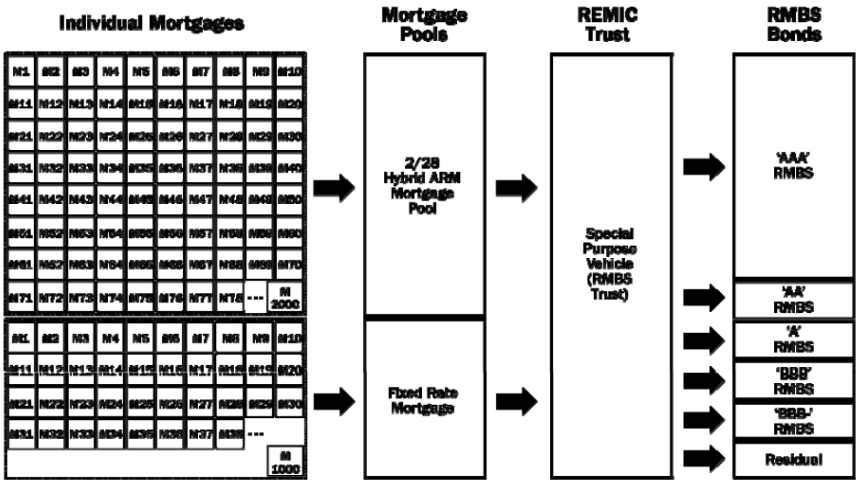
Credit Derivative Markets (Focus – Mortgage Backed Securities and CDOs)

- Prior to 1990s: Relatively Simple Market
  - Borrowers
  - Originating Lenders / Servicers
  - Secondary Market Purchasers (inc. Fannie; Freddie)
    - Had significant constraints on what they could purchase => significant constraints on borrowers
- Beginning 1990s and into 2000s:
  - Structured Finance Industry: Create value by pooling and rearranging cash flow rights to make risky assets less risky. RMBSs; CMBSs
  - Impetus: 1986 Tax Reform Act
    - Allowed pass through taxation for "Real Estate Mortgage Investment Conduits" (REMICs)

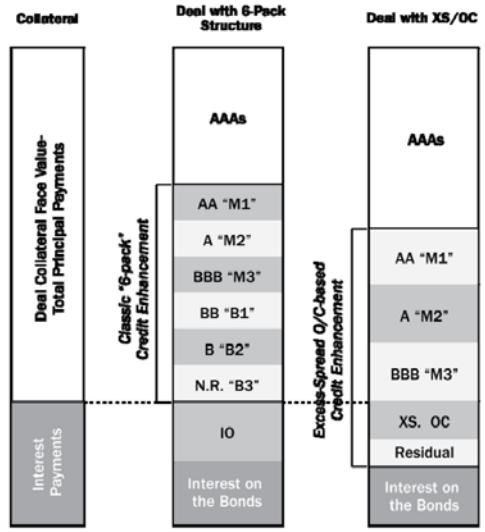
The value proposition? MBS Example: A & B each owe $1000 in one-time mortgage payment

- Chance of default for each is 10%; assume default complete (i.e., recovery rate if default occurs = 0%)
  - Thus, owning rights to payment is uncertain; risk averse buyers would pay less than $900 to buy mortgage (often substantially so)
- Idea ("RMBS"): Combine A's & B's payments into single "pool"; sell off 2 cash flow claims from combined pool:
  - *Senior tranche:* Right to collect the first $1000 to come in;
  - *Equity tranche:* Right to collect whatever else comes in
- If A's & B's ***default risks are independent (more below):***
  - Senior tranche holder collects $1000 unless *both* A and B default, which happens only 1% of the time (10% x 10%).
  - Equity tranche holder collects $1000 only if *neither* A and B default (81% of time), and thus default happens 19% of the time.
- Result – Financial Alchemy through Diversification:
  - Securitizing turns pool of two "risky" securities into one "safe" asset and another "really risky" asset.
  - BUT: Market premium for low-risk assets was high enough to offset discount on equity tranche.

MBS Typical Structure



MBS Typical Structure (II) with "Credit Enhancements"



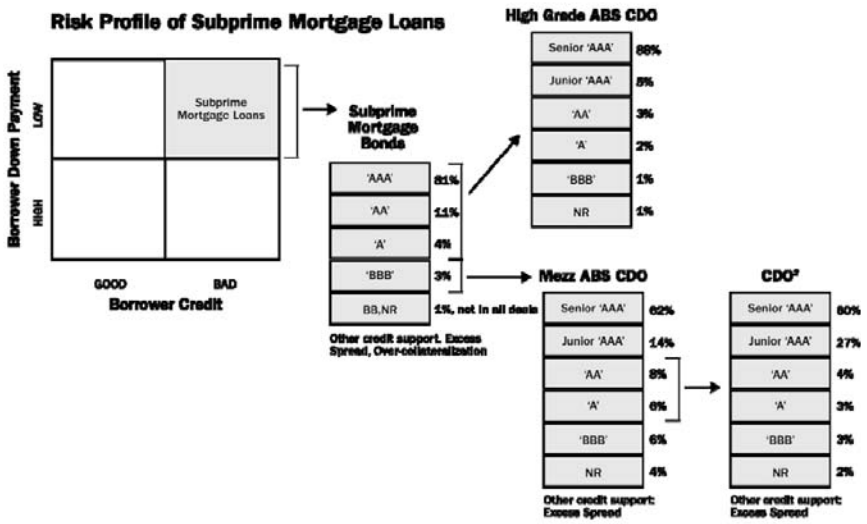
Growth of Structured Finance…

- Downside of MBS – it separated the owners of the cash flow rights from those making the payments – added a layer of oversight "goo"; less transparent.
- Upside: The added goo did not result in poor ratings from credit ratings agencies, which kept big institutional purchasers (e.g., pension funds) interested…
- Logical Next Question – Can we turn the crank again?
  - I.e., take the equity tranche of an MBS, pool it with other equity tranches of other MBSs, and sell off senior and junior tranches?
  - The Collateralized Debt Obligation (CDO) – a credit derivative security not backed by mortgages themselves, but instead backed by securities that were themselves backed by mortgages.

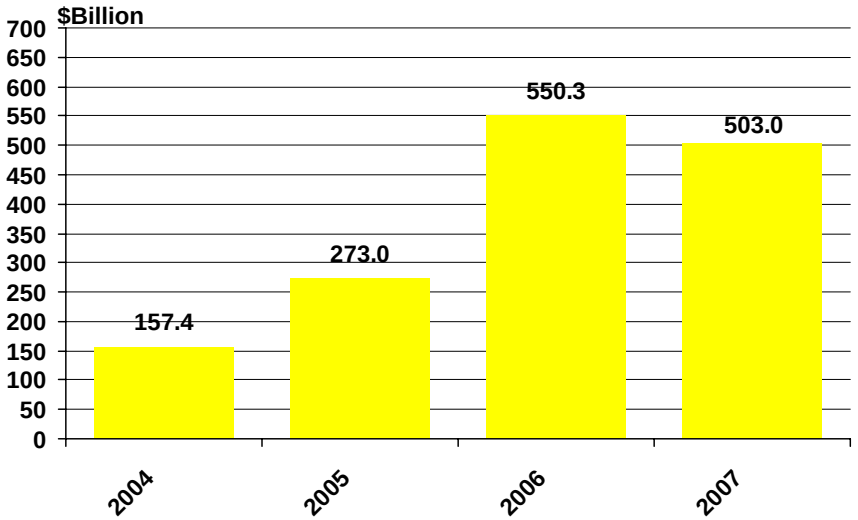
Continue Example: A-B MBS, plus a similar MBS pooling the mortgage obligations of C & D

- For each MBS equity tranche, recall chance of default for each is 19%.
  - Owning rights to payment is uncertain; risk averse buyers would pay far less than $810.
- Combine A-B and C-D equity tranches into a single "pool"; and once again sell off two tranches:
  - *Senior tranche:* Right to collect the first $1000 to come in;
  - *Equity tranche:* Right to collect whatever else comes in.
- If default by the A-B tranche ***is independent from the C-D tranche:***
  - Senior tranche holder collects $1000 unless *both* A-B and C-D default, which happens only 3.6% of the time (19% x 19%)
  - Equity tranche holder collects $1000 only if *neither* A and B default, and thus default happens 34.4% of the time.
- Result – the CDO: Financial Alchemy squared
  - We've turned two "really risky" equity tranche MBSs into one "pretty safe" asset and another "extremely risky" asset.
  - But with enough credit enhancements and the right structure we could make the pretty safe asset even safer.

Canonical CDO Structure

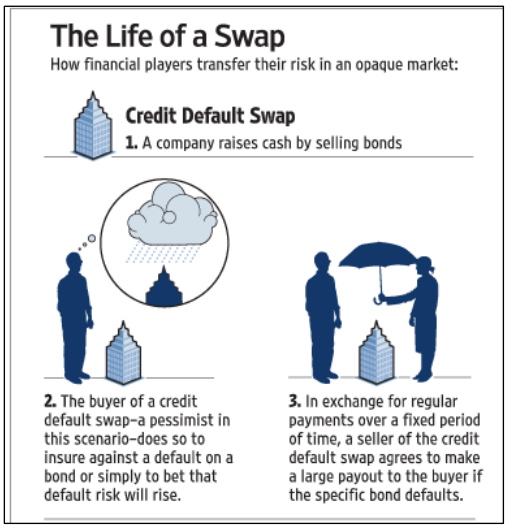


Global CDO Issuance



Source: Securities Industry and Financial Markets Association

"Synthetic" CDO (written against assets issuer doesn't own). Equivalent of a Credit Default Swap



Source: wsj.com

CDS Counterparty Risk

- Completely unregulated, privately negotiated bilateral arrangement.
  - No standard capital req'ts, valuation methods, or contract structure.
- No central clearinghouse or system for recording trades.
  - We still do not know where it all is…
- "Long only" positions; can only be "unwound" with countervailing positions.
- Bears Stearns, AIG, Lehman, European school boards others all had important roles as **sellers** of CDS – considerable fees, minimal capital requirements
  - Sellers needed reliable access to short term debt markets (repo; corporate paper) to fund their CDS activities (fees; collateral calls)

Key Events Precipitating Crisis (II)
Late 2007 - 2008

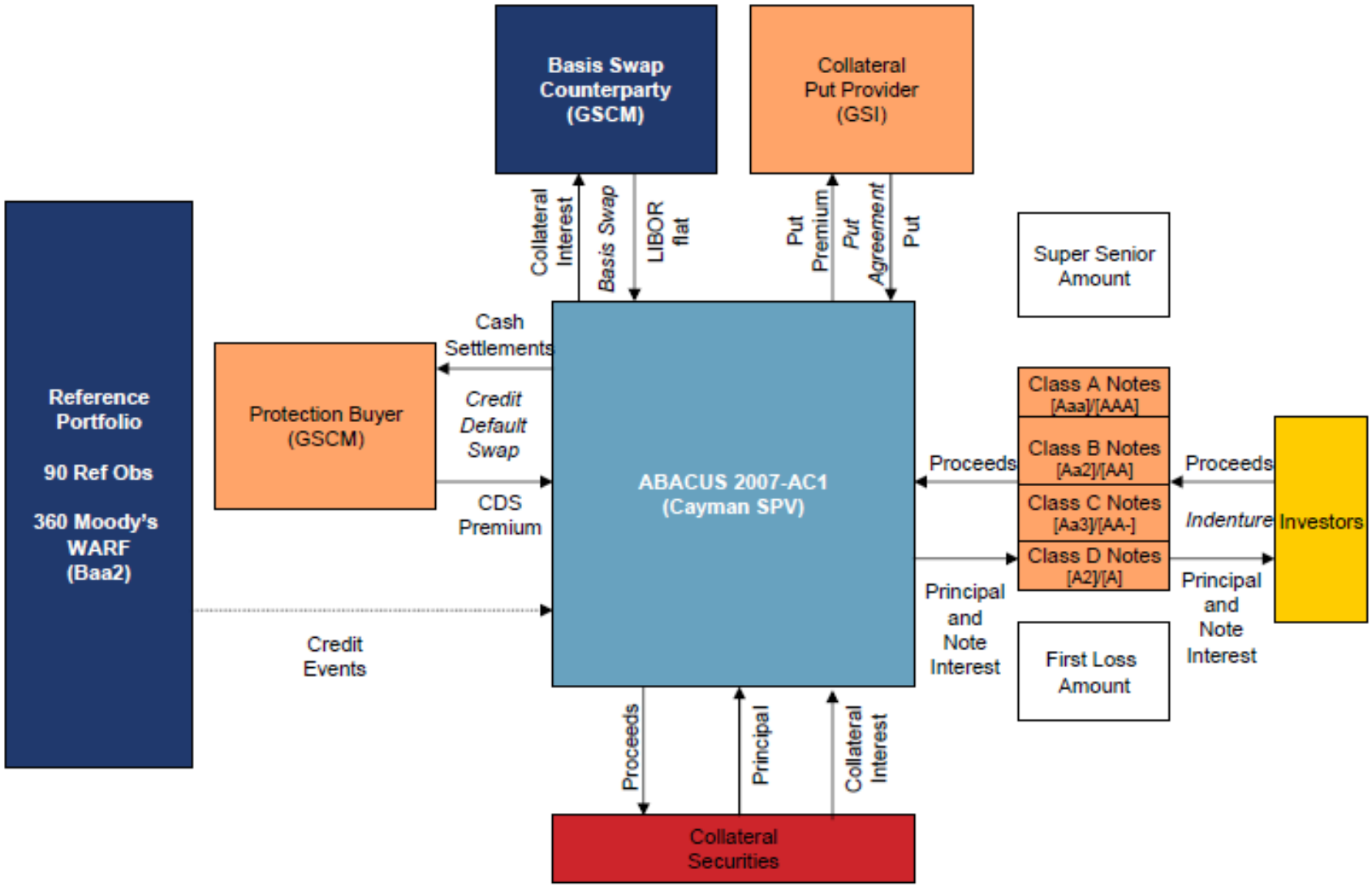
Housing Bubble bursts across US, with 3 big effects:

- Usual exit option (refinancing out) no longer viable
- Balloon payments (meant to encourage refinancing) added cash flow strain. Defaults / NPLs increase
  - Much more correlation in defaults than presumed.
    - Default Rates begin to increase
    - Recovery Rates (Loss Given Default) begin to slide
  - Significantly: It was not known (perhaps still isn't) how much higher both defaults and recovery rates would go….Great uncertainty about how to price risk because of unknown correlation.
  - But that still matters because most credit derivatives allow for counterparties to make "collateral calls"
- Short term debt market dries up for CDS sellers.
  - To pay, counter-party must make additional collateral calls or sell mortgage backed derivative assets
    - CDS prices and values plummet further
  - FASB rules required (at the time) "mark to market" accounting practices

Crisis through a liquidity crunch

- Although the credit risk models used by the securitization industry were clearly mis-calibrated, we still don't know how far off they were
- It is clear, however, that many of the widely used risk models made simplifications / omissions in areas of risk management that have proven important
  - Ignored liquidity risk (collateral / margin calls)
  - Ignored contributing effect of mark to market accounting
  - Ignored systemic risk; often treated default probabilities and recovery rates as independent;
    - Yet their relationship has long been known;
    - As general economic slowdown can create a snowballing type of default risk

Goldman Sachs' ABACUS 2007-AC1 Synthetic CDO Structure



Key Legal Elements of SEC's Case

- Deception:
  - Was ACA deceived about Paulson's role?
  - If not, were purchasers of ABACUS deceived?
  - Effect of various disclaimers in prospectus?
  - Ability of investors to research underlying assets?
- Scienter:
  - Did GS act consciously/recklessly in omitting the nature of Paulson's involvement?
    - *Aside: Only "mere" negligence for §17(a) allegation.*
- Materiality:
  - What "total mix" of information was available?
  - Nature of the type of CDO?
  - Was *anyone* disclosed as "short" position?

Key Political Elements of the Case

- Litigation Resources
  - SEC's Budgetary / Staffing Resources
  - Goldman's Financial War Chest
- Public Relations:
  - SEC's credibility as capable watchdog (e.g., Madoff)
  - Goldman's status as "reputable" investment bank
  - Potentially damning emails, memos, etc. (possibly for both sides).
- Effect of case's resolution on….
  - Viability of Other SEC Cases?
  - The likelihood of follow-on private litigation
    - By CDO/CDS purchasers? By GS Shareholders?
  - Prospects for Reforms of Financial Regulation?