Securitization, Haircuts and Repo: Why Regulate Shadow Banking?

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Bank Capital Requirements

- 2010 Dodd-Frank Act did not mandate specific levels for banks' capital requirements – left it to Basel Committee on Banking Supervision

- September 2010 – Basel III:

  - minimum equity capital set at 7% of assets
  - counter-cyclical buffer of up to 2.5% of assets imposed by regulators during "good times"

- "Basel III is much tougher than Basel II…implies the bankers' incentive to game the system is even greater than before…" (*Financial Times*, 9/21/2010)

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Financial Crisis and Banking

- Financial crisis triggered by "systemic event" – increase in subprime mortgage defaults
- Caused bank run in "shadow-banking" sector – forced rescues (Bear Stearns) and bankruptcies (Lehman Brothers)
- Pre-1930s, bank runs occurred when depositors sought to withdraw cash *en masse*
- Collapse of liquidity in recent crisis due to run on repurchase market - rise in price of "haircuts" and cessation of "repo" lending on certain collateral

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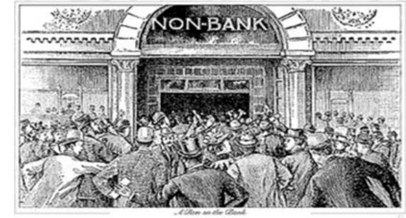
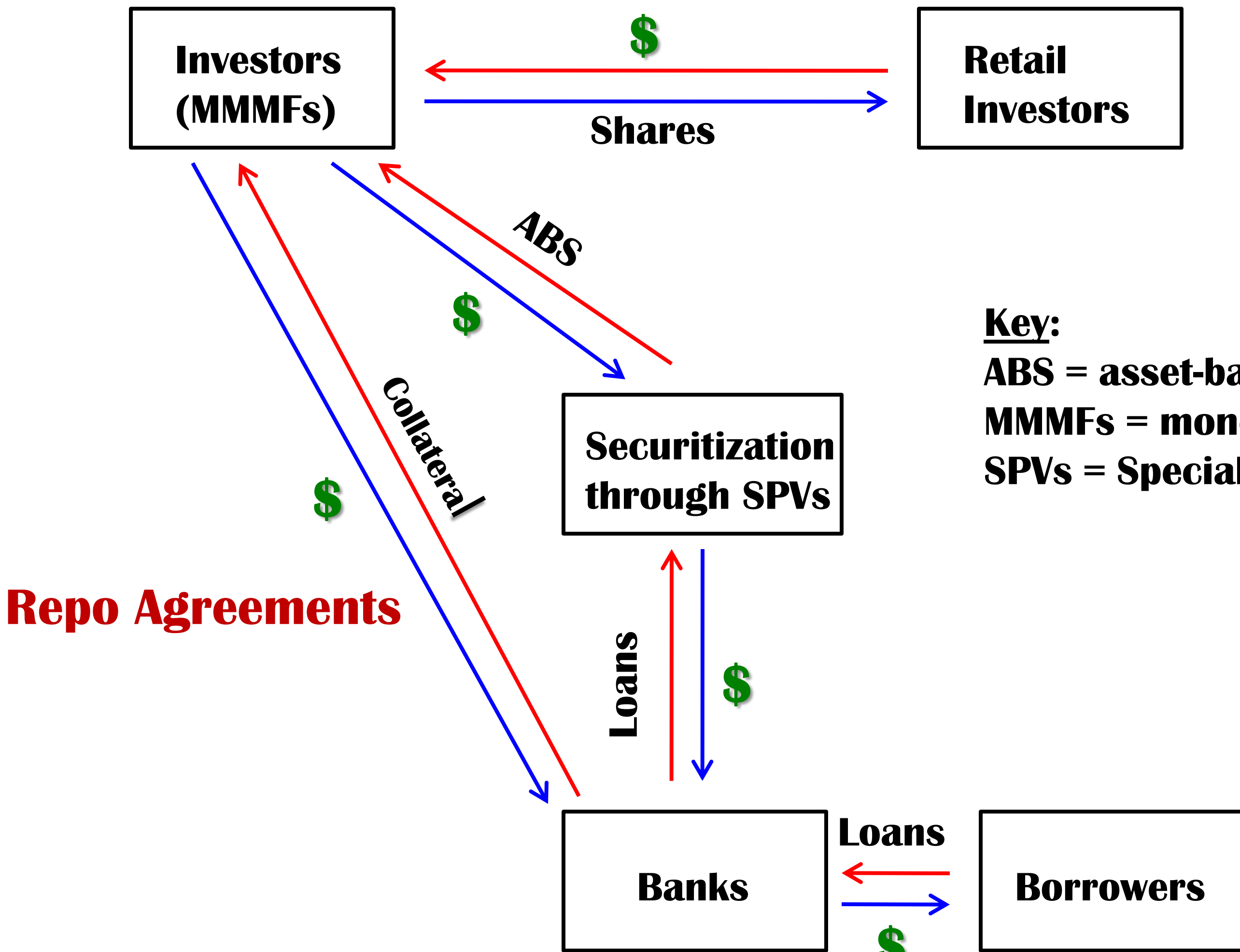
Shadow Banking

- Issuance of short-term money market instruments (repo and commercial paper) backed by asset backed securities (ABS)
- Players: broker-dealers, structured investment vehicles, and money market mutual funds (MMMFs)
- 2008 – liabilities of $20 trillion
- Evolved over past 30 years due to:
  - competition – MMMFs and junk bonds
  - regulatory change – repeal of Glass-Steagall Act
  - innovation – derivatives and securitization

Shadow Banking





Key:
ABS = asset-backed securities
MMMFs = money market mutual funds
SPVs = Special Purpose Vehicles

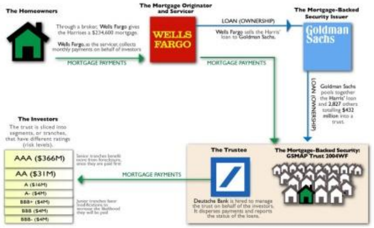
Source: Gorton and Metrick (2010)

Repo Agreements

- With cap on deposit insurance, large institutions have no access to safe short-term investments
- In repo agreements, bank sells asset (collateral) to investor for \$X, and buys asset back at \$Y, where (Y-X)/X is "repo rate" – investor keeps collateral if bank defaults on promise to repurchase
- Amount investor deposits with bank typically less than value of asset, i.e., there is a "haircut"

  Example: Bank sells asset worth \$100 for \$80, and repurchases at \$88, "repo rate" = 10%, and "haircut" = 20%

Securitization



- **Loan originators can sell claims to cash flows**
- **Multiple loans "pooled", and assembled off-balance sheet in a trust - Special Purpose Vehicle**
- **Pool of loans "tranched" – designation of classes of claimants on cash-flows, i.e., AAA through to BBB**

  <u>Example</u>: N loans in pool, BBB tranche loses money if 1 loan not repaid, AAA tranche only loses if all N loans not repaid
- **ABS sold to capital market to finance purchase of cash flows from originator or used as collateral in repo agreements**

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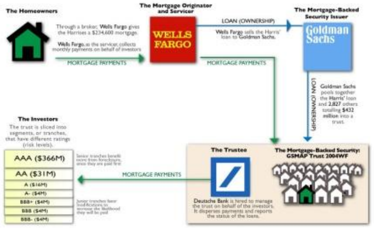
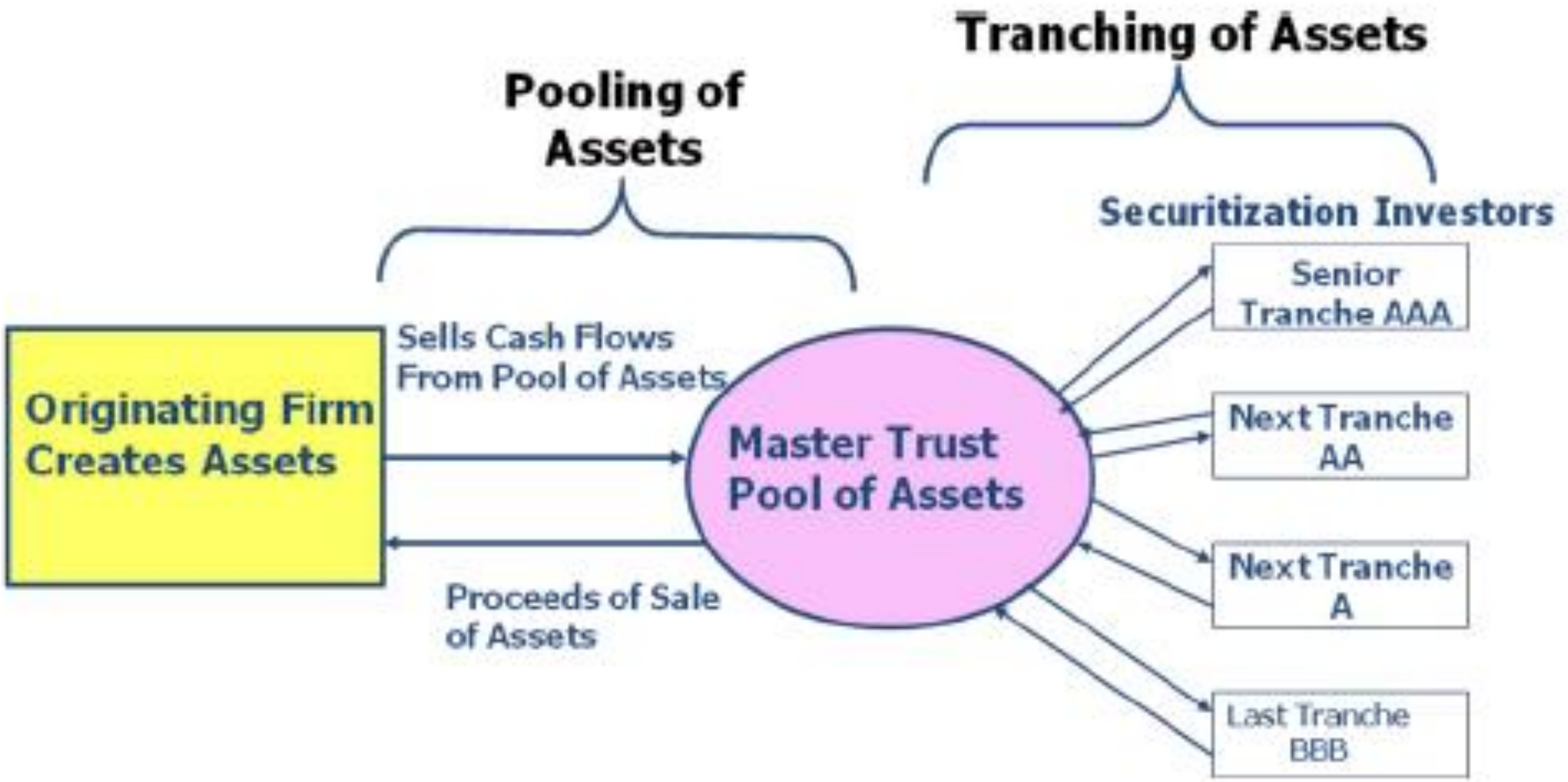
Securitization





Source: Gorton (2009)

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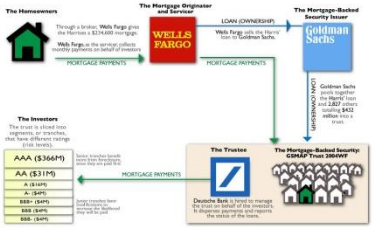
Why Securitization?



- **<u>Benign Story</u>:**

  Securitization spreads risks across wider range of investors – lowers lending costs

  Also, if securitization done properly, senior tranches of ABS relatively easy for non-specialized investors to evaluate – expands buyer-base

- **<u>"Regulatory Arbitrage" Story</u>:**

  Rules on bank capital requirements, i.e., 1988 Basel I provisions avoided via off-balance-sheet vehicles

Traditional vs. Shadow Banking

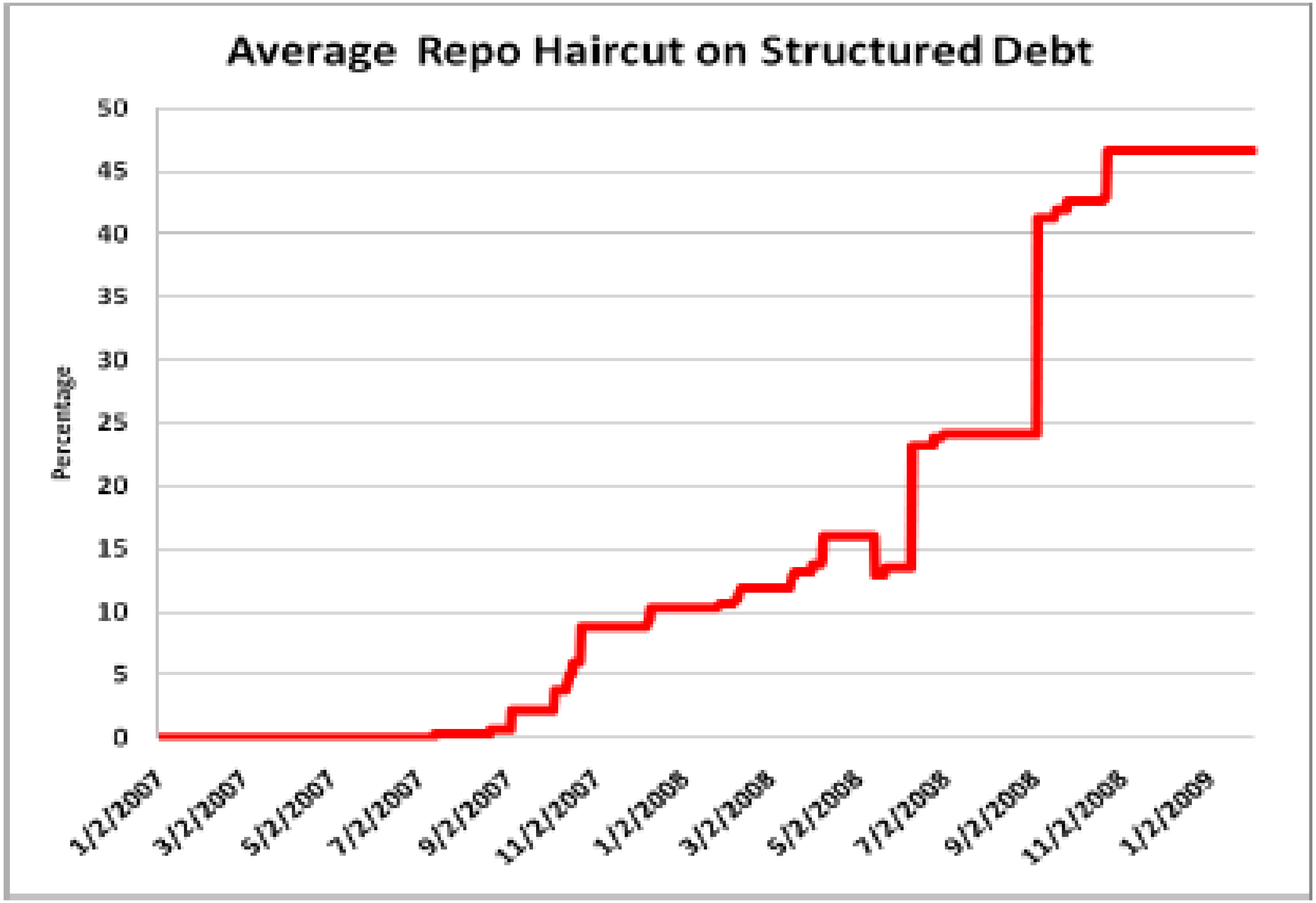
Traditional Banking	Shadow Banking
Reserves: - minimum levels set - shortfalls can be borrowed from Federal Reserve	**Haircuts:** -minimum levels set by counterparties - no borrowing from Federal Reserve
Deposit Insurance: - guaranteed by FDIC	**Collateral:** - asset backed securities
Interest Rates on Deposits: - can be raised to attract deposits when reserves low	**Repo Rates:** - can be raised to attract counterparties when funds low
Loans on Balance Sheets	**Loans Securitized:** - some ABS kept on balance sheet to be used as collateral

Source: Gorton and Metrick (2009)

The Run on Repo

- 2007, investors became concerned about quality of ABS and began to pull back on short-term lending – causing run on repo, with sharp increase in haircuts
- If borrower has $1 billion of ABS, and haircuts rise from 2% to 50%, equivalent to deposits falling from $980 to $500 million
- Borrowers forced to liquidate ABS, depressing prices via “fire-sale” effect, reducing value as collateral, and causing further pullback in short-term lending
- Liquidity crisis eventually backstopped by Federal Reserve after Lehman’s collapse

The Run on Repo



Source: Gorton (2009)

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Shadow Banking Regulation

- "Basel III and Dodd-Frank: Useful Steps Forward, but Watch the Shadows" (US Economonitor, 10/4/2010)
- Financial crisis driven by run on repo market due to deterioration in certain securitized assets
- Shadow banking ought to be regulated as it is a new form of banking that has same vulnerabilities as traditional banking, objective being to eliminate runs
- Whether banks operate on or off balance sheets, regulators need to evaluate risks, i.e., as in past, need to set capital requirements for new system

Shadow Banking Regulation

◈ **Repo needs to be backed by high-quality collateral:**

(1) All securitized assets should be sold to Narrow Funding Banks (NFBs) who are chartered, face capital requirements, and have access to Federal Reserve discount window

- **NFBs only purchase ABS and issue liabilities**
- **investors buy liabilities of NFBs**

(2) Regulator determines asset classes that can be purchased by NFBs, and sets their portfolio criteria based on proportions and ratings of assets

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Shadow Banking Regulation

- **Need to provide safe “deposit-type” accounts for lenders in repo market:**

(1) NFBs and commercial banks, allowed to borrow, pay interest and provide collateral - US treasuries and NFB liabilities

(2) Licensed non-banks can engage in repo, subject to minimum haircuts and position limits

- **minimum haircuts – would limit excessive leverage**
- **position limits set by regulator, based on firm size and collateral used**

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