

Credit risk transfer (CRT) mechanisms

Why do it?

- Sometimes banks want to reduce their credit risk exposure to a certain borrower (or a group of borrowers).

Alternative CRT Methods

1. Loan sales
2. Securitization
3. Credit default swaps

Loan Sales

- The bank sells off an existing loan (or part of a loan).
- Funding loans by proceeds from loan sales rather is in general cheaper because of the reserve requirements associated with bank deposits and capital requirements associated with bank equity.
- Loan sales enable banks to invest in profitable loans that would have been unfunded had deposits been the only source of financing.
- Banks that lack the ability to diversify their loan portfolios internally can diversify by purchasing and/or selling loans.

Two Frictions

1. “Lemons problem” (or adverse selection problem): Banks have superior information about the quality and future prospects of their borrowers relative to outside third parties.
2. Moral hazard problem: Since it sheds credit risk by selling the loan, the originating bank has little incentive to monitor the borrower.

Lemons problem in loan sales

An original lender on a \$150 million Bradlees credit reportedly sold a \$5 million piece of the revolver in a hurry last week, according to traders familiar with the situation, sending the message to some traders that the lenders most familiar with Bradlees are not comfortable with the company's situation. Because a long-term lender dumped the paper, and urgently, traders said they suspect the lender knew something they did not.

(Bank Letter 1995)

Do banks truly have superior information about their borrowers than third parties?

- YES!
 1. Borrowing firm's stock price increases by 2%, on average, at the announcement of a new bank loan. This implies that banks' decision to lend to a firm serves as a certification of the firm's quality.
 2. Borrowing firm's stock price decreases by 2%, on average, upon the announcement of a loan sale. Furthermore, 42% of firms whose loans are sold file for bankruptcy within 3 years of the loan sale announcement.

How to mitigate these frictions?

1. Reputation
2. The seller holds a fraction of the loan rather than entirely selling it
3. Loans that are subsequently sold often include more and tighter covenants.

Why do borrowers agree to contracts with tighter covenants? Because loan sales increases credit availability.

Securitization

- Sometimes banks find it more profitable to securitize a group of loans rather than selling the loans individually.
- Securitization: Pool a group of loans and issue bonds backed by the pool.
- In securitization, banks typically divide the loan pool into separate tranches and create
 - **AAA-rated senior tranche** that gets paid before the subordinate tranches,
 - **BBB-rated mezzanine or subordinated tranche** that gets paid after the AAA-rated tranche gets paid off,
 - **Residual equity tranche** receives whatever is left off after AAA- and BBB-rated tranches are fully paid off. This tranche is typically held by the sponsor of the pool.
- The value of AAA-rated bonds are not very sensitive to the bank's private information about the loans in the pool, so tranching mitigates the "lemons" problem.

Borrowers

Cash flows before
securitisation

Originator

Asset sale

Administrator

Sale price

Cash flows after
securitisation

SPV

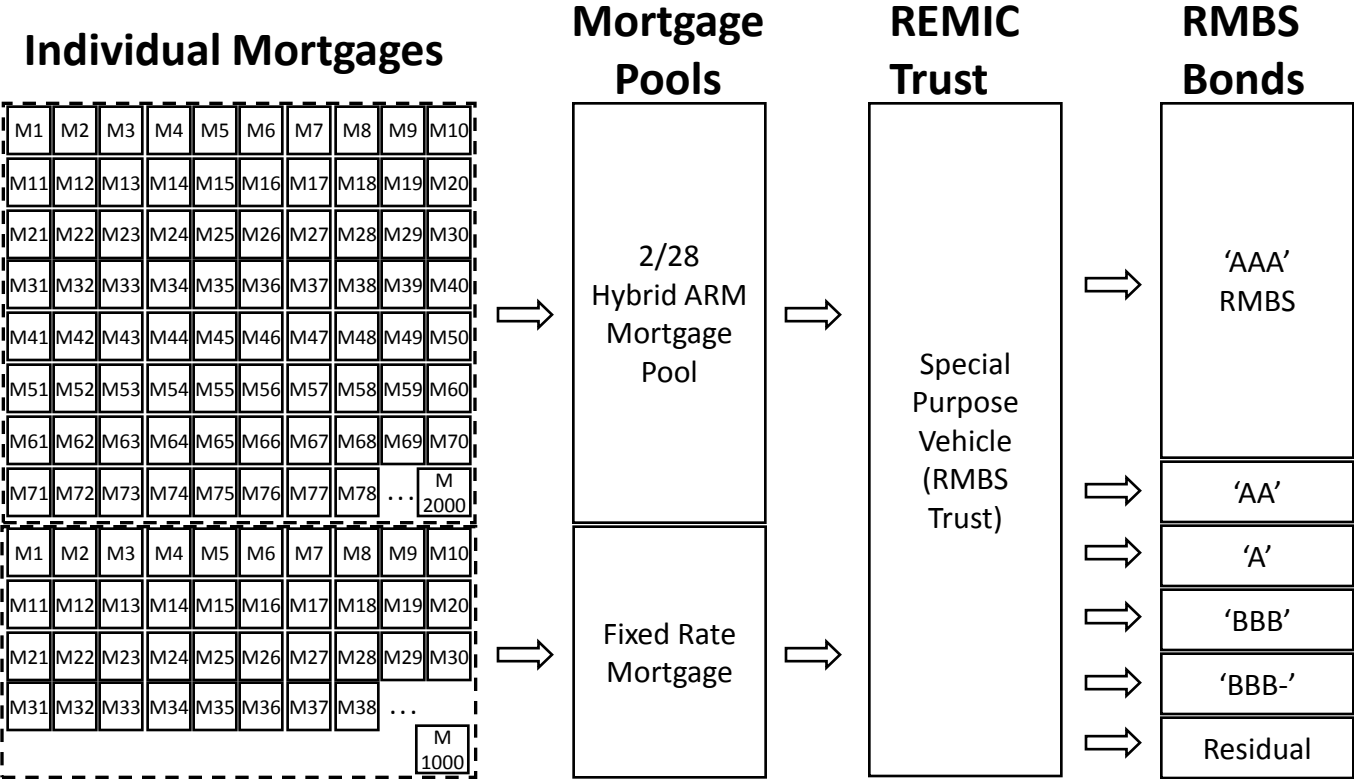
Profit
extraction

Sale price of securities

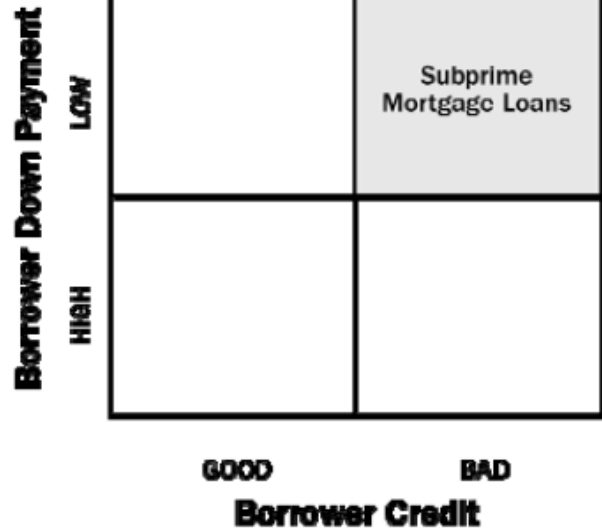
Interest and principal

Investors

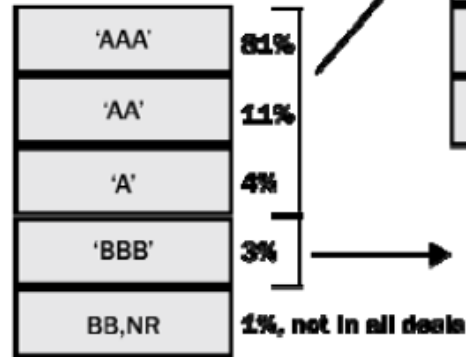
Sample subprime RMBS structure



Risk Profile of Subprime Mortgage Loans

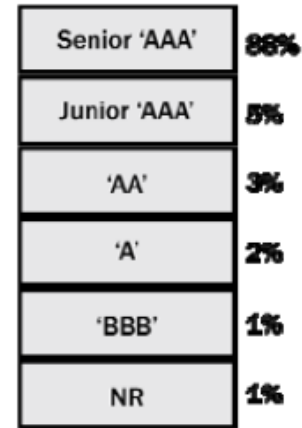


Subprime Mortgage Bonds

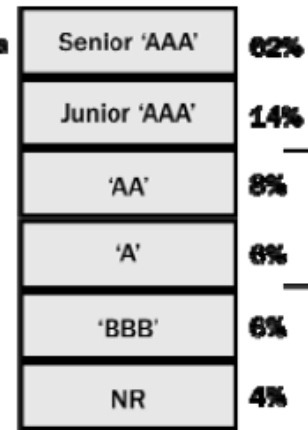


Other credit support: Excess Spread, Over-collateralization

High Grade ABS CDO

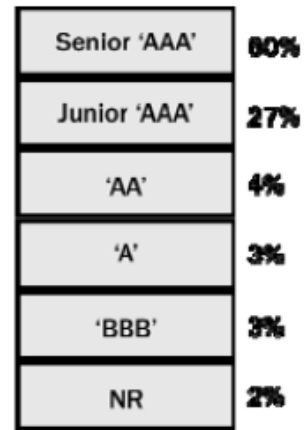


Mezz ABS CDO



Other credit support: Excess Spread

CDO*



Other credit support: Excess Spread

Securitization vs. loan sales

- From the perspective of a bank, pooling and tranching dominates loan sales when:
 - The pool is big enough
 - The performance of residual tranches from multiple securitization transactions sponsored by the bank are not highly correlated

Credit default swaps (CDS)

- Insurance contracts that protect the bank from losses upon the default of the bank's borrower.
- Example: Suppose an investor buys a CDS from ABC Bank, where the reference entity is Risky Corp. The investor will make regular insurance payments to ABC Bank. *If* Risky Corp defaults on its debt (i.e., misses a coupon payment or does not repay it), the investor will receive a one-off payment from ABC Bank and the CDS contract is terminated.
- If the investor actually owns Risky Corp debt, the CDS can be thought of as hedging. But investors can also buy CDS contracts referencing Risky Corp debt, without actually owning any Risky Corp debt. This may be done for speculative purposes, to bet against the solvency of Risky Corp in a gamble to make money if it fails, or to hedge investments in other companies whose fortunes are expected to be similar to those of Risky.

Terminology

Protection Seller

- Receives CDS premium payment and reimbursement payments in exchange for providing protection payments if a credit event occurs.

Protection Buyer

- Pays CDS premium in exchange for protection payments if a credit event occurs.

Calculation Agent

- Determines the amount of the protection payment upon a credit event per the terms of the credit default swap
- Usually the Protection Buyer serves this role

CDS spread

- The "spread" of a CDS is the annual amount the protection buyer must pay the protection seller over the length of the contract, expressed as a percentage of the notional amount. For example, if the CDS spread of Risky Corp is 50 basis points, then an investor buying \$1 million worth of protection from ABC Bank must pay the bank \$5,000 per year. These payments continue until either the CDS contract expires or Risky Corp defaults.
- All things being equal, at any given time, if the maturity of two credit default swaps is the same, then the CDS associated with a company with a *higher* CDS spread is considered *more likely* to default by the market, since a higher fee is being charged to protect against this happening. However, factors such as liquidity and estimated loss given default can impact the comparison.

Credit Events

- Applicable credit events will vary by CDS
- Typical credit events may include:
 - Bankruptcy
 - Failure to Pay (FTP)
 - Restructuring
 - Repudiation/Moratorium, usually emerging markets and sovereigns only
- Once a credit event has been called and settled then the credit default swap is terminated

Settlement

- Protection Buyer calls a credit event by sending notice to the Protection Seller what credit event has occurred
- Settlement method is determined by the CDS contract
 - Physical settlement means the Protection Buyer gives the Seller the reference obligation, or equivalent, in return for cash par amount
 - Cash settlement means the parties look to the market value of the reference obligation to determine the net protection payment
- The preferred valuation process includes:
 - Dealer poll of at least 5 dealers, not including the Protection Buyer
 - Polls typically held 30 to 60 days after credit event notification

Issues

1. Privately negotiated and not transparent
2. Reduces the creditor's incentive to monitor the borrower or restructure debt upon a default event
3. Counterparty risk