

Topic 6 Securitization

- For the truly devoted: Ascraft and Scheurmann, "Understanding the Securitization of Subprime Mortgage Credit," Federal Reserve Bank of New York 17 December 2007

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Securitization has been central to the subprime crisis.

Better understand how it works.

"An economist is someone who sees something work in practice, and wonders if it can work in theory."

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Underwrite-and-Hold

Underwriters held assets in their own portfolios.

Good incentives (as in Diamond, Williamson) re:

- Risk evaluation
- Covenant writing/enforcement
- Collection efforts
 - Liquidation
 - Continuation

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No (few) Loan Sales

- Akerlof
- Information required to monitor might give the purchaser valuable “inside” information about the originator’s customer.
- “Funding risk”

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Underwrite-and-Sell

Mortgages pooled by U.S. agency (GNMA) in the 1970s.

Mortgages also purchased by agencies, to provide liquidity to originators (FHLMC, FNMA).

Government guaranteed principal and interest.

Underwriting standards relatively easy to specify.
Became the definition of “prime” mortgage loans.

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SPV – non-tax-paying entity

Liabilities	Assets
Bonds entitled to cash flows, as they arrive	Many mortgages

Simple pass-through

Someone else “serviced” the mortgages

Brain dead

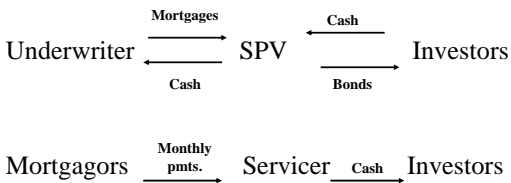
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SPV Features

- Portfolio of assets not explicitly tied to any “regular” firm (after origination)
- Bankruptcy remote vehicle: SPV, SIV, SPE
- Originator turns over control (tax, accounting rules)
- Preset rules for managing the assets
- May have multiple claimants
- Junior tranche most exposed to risk
 - Default
 - Maybe prepayment

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“Off the books”



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Securitization Benefits

- MBS simply pooled multiple mortgages
 - Government guarantee credit quality
 - Geographic diversification (re: repayment)
 - Liquidity
 - Investors with longer-term liabilities (unlike thrift institutions) acquired access to longer-term assets
 - Originator could specialize, not tie up capital

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Tranching Maturity/Duration

- CMOs split mortgage cash flows by maturity
- Initial estimate: raise value of cash flows by 1% of principal
- Customize bond cash flows to investors' needs.

Liabilities	Assets
"Fast pay" bonds: all principal repayments	Many mortgages
"Slow pay" bonds: interest pmts shared with fast pay	

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More Tranching

- Finer maturity gradations
- I/O, P/O, floating, inverse floating,
- Finer tranching created a need for a residual tranche (toxic waste) – a claim similar to equity.
- Still brain dead?
 - No further financing needed after the SPV was set up.
 - How does the servicer handle delinquencies or defaults?

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Securitizing Other Assets

- 1985: computer leases
- Auto loans and leases
- The beginning of "live" SPV:
 - Credit cards were hard, but got started
 - CLOs – NationsBank was the first in early 90s.
- A very wide variety of underlying assets.
 - (David) Bowie bonds
 - Tobacco bonds for U.S. states

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Tranching Credit Quality

- CDOs: raise market value by customizing cash flow claims.
- Credit card, mortgage pools. Other.
- Credit quality (default probability) is model-based.

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“Underwrite-and-Sell” Model

Leverage underwriting capabilities

“Market liquidity” required to run the business

- Lemons
- Statistical underwriting

Agency issues – e.g. compare to Diamond or Pennacchi

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Avoid Capital Requirements?

- Probably, particularly early on when writing credit guarantees had lower capital charge than holding assets.
- Unregulated firms also did it: e.g. auto finance companies. → there were further benefits.

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Woody Allen
(or Groucho Marx or Freud)

"I would never want to belong to any club that would have someone like me for a member."

What has the underwriter got at risk?

- Reputation
- Future rents from selling bundled assets

Same as a credit rating agency.

Enough? Capital regs limit direct exposure.

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Early securitizations were brain-dead.

- Liabilities' terms and maturities tied to asset payoffs
- No need for subsequent cash inflow

Unlike the early securitizations, Specialized Investment Vehicles (SIVs) were "alive"

- some funded long-term assets (partially) with commercial paper (ABCP)
- interest rate swap
 - Pure interest rate risk
 - Not covering credit risk

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SIV

Assets	Liabilities
<p>Asset pool: in some cases, the composition was not too clear.</p> <p>Absolute promised payoff</p> <p>Payoffs reflect asset cash flows</p>	<p>Commercial paper</p> <p>Super senior tranche</p> <p>Less senior tranches</p> <p>"toxic waste" tranche</p>

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Functional vs. Institutional Supervision

What are the financial system's "primitives"?

- institutions?
- functions performed by institutions?

Over-regulating a function can cause it to move to another institutional form.

Subprime credit crisis reflects problems in a "shadow financial system."

SIV looks like a bank, with ABCP in place of ST Deposits.

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Advantages

- Reduced funding costs
 - Slice total risk into small bits
 - no asset substitution
- Liquidity

Disadvantages

- Risk borne by the most junior tranche(s)
- Ratings summarized credit risk(?)
- Models specified size
- Woody Allen: where were the forward-looking incentives?

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Ashcraft and Scheurmann: What can go wrong? Frictions between...

- 1) mortgagor and the originator: predatory lending
- 2) originator and the arranger: misrepresentations, fraud (income, assessments)
- 3) arranger and investors: adverse selection, poor due diligence
- 4) principal-agent problems between
 - a. servicer and mortgagor
 - b. servicer and investors
 - c. asset manager and investor
- 5) investor and the credit rating agencies: Model "error"

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Delinquencies unprecedented

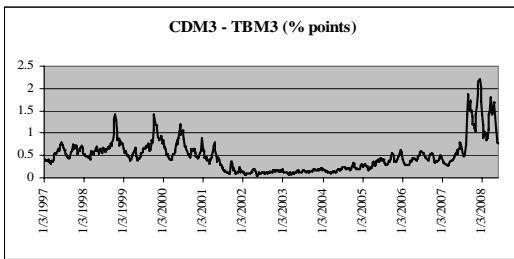
- Without relevant models, who knows how deep the losses could run?
- Portfolios lost value; lower tranches wiped out
- ABCP no longer rolled over

Tranches of pools collected into CDOs, further increased the uncertainty about values.

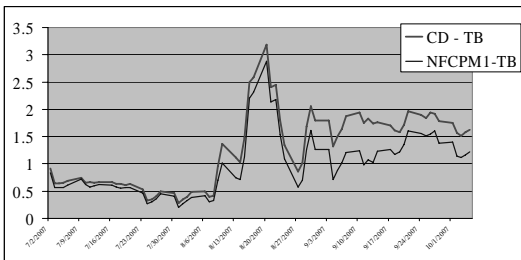
Credit premia ↑ in mid-2007. (Initially offset by Fed interest rate cuts.) Previously, “very” low.

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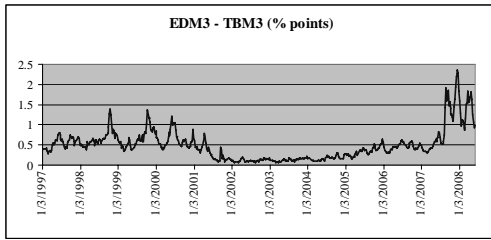
Credit Risk Premia



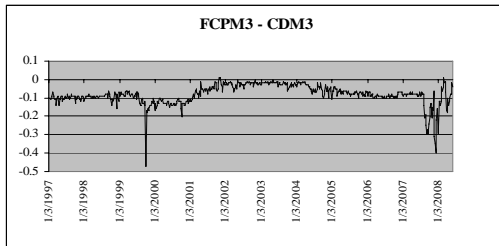
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Too Brain Dead?

- SIV structure did not provide flexibility in a workout – to manage/maximize the value of collateral.
- Servicer must balance claims of various seniorities; easy to re-distribute value while making collateral overall more valuable.
- In Mid-May, U.S. Treasury waived some “no renegotiation” restrictions required for REMIC structure.

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Roots of the Subprime Crisis

- Parallel banking system
- Opaque assets
- Potential for runs
- Over-reliance(?) on credit ratings; insufficient due diligence (e.g. CDOs)

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Ashcraft and Schuermann blame (in order)

- Friction #1: predatory lending.
- Friction #4c: principal-agent problem between investors and investment managers
- Friction #3: adverse selection
- Friction #2: predatory borrowing and lending.
- Friction #5: Credit ratings

Credit ratings would be higher, except that others in the chain were so negligent.

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How has it spread?

Initial big problems in subprime

Solvency questions: who was affected?

Could not or would not reveal exposures

Pull back lending

- Credit no longer gets to where it is most highly demanded
- Credit risk spreads ↑ in addition

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Assessment

- Agency problems: “it’s not my money”
- Compensation schemes: too short-sighted
- Rating agencies: probably helped the actors to remain ignorant.
- Banks with SIVs: under-estimated the chance of needing to take back the assets.

- Agency problems: it was working in practice, but shouldn’t have been working, in theory.

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(Concluding) Open Questions:

What could/should regulators have done?

What legislative reforms are appropriate?

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