ASSET-BACKED SECURITIES

CHAPTER SUMMARY

In Chapters 11 and 12 we discussed securities backed by a pool of standard mortgage loans (both residential and commercial). By standard loans we mean first-lien mortgage loans. Securities created by pooling loans other than first-lien mortgage loans are referred to as asset-backed securities (ABS). In this chapter we will discuss the basic features of ABS and look at the five major ABS types: (i) credit card receivable ABS, (ii) auto ABS, (iii) home equity ABS, (iv) rate reduction bonds (also called stranded cost ABS), and (v) manufactured housing ABS. Commercial mortgage-backed securities (CMBS), the subject of Chapter 13, is treated as a separate sector in the broad-based bond market indexes.

CREATION OF AN ABS

A security created by pooling loans other than mortgage loans is referred to as an asset-backed security (ABS). To explain the creation of an ABS and the parties to a securitization, we will use an illustration. Suppose that Exception Dental Equipment, Inc., receives a bulk of its sales from installment contracts (wherein the buyer agrees to repay Exceptional Dental Equipment, Inc., over a specified period of time for the amount borrowed plus interest). The dental equipment purchased is the collateral for the loan. The credit department of Exceptional Dental Equipment, Inc., makes the decision as to whether or not to extend credit to a customer. The criteria for granting a loan are referred to as underwriting standards. Because Exceptional Dental Equipment, Inc., is granting the loan, the company is referred to as the originator of the loan.

Moreover, Exceptional Dental Equipment, Inc., (EDE) may have a department that is responsible for servicing the loan. As explained in previous chapters, 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 the borrower fails to make the contractual loan payments. While the servicer of the loans need not be the originator of the loans, in our illustration we are assuming that the originator (EDE) is also the servicer. Suppose EDE has more than $300 million of installment sales contracts and wants to raise this amount. Rather than issuing corporate bonds for $300 million, the EDE’s treasurer decides to raise the funds via a securitization. To do this, EDE sets up a legal entity called a special purpose vehicle (SPV) that is called DE Asset Trust (DEAT). EDE will then sell to DEAT $300 million of the loans and so receive from DEAT $300 million in cash-- the amount of funds it wanted to raise. DEAT obtains the $300 million by selling securities that are backed by the $300 million of loans. The securities are asset-backed securities.

The Parties to a Securitization

In our hypothetical securitization, Exceptional Dental Equipment, Inc. (EDE), is not the issuer of the ABS (although it is sometimes referred to as the issuer because it is the entity that ultimately

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raises the funds). Rather, it originated the loans. Hence, in this transaction, EDE is called the “seller” because it sold the receivables to DEAT. EDE is also called the “originator” because it originated the loans. DEAT (i.e., the SPV in the securitization) is referred to as the “issuer” or “trust” in the prospectus.

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

There will be a trustee for the securities issued. The responsibilities of the trustee are to represent the interests of the bond classes by monitoring compliance with covenants, and in the event of default, enforce remedies as specified in the governing documents.

Transaction Structure

In creating the 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 the seller/servicer for a security by each rating agency.

Role of the SPV

To understand the role of the SPV, we need to understand why a corporation would want to raise funds via securitization rather than simply issue corporate bonds. There are four principal reasons why a corporation may elect to raise funds via a securitization rather than a corporate bond. They are the potential to reduce funding costs, to diversify funding sources, to accelerate earnings for financial reporting purposes, and to achieve (if a regulated entity) relief from capital requirements.

We will only focus on the first of these reasons to see the critical role of the SPV in a securitization. Suppose that Exceptional Dental Equipment, Inc. (EDE), has a BB credit rating. If it wants to raise funds equal to $300 million by issuing a corporate bond, its funding cost is the going rate for a firm with a BB credit rating. If EDE defaults on any of its outstanding debt, the creditors will go after all of its assets, including the loans to its customers.

Suppose that EDE can create a legal entity and sell the loans to it. That entity is the special purpose vehicle (SPV). In our illustration, the SPV is DEAT. If the sale of the loans by EDE to DEAT is done properly, DEAT then legally owns the receivables, not EDE. As a result, if EDE is ever forced into bankruptcy while the loans sold to DEAT are still outstanding, the creditors of EDE cannot recover the loans because they are legally owned by DEAT.

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

Credit Enhancements

In Chapter 11 we briefly reviewed the different forms of credit enhancement (as applied to nonagency MBS). Below we describe two forms of enhancement: external credit enhancement and internal credit enhancement.

**External credit enhancement** involves a guarantee from a third party. The risk faced by an investor is the potential for the third party to be downgraded, and as a result, the bond classes guaranteed by the 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.

**Internal credit enhancements** come in more complicated forms than external credit enhancements and may alter the cash flow characteristics of the 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 the underlying collateral must be used. This schedule, which is explained in the deal’s prospectus, is known as the **cash flow waterfall**, or simply the **waterfall**. The cash flows that remain after all of the scheduled periodic payment obligations are met can be associated with the **excess spread**. The excess spread 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.

The most common forms of internal credit enhancement are senior/subordinate structures, overcollateralization, and reserve funds. Almost all existing senior/subordinate structures backed by residential mortgage loans also incorporate a shifting interest mechanism. This mechanism redirects prepayments disproportionately from the subordinate bond class to the senior bond class according to a specified schedule. The rationale for the shifting interest structure is to have enough subordinate bond classes outstanding to cover future credit losses.

The percentage of the mortgage balance of the subordinate bond class to that of the mortgage balance for the entire deal is called the level of subordination or the subordinate interest. The higher the percentage, the greater the level of protection for the senior bond class.

The prospectus will specify how different scheduled principal payments and prepayments will be allocated between the senior bond class and the subordinate bond class. The scheduled principal payments are allocated based on the senior percentage, which is defined as the ratio of the balance of the senior bond class to the balance of the entire deal and is equal to 100% minus the subordinate interest.

Allocation of the prepayments is based on the **senior prepayment percentage** and is defined as
senior percentage + (shifting interest percentage × subordinate interest).

The prospectus will provide the shifting interest percentage schedule for calculating the senior prepayment percentage. The shifting interest percentage schedule given in the prospectus is the “base” schedule. The schedule can change over time depending on the performance of the collateral.

While the shifting interest structure is beneficial to the senior bond class holder from a credit standpoint, it does alter the cash flow characteristics of the senior bond class even in the absence of defaults. The size of the subordination also matters. A larger subordinate class redirects a higher proportion of prepayments to the senior bond class, thereby shortening the average life even further.

An important feature in analyzing senior/subordinate bond classes or deals backed by residential mortgages is the deal’s step-down provisions. These provisions allow for the reduction in credit support over time.

There are two triggers based on the level of credit performance required to be passed before the credit support can be reduced: a delinquency trigger and loss trigger. The triggers are expressed in the form of a test that is applied in each period. The delinquency test, in its most common form, prevents any step-down from taking place as long as the current over 60-day delinquency rate exceeds a specified percentage of the then current pool balance. The principal loss test prevents a step-down from occurring if cumulative losses exceed a certain limit (which changes over time) of the original balance. In addition to triggers based on the performance of the collateral, there is a balance test. This test involves comparing the change in the senior interest from the closing of the deal to the current month.

Optional Clean-Up Call Provisions

For ABS there is an optional clean-up call provision granted to the trustee. There are several types of clean-up call provisions: percent of collateral 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 is the percent of collateral call where the outstanding bonds can be called at par value if the outstanding collateral’s balance falls below a predetermined percent of the original collateral’s balance.

Actual Securitization

In an actual securitization, the collateral for the 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 the collateral from the creditors of the SPV. For servicing the collateral, the servicer receives a servicing fee based on the outstanding loan balance.
Structuring a securitization will depend on the characteristics of the underlying assets. Two characteristics affect the structure: amortization and interest rate. Specifically, the structure depends on whether (i) the assets are amortizing or nonamortizing and (ii) the interest rate on the collateral is fixed or floating.

Amortizing Versus Nonamortizing Assets

The collateral in a securitization can be classified as either amortizing or nonamortizing assets. **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.

In contrast to amortizing assets, nonamortizing assets do not have a schedule for the periodic payments that the individual borrower must make. Because there is no schedule of principal payments (i.e., no amortization schedule) for a **nonamortizing asset**, the concept of a prepayment does not apply. Credit card receivables are examples of nonamortizing assets.

Fixed-Rate Versus 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.

CREDIT RISKS ASSOCIATED WITH INVESTING IN ABS

Investors in ABS are exposed to credit risk and rely on rating agencies to evaluate that risk for the bond classes in a securitization. While the three agencies have different approaches in assigning credit ratings, they do focus on the same areas of analysis.

Asset Risks

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

Structural Risks

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

Third-Party Providers

In a securitization, several third parties are involved. These include third-party credit guarantors (most commonly bond insurers), the servicer, a trustee, issuer’s counsel, a guaranteed investment contract provider (this entity insures the reinvestment rate on investable funds), and accountants. The rating agency will investigate all third-party providers. For the third-party guarantors, the rating agencies will perform a credit analysis of their ability to pay.

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

Potential Legal Challenges

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

REVIEW OF SEVERAL MAJOR TYPES OF ABS

The five largest sectors within the ABS market are: (i) credit card receivable-backed securities, (ii) auto loan-backed securities, (iii) home equity loan-backed securities, (iv) rate reduction bonds, and (v) manufactured housing loan-backed securities.

Credit Card Receivable-Backed Securities

Credit cards are issued by banks (e.g., Visa and MasterCard), retailers (e.g., JC Penney and Sears), and travel and entertainment companies (e.g., American Express). The cash flow for a pool of credit card receivables consists of finance charges collected, fees, and principal. Interest to the bond classes is paid periodically (e.g., monthly, quarterly, or semiannually). The interest rate may be fixed or floating. A credit card receivable is a nonamortizing asset and therefore has a revolving structure.

There are provisions in credit card receivable-backed securities that require early amortization of the principal if certain events occur. Such a provision, which is referred to as either an early amortization provision or a rapid amortization provision, is included to safeguard the credit quality of the structure. The only way that the principal cash flows can be altered is by triggering the early amortization provision.
The following concepts must be understood in order to assess the performance of the portfolio of receivables and the ability of the collateral to satisfy the interest obligation and repay principal as scheduled: gross portfolio yield, charge-offs, net portfolio yield, delinquencies, and monthly payment rate. 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. The monthly payment rate (MPR) expresses the 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.

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. As explained in Chapter 11, the single-month mortality rate (SMM) is the monthly conditional prepayment rate (CPR) based on the prior month’s balance. There is a mathematical relationship between the ABS and SMM. Given the SMM (expressed as a decimal), the ABS (expressed as a decimal) is obtained as follows:

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

where M is the number of months after origination (i.e., loan age). Given the ABS, the SMM is obtained as follows:

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

The SMM can then be converted to a CPR using the formula given in Chapter 11.

Home Equity Loan-Backed Securities

A home equity loan (HEL) is a loan backed by residential property. Typically the borrower has either an impaired credit history and/or the payment-to-income ratio is too high for the loan to qualify as a conforming loan for securitization by Ginnie Mae, Fannie Mae, or Freddie Mac. While home equity loans can be either closed end or open end, most home equity loan securitizations are backed by closed-end HELs. A closed-end HEL is designed the same way as a fully amortizing residential mortgage loan. An open-end HEL is a line of credit.
The securities backed by the adjustable-rate (or variable-rate) HELs are called HEL floaters. To increase the attractiveness of home equity loan-backed securities to institutional investors, the securities typically have been created using a reference rate of 1-month LIBOR. Unlike a typical floater, which has a cap that is fixed throughout the security’s life, the effective cap of an HEL floater is variable. The effective cap, referred to as the available funds cap, will depend on the amount of funds generated by the net coupon on the principal, less any fees.

**Rate Reduction Bonds**

Rate reduction bonds are backed by a special charge (tariff) included in the utility bills of utility customers. 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. 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. 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 the CTC on a periodic basis over the term of the securitization based on actual collection experience. The advantage of the true-up mechanism to the bond classes is that it provides cash flow stability as well as a form of credit enhancement.

**Manufactured Housing-Backed Securities**

Manufactured housing-backed securities are backed by loans for manufactured homes. In contrast to site-built homes, manufactured homes are built at a factory and then transported to a manufactured home community or private land. The typical loan for a manufactured home is 15 to 20 years and may be either a mortgage loan (for both the land and the home) or a consumer retail installment loan. The loan repayment is structured to fully amortize the amount borrowed. Therefore, as with residential mortgage loans and HELs, the cash flow consists of net interest, regularly scheduled principal, and prepayments.
ANSWERS TO QUESTIONS FOR CHAPTER 14

(Questions are in bold print followed by answers.)

1. Why is the entity seeking to raise funds through a securitization referred to as the “seller” or the “originator”?

A security created by pooling loans other than mortgage loans is referred to as an asset-backed security (ABS). To explain why an entity seeking to raise funds through a securitization is the “seller” or “originator” let us use an illustration. Suppose that Exception Dental Equipment, Inc. (EDE), has a bulk of its sales from installment contracts (wherein the buyer agrees to repay EDE over a specified period of time for the amount borrowed plus interest). The dental equipment purchased is the collateral for the loan. The credit department of EDE makes the decision as to whether or not to extend credit to a customer. EDE sets up a legal entity called a special purpose vehicle (SPV) to whom it sells its loans. Because EDE initiates the loan with the SPV, EDE is called the “seller” or “originator.”

2. In achieving the benefits associated with a securitization, why is the special purpose vehicle important to the transaction?

To understand the role of the special purpose vehicle (SPV) and the benefit derived from it, we need to understand why a corporation would want to raise funds via securitization rather than simply issue corporate bonds. There are four principal reasons why a corporation may elect to raise funds via a securitization rather than a corporate bond. They are the potential to reduce funding costs, to diversify funding sources, to accelerate earnings for financial reporting purposes, and to achieve (if a regulated entity) relief from capital requirements.

Let us focus on the first of these reasons to understand the critical role of the SPV in a securitization. Suppose that Exceptional Dental Equipment, Inc. (EDE), has a BB credit rating. If it wants to raise funds equal to $300 million by issuing a corporate bond, its funding cost is the going rate for a firm with a BB credit rating. If EDE defaults on any of its outstanding debt, the creditors will go after all of its assets, including the loans to its customers.

Suppose that EDE can create a legal entity and sell the loans to that entity. That entity is the special purpose vehicle (SPV). In our illustration, let us call the SPV by the name of DEAT. If the sale of the loans by EDE to DEAT is done properly, DEAT then legally owns the receivables, not EDE. As a result, if EDE is ever forced into bankruptcy while the loans sold to DEAT are still outstanding, the creditors of EDE cannot recover the loans because they are legally owned by DEAT.

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

3. In a securitization, what is the difference between a servicer and a special purpose vehicle?

As just seen in the previous question, due to the SPV (as well as quality of the collateral and credit enhancement), a corporation can raise funds via a securitization where some of the bond classes have a credit rating better than the corporation seeking to raise funds and that in the aggregate the funding cost is less than issuing corporate bonds. The role of a servicer is to see that the loan created through the SPV is serviced. This involves services such as collecting payments from borrowers, notifying borrowers who may be delinquent, and when necessary, recovering and disposing of the collateral if the borrower does not make loan repayments by a specified time. Moreover, the servicer is likely to be the originator of the loans used as the collateral. The servicer is also responsible for distributing the proceeds collected from the borrowers to the different bond classes in the structure according to the cash flow waterfall. Where there are floating-rate securities in the transaction, the servicer will determine the interest rate for the period. The servicer may also be responsible for advancing payments when there are delinquencies in payments, resulting in a temporary shortfall in the payments that must be made to the bondholders.

4. What is meant by a cash flow waterfall?

Most securitization transactions that employ internal credit enhancements follow a predetermined schedule that prioritizes the manner in which principal and interest generated by the underlying collateral must be used. This schedule, which is explained in the deal’s prospectus, is known as the cash flow waterfall, or simply the waterfall. At the top of the waterfall would be cash flows due to senior bondholders (interest and principal, depending upon the principal repayment schedule) as well as some standard fees and expenses (e.g., administration and servicing fee). After the cash flow obligations at the top of the waterfall are met, cash flows down to lower priority classes (those rated AA, A, BBB bond classes and so on). The cash flows associated with the excess spread are all that remain after the scheduled periodic payment obligations are met. The excess spread 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. If the excess spread is fully eaten away by losses, the next lowest-rated class will begin to be negatively affected by credit losses.

5. Explain the difference in the treatment of principal received for a self-liquidating trust and a revolving trust.

Typically when amortizing assets are securitized, the collateral is fixed over the life of the structure. That is, no new assets are acquired. The collateral composition stays the same except for prepayments and defaults. Consequently, all principal received by the trust is paid out to the bond classes. The structure in this case is referred to as a self-liquidating structure.
In the case of nonamortizing assets, for a period of time referred to as the lockout period or revolving period, all principal received is used to purchase new collateral. Hence, new assets are being added to the collateral, and this structure is referred to as a revolving structure. After the lockout period, called the amortization period, principal received is distributed to the bond classes.

6. Answer the following questions.

(a) In a securitization, what is a lockout period?

Typically when amortizing assets are securitized, the collateral is fixed over the life of the structure and all principal received by the trust is paid out to the bond classes. However, in the case of nonamortizing assets, for a period of time, referred to as the lockout period or revolving period, all principal received is used to purchase new collateral. Hence, new assets are being added to the collateral, and this structure is referred to as a revolving structure. After the lockout period, the principal received is distributed to the bond classes. For example, a credit card receivable is a nonamortizing asset and therefore has a revolving structure. During the lockout period the principal payments made by credit card borrowers comprising the pool are retained by the trustee and reinvested in additional receivables to maintain the size of the pool. The lockout period can vary from 18 months to 10 years. So, during the lockout period, the cash flow that is paid out to the bond classes is based on finance charges collected and fees. The lockout period is followed by the principal amortization period where the principal is no longer reinvested but paid to bond holders.

(b) In a securitization, what is an early amortization provision?

There are provisions in credit card receivable-backed securities that require early amortization of the principal if certain events occur. Such a provision, which is referred to as either an early amortization provision or a rapid amortization provision, is included to safeguard the credit quality of the structure. The only way that the principal cash flows can be altered is by triggering the early amortization provision. Typically, early amortization allows for the rapid return of principal in the event that the three-month average excess spread earned on the receivables falls to zero or less. When early amortization occurs, the bond classes are retired sequentially (i.e., first the AAA bond then the AA rated bond, etc.). This is accomplished by distributing the principal payments to the specified bond class instead of using those payments to acquire more receivables. The length of time until the return of principal is largely a function of the monthly payment rate (MPR). MPR expresses the 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. For example, suppose a $600 million credit card receivable portfolio in February realized $60 million of payments in March. The MPR for March would then be 10% ($60 million divided by $600 million). The MPR is important for two reasons. First, if the MPR reaches an extremely low level, there is a chance that there will be extension risk with respect to the principal payments to the bond classes. Second, if the MPR is very low, then there is a chance that there will not be sufficient cash flows to pay off principal. This is one of the events that could trigger the early amortization provision.

7. Answer the following questions.
(a) Why is credit enhancement required in a securitization?

Credit enhancement is required for all asset-backed securities to provide greater protection to investors against losses due to defaults by borrowers. More details on credit enhancement are given below.

In Chapter 11, we briefly reviewed the different forms of credit enhancement for nonagency MBSs. They include external credit enhancement and internal credit enhancement. The credit enhancement forms are used both individually and in combination, depending on the loan types that are backing the securities.

External credit enhancement involves a guarantee from a third party. The risk faced by an investor is the potential for the third party to be downgraded, and as a result, the bond classes guaranteed by the 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.

Internal credit enhancements come in more complicated forms than external credit enhancements and may alter the cash flow characteristics of the loans even in the absence of default. Credit enhancement levels (i.e., the amount of subordination for each form of enhancement utilized within a deal) are determined by the rating agencies from which the issuer seeks a rating for the bond classes. This is referred to as “sizing” the transaction and is based on the rating agencies’ expectations for the performance of the loans collateralizing the deal in question.

Most securitization transactions that employ internal credit enhancements follow a predetermined schedule that prioritizes the manner in which principal and interest generated by the underlying collateral must be used. The most common forms of internal credit enhancement are senior/subordinate structures, overcollateralization, and reserve funds.

(b) What entity determines the amount of securities needed in a securitization?

While in our simple transaction example (described earlier and mentioned in the text), Exceptional Dental Equipment, Inc. (EDE), manufactured the dental equipment and originated the loans, there is another type of securitization transaction involving another company, called a conduit, that buys the loans and securitizes them. For example, consider a hypothetical company Dental Equipment Financing Corporation (DEFC) whose business is to provide financing to dental equipment manufacturers who want to sell their equipment on an installment basis. DEFC would then develop a relationship with manufacturers of dental equipment (such as EDE) to purchase their installment contracts. DEFC would then warehouse the installment contracts purchased until it had a sufficient amount to sell to a special purpose vehicle (SPV), which would then issue the asset-backed securities (ABS). The SPV in a securitization is referred to as the “issuer” or “trust” in the prospectus. As an issuer, the SPV would be involved in determining the details of the securities needed in the securitization.

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

8. Why is the MPR for credit card receivable-backed securities important?

Credit cards are issued by banks (e.g., Visa and MasterCard), retailers (e.g., JC Penney and Sears),
and travel and entertainment companies (e.g., American Express). The cash flow for a pool of
credit card receivables consists of finance charges collected, fees, and principal. Finance charges
collected represent the periodic interest the credit card borrower is charged based on the unpaid
balance after the grace period. Fees include late payment fees and any annual membership fees.
Interest to the bond classes is paid periodically (e.g., monthly, quarterly, or semiannually). The
interest rate may be fixed or floating.

Assuming the period is a month, then the **monthly payment rate (MPR)** expresses the 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. For
example, suppose a $600 million credit card receivable portfolio in February realized $60 million
of payments in March. The MPR for March would then be 10% ($60 million divided by $600
million).

The MPR is important for two reasons. First, if the MPR reaches an extremely low level, there is a
chance that there will be extension risk with respect to the principal payments to the bond classes.
Second, if the MPR is very low, then there is a chance that there will not be sufficient cash flows to
pay off principal. This is one of the events that could trigger the early amortization provision.

9. What is the limitation of a third-party guarantee as a form of credit enhancement?

As a form of external credit enhancements, the rating companies take the “weak link” approach to
ratings. That is, if the rating of the third-party guarantor is downgraded, the asset-backed security’s
rating will be downgraded even if the collateral is performing as expected.

All asset-backed securities are credit enhanced to provide greater protection to investors against
defaults. There are two general types of credit enhancement structures: external and internal.
External credit enhancements come in the form of third-party guarantees that provide for first loss
protection against losses up to a specified dollar amount. Internal credit enhancements include
reserve funds reserves (cash reserves and excess servicing spread), overcollateralization, and
senior/subordinated structures.

In earlier credit card structures, the most popular form of credit enhancement was a bank letter of
credit. However, as just mentioned above, the disadvantage of a third-party guarantee is that if the
guarantor is downgraded the structure will be downgraded regardless of how the collateral is
performing. With the downgrading of banks that provided letters of credit for earlier credit card
deals and the subsequent downgrading of the securities, this form of credit enhancement lost its popularity.

10. An asset-backed security has been credit enhanced with a letter of credit from a bank with a single A credit rating. If this is the only form of credit enhancement, explain whether this issue can be assigned a triple A credit rating at the time of issuance.

The issue will not receive a triple A credit rating but a single A credit rating because there are no other forms of credit enhancements such as reserve funds (cash reserves and excess servicing spread) and overcollateralization.

In the earlier credit card structures, the most popular form of credit enhancement was a bank letter of credit. However, the disadvantage of a third-party guarantee is that if the guarantor is downgraded, the structure will be downgraded regardless of how the collateral is performing. With the downgrading of banks that provided letters of credit for earlier credit card deals and the subsequent downgrading of the securities, this form of credit enhancement lost its popularity.

Today the two most popular forms of credit enhancement for credit card deals coupled with any senior/subordinated structure are the cash collateral account and the collateral invested account. Both forms of credit enhancement involve the investment of cash. In the case of the cash collateral account, funds are generally borrowed from a bank and those funds are then invested in commercial paper or other short-debt of the bank. In the collateral invested account, the funds are invested in credit card receivables within the structure rather than commercial paper or other short-term debt.

11. A corporation is considering a securitization and is considering two possible credit enhancement structures backed by a pool of automobile loans. Total principal value underlying the asset-backed security is $300 million.

<table>
<thead>
<tr>
<th>Principal Value for:</th>
<th>Structure I</th>
<th>Structure II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pool of automobile loans</td>
<td>$304 million</td>
<td>$301 million</td>
</tr>
<tr>
<td>Senior class</td>
<td>$250 million</td>
<td>$270 million</td>
</tr>
<tr>
<td>Subordinated class</td>
<td>$ 50 million</td>
<td>$ 30 million</td>
</tr>
</tbody>
</table>

Answer the following questions.

(a) Which structure would receive a higher credit rating and why?

Generally, a subordinated class will receive a lower credit rating. Thus, because structure II has a smaller subordinate class, it will likely receive a higher credit rating even though its pool of automobile loans is slightly smaller. However, through various forms of credit enhancement and features (such as options) attached to various classes, it is possible both structures could receive the same credit rating.

(b) What forms of credit enhancement are being used in both structures?
As with nonagency mortgage-backed securities, credit enhancement can be either insurance, corporate guarantees, or letters of credit. Internal credit enhancements include reserve funds (cash reserves and excess servicing spread), overcollateralization, and senior/subordinated structures. In both structures above, senior/subordinated structures are being used.

12. Answer the following questions.

(a) Why is a shifting interest mechanism included in a securitization where the collateral is residential mortgage loans?

Almost all existing senior/subordinate structures backed by residential mortgage loans also incorporate a shifting interest mechanism. This mechanism redirects prepayments disproportionately from the subordinate bond class to the senior bond class according to a specified schedule.

As mentioned in Chapter 11, the rationale for the shifting interest structure is to have enough subordinate bond classes outstanding to cover future credit losses. The basic credit concern that investors in the senior bond class have is that while the subordinate bond classes provide a certain level of credit protection for the senior bond class at the closing of the deal, the level of protection may deteriorate over time due to prepayments and certain liquidation proceeds. The objective is to distribute these payments of principal such that the credit protection for the senior bond class does not deteriorate over time.

The percentage of the mortgage balance of the subordinate bond class to that of the mortgage balance for the entire deal is called the level of subordination or the subordinate interest. The higher the percentage, the greater the level of protection for the senior bond class. The subordinate interest changes after the deal is closed due to prepayments. That is, the subordinate interest shifts (hence the term “shifting interest”). The purpose of a shifting interest mechanism is to allocate prepayments so that the subordinate interest is maintained at an acceptable level to protect the senior bond class.

The prospectus will specify how different scheduled principal payments and prepayments will be allocated between the senior bond class and the subordinate bond class. The scheduled principal payments are allocated based on the senior percentage. The senior percentage, also called the senior interest, is defined as the ratio of the balance of the senior bond class to the balance of the entire deal and is equal to 100% minus the subordinate interest. Allocation of the prepayments is based on the senior prepayment percentage defined as:

\[
\text{senior percentage} + (\text{shifting interest percentage} \times \text{subordinate interest})
\]

where the prospectus will provide the shifting interest percentage schedule for calculating the senior prepayment percentage. While the shifting interest structure is beneficial to the senior bond class holder from a credit standpoint, it does alter the cash flow characteristics of the senior bond class even in the absence of defaults. The size of the subordination also matters. A larger subordinate class redirects a higher proportion of prepayments to the senior bond class, thereby shortening the average life even further.
(b) Why would a shifting interest mechanism not be included in a securitization where the assets being securitized do not have prepayments?

A shifting interest mechanism would not be included in a securitization where the assets being securitized do not have prepayments because the purpose of a shifting interest mechanism is to allocate prepayments so that the subordinate interest is maintained at an acceptable level to protect the senior bond class.

As explained in Chapter 11, a prepayment is any excess payment over the scheduled principal payment. For an amortizing asset, projection of the cash flows requires projecting prepayments. In contrast to amortizing assets, nonamortizing assets do not have a schedule for the periodic payments that the individual borrower must make. Instead, a nonamortizing asset is one in which the borrower must make a minimum periodic payment. If that payment is less than the interest on the outstanding loan balance, the shortfall is added to the outstanding loan balance. If the periodic payment is greater than the interest on the outstanding loan balance, then the difference is applied to the reduction of the outstanding loan balance. Because there is no schedule of principal payments (i.e., no amortization schedule) for a nonamortizing asset, the concept of a prepayment does not apply. Credit card receivables are examples of nonamortizing assets.

13. Suppose that for a securitization with a shifting interest mechanism, you are given the following information for some month:

   subordinate interest = 25%
   shifting interest percentage = 85%
   regularly scheduled principal payment = $3,000,000
   prepayments = $1,200,000

Answer the following questions.

(a) What is the senior prepayment percentage for the month?

The prospectus will specify how different scheduled principal payments and prepayments will be allocated between the senior bond class and the subordinate bond class. The scheduled principal payments are allocated based on the senior percentage. The senior percentage, also called the senior interest, is defined as the ratio of the balance of the senior bond class to the balance of the entire deal and is equal to 100% minus the subordinate interest. For our problem, the subordinate interest percentage is 25% entailing that the senior percentage is 100% – 25% = 75%.

Allocation of the prepayments is based on the senior prepayment percentage (in some deals called the accelerated distribution percentage). This is defined as follows:

   senior percentage + (shifting interest percentage × subordinate interest).

The “shifting interest percentage” in the formula above is specified in the prospectus. For our problem, we have senior interest of 75%, the subordinate interest is 25%, and the shifting interest
percentage is 85% (0.85 when used in formula). Inserting these numbers in the above formula we get:

\[
\text{senior percentage for the month} = 75\% + (0.85 \times 25\%) = 96.25\%.
\]

(b) How much of the $3,000,000 regularly scheduled principal payment is distributed to the senior class?

Given the scheduled principal payment of $3 million, the senior bond class will get 0.75($3,000,000) = $2,250,000. Thus, the subordinate bond class will get 0.25($3,000,000) = $750,000 (or the difference of $3,000,000 – $2,250,000 = $750,000).

(c) How much of the $1,200,000 is distributed to the senior class?

Given our answer in part (a) of 0.9625, we see that if prepayments for the month are $1,200,000, then 0.9625($3,000,000) = $1,150,000 is allocated to the senior bond class. The subordinate bond class will get the remainder of $1,200,000 – $1,150,000 = $50,000.

14. What is the purpose of the step-down provisions in a securitization?

An important feature in analyzing senior/subordinate bond classes or deals backed by residential mortgages is the deal’s step-down provisions. These provisions allow for the reduction in credit support over time.

A concern that investors in the senior bond class have is that if the collateral performance is deteriorating, step-down provisions should be altered. The provisions that prevent the credit support from stepping down are called “triggers.” Principal payments from the subordinate bond classes are diverted to the senior bond class if a trigger is reached. The diversion of principal varies from issuer to issuer. The most conservative approach is to stop all principal payments from being distributed to the subordinate bond classes. Alternatively, some issuers allow the subordinate bond classes to receive regularly scheduled principal (amortization) on a pro rata basis but divert all prepayments to the senior bond class.

There are two triggers based on the level of credit performance required to be passed before the credit support can be reduced: a delinquency trigger and loss trigger. The triggers are expressed in the form of a test that is applied in each period. The delinquency test, in its most common form, prevents any step-down from taking place as long as the current over 60-day delinquency rate exceeds a specified percentage of the then-current pool balance. The principal loss test prevents a step-down from occurring if cumulative losses exceed a certain limit (which changes over time) of the original balance.

In addition to triggers based on the performance of the collateral, there is a balance test. This test involves comparing the change in the senior interest from the closing of the deal to the current month. If the senior interest has increased, the balance test is failed, triggering a revision of the base schedule for the allocation of principal payments from the subordinate bond classes to the senior bond class. Unlike a trigger that will increase the allocation to the senior bond class, there are balance tests that will increase the allocation to the subordinate bond class. This can occur
where the subordinate interest improves by a significant amount. That amount is set forth in the prospectus. For example, the prospectus may set forth that if the subordinate interest doubles, the base schedule is overridden such that more is allocated to the subordinate bond class.

15. Answer the following questions.

(a) What is meant by concentration risk?

Concentration risk refers to a situation where a few borrowers of significant size are concentrated in a pool. This results in a loss of diversification and higher default risk.

Analysis of the credit quality of the collateral depends on the asset type. The rating companies will look at the borrower’s ability to pay and the borrower’s equity in the asset. The latter will be a key determinant as to whether the borrower will default or sell the asset and pay off a loan. The rating companies will look at the experience of the originators of the underlying loans and will assess whether the loans underlying a specific transaction have the same characteristics as the experience reported by the issuer.

The concentration of loans is examined. The underlying principle of asset securitization is that the large number of borrowers in a pool will reduce the credit risk via diversification. If there are a few borrowers in the pool that are significant in size relative to the entire pool balance, this diversification benefit can be lost, resulting in a higher level of default risk. This risk is called concentration risk. In such instances, rating companies will set concentration limits on the amount or percentage of receivables from any one borrower.

(b) How do rating agencies seek to limit the exposure of a pool of loans to concentration risk?

Rating agencies will seek to limit the exposure of a pool of loans to concentration risk by setting limits on the amount or percentage of receivables from any one borrower. These limits are called concentration limits. Even if the exposure cannot be perfectly limited there are still other ways to achieve a desire rating.

16. What is the difference between pool-level and loan-level analysis?

The analysis of prepayments can be performed on a pool level or a loan level. In pool-level analysis it is assumed that all loans comprising the collateral are identical. For an amortizing asset, the amortization schedule is based on the gross weighted-average coupon (GWAC) and weighted-average maturity (WAM) for that single loan. Pool-level analysis is appropriate where the underlying loans are homogeneous. Loan-level analysis involves amortizing each loan (or group of homogeneous loans). Thus, the major difference is that pool-level analysis focuses upon examining a larger group of loans whereas loan-level analysis concentrates on examining a loan individually (or a small group of loans that have similar qualities).
17. How do optional call provisions in a securitization differ from that of a call provision in a standard corporate bond?

To answer this question it helps to understand why a corporation would want to raise funds via securitization rather than simply issue corporate bonds. There are four principal reasons why a corporation may elect to raise funds via a securitization rather than a corporate bond. They are the potential to reduce funding costs, to diversify funding sources, to accelerate earnings for financial reporting purposes, and to achieve (if a regulated entity) relief from capital requirements. These reasons can all be viewed as involving an option that a corporate bond does not contain.

Let us focus on the first of the above reasons (i.e., to reduce fund costs) using the illustration given previously and found in the text. Suppose that Exceptional Dental Equipment, Inc. (EDE), has a BB credit rating. If it wants to raise funds equal to $300 million by issuing a corporate bond, its funding cost the going rate for a firm with a BB credit rating. If EDE defaults on any of its outstanding debt, the creditors will go after all of its assets, including the loans to its customers.

Suppose that EDE can create a legal entity and sell the loans to that entity. That entity is the special purpose vehicle (SPV). In our illustration, the SPV is DEAT. If the sale of the loans by EDE to DEAT is done properly, DEAT (and not EDE) then legally owns the receivables. As a result, if EDE is ever forced into bankruptcy while the loans sold to DEAT are still outstanding, the creditors of EDE cannot recover the loans because they are legally owned by DEAT.

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

18. What factors do the rating agencies consider in analyzing the structural risk in a securitization?

The decision on the structure is up to the seller. Once selected, the rating agencies examine the extent to which the cash flow from the collateral can satisfy all of the obligations of the bond classes in the securitization. The cash flow of the underlying collateral is interest and principal repayment. The cash flow payments that must be made are interest and principal to investors, servicing fees, and any other expenses for which the issuer is liable. This is described by the structure’s cash flow waterfall. The rating agencies analyze the structure to test whether the collateral’s cash flows match the payments that must be made to satisfy the issuer’s obligations. This requires that the rating agency make assumptions about losses and delinquencies and consider various interest rate scenarios after taking into consideration credit enhancements.
In considering the structure, the rating agencies will consider (i) the loss allocation (how losses will be allocated among the bond classes in the structure), (ii) the cash flow allocation (i.e., the cash flow waterfall), (iii) the interest rate spread between the interest earned on the collateral and the interest paid to the bond classes plus the servicing fee, (iv) the potential for a trigger event to occur that will cause the early amortization of a deal (discussed later), and (v) how credit enhancement may change over time.

We can note that in the past four nationally recognized statistical rating organizations rate asset-backed securities. These rating agencies evaluate many factors related to risk for asset-backed securities (ABS). For example, in analyzing credit risk, the rating companies focus on the following factors: credit quality of the collateral, the quality of the seller/servicer, cash flow stress and payment structure, and legal structure. In regards to the servicer, Duff & Phelps reviews the following factors when evaluating servicers: servicing history, experience, originations, servicing capabilities, human resources, financial condition, and growth/competition/business environment. Based on its analysis, Duff & Phelps determines whether the servicer is acceptable or unacceptable.

19. Why would an interest rate derivative be using in a securitization structure?

To deal with situations where there may be a mismatch between the cash flow characteristics of the asset and the liabilities, interest rate derivative instruments are used in a securitization. The two common interest rate derivatives used are interest rate swaps and interest rate caps, both described in Chapter 28.

20. The following questions relate to auto loan–backed securities. Answer each.

(a) What is the cash flow for an auto loan–backed security?

The cash flow for auto loan–backed securities consists of regularly scheduled monthly loan payments (interest and scheduled principal repayments) and any prepayments. The monthly interest rate may be fixed or floating.

(b) Why are prepayments of minor importance for automobile loan-backed securities?

Prepayments are less of a problem (say relative to mortgage refinancing) because auto loans are less sensitive to changes in interest rates. For example, an auto loan is a relatively small loan with short horizons so that refinancing may have little to gain. Furthermore, interest rates for the automobile loans are already substantially below market rates if they are offered by manufacturers as part of a sales promotion.

For securities backed by auto loans, prepayments result from sales and trade-ins requiring full payoff of the loan, repossession and subsequent resale of the automobile, loss or destruction of the vehicle, payoff of the loan with cash to save on the interest cost, and refinancing of the loan at a lower interest cost.

Prepayments due to repossessions and subsequent resale are sensitive to the economic cycle. In
recessionary economic periods, prepayments due to this factor increase. Whereas refinancings may be a major reason for prepayments of mortgage loans, they are of minor importance for automobile loans. Moreover, the interest rates for the automobile loans underlying several issues are substantially below market rates if they are offered by manufacturers as part of a sales promotion.

(c) How are prepayments on pools of auto loans measured?

Prepayments for auto loan–backed securities are measured in terms of the absolute prepayment rate, denoted not by APR but by ABS (probably because it was the first prepayment measure used for asset-backed securities). The ABS is the monthly prepayment expressed as a percentage of the original collateral amount. Recall that the SMM (monthly CPR) expresses prepayments based on the prior month’s balance.

21. The following questions relate to credit card receivable-backed securities. Answer each one.

(a) What happens to the principal repaid by borrowers in a credit card receivable-backed security during the lockout period?

In contrast to an auto loan–backed security, the principal repayment of a credit card receivable–backed security is not amortized. Instead, for a specified period of time, referred to as the lockout period or revolving period, the principal payments made by credit card borrowers constituting the pool are retained by the trustee and reinvested in additional receivables. The lockout period can vary from 18 months to 10 years.

After the lockout period, the principal is no longer reinvested but paid to investors. This period is referred to as the principal-amortization period.

(b) What is the role of the early amortization provision in a credit card receivable-backed security structure?

The role of an early amortization provision in a credit card receivable–backed security structure is to provide a safeguard to protect the claims of those who purchase credit card receivable-backed securities.

There are provisions in credit card receivable–backed securities that require earlier amortization of the principal if certain events occur. Such provisions, which are referred to as early or rapid amortizations, are included to safeguard the credit quality of the issue. The only way that the cash flows can be altered is by triggering the early amortization provision.

Early amortization is invoked if the trust is not able to generate sufficient income to cover the investor coupon and the servicing fee. For example, in the Sears Credit Account Master Trust II, Series 1995-4, if the net yield provided by the portfolio of receivables is less than the base rate for three monthly periods, early amortization is triggered. Other events that may trigger early amortization are the default of the servicer, credit support decline below a specified level, or the
issuer violating agreements regarding pooling and servicing.

(c) How can the cash flow of a credit card receivable-backed security be altered prior to the principal-amortization period?

The cash flow of a credit card receivable–backed security can be altered prior to the principal-amortization period when credit card borrowers pay more or less than the interest due. More details are given below.

In contrast to an auto loan–backed security, the principal repayment of a credit card receivable–backed security is not amortized. For a specified period of time (varying from 18 months to 10 years) before the principal-amortization period, the principal payments made by credit card borrowers constituting the pool are retained by the trustee and reinvested in additional receivables.

In contrast to amortizing assets, nonamortizing assets do not have a schedule for the periodic payments that the borrower must make. Instead, a nonamortizing asset is one in which the borrower must make a minimum periodic payment. If that payment is less than the interest on the outstanding loan balance, the shortfall is added to the outstanding loan balance. If the periodic payment is greater than the interest on the outstanding loan balance, then the difference is applied to the reduction of the outstanding loan balance. There is no schedule of principal payments (i.e., no amortization schedule) for a nonamortizing asset.

(d) Why is the monthly payment rate an important measure to examine when considering investing in a credit card receivable-backed security?

It is important to look at the monthly payment rate so as to get a feel for how rapidly credit card borrowers are paying off their debt.

The concept of prepayments does not apply to credit card receivable–backed securities because there is no amortization schedule during the lockout period. Instead, for this sector of the asset-backed securities market, participants look at the monthly payment rate (MPR). This measure expresses the monthly payment (which includes finance charges collected and any principal) of a credit card receivable portfolio as a percentage of debt outstanding in the previous month. For example, suppose a $500 million credit card receivable portfolio in January realized $50 million of payments in February. The MPR would then be $50 million / $500 million = 0.10 or 10%.

22. The below questions relate to home equity loan–backed securities. Answer each.

(a) What is the cash flow of a closed-end home equity loan–backed security?

The monthly cash flow for a home equity loan–backed security backed by closed-end HELs is the same as for mortgage-backed securities. That is, the cash flow consists of net interest, regularly scheduled principal payments, and prepayments. The uncertainty about the cash flows arises from prepayments.
Home equity loan–backed securities are backed by home equity loans. A **home equity loan (HEL)** is a loan backed by residential property. Typically, the loan is a second lien on property that has already been pledged to secure a first lien. In some cases, the lien may be a third lien. In recent years, some loans have been first liens.

Home equity loans can be closed or open end. A **closed-end HEL** is structured the same way as a fully amortizing residential mortgage loan. That is, it has a fixed maturity and the payments are structured to fully amortize the loan by the maturity date. There are both fixed-rate and variable-rate closed-end HELs. Typically, variable-rate loans have a reference rate of six month LIBOR and have periodic caps and lifetime caps, just as with adjustable-rate mortgages. The cash flow of a pool of closed-end HELs is composed of interest, regularly schedule principal repayments, and prepayments, just as with mortgage-backed securities. Thus it is necessary to have a prepayment model and a default model to forecast cash flows. The prepayment speed is measured in terms of a conditional prepayment rate (CPR).

With an **open-end HEL**, the homeowner is given a credit line and can write checks or use a credit card for up to the amount of the credit line. The amount of the credit line depends on the amount of the equity the borrower has in the property. There is a revolving period over which the homeowner can borrow funds against the line of credit. At the end of the term of the loan, the homeowner either pays off the amount borrowed in one payment or the outstanding balance is amortized.

**b) How is prepayment on home equity loan–backed securities measured?**

The cash flow of a pool of closed-end HELs is composed of interest, regularly schedule principal repayments, and prepayments, just as with mortgage-backed securities. Thus, it is necessary to have a prepayment model and a default model to forecast cash flows. The prepayment speed is measured in terms of a conditional prepayment rate (CPR).

**c) What is meant by the prospectus prepayment curve?**

The prospectus prepayment curve, or PPC, refers to a multiple of the base case prepayments assumed in the prospectus.

Borrower characteristics and the seasoning process must be kept in mind when trying to assess prepayments for a particular deal. In the prospectus of an offering, a base case prepayment assumption is made: The initial speed and the amount of time until the collateral is expected to be seasoned. Thus the prepayment benchmark is issue specific. Investors are now using the concept of a prospectus prepayment curve, or PPC. This is just a multiple of the base case prepayments assumed in the prospectus. For example, in the prospectus for the Contimortgage Home Equity Loan Trust 1996-1, the base case prepayment assumption for the fixed-rate mortgages in the pool is as follows (p. 3–37):

“... a 100% Prepayment Assumption assumes conditional prepayment rates of 4% per annum of the then outstanding principal balance of the Home Equity Loans in the Fixed Rate Group in the first month of the life of the mortgage loans and an additional
1.455% (precisely 16/11%) per annum in each month thereafter until the twelfth month. Beginning in the twelfth month and in each month thereafter during the life of the mortgage loans, 100% Prepayment Assumption assumes a conditional prepayment rate of 20% per annum each month.”

Therefore, if an investor analyzed the deal based on 200% PPC, this means doubling the CPRs cited in the excerpt and using 12 months for seasoning.

23. In a home equity loan-backed transaction, what is meant by an available funds cap and how does this cap differ from a typical cap in a floating-rate security?

An available funds cap refers to an effective cap where the cap depends on the amount of funds generated by the net coupon on the principal, less any fees. Unlike a typical security with an adjustable rate, which has a cap that is fixed throughout the security’s life, the effective periodic and lifetime cap is variable.

Typically, home equity loan-backed securities are securitized by both closed-end fixed-rate and adjustable-rate (or variable-rate) HELs. The securities backed by the latter are called HEL floaters, and most are backed by nonprime HELs. The reference rate of the underlying loans typically is six month LIBOR. The cash flow of these loans is affected by periodic and lifetime caps on the loan rate. To increase the attractiveness of home equity loan-backed securities to investors, the securities typically have been created in which the reference rate is one-month LIBOR. Because of (i) the mismatch between the reference rate on the underlying loans and that of the HEL floater and (ii) the periodic and life caps of the underlying loans, there is a cap on the coupon rate for the HEL floater. Unlike a typical floater, which has a cap that is fixed throughout the security’s life, the effective periodic and lifetime cap of a HEL floater is variable. The effective cap, referred to as the available funds cap, will depend on the amount of funds generated by the net coupon on the principal, less any fees.

24. The following questions relate to rate reduction bonds. Answer each one.

(a) What asset is the collateral?

Rate reduction bonds are backed by a special charge (tariff) included in customers’ utility bills. 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.

Prior to deregulation, electric utilities were entitled to set utility rates so as to earn a competitive return on the assets on their balance sheet. After deregulation, the setting of utility rates to recover a competitive return was no long permissible. As a result, many electric utilities had a substantial number of assets that they acquired prior to deregulation that would likely become uneconomic and utilities would no longer be assured that they could charge a high enough rate to recover the costs of these assets. These assets are referred to as “stranded assets” and the associated costs referred to as “stranded costs.” For this reason, rate reduction bonds are also known as stranded...
cost bonds or stranded asset bonds. Some market participants refer to this sector of the ABS market as the “utilities” sector.

The CTC is collected by the utility over a specific period of time. 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.

(b) What is a true-up provision in a securitization creating 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. The CTC is initially calculated based on projections of utility usage and the ability to collect revenues. 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 the CTC on a periodic basis over the term of the securitization based on actual collection experience. The advantage of the true-up mechanism to the bond classes is that it provides cash flow stability as well as a form of credit enhancement.

25. The following questions relate to manufactured housing-backed securities. Answer each one.

(a) What is the cash flow of a manufactured housing-backed security?

The typical loan for a manufactured home is 15 to 20 years. The loan repayment is structured to fully amortize the amount borrowed. Therefore, as with residential mortgage loans and HELs, the cash flow consists of net interest, regularly scheduled principal, and prepayments. However, prepayments are more stable for manufactured housing–backed securities because they are not sensitive to refinancing.

(b) How are prepayments measured for manufactured housing-backed securities?

As with residential mortgage loans and HELs, prepayments on manufactured housing–backed securities are measured in terms of CPR.

(c) Why are prepayments on manufactured housing-backed securities less insensitive to prepayments due to refinancing compared to securities backed by other types of residential mortgage loans?

Prepayments are more stable for manufactured housing–backed securities because they are not sensitive to refinancing like securities backed by other types of residential mortgage loans. There are several reasons for this. The loan balances are typically small so that there is no significant dollar savings from refinancing. Second, the rate of depreciation of mobile homes may be such that in the earlier years depreciation is greater than the amount of the loan paid off. This makes it difficult to refinance the loan. Finally, typically borrowers are of lower credit quality and therefore find it difficult to obtain funds to refinance.