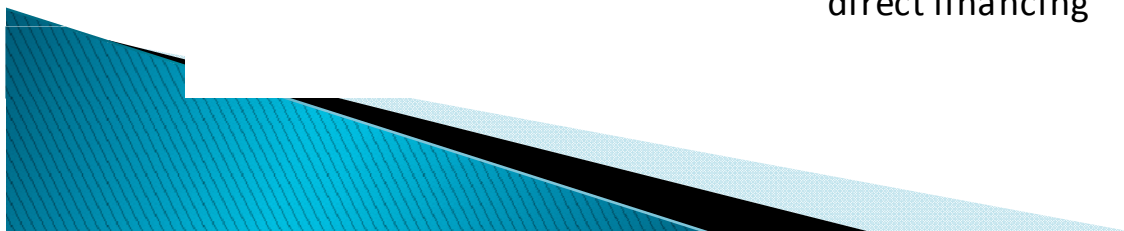
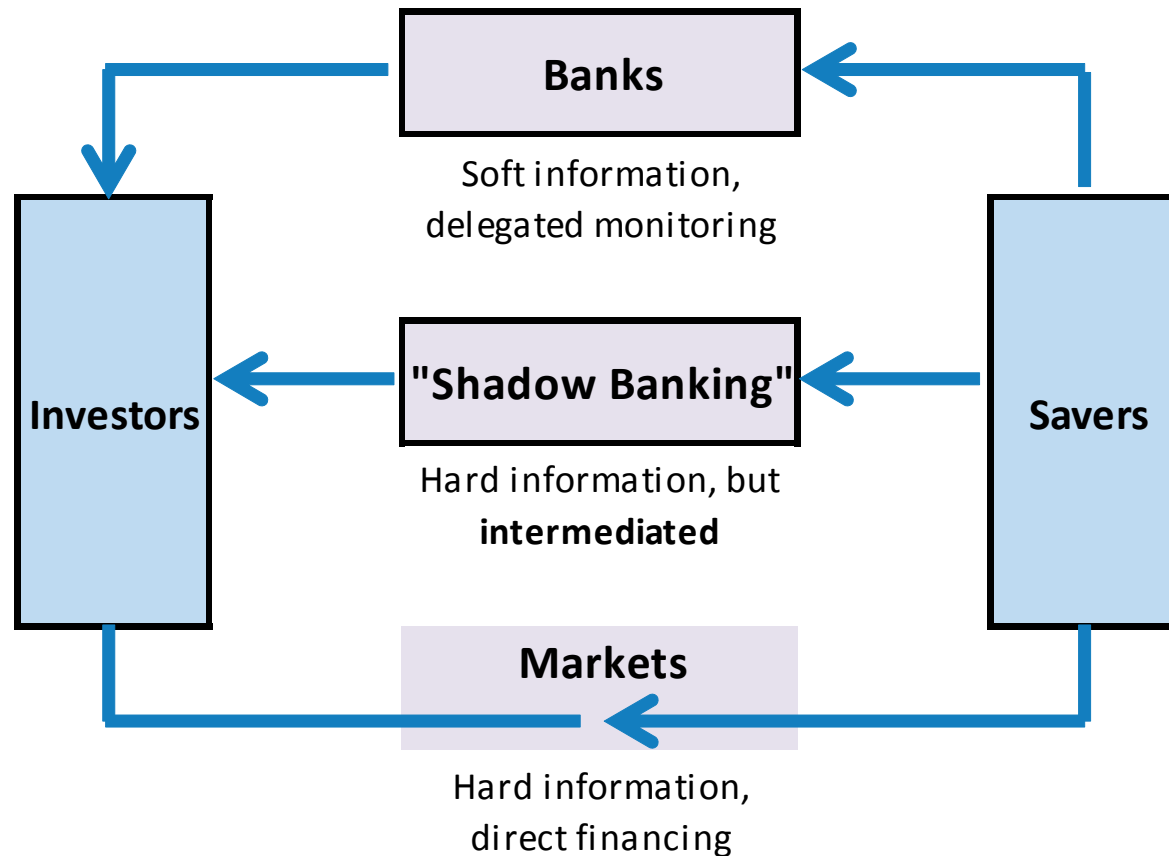
Our view

- ▶ Drivers (Demand) → Operations → Market Failures → Systemic Risk → Policy
 - ▶ **Shadow banking offers specific financial services**
 - Not offered by banks
 - Some regulatory arbitrage, some specialization
 - ▶ **Services may be valuable or redundant, have to understand optimal policy response**
 - ▶ Focus on two “services” – functions:
 - **Securitization**
 - **Collateral intermediation**
- 

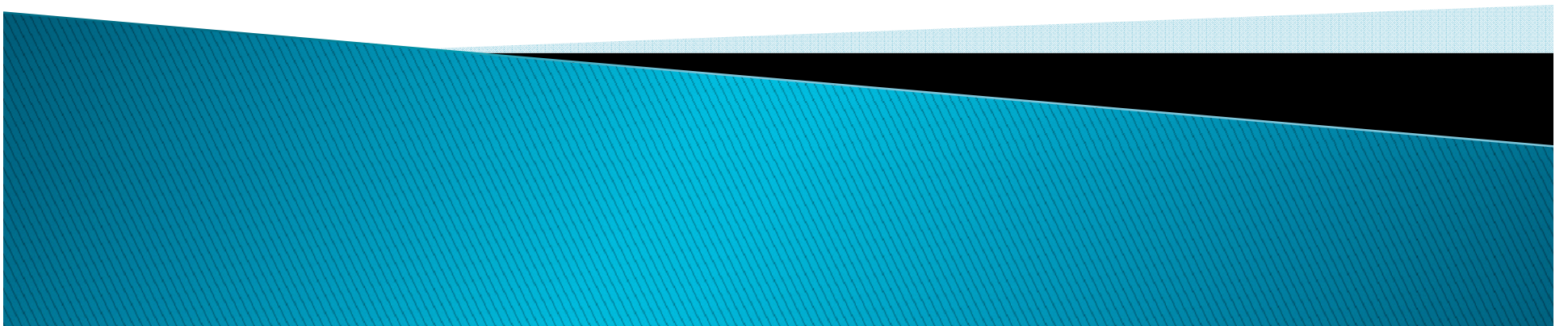
Shadow banking in traditional theory of financial intermediation



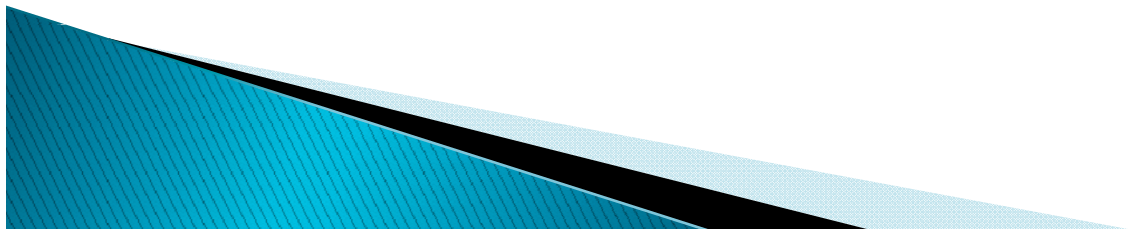
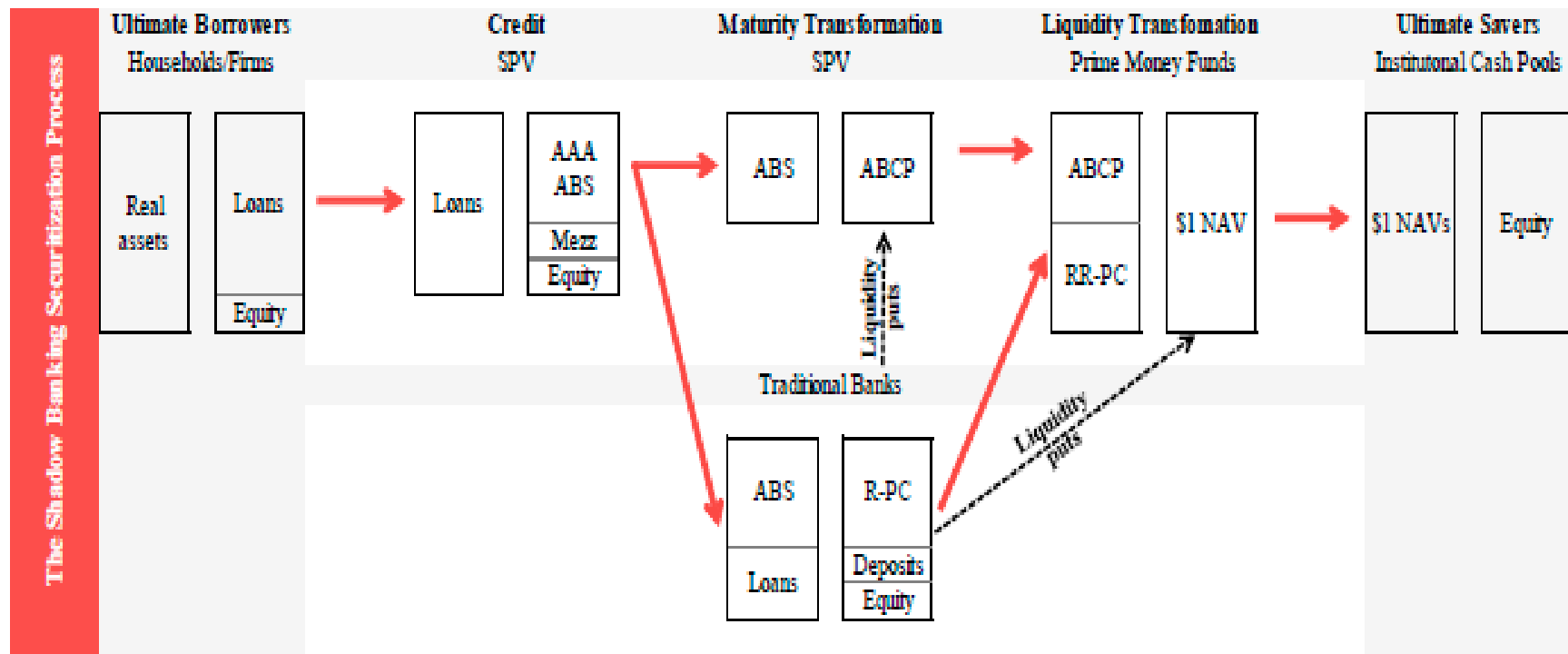
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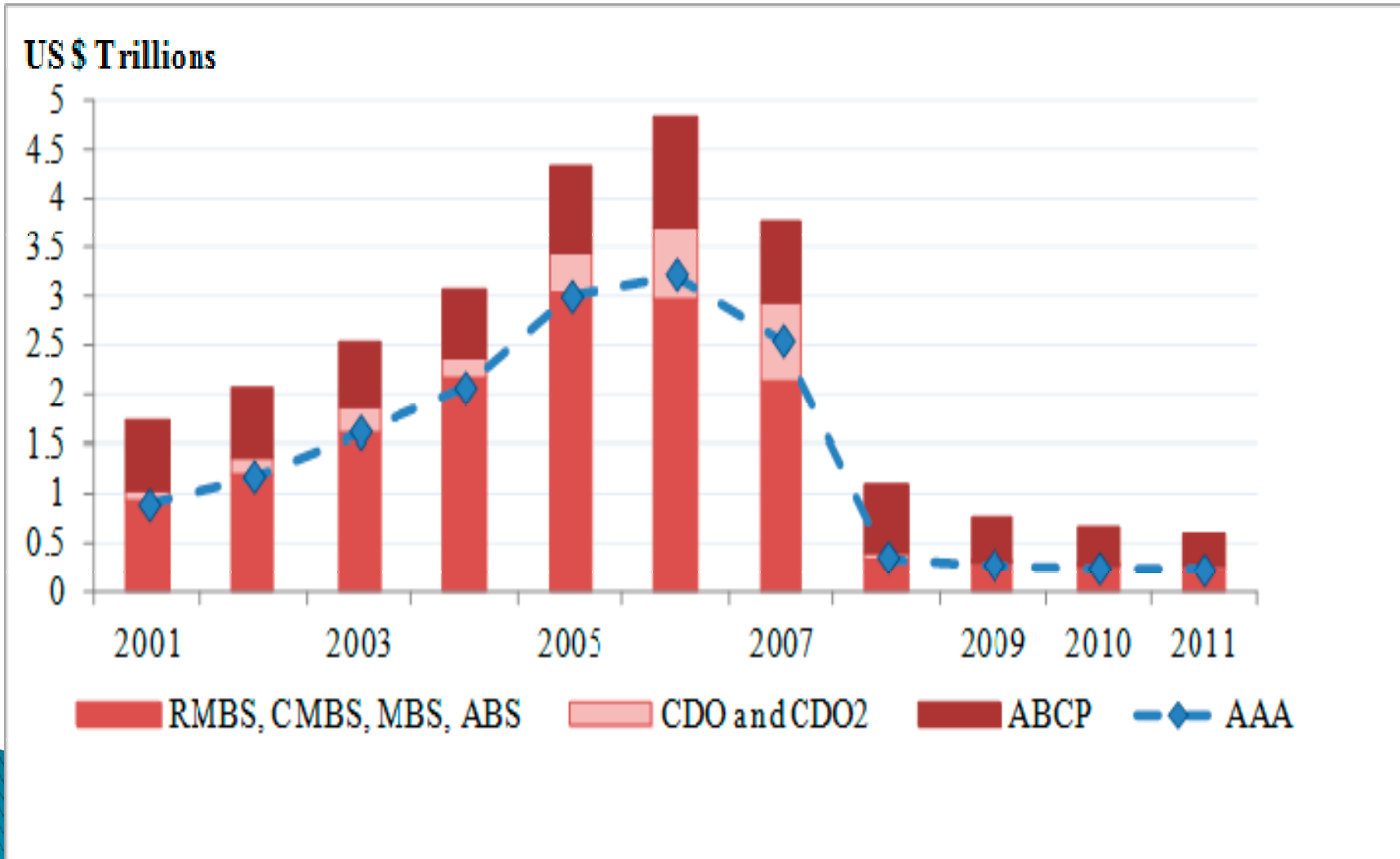
Securitization



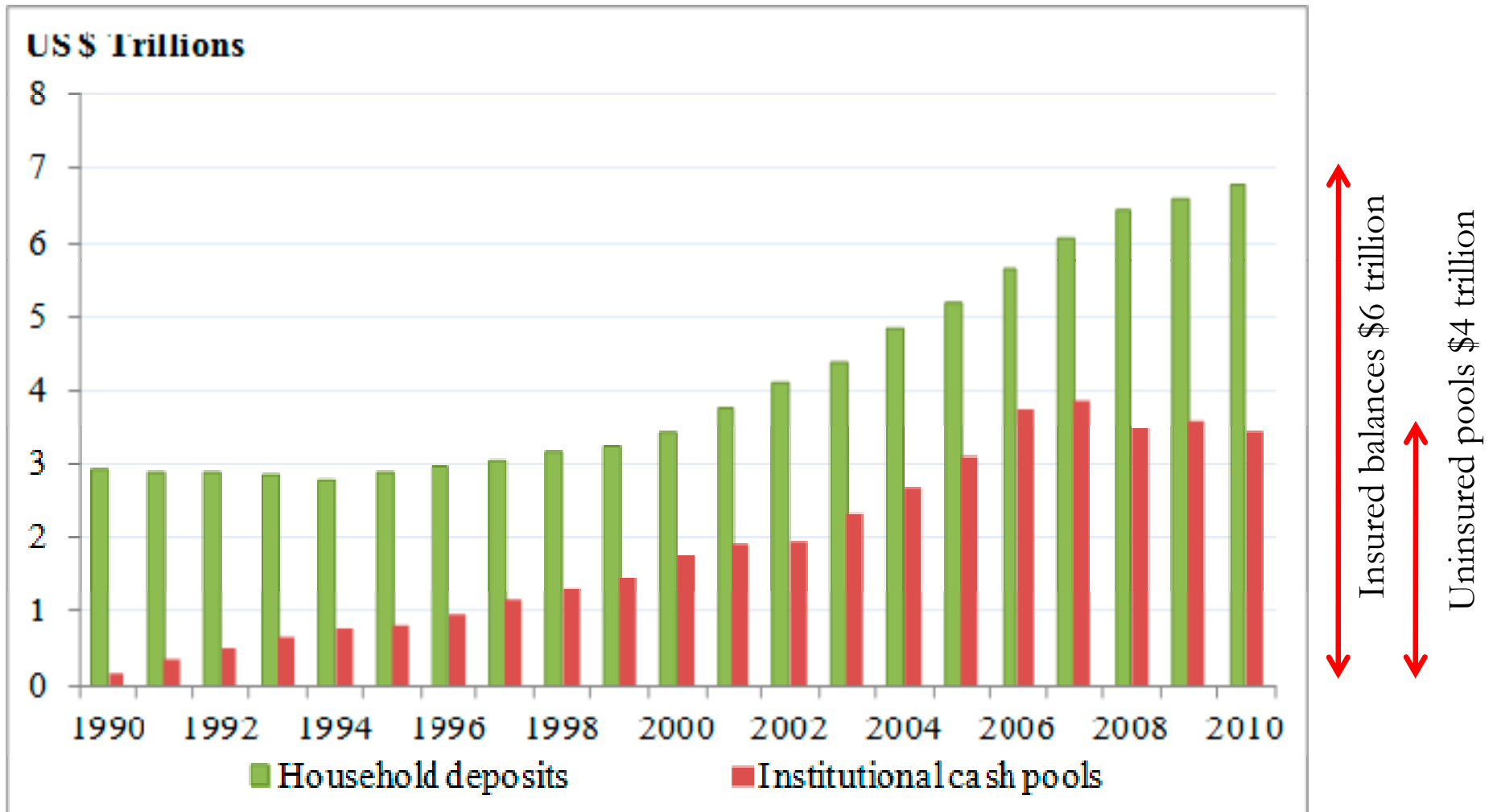
Securitization creates “safe assets,” with banks providing puts to MMFs



Rapid growth in “safe assets”, followed by a collapse

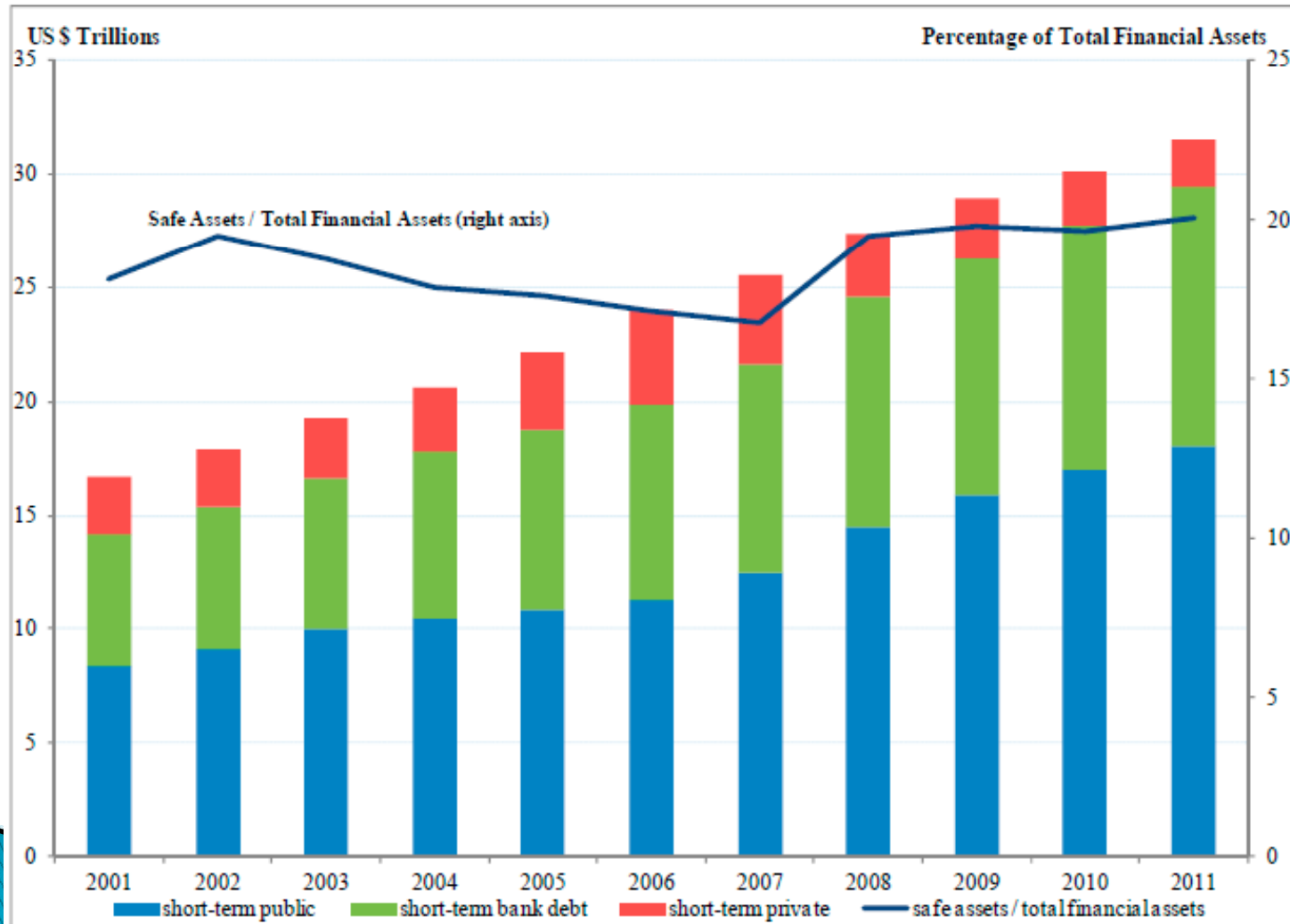


Fundamental driver of securitization: Cash Pools

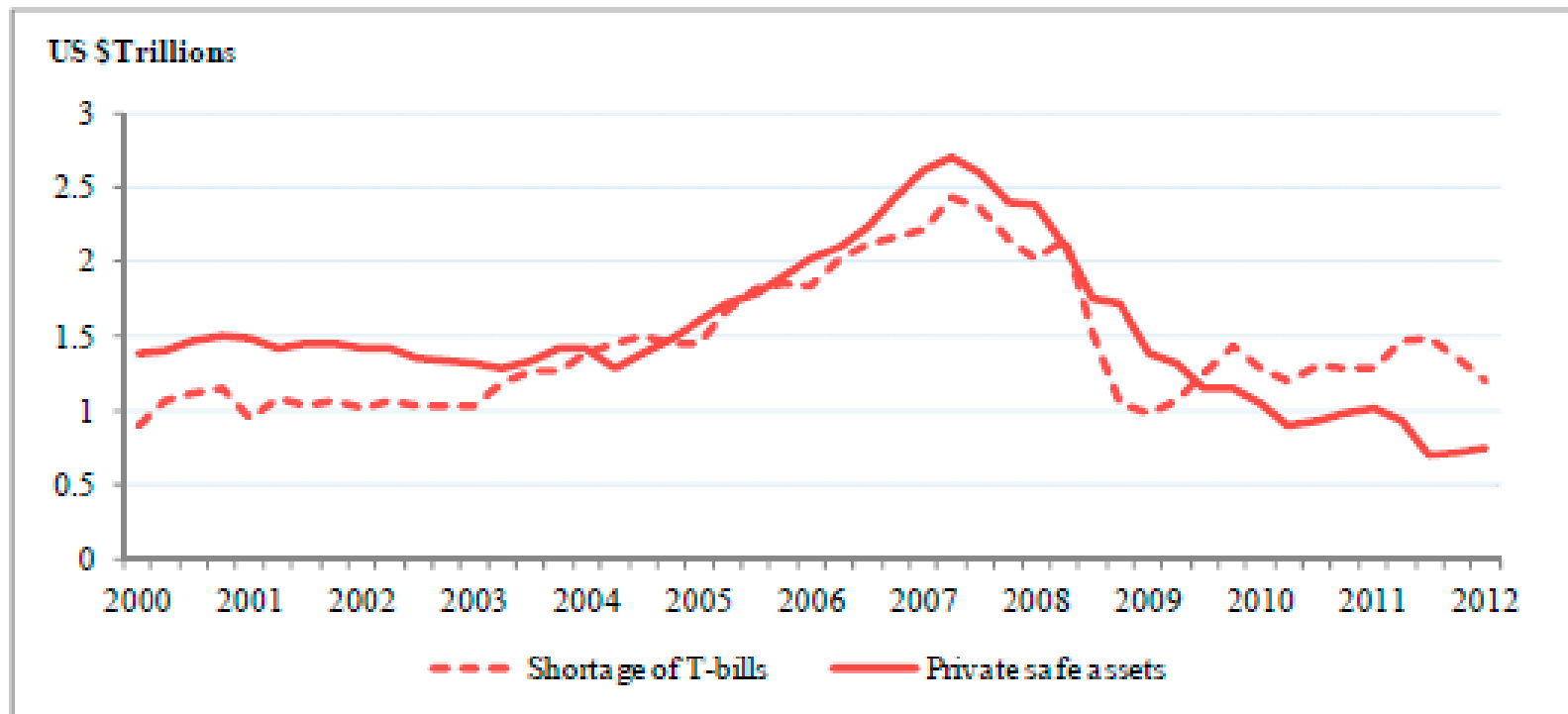


Sources: Federal Reserve, Capital IQ, ICI, RMA, BIS, Poszar (2011)

And, there was not enough “public” safe assets



Securitization filled the vacuum of public short-term debt



Shortage of T-bills is calculated by subtracting from the volume of cash pools the volume of short-term, government-guaranteed securities (the sum of T-bills, Treasury notes with a remaining maturity of less than one year, and agency discount notes) not held by foreign official accounts. Private safe assets are the sum of the volume of structured money market instruments and repo-based wholesale funding.

Regulatory arbitrage driver of securitization: Bank funding / capital arbitrage

- ▶ Total subprime mortgage exposure

	Total reported sub-prime exposure (US\$bn)	Percent of reported exposure
Investment Banks	75	5%
Commercial Banks	418	31%
GSEs	112	8%
Hedge Funds	291	21%
Insurance Companies	319	23%
Finance Companies	95	7%
Mutual and Pension Funds	57	4%
Leveraged Sector	896	66%
Unleveraged Sector	472	34%
Total	1,368	100%

Source: Greenlaw, Hatzius, Kashyap and Shin (2008)

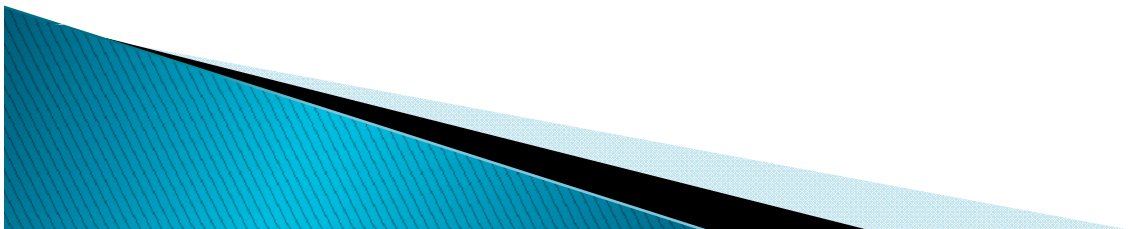
Economics

- ▶ **Fundamental reason (genuine demand)**
 - Banks cannot intermediate cash pools
- ▶ **Regulatory arbitrage**
 - Some regulatory arbitrage, many risk management mistakes
 - MMF implicit guarantees / SIV liquidity puts by banks
- ▶ **Macro implications**
 - Tail risk (latent in good times, ferocious under stress)
 - Leverage / procyclicality

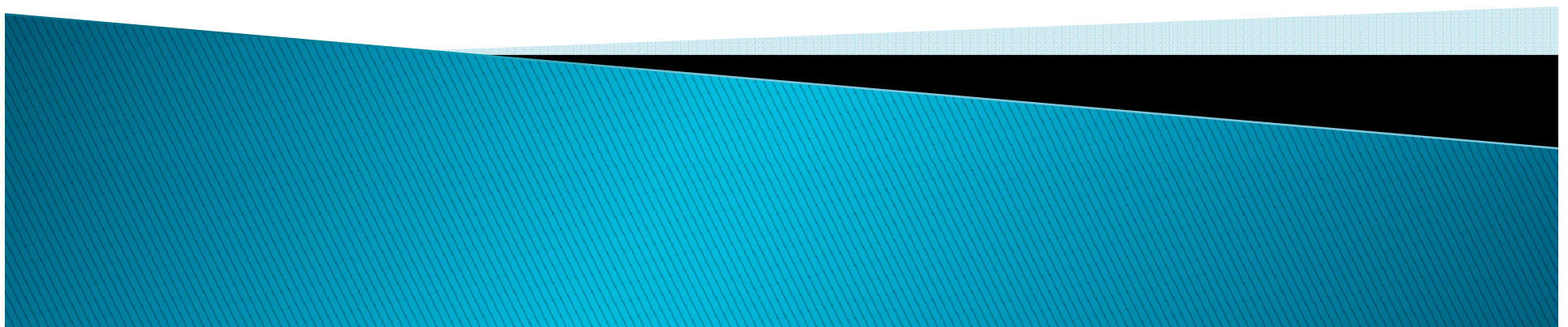


Policy

1. **Regulate banks**
 - Capital charges, repo market, liquidity “puts”
2. **Regulating MMF**
 - Necessary but unclear
3. **“Demand-side”: Expanding supply of government debt**
 - Controversial
 - + Reforming tax code?
(AAPL issued \$17Bn bonds, has cash pile \$142Bn)



Collateral intermediation



Collateral Intermediation


- ▶ **Scarce collateral**

- To secure arms' length transactions

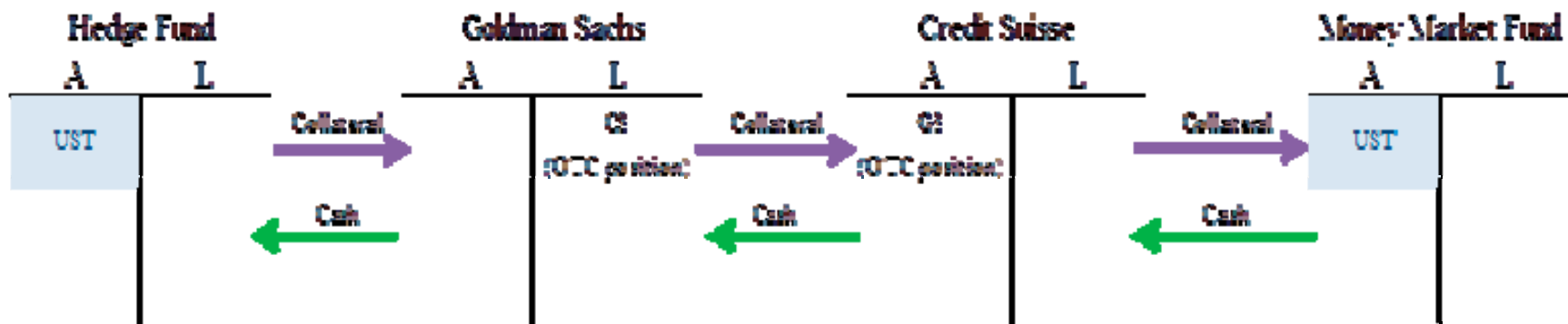
- ▶ **Supply**

- Hedge funds, insurers, pension funds, SWFs/CBs,... pledge as collateral or “rent out” in securities lending to **dealer banks*** (“**mining**”/ “**renting out**”)
- Collateral then re-pledged multiple times to other parties to obtain funding or support other contracts (“**re-use**”)

* Main are: Goldman Sachs, Morgan Stanley, JP Morgan, Bank of America–Merrill Lynch and Citibank in the U.S., and Barclays, BNP Paribas, Crédit Suisse, Deutsche Bank, HSBC, Royal Bank of Scotland, Société Generale, Nomura and UBS. All are classified as SIFIs by ESB

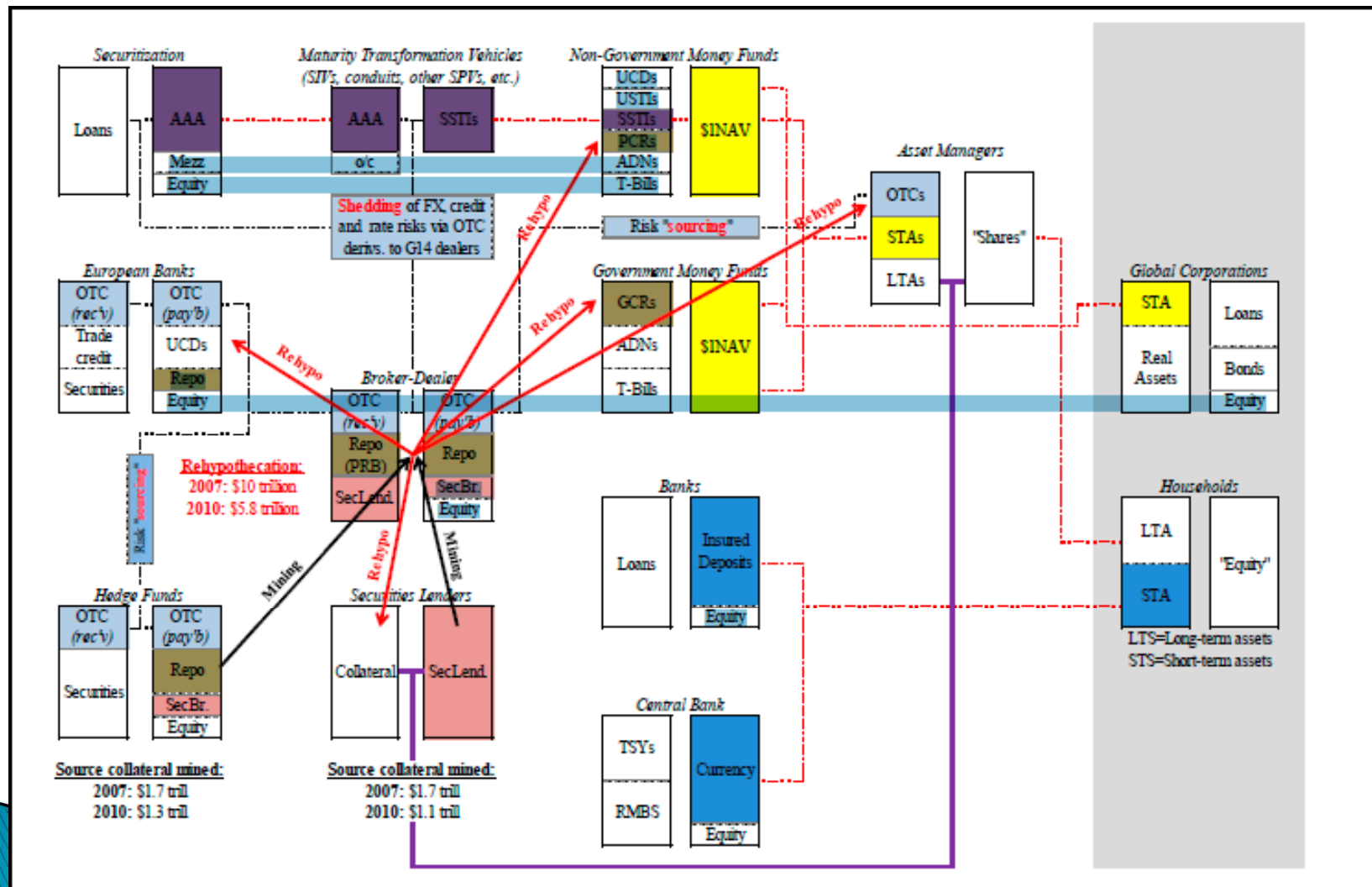


Collateral gets re-used



- Collateral (e.g. UST) is used by a hedge fund to get financing (“cash”) from a prime broker, e.g., Goldman Sachs
- Collateral then used by GS to pay Credit Suisse on a derivative position
- CS passes it to a MMF holding it with short-term funding

Collateral Intermediation: Complex



Collateral: Stock and Velocity

- ▶ Collateral re-use is large, factor 2–3

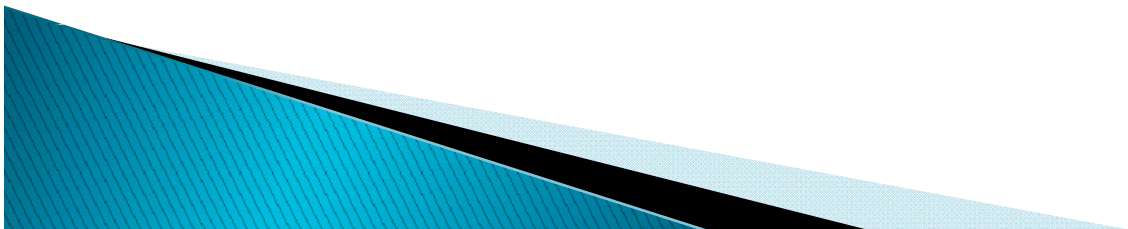
Year	Sources		Volume of secured operations	Velocity
	Hedge funds	Others		
2007	1.7	1.7	10.0	3.0
2010	1.3	1.1	5.8	2.4
2011	1.3	1.05	6.1	2.5

In US\$ Trln, Source: Singh (2012)



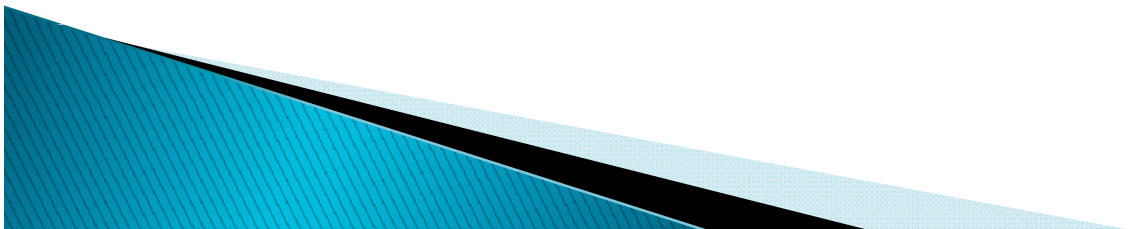
Economics

- ▶ **Collateral is scarce**
 - Dealer banks play a key role in enabling re-use
- ▶ **Relative advantage of dealer banks not clear**
 - Network centrality
 - Or TFTB guarantees?
- ▶ **The system becomes highly interconnected**
 - Trade-off with efficiency of financial services provision



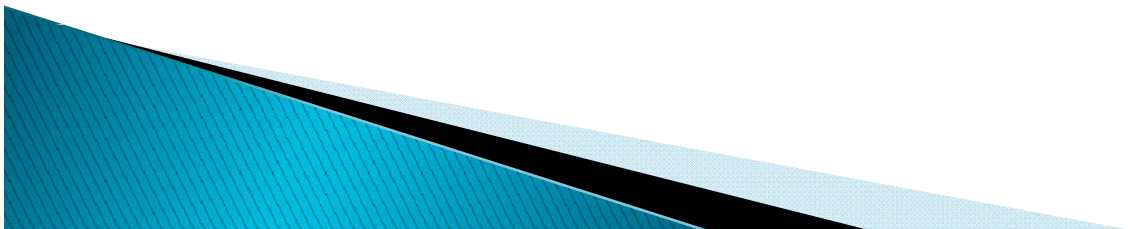
Policy

1. Dealer banks are TBTF; collateral operations bankruptcy-exempt
 - Puts to the safety net subsidize the system
2. No established regulatory approach to deal with the dealer banks' business model
 - More research needed
3. Volume and velocity of collateral matter
 - Macro implications, monetary transmission



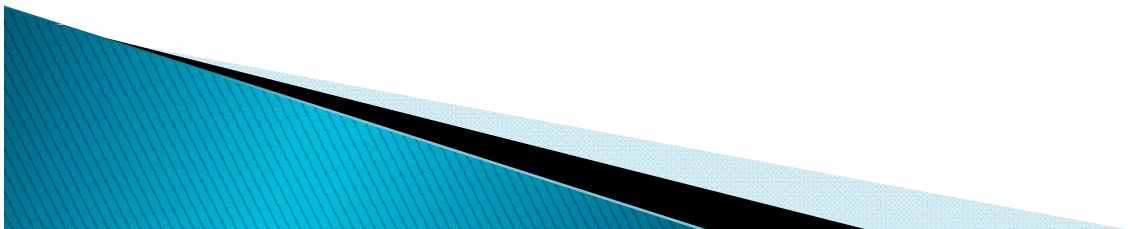
Conclusions

- ▶ Think about functions / economic role of “shadow banking” activities
 - Looking at within / outside the perimeter is insufficient
- ▶ Some reg. arbitrage, some genuine economic role
- ▶ Systemic risks present
- ▶ The system is new, research is needed to fully develop a regulatory approach
- ▶ More: [IMF Staff Discussion Note 12/12 “Shadow Banking: Economics and Policy”](#)



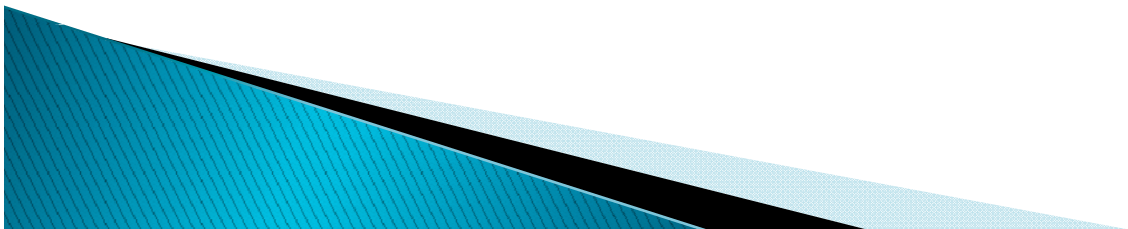
FSB Agenda

1. Banks' interactions with shadow banking entities
2. Money market funds
3. Other shadow banking entities
4. Securitization
5. Securities lending and repos



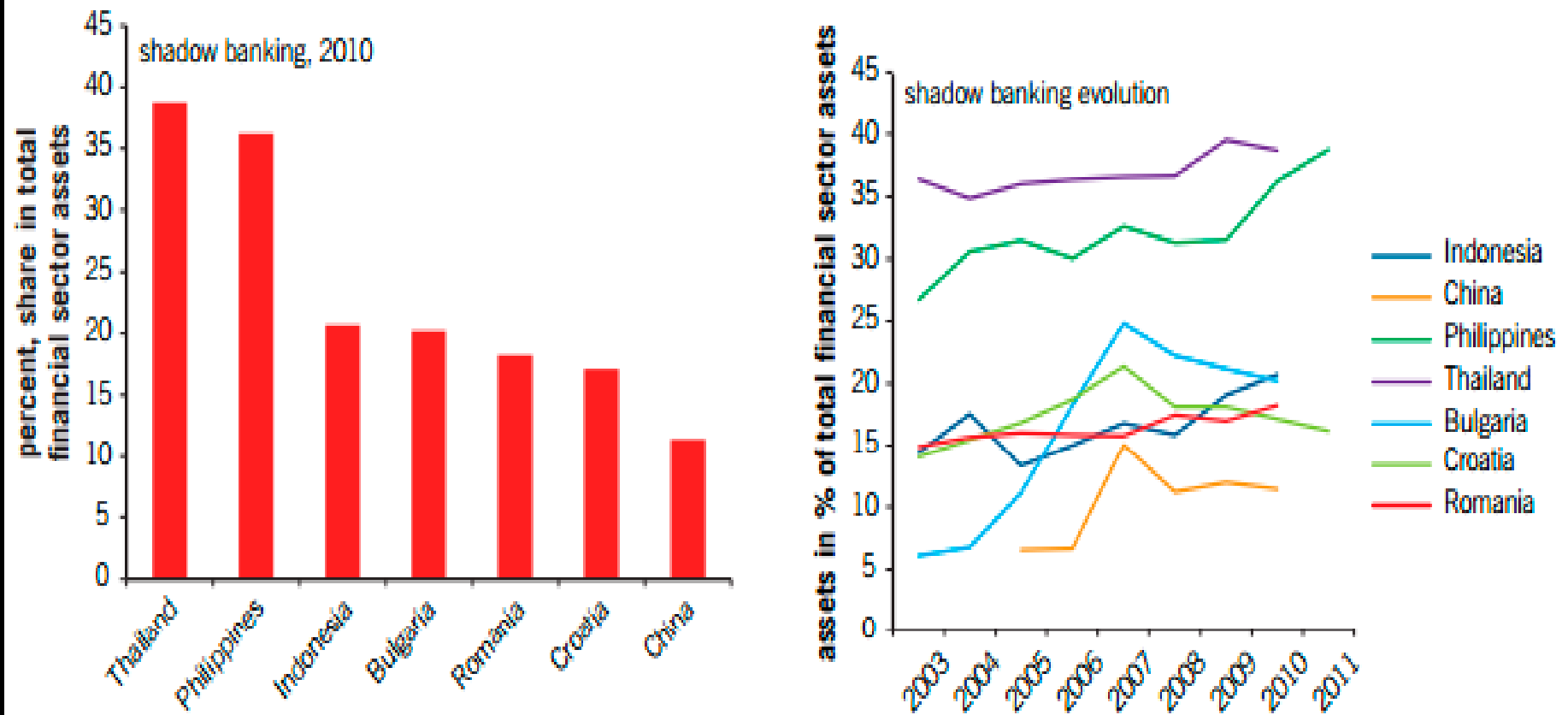
Measuring the Shadow Banking System Better

- ▶ Measures vary greatly as scope, institutional coverage, methodology not uniform
- ▶ Better measurement has to start with agreeing on whether to cover net or gross activities and stock or flows
- ▶ While significant progress can be made by using existing data, more data is needed
- ▶ And continuous monitoring of developments



“SB” is not just US or ACs, also EMs

Figure 1. Evolution of the Shadow Banking Sector in Selected EMDEs



Source: Authors' illustration from data drawn from FSAPs and central bank and other regulatory agency reports.

Notes: Data on total financial sector in the Philippines do not include pension funds. Data on total financial sector of Thailand include private pension funds but not public pension funds. Due to lack of available data, asset data for four Thailand financial institutions in some years in 2003-5 were estimated based on the average growth of the other specialized financial institutions that provided data. Similarly, due to lack of available data, asset data for specialized vehicles in Romania for 2010 were estimated based on the average growth of the system. For China, there is significant informal private lending and underground intermediation, which cannot be captured in the formal statistics reported above.

Source: Swati Ghosh, Ines Gonzales Velazquez, and Inci Ötker-Robe, 2012