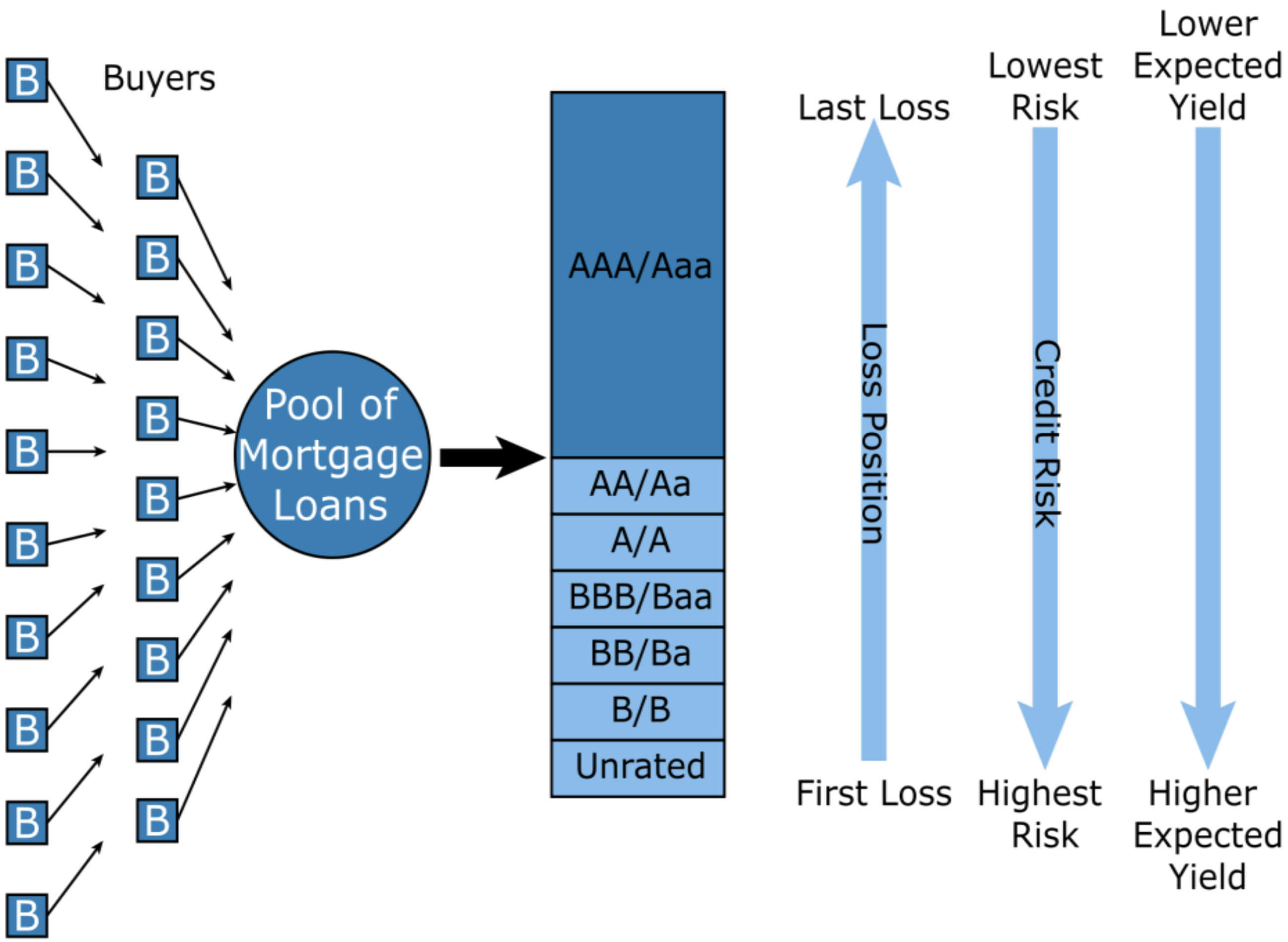
GoldenTree Asset Management

MIT Golub Center for Finance and Policy
3rd Annual Conference

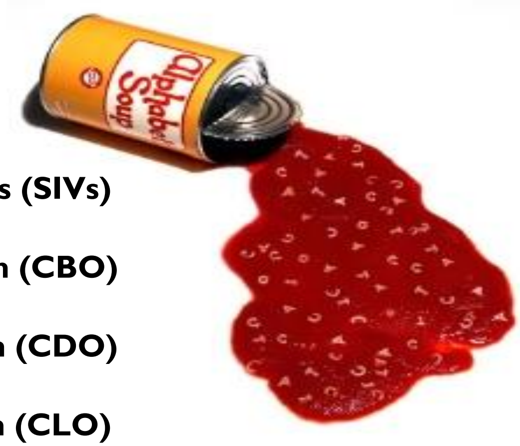
Joseph Naggar, Partner & Senior Portfolio Manager

September 2016

Different Risk and Return for Different Investors



Financial Innovation→Acronym Alphabet Soup



Structured Investment Vehicles (SIVs)

Collateralized Bond Obligation (CBO)

Collateralized Debt Obligation (CDO)

Collateralized Loan Obligation (CLO)

Residential Mortgage Backed Security (RMBS)

Commercial Mortgage Backed Security (CMBS)

Asset Backed Security (ABS)

Asset Backed Security Collateralized Debt Obligation (ABS CDO)

Commercial Real Estate Collateralized Debt Obligation (CRE CDO)

Collateralized Mortgage Obligation (CMO)

Asset Backed Commercial Paper (ABCP)

Derivatives Product Company (DPC) or Credit Derivatives Product Company (CPDC)

Collateralized Debt Obligation Squared (CDO Squared)

Collateralized Loan Obligation Squared (CLO Squared)

Synthetic Collateralized Debt Obligation (SCDO)

Synthetic Collateralized Debt Obligation Squared (SCDO Squared)

Student Loan Asset Backed Security (SLABS)

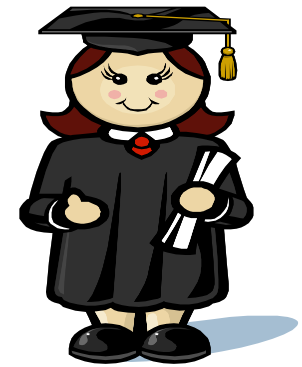
Collateralized Proportion Debt Obligation (CPDO)

Trust Preferred Collateralized Debt Obligation (Trup CDO)

Synthetic Indices – ABX, LCDX, HY CDX, LEV X, ITRAX, IG CDX and Tranches on some of these; multiple series

What Markets Depend On Securitization?

US Securitization Markets – Outstanding Issuance



Credit Cards ($134bn)

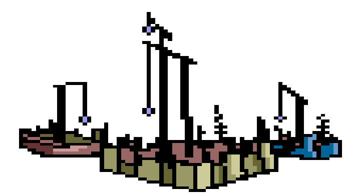
Auto loans ($194bn)

Student Loans ($221bn)

Mortgages
Prime ($2.6tr, $735 non-agency ’07)
Subprime ($243bn ’07)

US Commercial Real Estate ($600bn)

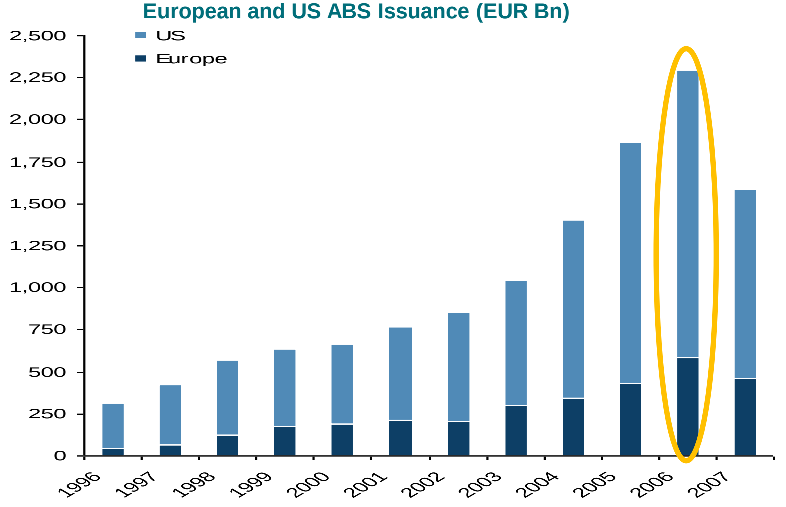
High Yield Loans
US/EUR CLOs ($400bn)

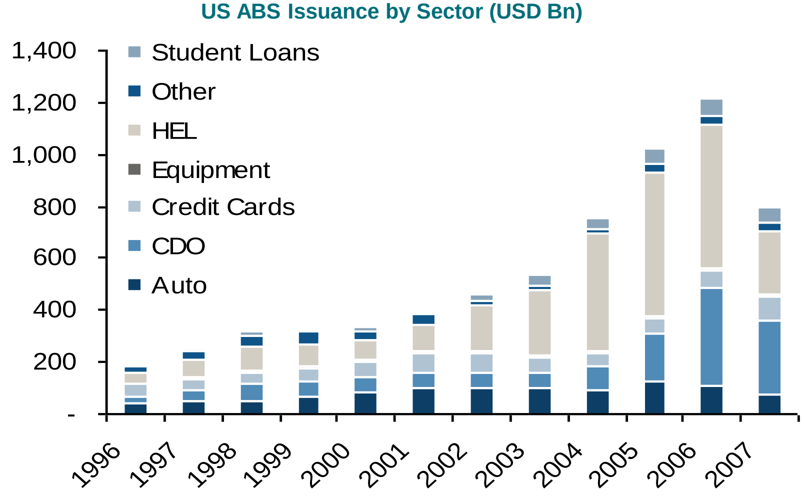


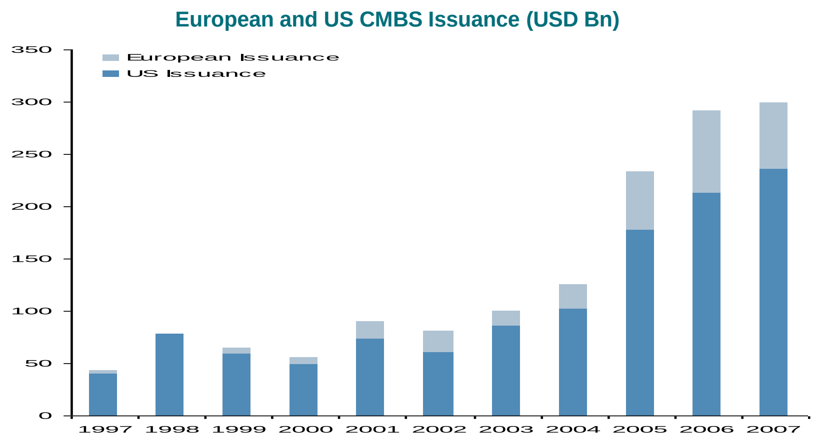
Source: Barclays, Citigroup

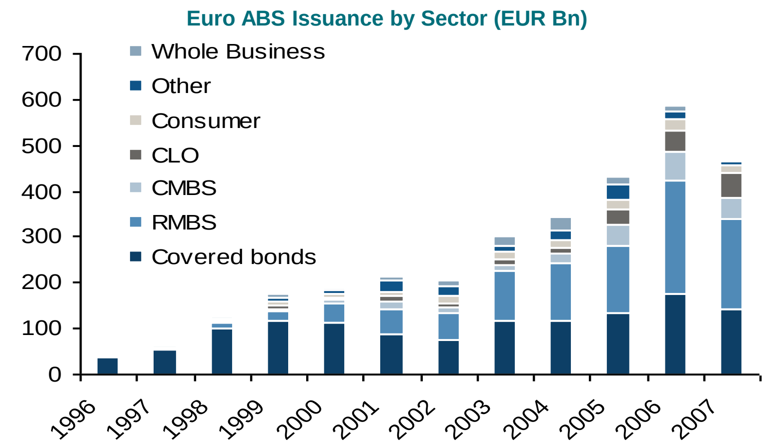
What Is The Size Of The Structured Products Market?

Size of Structured Products Markets – Issuance Per Year through 2008







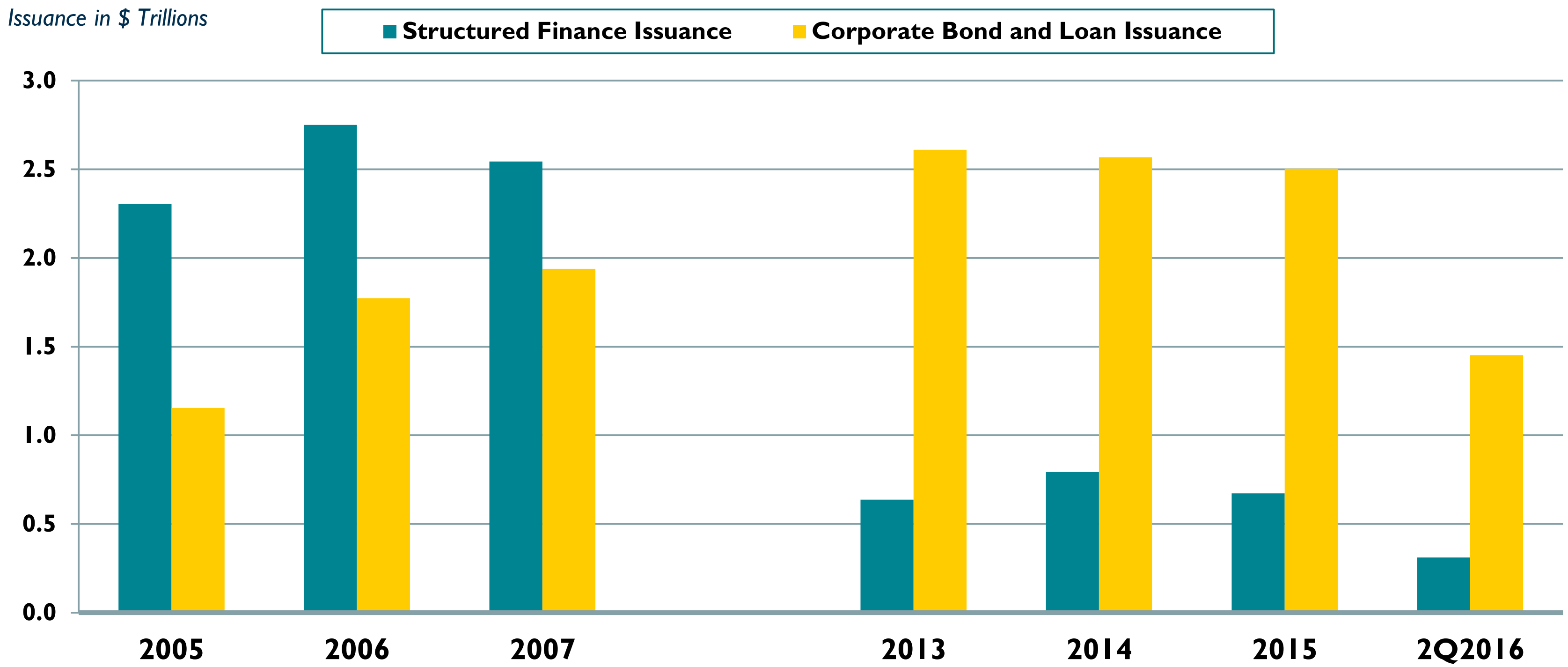


Source: Barclay's

Structured Finance Issuance

Structured Products issuance is a fraction of Corporate issuance post 2008 crisis

US & Europe Structured Finance Issuance Vs Corporate Issuance



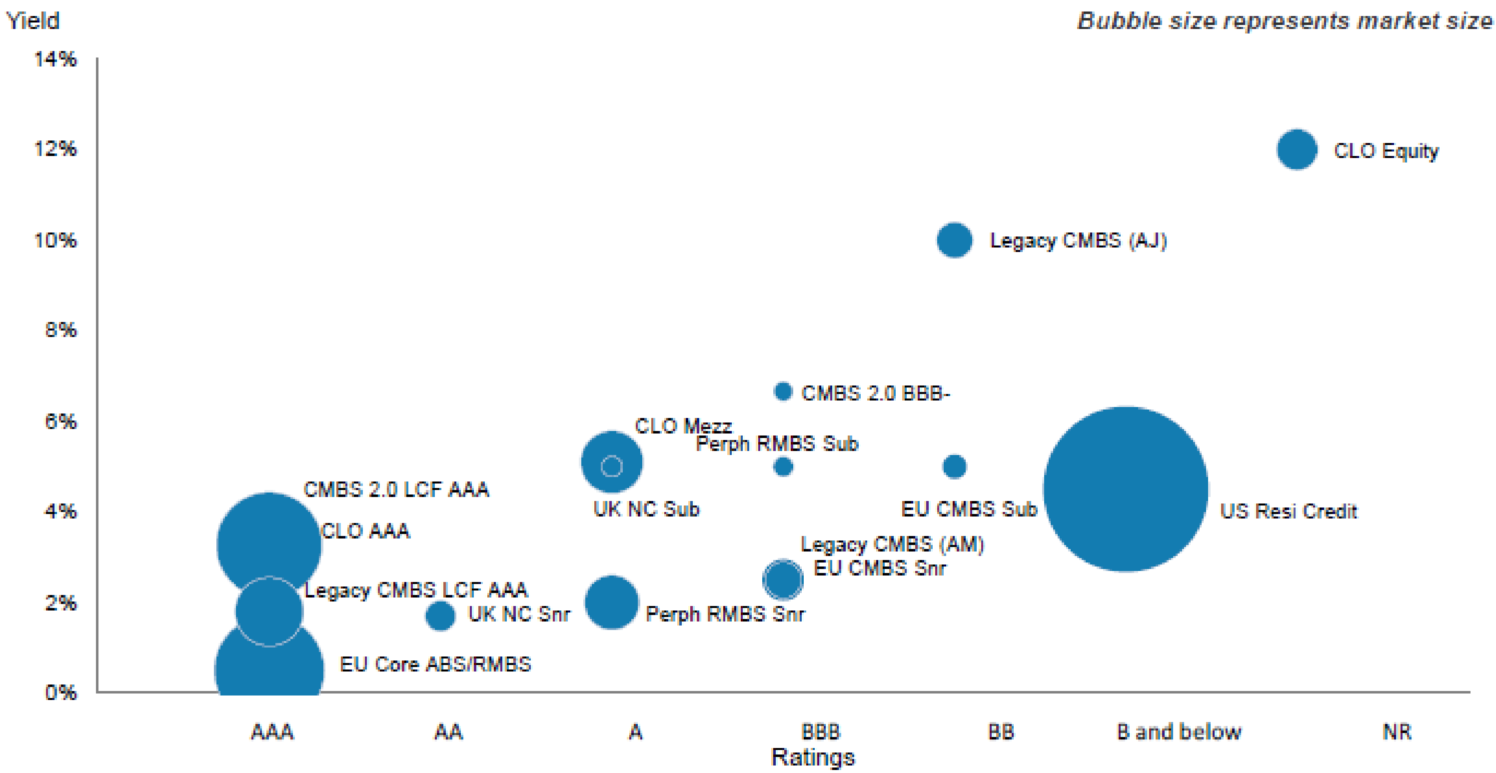
Ratio of Structured Finance to Corporate Issuance						
2.0x	1.6x	1.3x	0.2x	0.3x	0.3x	0.2x

As of June 30, 2016
Source: SIFMA for Structured Finance issuance; SP LCD, Barclays Research for Corporate issuance

Securitized Products: A Market of Many

Securitized Products are an amalgam of many different investment opportunity sets, suitable for a wide range of investors with varying return objectives and risk tolerance

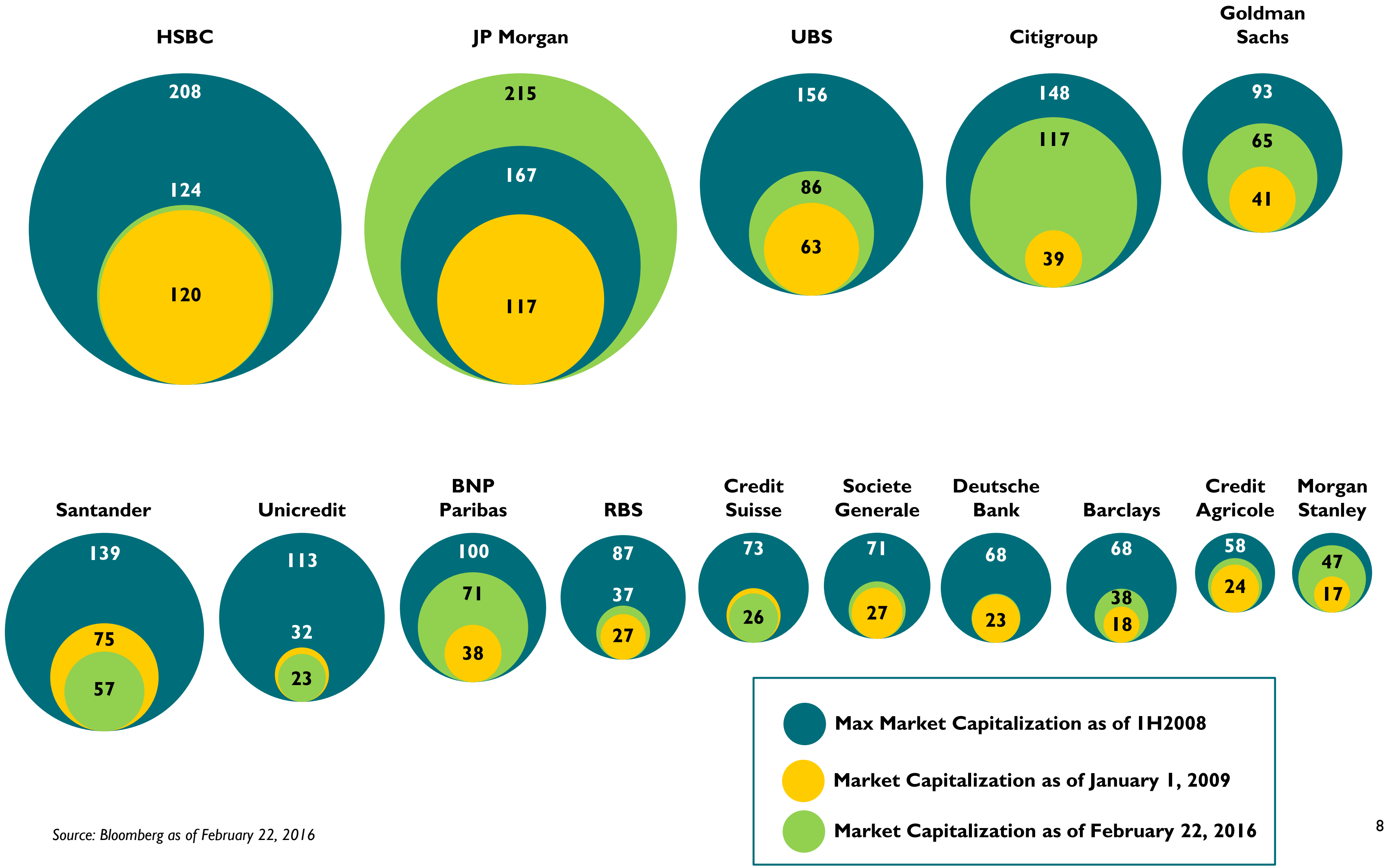
Securitized Credit: A Diverse Set of Opportunities



Source: Morgan Stanley Research

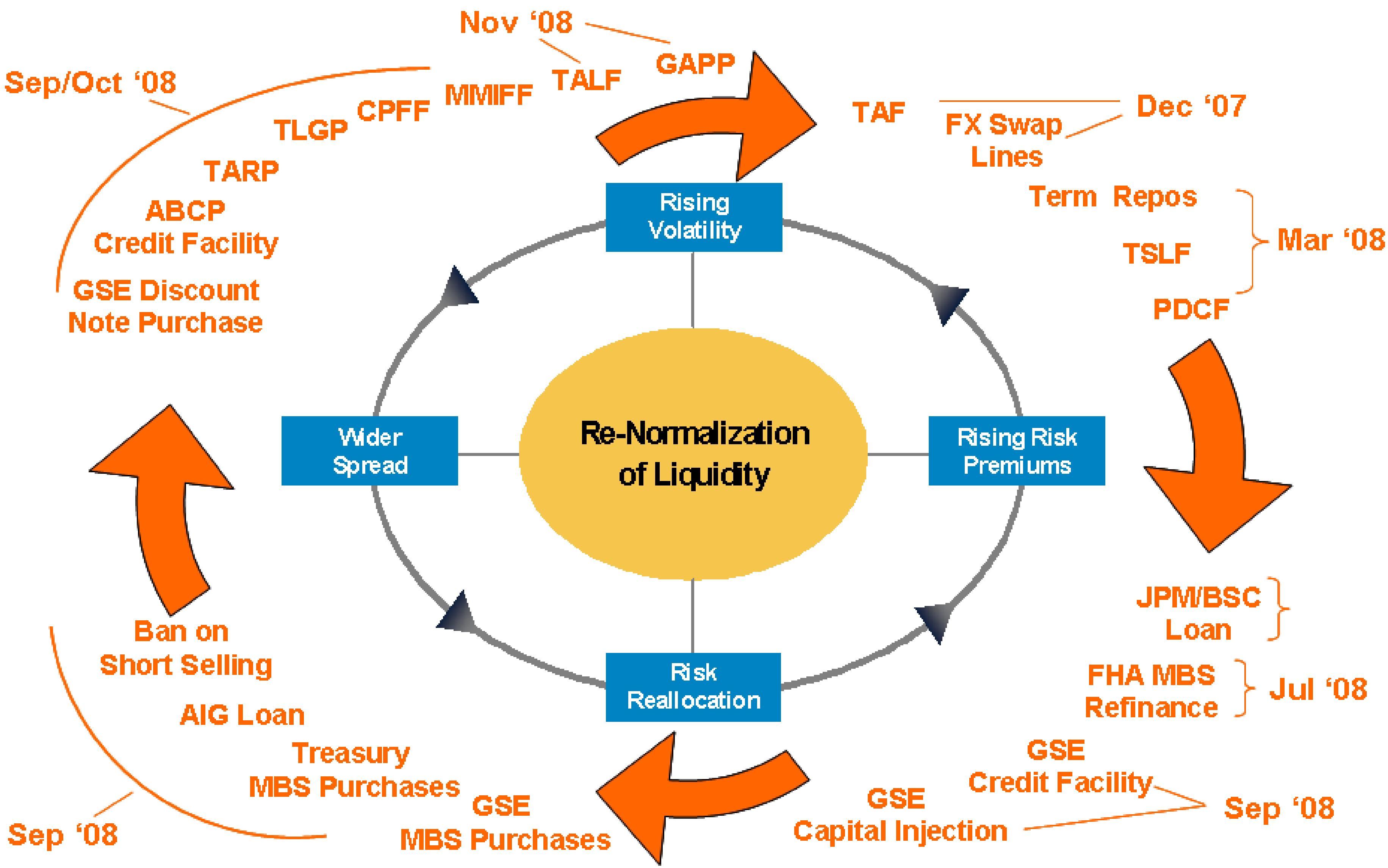
Banking System Effects of the Financial Crisis

$ Billions



Source: Bloomberg as of February 22, 2016

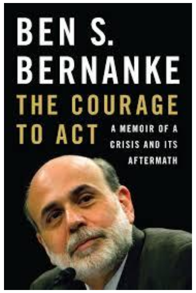
The Policy Response Plan In A Disintermediated World



Source: Morgan Stanley

Emergency Policy Initiatives Post Crisis

- Unprecedented global central bank intervention with goal of stabilizing housing, recapitalizing the bank system, reviving structured products and especially lending to consumers
  - Conventional methods: interest rate easing
  - Un-conventional: "quantitative" easing and "credit" easing methods
  - Read Bernanke's statements; makes for good bedtime stories

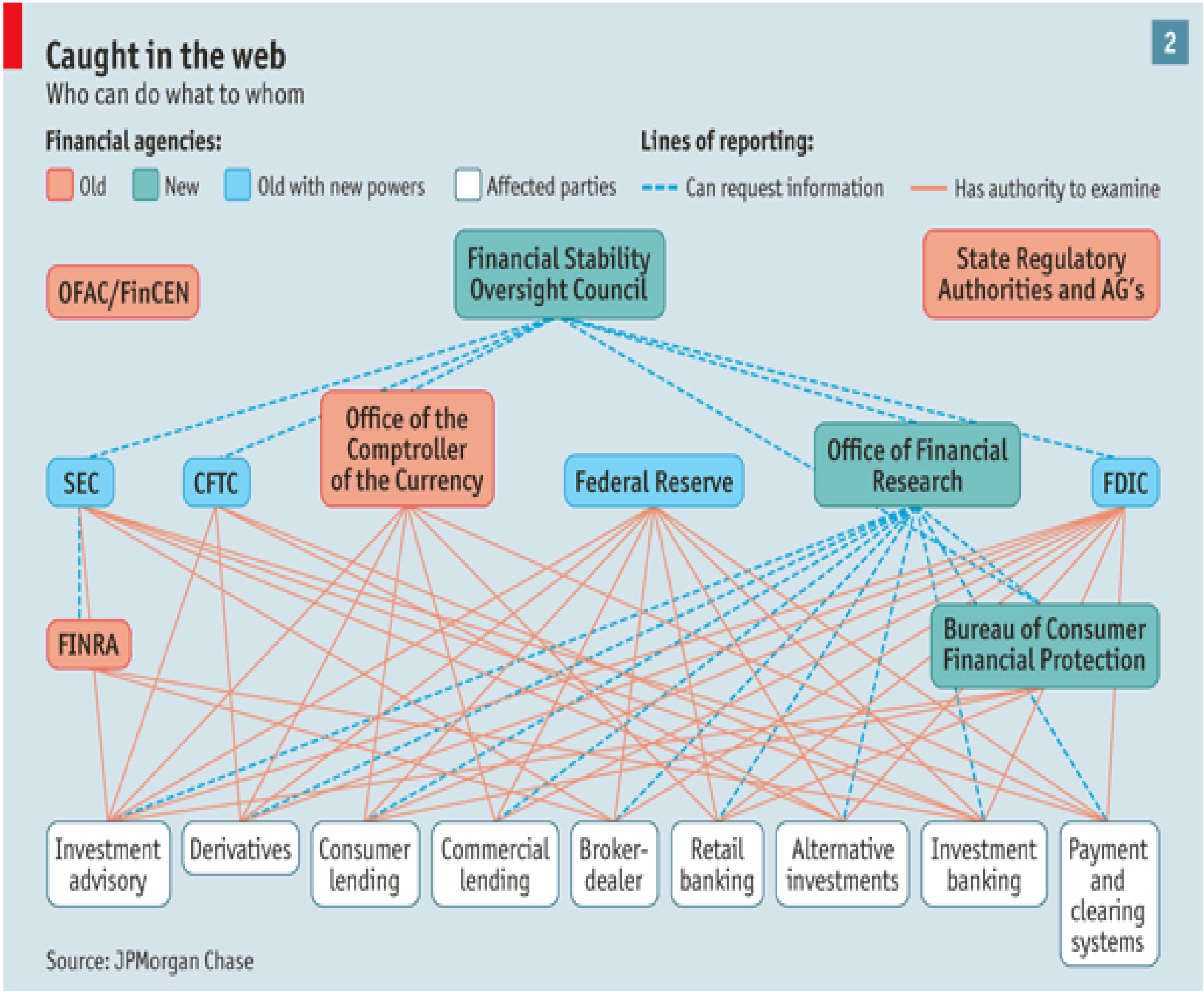


- Securities / Market Related Initiatives
  - TARP: $700 Billion program total, purchases of equity in financial institutions or assets
  - TLGP: Temporarily guarantee of newly issued senior unsecured debt of FDIC-insured depository institutions for 3-years (proposed to be extended to 10 years)
  - FDIC: Government guarantees and financing (e.g. IndyMac)
  - TALF: $200 Billion of non-recourse term financing of AAA consumer ABS with no re-margining requirements. Likely to be expanded to $1 trillion and include CMBS, and potentially others such as CLOs
- Initiatives Aimed at the Consumer
  - Loan-modification programs including principal reduction
  - Refinancing through Hope for Homeowners Act
  - New job creation through fiscal stimulus

MAKING HOME AFFORDABLE.gov
An official program of the Departments of the Treasury & Housing

HARP

Policy Interaction



Securitization and its Discontents

Laurie Goodman
Co-Director, Housing Finance Policy Center
Urban Institute

MIT Golub Center for Finance and Policy
3rd Annual Conference
Cambridge, MA
September 28, 2016

Outline

- While most other securitized asset classes have come back after the financial crises, residential MBS has not.

- There are 3 reasons for this:

  - Mortgages exhibited the most severe dislocations of any asset class

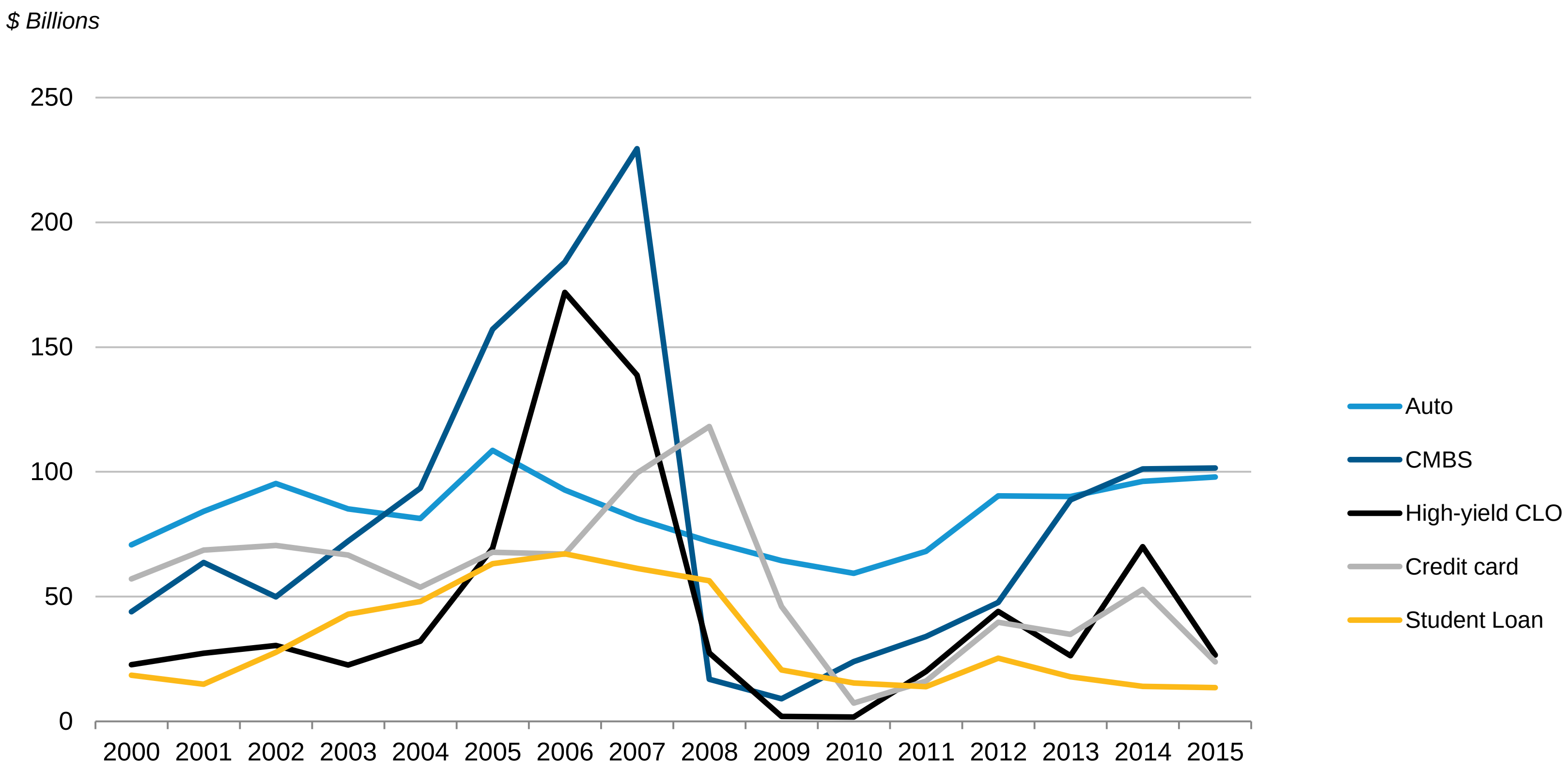
  - Mortgages were the only asset class to experience significant policy changes affecting already outstanding securities

  - Though the interests of investors and issuers were largely aligned in the securitizations of other asset classes, private-label securitization was riddled with conflicts of interest among all of the key players

- This cannot be explained by the much large role for the government in the MBS Market

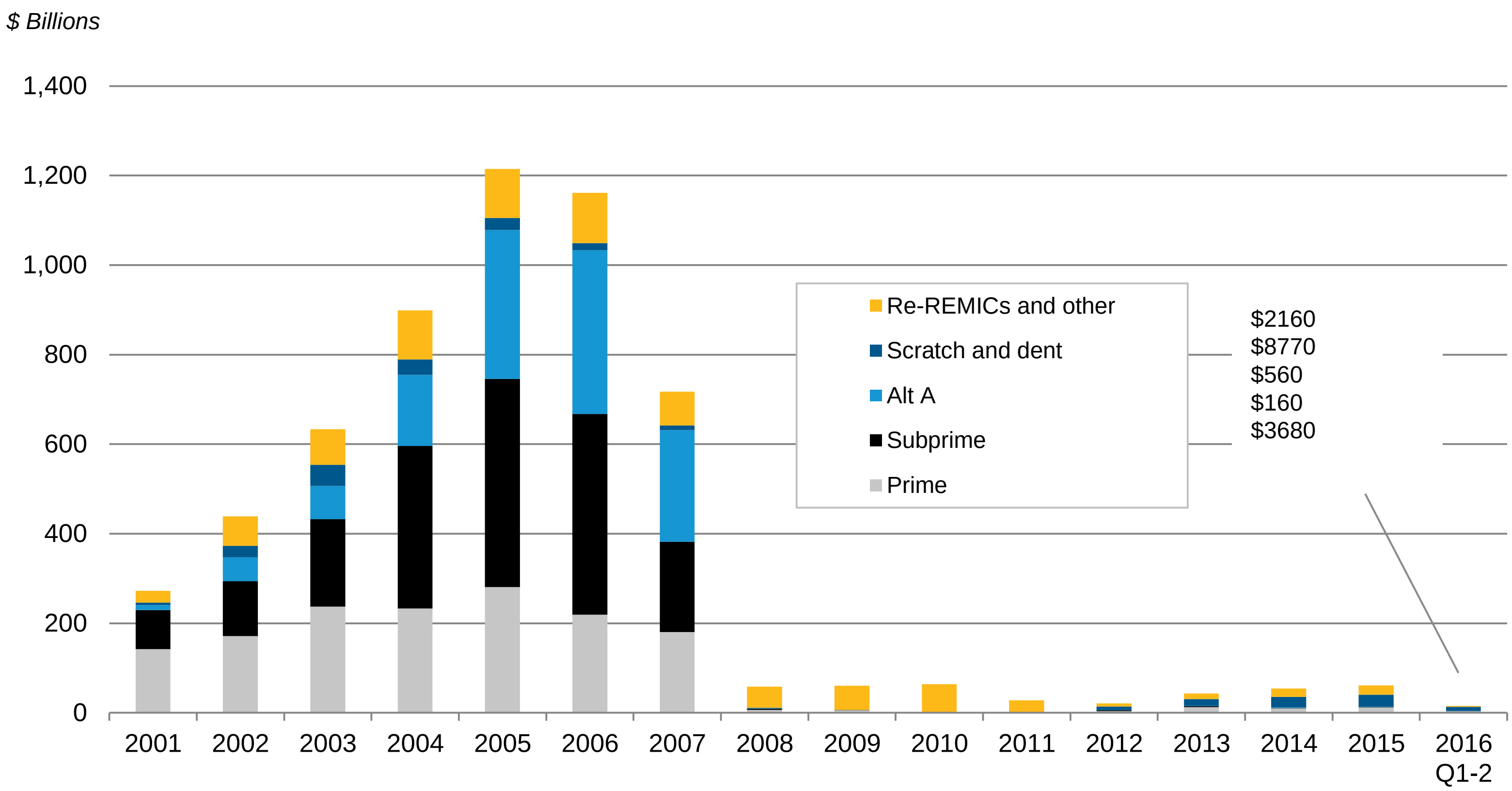
- What has to change in the PLS Market to restore issuance?
  - Standardization, introduction of a deal agent, better transparency and monitoring on servicing

Securitization of non-mortgage asset classes



Sources: Securities Industry and Financial Markets Association and Urban Institute.

Private Label RMBS (PLS) Issuance



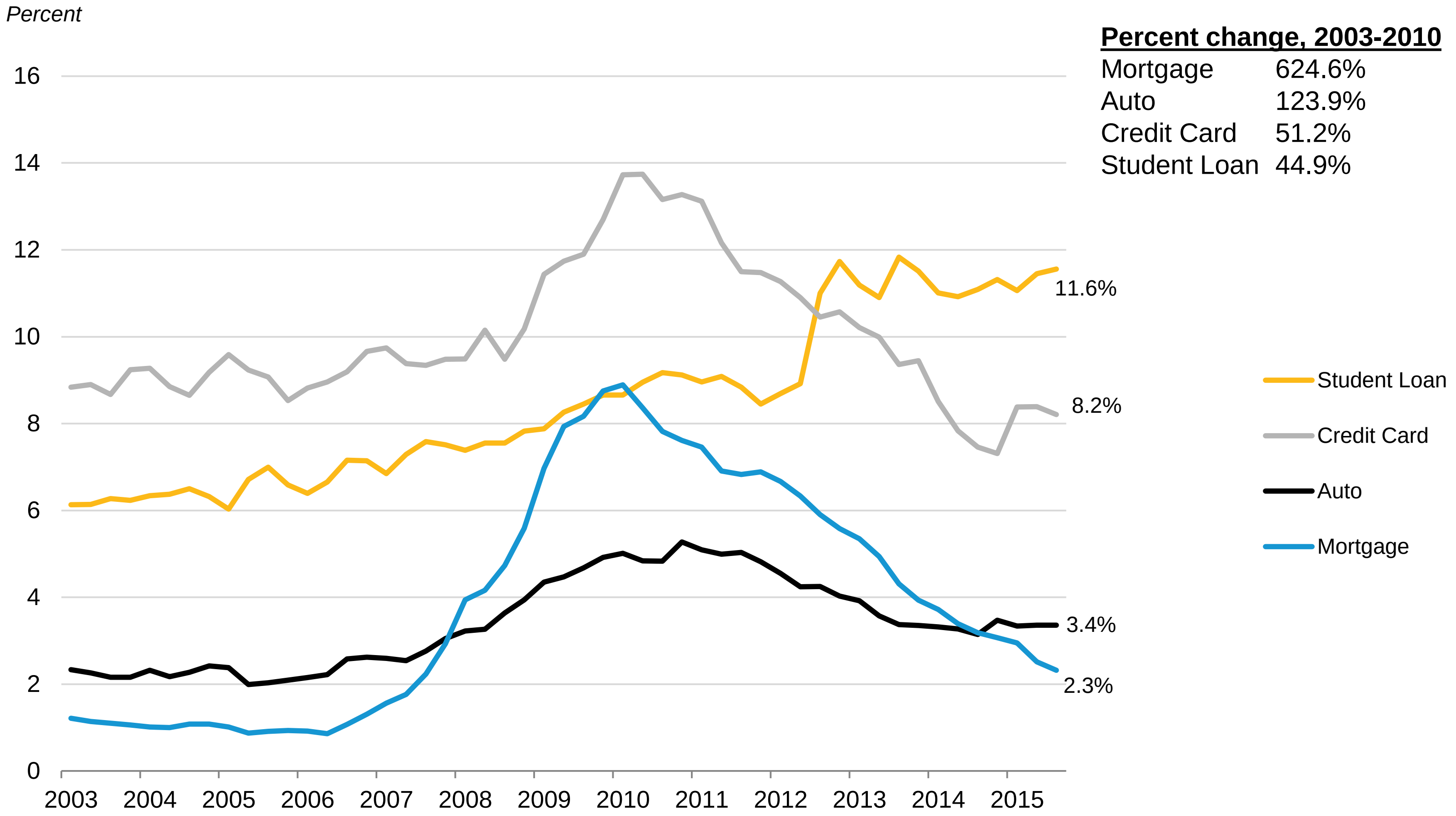
Source: Inside Mortgage Finance and Urban Institute

Percent change in securities issuance from 2001 to 2015

Types of Debt	
Auto	14.4%
Credit card	-22.9%
Student	-5.3%
High-yield CLO	155.8%
CMBS	58.8%
Private Label RMBS	-84.2%

Source: Urban Institute

Delinquency rates by loan product



Percent change, 2003-2010	
Mortgage	624.6%
Auto	123.9%
Credit Card	51.2%
Student Loan	44.9%

Sources: Federal Reserve Bank of New York Quarterly Report on Household Debt and Credit and Urban Institute.

Why has the private label RMBS market not come back?

- Mortgages exhibited the most severe dislocations of any asset class
    - Exposed weaknesses in the cash flow waterfall
    - Exposed weaknesses in the collateral underwriting process
    - Exposed the lack of consistent loan level information
    - Exposed the sloppy due diligence
- Mortgages were the only asset class the experience significant policy changes after the crises
    - Lack of disclosure for the wave of mortgage modifications
    - Servicing settlements
    - Expansion of timelines
    - Eminent domain

Why has the private label RMBS market not come back?

- Securitizations of other asset classes have better alignment of interests between the issuer and investors.

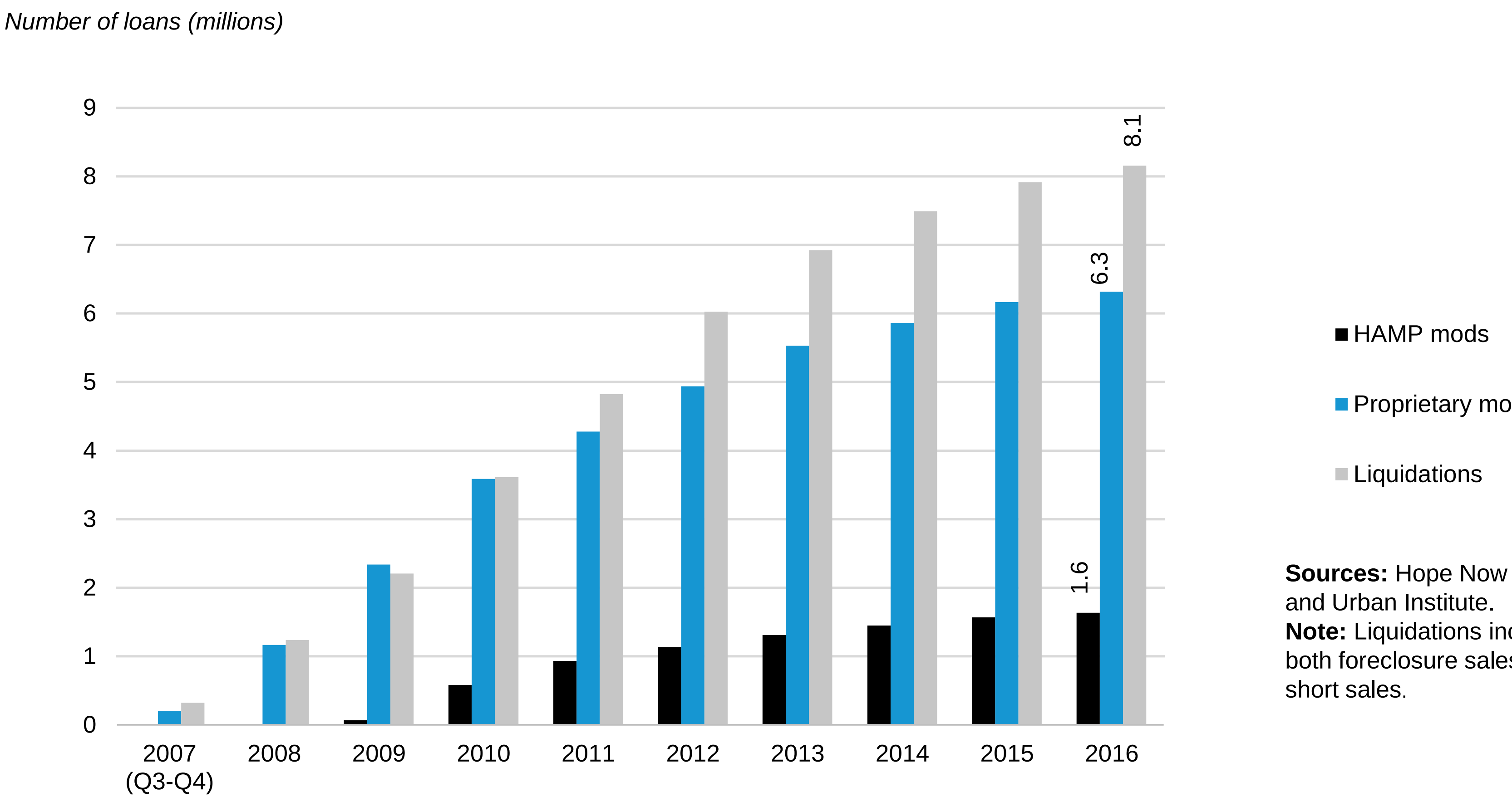
  - Major Issues Include:

    - Enforcement of reps and warranties

    - Misplaced incentives due to ownership of second liens

    - Vertical integration in the servicing process

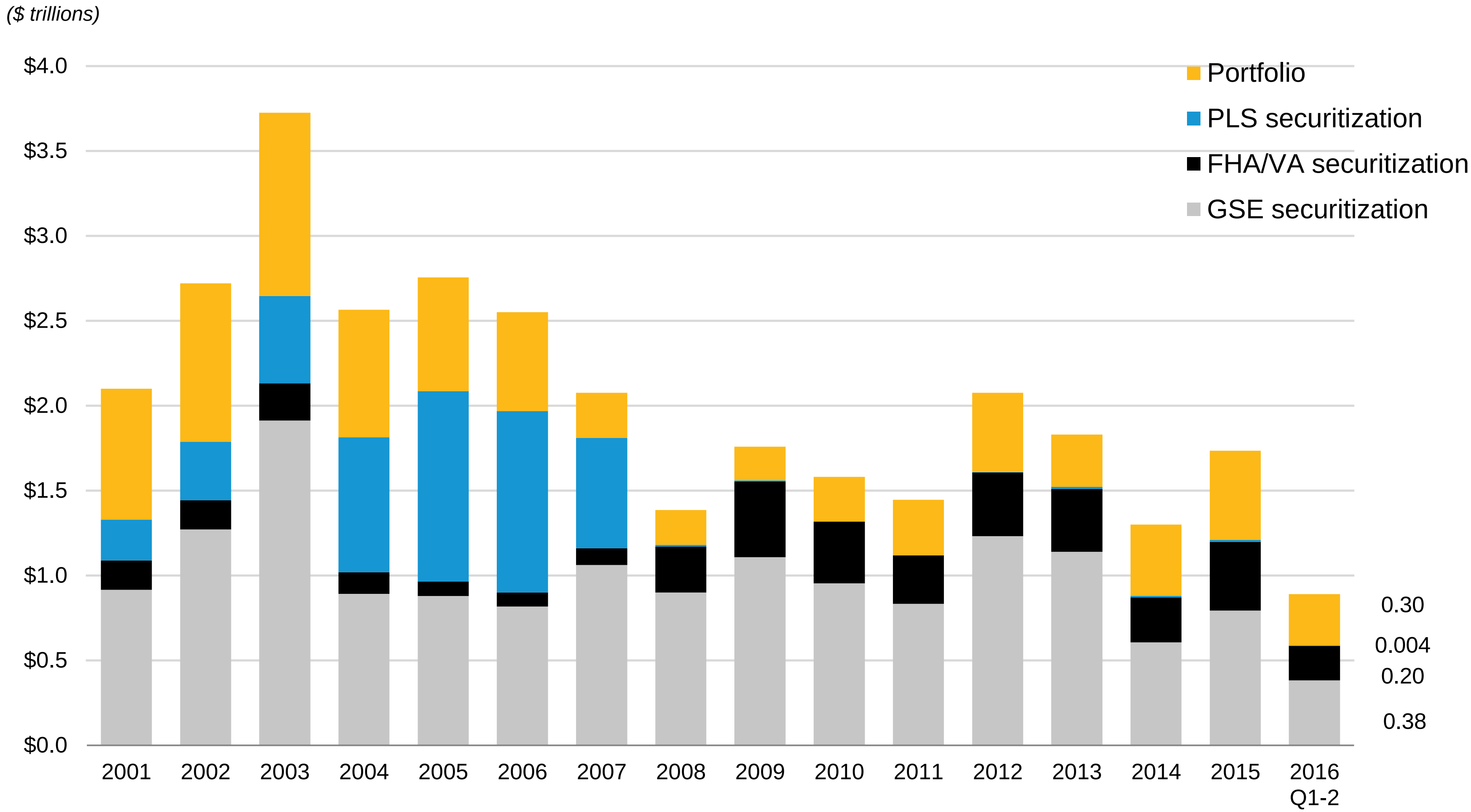
Cumulative Modifications and Liquidations



Sources: Hope Now Reports and Urban Institute.
Note: Liquidations includes both foreclosure sales and short sales.

July 2016

First Lien Share by Funding Source



Sources: Inside Mortgage Finance and Urban Institute

A Security Design Crisis in the Plumbing of U.S. Mortgage Origination

Nancy Wallace

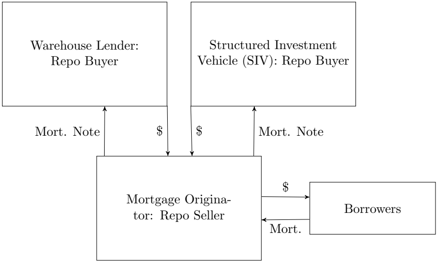
Haas School of Business
Real Estate and Financial Markets Laboratory
Fisher Center for Real Estate and Urban Economics

MIT GCFP Conference
September 28, 2016

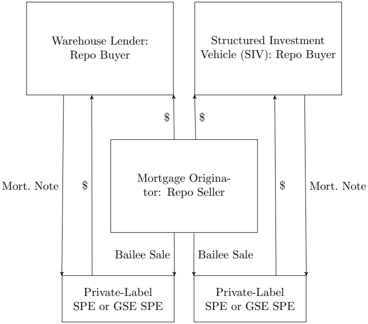
GNMA/GSE pipeline risks

- Secondary mortgage market is heavily federalized.
- GNMA/GSE securitization volume is now dominated by non-depository mortgage originators.
  - CFPB, HUD and state-level oversight – no stress testing.
  - Reliance on short-term bi-lateral repo funding.
  - **Short-run risks** – covenants on repo, slowing of mortgage refi's (reduced fee income), underfunding for servicing advances, other balance sheet failures.
  - **Liquidity risks** – changes in forward funding markets (hedging costs), repo pricing.
  - **Systemic risks** – Repo runs (short-run triggers and BAPCPA 2005), mortgage fire sales, unfunded rep and warranty guarantees, risk to origination capacity.

Warehouse Lending and Repurchase Agreements

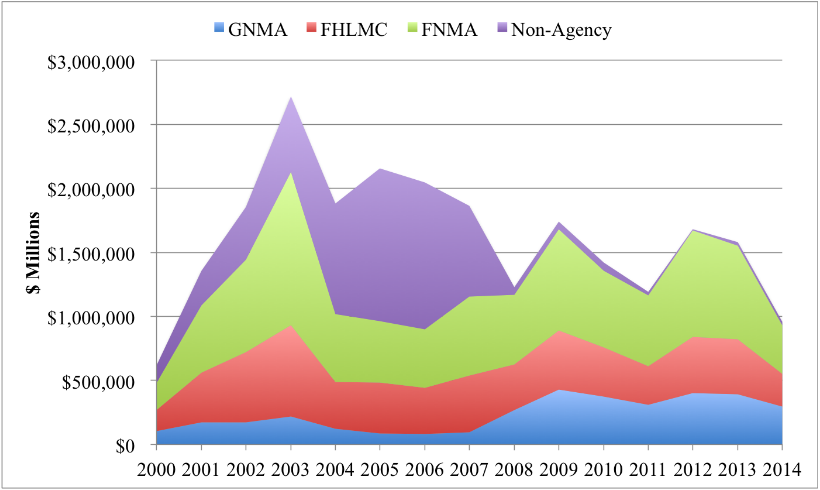


(a) Repo Setup



(b) Repo Unwind

Federalization of Secondary Residential Mortgage Market (Source: HMDA)



BerkeleyHaas
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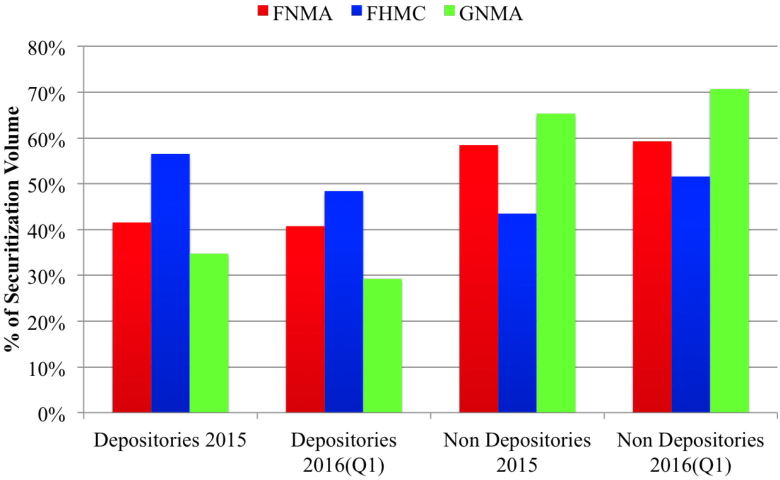
University of California Berkeley

REFM
Real Estate and Financial Markets Lab

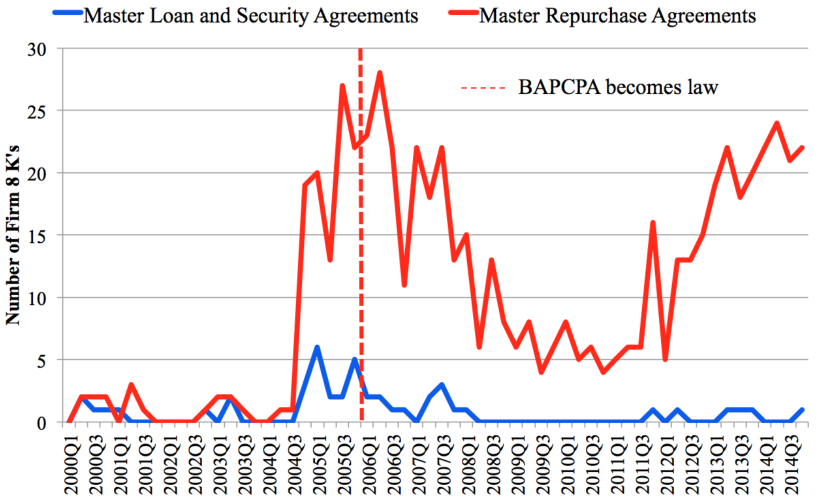
Importance of Non-Depository Origination for GSE and GNMA Securitization



Dominant Non-Depository Funding Facility: Mortgage Repurchase Agreements

- **Summary of Contract Features:**
  - Strict capital and accounting covenants.
  - Significant roll-over risk (short term maturities).
  - Often highly concentrated repo buyer exposure.
  - Risk of haircuts and dynamic margins.
  - **Exempt from automatic stay under BAPCPA 2005 (repo buyer holds perfected mortgage collateral).**
  - Rep and warranty risk resides with originator (repo seller with little capital).
  - Mortgage servicing positions at risk: liquidity needs for advances.

Dominance of Master Repurchase Agreements (SIC 6162, 6163, 6798)



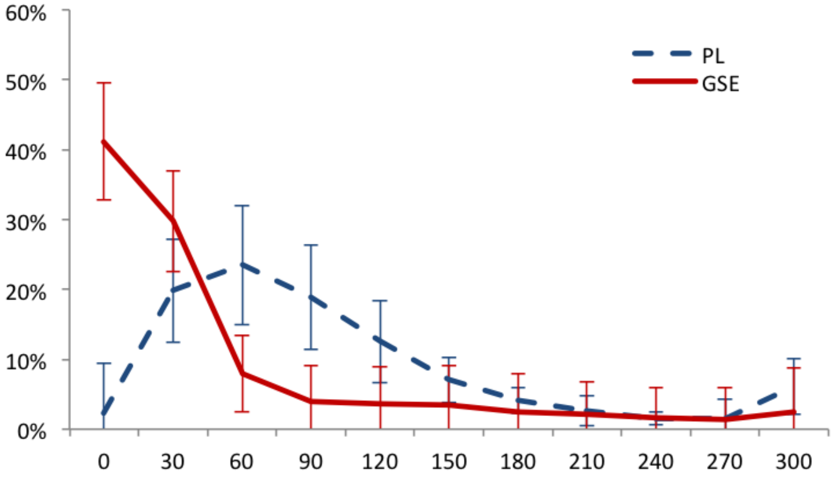
Source: SEC Edgar

Outcomes for 2006 Top Forty Originators

Firm Type	Originations as % of Total	% of Firm Originations with MRAs	% of Firm Failures[1.]
Commercial banks	38.0%	0.0%	0.0%
Federal Savings Banks	1.9%	60.6%	66.7%
Savings and Loans	29.0%	64.8%	100.0%
Affiliated Mortgage Companies	12.7%	100.0%	89.0%
Independent Mortgage Companies	3.5%	84.0%	66.7%
Real Estate Investment Trusts	10.7%	100.0%	100.0%

1. Supervisory closure, Chapter 11 closure, distressed closure.

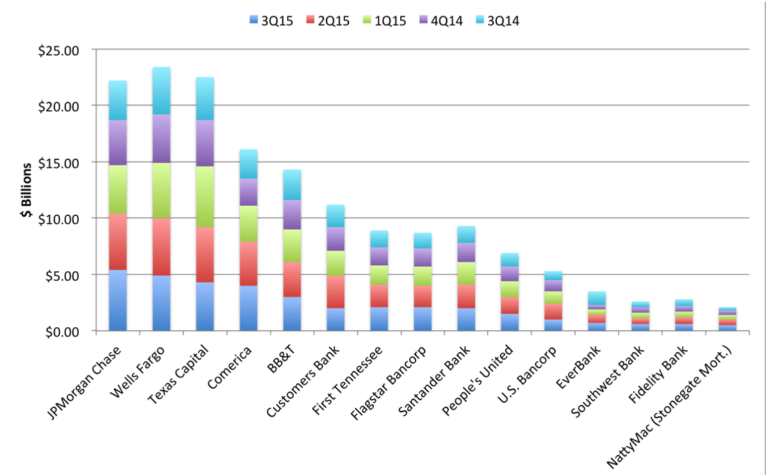
Repo was/is a Bet on Loan-level Securitization Speeds: Mean and Standard Deviation by 30 Day Bins



Top 2016 Public IMCs are heavily reliant on MRAs

Firm	Moody's Credit Rating	Orig. Ranking/ Refi	Secured Debt/ Gross Tangible Assets Q12016
PHH Mortgage, Inc.	Ba3	7	22.5%
Provident	B1	24	20%
PNMAC	B1	8	37.9%
New Resi	B1		73%
Stearns	B2	16	60%
Walter	B3		85%
Ocwen	B3		75%

Concentrated Repo Buyer Commitments (Not including hedge funds or foreign banks)



Conclusions

- Significant pipeline risk exposure for GNMA and GSEs.
  - Dominance of imperfectly monitored bi-lateral repo funding.
  - Importance of risk segmentation between repo buyers and sellers.
- **Non-depository pipeline funding is fragile:**
  - Pre-crisis mortgage origination funding structures are still dominant especially master repurchase agreements (MRAs).
  - MRA funding structures are vulnerable to: 1) roll-over risk; 2) many other debt covenants (especially accounting triggers) – this was a very important pre-crisis problem leading to the collapse of lending infrastructure and many firm bankruptcies.
  - MRAs have repo status so they are exempt from automatic stay –Warehouse lenders (Repo Buyers) will run when market softens.
  - Non-depository warehouse borrowers (repo sellers) have no capital, but they bear the rep and warranty risk – is this sensible?