

## Chapter 4 Credit Risk Transfer Mechanisms

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## 1. Overview of Credit Risk Transfer Mechanisms

The core risk exposure for banks is credit risk (i.e. the risk of a borrower defaulting). Historically, banks have taken short term liquid deposits and provided long term, illiquid loans, and had only a limited capacity for managing credit risk exposure. This changed by the end of the twentieth century due to advent of novel credit risk transfer tools like credit default swaps (CDS), collateralized debt obligations (CDOs), and collateralized loan obligations (CLOs).

Alan Greenspan, the Federal Reserve Chairman in 2002, argued that the US banking system had withstood the 2001-2002 economic slowdown because it had transferred and dispersed credit risk exposures using the credit risk transfer tools mentioned above. However, this praise may have been misguided because the misuse of these tools led to the 2007-2009 global financial crisis.

Table 4.1 from the curriculum provides the definitions of key terms and investment vehicles.

Vehicle	Brief definition
Asset-backed security (ABS)	A structured product backed by loans and receivables created using the securitization process. Examples include: credit card ABS, student loan ABS, automobile and ABS.
Asset-backed commercial paper (ABCP)	Commercial paper is used by a special purpose vehicle (SPV) to finance a pool of longer-term receivables.
Collateralized debt obligation (CDO)	A structured product backed by a pool of debt instruments (e.g., bonds created using the securitization process).
CDO Squared	An investment vehicle issued by an SPV using the securitization process that is backed by tranches of a collateralized debt obligation.
Commercial mortgage-backed security	A structured product backed by a pool of commercial mortgage loans created using the securitization process.
Credit default swap (CDS)	The most popular type of credit derivative. In a CDS, the protection buyer pays a fee to the protection seller in return for the right to receive a payment conditional on a credit event by the reference obligation or the reference entity. Should a credit event occur, the protection seller must make a payment. A single-name CDS is one in which there is one reference entity. When there are multiple reference entities, they are referred to as basket CDS.
Credit derivative	A vehicle to transfer credit risk from one party to another. Examples include credit default swaps, credit debt obligations, and credit-linked notes.
Credit loan obligation (CLO)	A structured product backed by a pool of commercial bank loans created using the securitization process.
Mortgage-backed security (MBS)	A structured product backed by a pool of residential mortgage loans created using the securitization. There are government backed MBS (i.e., MBS backed by Fannie Mae and Freddie Mac) and MBS issued by private entities (including subprime MBS)
Structured investment vehicle (SIV)	A pool of investment assets that seeks to generate a return from the credit spread between short-term rates and long-term structured financial products such as asset-backed securities and mortgage-backed securities,

Of the instruments mentioned above, some of the more robust instruments survived the crisis and are still used today. These include CDS, ABS, ABCP, MBS, and CLOs.

Other forms of overly complex securitized instruments like CDOs-squared are no longer used today. The complexity of these products was not intended to improve their risk-hedging capabilities. Rather, it was designed to make them easier to market.

## 2. How Credit Risk Transfer Can Be Useful

Banks have traditionally used several ways to reduce their exposure to credit risk. These techniques include:

- **Purchasing insurance from a third-party guarantor:** Banks can purchase insurance from a third party to cover the failure of a single borrower or a group of borrowers. If a single borrower is being insured, the insurance is called a financial guarantee, and this type of insurance is provided by a special insurance company called a monoline insurer. Financial guarantees are commonly used in the US municipal and in the ABS market.
- **Netting of exposures to counterparties:** If a bank has multiple exposures against the same counterparty, these exposures are netted against each other and only their net impact is considered.
- **Marking-to-market/margining:** Counterparties periodically revalue a credit derivatives position and transfer any required payment to the winning counterparty. This is done to prevent a build up of a large liability on any one party at the end of the credit derivative's maturity. Marking-to-market is commonly used for exchange-traded derivatives.
- **Requiring collateral to be posted:** Collateral can offset credit losses in the event of a default. However, there is sometimes the potential for wrong way risk (circumstances leading to the default also negatively impact the value of the collateral). For example, say an oil company offers barrels of crude as collateral; in this case, the probability of the company defaulting increases as the price of oil falls.
- **Termination:** At inception, the counterparties agree that the position in the credit derivative would be unwound if a predetermined set of trigger events occur. Such triggers could be downgrades, metrics based on balance sheet or income statement items etc.
- **Reassignment:** A bank could have agreements in place to reassign a credit exposure to another party in the event of some predetermined trigger such as a ratings downgrade.

**Syndication:** Apart from the tools mentioned above, banks also use syndication to disperse the credit risk of very large loans. In this case, the lead bank originates the loan transaction and makes arrangements to distribute the deal among a larger group of investors. The bank receives a percentage fee for its efforts. Typically, the lead bank will keep about 20% of the loan on its own book, and distribute the remaining 80%.

There are two types of syndicate arrangements:

- **Firm commitment:** The bank guarantees that the borrower will receive the full loan amount. Any failure by the bank to get additional investors will result in the bank taking a larger portion of the loan onto its own books.
- **Best efforts:** The bank does not guarantee that the borrower will receive the full loan amount. It will do its best to find additional investors.

The traditional tools discussed above are effective but they do not isolate credit risk from the underlying positions. Credit derivatives (e.g. CDSs) were formulated to enable the isolation and transfer of credit risk, without having to sell the underlying position. They are off-balance sheet instruments between two counterparties: the beneficiary who sells the risk and the guarantor who buys the risk.

In a properly functioning market, credit derivatives contribute to the process of credit price discovery. Corporate bonds also provide price discovery, but bonds blend interest rate and credit risk together.

### 3. The Mechanics of Securitization

Securitization involves the repackaging of loans and other assets into new securities that can be sold to investors. The collateral for the new securities is the pool of loans and other assets. The performance of the new securities depends on the performance of the collateral.

The securitization process is as follows:

- The originating entity (i.e. the sponsor) creates a separate legal entity called a special purpose vehicle (SPV), which is a key element of securitization.
- The SPV purchases the pool of loans from the sponsor and takes ownership of those loans.
- The SPV obtains the funds to purchase the pool of loans by selling new securities to investors.
- The holders of these new securities receive interest and principal payments based on the rules for the distribution and the rules for how defaults will be treated.
- Typically, the SPV issues different 'classes' or 'tranches' of securities such as senior bonds, junior bonds, and equity.
- The senior bond class has the highest level of protection against credit risk (it receives payments first) and typically has a credit rating of AAA.
- Junior bonds receive payments after the senior bond classes have been paid.
- The equity class (also called residual class) only receives payments after all of the other classes have been paid. Therefore, it is exposed to the greatest credit risk.

Prior to securitization, loan originating entities simply held the loans in their portfolios as investments. This model was known as the 'buy-and-hold' model. Under this model, the originating entity was exposed to credit risk, price risk and liquidity risk.

The securitization model, is also known as the 'originate-to-distribute' model. Compared to the 'buy-and-hold model', the 'originate-to-distribute' model reduces risks for the originating entity. First, since the originating entity does not hold the collateral, it is not exposed to credit risk. Second, the originating entity bears no price risk because it does not own the individual assets in the pool. Finally, by using illiquid loans as collateral for securitization, the originating entity no longer holds an illiquid asset and therefore avoids liquidity risk.

#### 4. From Buy-and-Hold to Originate-to-Distribute

Starting in the 1980s, banking activities shifted from the traditional buy and hold model to the OTD model. This shift was primarily driven by Basel capital adequacy requirements. Banks sought to optimize their use of capital by moving capital-consuming loans off their books.

The OTD model seemed to offer financial services industry many benefits such as:

- Originators benefited from greater capital efficiency and enhanced funding opportunities, and lower earnings volatility. The OTD model, at least in theory, dispersed credit risk and interest rate risk across many market players.
- Investors benefited from a wider array of investments, allowing them to better diversify their portfolios.
- Borrowers benefited from the easier availability of credit and the lower cost of credit.

However, the benefits of this model eventually eroded and finally lead to the financial crisis. The main problem of this model was *moral hazard*. Lenders had very little incentive to maintain high loan underwriting standards and to monitor the creditworthiness of borrowers.

Other issues with the OTD model were:

- *Misaligned incentives*: The OTD model encouraged the pursuit of short-term profits instead of long-term sustainability.
- *Complexity and lack of transparency*: There was a lack of proper understanding of these products among investors. Investors also had difficulty assessing the quality of the underlying assets and the potential correlations between them.

To alleviate some of the problems in securitization, the SEC added a new rule Section 15G in 2014. This rule requires that originators of securitized products such as MBS, ABS, and CLOs retain at least 5% of the credit risk. Securitizers are not permitted to transfer, mitigate, or hedge this risk. These provisions are designed to align securitizers' interests with those of investors, requiring the securitizers to have some skin in the game.

## Summary

**LO: Compare different types of credit derivatives, explain their applications, and describe their advantages.**

Vehicle	Brief definition
Asset-backed security (ABS)	A structured product backed by loans and receivables created using the securitization process. Examples include: credit card ABS, student loan ABS, automobile and ABS.
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Structured investment vehicle (SIV)	A pool of investment assets that seeks to generate a return from the credit spread between short-term rates and long-term structured financial products such as asset-backed securities and mortgage-backed securities,

**LO: Explain different traditional approaches or mechanisms that firms can use to help mitigate credit risk.**

Banks have traditionally used several ways to reduce their credit risk exposure. These techniques include:

- Purchasing insurance from a third-party guarantor
- Netting of exposures to counterparties
- Marking-to-market
- Requiring collateral to be posted
- Termination on triggers
- Reassignment on triggers
- Syndication

**LO: Evaluate the role of credit derivatives in the 2007–2009 financial crisis and explain changes in the credit derivative market that occurred as a result of the crisis.**

The benefits of the OTD model eventually eroded and finally lead to the financial crisis. The main problem of this model was *moral hazard*. Lenders had very little incentive to maintain high loan underwriting standards and to monitor the creditworthiness of borrowers.

Other issues with the OTD model were:

- *Misaligned incentives*: The OTD model encouraged the pursuit of short-term profits instead of long-term sustainability.
- *Complexity and lack of transparency*: There was a lack of proper understanding of these products among investors. Investors also had difficulty assessing the quality of the underlying assets and the potential correlations between them.

To alleviate some of the problems in securitization, the SEC added a new rule Section 15G in 2014. This rule requires that originators of securitized products such as MBS, ABS, and CLOs retain at least 5% of the credit risk. Securitizers are not permitted to transfer, mitigate, or hedge this risk.

**LO: Explain the process of securitization, describe a special purpose vehicle (SPV), and assess the risk of different business models that banks can use for securitized products.**

The securitization process is as follows:

- The originating entity (i.e. the sponsor) creates a separate legal entity called a special purpose vehicle (SPV), which is a key element of securitization.
- The SPV purchases the pool of loans from the sponsor and takes ownership of those loans.
- The SPV obtains the funds to purchase the pool of loans by selling new securities to investors.
- The holders of these new securities receive interest and principal payments based on the rules for the distribution and the rules for how defaults will be treated.
- Typically, the SPV issues different 'classes' or 'tranches' of securities such as senior bonds, junior bonds, and equity.
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