Module 6: Asset-Backed Securities

Roadmap

- How asset-backed securities are created
  - Basic structure of a securitization
  - Parties to a securitization
  - Primary motivation for raising funds via a securitization
  - Role of special purpose vehicle
  - Different types of structures: self liquidating and revolving.
  - Various forms of credit enhancement
  - Shifting interest mechanism and step down provisions
  - Different types of optional call provisions
- Credit risks associated with ABS
- Major types of ABS

Creation of an ABS

Introduction

- A security created by pooling loans *other than* mortgage loans is referred to as an asset-backed security (ABS).
- To explain how an ABS is created and parties to a securitization, let’s see the following example:

Example

- Suppose that Exception Dental Equipment, Inc. (EDE) has a bulk of its sales from installment contracts -- buyer agrees to repay EDE over a specified period of time for the amount borrowed plus interest.
- The dental equipment purchased is collateral for loan. Credit department of EDE makes decision whether or not to extend credit to a customer.
- Criteria for granting a loan is referred to as *underwriting standards*.

Example

- Because EDE is granting the loan, it is referred to *originator* of loan. EDE may have a department that is responsible for servicing loan.
  - Servicing involves collecting payments from borrowers, notifying borrowers who may be delinquent, and, when necessary, recovering and disposing of the collateral (i.e., the dental equipment in our illustration) if borrower fails to make contractual loan payments.
- While servicer of loans need not be originator of loans, we assume that originator (EDE) is also servicer.

Example

- Suppose EDE has $300M of installment sales contracts and wants to raise this amount. Rather than issuing corporate bonds, EDE's treasurer decides to raise funds via a *securitization*. EDE sets up a legal entity called a *special purpose vehicle* (SPV) -- DE Asset Trust (DEAT).
  - EDE will then sell to DEAT $300M of loans and so receive from DEAT $300M in cash.
  - DEAT obtains $300M by selling securities that are backed by $300 million of loans.
- The securities are asset-backed securities.

Parties to a Securitization

- EDE is not issuer of ABS although it is sometimes referred to as issuer because it is the entity that ultimately raises funds.
- EDE originated loans and hence it called “seller” because it sold receivables to DEAT.
- EDE is also called “originator” because it originated loans.
- DEAT (i.e., SPV in securitization) is referred to as “issuer” or “trust” in prospectus.

Parties to a Securitization

- EDE manufactured dental equipment and originated loans, there is another type of securitization transaction involving another company (called a *conduit*) that buys loans and securitizes them.
- A conduit that finances dental equipment manufactures would warehouse installment contracts purchased until it had a sufficient amount to sell to an SPV, which would then issue ABS.

Parties to a Securitization

- There will be a *trustee* for securities issued. The responsibilities of trustee are to represent the interests of bond classes by monitoring compliance with covenants and in the event of default enforce remedies as specified in the governing documents.
- The description of parties to a securitization is referred to as a "one-step securitization."
- For certain reasons this is not important to investors, we will see…

Two-Step Securitization

- A securitization might involve two SPVs in order to ensure that transaction is considered a true sale for tax purposes. One SPV is called an *intermediate SPV*, which is a wholly owned subsidiary of originator and has restrictions on its activities.
- Intermediate SPV *purchases assets* from originator, and then sells assets to SPV that *issues ABS* (e.g., issuing entity).
- In prospectus for a securitization transaction, intermediate SPV is referred to as *depositor*.

Transaction Structure

- In creating various bond classes (or tranches) in a securitization, there will be rules for distribution of principal and interest.
- All asset-backed securities are credit enhanced. Credit enhancement levels are determined relative to a specific rating desired by seller/ servicer for a security by each rating agency.

Role of SPV

- To understand role of SPV, we need to understand why a corporation raises funds via securitization rather than issues bonds. There are four reasons:
  - potential to reduce funding costs
  - to diversify funding sources
  - to accelerate earnings for financial reporting purposes
  - to achieve (if a regulated entity) relief from capital requirements

Role of SPV

- Let us focus on the first reason to see critical role of SPV in a securitization.

- Suppose that EDE has a BB credit rating. If it issues bonds, funding cost is sum of T-bill rate and credit spread. If it defaults, creditors will go after all of its assets, including loans to its customers.
- Suppose that EDE can create a legal entity and sell loans to that entity – SPV (e.g., DEAT). If sale of loans by EDE to DEAT is done properly, DEAT then legally owns receivables. As a result, if EDE is forced into bankruptcy while loans sold to DEAT are still outstanding, creditors of EDE cannot recover loans because they are legally owned by DEAT.

Role of SPV

- The legal implication is that when DEAT issues ABS that are backed by loans, investors contemplating purchase of any bond class will evaluate credit risk associated with collecting payments due on loans independent of credit rating of EDE.
- Credit rating will be assigned to different bond classes created in securitization and will depend on how rating agencies will evaluate credit risk based on collateral (i.e., loans). In turn, this will depend on credit enhancement for each bond class.
- Due to SPV, quality of collateral, and credit enhancement, a corporation can raise funds via a securitization where some of bond classes have a credit rating better than corporation seeking to raise funds and that in aggregate funding cost is less than issuing corporate bonds.

Credit Enhancements

- We now review two forms of credit enhancement as applied to non-agency MBS:
  - external credit enhancement
  - internal credit enhancement
- *External credit enhancement* involves a guarantee from a third party.
  - The risk faced by an investor is the potential for third party to be downgraded, and, as a result, bond classes guaranteed by third party may be downgraded.
  - The most common form of external credit enhancement is *bond insurance* and is referred to as a surety bond or a wrap.

Credit Enhancements

- *Internal credit enhancements* come in more complicated forms than external credit enhancements and may alter cash flow characteristics of loans even in the absence of default.
  - Most securitization transactions that employ internal credit enhancements follow a predetermined schedule that prioritizes the manner in which principal and interest generated by underlying collateral must be used.

Credit Enhancements

- The most common forms of internal credit enhancement are senior/subordinate structures, overcollateralization, and reserve funds. This schedule, which is explained in the deal's prospectus, is known as *cash flow waterfall*, or *waterfall*.
- The cash flows that remain after all of scheduled periodic payment obligations are met can be associated with *excess spread*, which is the first line of defense against collateral losses, since deals that are structured to have a large amount of excess spread can absorb relatively large levels of collateral losses.

Option Clean-Up Call Provisions

- For ABS there is an optional clean-up call provision granted to *trustee*. They include percent of collateral call, percent of bond clean-up call, percent of tranche clean-up call, call on or after specified date, latter of percent or date call, auction call, and insurer call.
- The most common clean-up call provision is *percent of collateral call* where outstanding bonds can be called at par value if outstanding collateral's balance falls below a predetermined percent of original collateral's balance.

Actual Securitization

- In an actual securitization, the collateral for transaction is a pool of retail installment sales contracts that are secured by new and used goods.
- A key feature in a securitization transaction is the separation of collateral from creditors of SPV.
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Collateral Type and Securitization Structure

- Structuring a securitization will depend on the characteristics of underlying assets.
- Two characteristics affect the structure:
  - Amortization
  - Interest rate
- The structure depends on whether
  - Assets are amortizing or non-amortizing.
  - Interest rate on collateral is fixed or floating.

Amortizing vs. Non-Amortizing Assets

- The collateral in a securitization can be classified as either *amortizing* or *non-amortizing asse*ts.
- *Amortizing assets* are loans in which the borrower's periodic payment consists of scheduled principal and interest payments over the life of the loan.
- The schedule for the repayment of the principal is called an amortization schedule and can be created on a pool level or a loan level.

Fixed-Rate vs. Floating-Rate Assets

- The assets that are *securitized* can have a fixed rate or a floating rate.
  - The type of rate chosen impacts the structure in terms of the coupon rate for the *bonds* issued.
  - For example, a structure with all floating-rate bond classes backed by collateral consisting of only fixed-rate contracts exposes bondholders to interest rate risk.
  - To deal with situations where there may be a mismatch between cash flow characteristics of asset and liabilities, interest rate derivative instruments are used in a securitization (e.g., Swaps, Caps).

Credit Risks Associated with ABS

Introduction

- Investors in ABS are exposed to credit risk and rely on rating agencies to evaluate that risk for bond classes in a securitization.
- While three agencies have different approaches in assigning credit ratings, they do focus on same areas of analysis.
- Moody's, for example, investigates:
  - Asset risks
  - Structural risks
  - Third parties to structure

Asset Risks

- Evaluating asset risks involves the analysis of credit quality of collateral.
- Rating agencies will look at underlying borrower's ability to pay and borrower's equity（权益）in the asset.
- If there are a few borrowers in the pool that are significant in size relative to entire pool balance, this diversification benefit can be lost, resulting in a higher level of credit risk referred to as *concentration risk*.

Structural Risks

- Decision on structure is up to seller. Once selected, rating agencies examine the extent to which cash flow from collateral can satisfy all of obligations of bond classes in securitization.
- In reflecting on structure, rating agencies consider
  - Loss allocation (how losses will be allocated among bond classes in the structure)
  - Cash flow allocation (i.e., cash flow waterfall)
  - Interest rate spread between interest earned on collateral and interest paid to bond classes plus servicing fee,
  - Potential for a trigger event to occur that will cause early amortization of a deal (discussed later)
  - How credit enhancement may change over time.

Third-Party Providers

- In a securitization, third parties include:
  - Credit guarantors (most commonly bond insurers)
  - Servicer
  - A trustee
  - Issuer's counsel
  - provider of a guaranteed investment contract (this entity insures reinvestment rate on investable funds)
  - Accountants.
- Rating agency will investigate all third-party providers.
- For third-party guarantors, rating agencies will perform a credit analysis of their ability to pay.

Third-Party Providers

- While still viewed as a “third party” in many securitizations, servicer is likely to be originator of loans used as collateral.
- In addition to administration of loan portfolio as just described, servicer is responsible for distributing proceeds collected from borrowers to different bond classes in the structure according to cash flow waterfall.

Potential Legal Challenges

- Long-standing view is that investors in ABS are protected from creditors of seller of collateral.
  - When seller of collateral transfers it to trust (SPV), transfer represents a “true sale” and therefore in the case of seller’s bankruptcy, bankruptcy court cannot penetrate trust to recover collateral or cash flow from collateral.
  - However, this issue has never been fully tested.

Major Types of ABS

Introduction

- Three largest sectors within ABS market are:
  - Credit card receivable-backed securities
  - Auto loan-backed securities
  - Rate reduction bonds

Credit Card Receivable-Backed Securities

- Credit cards are issued by banks, retailers, and travel and entertainment companies.
- Cash flow for a pool of credit card receivables consists of finance charge collections, principal collections, and fees collected.
- Credit card issuers have a large number of credit card accounts that can be pledged to a trust.
- The process of structuring a transaction begins with credit card issuer setting up a trust and pledging those credit card accounts to trust.

Credit Card Receivable-Backed Securities

- In credit card transactions, the trust is called a *master trust* and (prospectus) *trust portfolio*.
- To be included as an account pledged to master trust, account must meet certain eligibility requirements.
- New credit card accounts can be pledged to master trust if they meet eligibility requirements.
- If a credit card account in master trust generates a receivable, that receivable belongs to master trust.

Credit Card Receivable-Backed Securities

- Each series is a separate credit card deal and trust can issue bond classes to public.
- For example, a series can have a senior bond class and two subordinate bond classes. However, each series will have a different level of credit enhancement.
- It is cash flow from trust portfolio that is used to make payments due to bond classes for all series.

Credit Card Receivable-Backed Securities

- Since a card receivable is a non-amortizing asset, it has a revolving (循环) structure.
- During revolving period or lockout period, principal payments made by credit card borrowers comprising pool which are retained by trustee and reinvested in additional receivables to maintain size of pool.
- Revolving period can vary from 18 months to 10 years. So, during revolving period, cash flow that is paid out to bond classes is based on finance charges collected and fees.

Credit Card Receivable-Backed Securities

- Revolving period is followed by principal amortization period where principal received from accounts is no longer reinvested but paid to bondholders.
- There are various ways principal can be repaid over principal amortization period.

Credit Card Receivable-Backed Securities

- There are provisions in credit card receivable-backed securities that require early amortization of principal if certain events (*pay-out events*) occur.
  - Such a provision, referred to as an *early amortization provision* or a *rapid amortization provision*, is included to safeguard credit quality of structure.
  - The only way that principal cash flows can be altered is by occurrence of a pay-out event.

Credit Card Receivable-Backed Securities

- When early amortization occurs, bond classes are retired sequentially (i.e., highest rated bond class first, then second highest rated bond class, and so on).
  - This is accomplished by distributing principal payments to specified bond class instead of using those payments to acquire more receivables.
  - The length of time until return of principal is largely a function of monthly payment rate.

Performance of Portfolio of Receivables

- Following concepts must be understood in order to assess performance of portfolio of receivables and ability of collateral to satisfy interest obligation and repay principal as scheduled:
  - Gross portfolio yield
  - Charge-offs
  - Net portfolio yield
  - Delinquencies
  - Monthly payment rate

Performance of Portfolio of Receivables

- The *gross portfolio yield* includes finance charges collected and fees.
- *Charge-offs* represent the accounts charged off as uncollectible.
- *Net portfolio yield* is equal to gross portfolio yield minus charge-offs.
- *Delinquencies* are the percentages of receivables that are past due for a specified number of months, usually 30, 60, and 90 days.
  - ✓ They are considered an indicator of potential future charge-offs.

Performance of Portfolio of Receivables

- *Monthly payment rate* (MPR) expresses monthly payment (which includes finance charges, fees, and any principal repayment) of a credit card receivable portfolio as a percentage of credit card debt outstanding in the previous month.

Auto Loan-Backed Securities

- Auto loan-backed securities are issued by the financial subsidiaries of auto manufacturers (domestic and foreign), commercial banks, and independent finance companies and small financial institutions specializing in auto loans.
- The cash flow for auto loan-backed securities consists of regularly scheduled monthly loan payments (interest and scheduled principal repayments) and any prepayments.

Auto Loan-Backed Securities

- Prepayments for auto loan-backed securities are measured in terms of the *absolute prepayment speed* (ABS).
- The ABS measure is the monthly prepayment expressed as a percentage of the original collateral amount.
- The single-month mortality rate (SMM) is the monthly conditional prepayment rate (CPR) based on the prior month's balance.

Auto Loan-Backed Securities

- Given SMM (expressed as a decimal), ABS (expressed as a decimal) is obtained as follows:

$$ABS = \frac{SMM}{1 + SMM \times (M - 1)}$$

where M is *number of months after origination* (i.e., loan age).

- Given ABS, the SMM is obtained as follows:

$$SMM = \frac{ABS}{1 \text{ 爾 (燜} BS[M - 1])}$$

Auto Loan-Backed Securities

- **Example.** Suppose that SMM is 2.1%, or 0.021, in month 32. Then ABS is

  $$ABS = SMM/(1+SMM*(M-1)) = 0.021/(1+0.21*(32-1)) = 1.27\%.$$

- **Example.** Given ABS just computed, SMM is obtained as follows:

  $$SMM = ABS/(1+ABS*(M-1)) = 0.015/(1+0.015*(26-1)) = 2.4\%$$

Rate Reduction Bonds

- Rate reduction bonds are backed by a special charge (tariff) included in the utility bills of utility customers in.
- The charge, called the *competitive transition charge* (or CTC), is effectively a legislated asset.
- It is the result of the movement to make the electric utility industry more competitive by deregulating the industry.
- The CTC is collected by the utility over a specific period of time.

Rate Reduction Bonds

- Because the state legislature designates the CTC to be a statutory property right, it can be sold by a utility to an SPV and securitized.
- It is the legislative designation of the CTC as an asset that makes rate reduction bonds different from the typical asset securitized.
- The CTC is initially calculated based on projections of utility usage and the ability to collect revenues.

Rate Reduction Bonds

- However, actual collection experience may differ from initial projections.
- Because of this, there is a “true-up” mechanism in these securitizations.
- This mechanism permits the utility to recompute CTC on a periodic basis over the term of securitization based on actual collection experience.
- The advantage of true-up mechanism to bond classes is that it provides cash flow stability as well as a form of credit enhancement.