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## **Securitization: The Tool of Financial Transformation**

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**Securitization: the tool of financial transformation**

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**Abstract**

Securitization as a financial instrument has had an extremely significant impact on the world's financial system. First, by integrating capital markets and the uses of resources - such as mortgage originators, finance companies, governments, etc. - it has strengthened the trend towards disintermediation. Having been able to mitigate agency costs, it has made lending more efficient; evidence of this can be observed in the mortgage markets. By permitting firms to originate and hold assets off the balance sheet, it has generated much higher levels of leverage and, though arguably, greater economies of scale. Combination of securitization techniques with credit derivatives and risk transfer devices continues to develop innovative methods of transforming risk into a commodity and allow various market participants to tap into sectors which were otherwise not open to them.

In its broadest sense, the term “securitization” implies a process by which a financial relationship is converted into a transaction. A financial transaction is the coming together of two or more entities; a financial relationship is their staying together. For example, a loan to a corporation is a financial relationship; once the loan is transformed into a tradable bond, it is a transaction. We find several examples in the history of the evolution of finance of relationships that have been converted into transactions. The creation of “stock,” representing ownership in a corporation, is one of the earliest and most important examples of this process because of its impact on the growth of the corporate form of business organization. The process of converting loans to corporations of high credit quality corporate borrowers, and in the 1970s expanding that opportunity to speculative-grade corporate borrowers, into publicly traded bonds is another example of this. Commercial paper is another example of securitization of relationships as it securitizes a trade debt.

In today’s capital markets, the term securitization has acquired a more specific meaning, which for the sake of distinction is referred to as “asset securitization.” Today securitization is understood to mean a process by which an entity pools together its interest in identifiable future cash flows, transfers the claims on those future cash flows to another entity that is specifically created for the sole purpose of holding those financial claims, and then utilizes those future cash flows to pay off investors over time, either with or without credit support from a source other than the cash flows. A securitization transaction thereby achieves the purpose of providing financing, but in a unique way – by sale of assets. While the result of a securitization transaction is that financing is obtained, it is not “financing” as such because the entity securitizing its assets is not borrowing money but selling a stream of cash flows that was otherwise to accrue to the entity. The entity could be a corporation (financial or non-financial) or a government entity (nation or municipal).

The purpose of this article is to describe the basic principles of securitization, the reasons for its use by corporations, and its impact on financial markets.

### **The securitization process**

We will use an example to explain the securitization process. Suppose a company has receivables on its balance sheet that represent installment loans that borrowers are repaying over time. Because the company has originated the loans it will be referred to as the “originator company” or simply the “originator.” The originator identifies a pool of receivables that satisfy certain features, described later, that make them acceptable to be securitized.

This pool of receivables is transferred to a special purpose entity (SPE), also referred to as a special purpose vehicle (SPV). Generally speaking, the pool of loans, which we will refer to as the “asset pool,” is transferred at par value; that is to say, it is transferred at the outstanding principal of the loans being pooled. Let us suppose the asset pool has a par value of U.S.\$100 million. The rate of return that the SPE would now receive on the loans is, of course, the weighted average of the interest accruing on the loans. In our illustration, an 8.55% weighted average rate of interest for that asset pool will be assumed.

The SPE holds the asset pool, paying for it by issuing securities. The credit rating of those securities will be based solely on the strength of the asset pool. That is to say, the asset pool’s cash flows will be used on a mutually exclusive basis to repay investors of the securities issued by the SPE. By “mutually exclusive” it is meant that the originator would not have any direct claim on the receivables, nor would the investors in the securities issued by the SPE or the SPE itself have any claim against the general assets of the originator, except to the extent of credit support described later.

As for the securities issued by the SPE, they are structured into different classes of securities. Very simply speaking, these securities may be senior and junior; or they may be senior, mezzanine, and junior; or they may have various classes such as class A, class B, and so on. These various classes are created in order to generate differentiated interests in the pool, such that the senior investors have superior rights over the pool than the subordinated investors. In our illustration, we will suppose that three classes of securities are created with following interests in the asset pool: class A - 95% (senior bond), class B - 2% (mezzanine bond), and class C - 3% (junior bond).

Since class A investors are senior, any losses or shortfalls in the asset pool to satisfy the obligations of that bond class would first be absorbed by class C, and then by class B. Class A would not be affected by losses

unless those losses exceed 5%. Therefore, class A has a cushion against losses provided by the existence and size of classes B and C. This allows class A to get a high rating from the rating agencies. In a securitization transaction, the amount of class B and C (referred to in securitization jargon as the “sizing” of subordination) is determined so as to obtain a target rating for class A, the target typically being a triple A rating. Likewise, the sizing of class C is determined so as to ensure the target rating for class B, say, an investment-grade rating. Typically, class C would be an unrated class, and may not find a buyer and, as a result, is often retained by the originator.

The three classes of securities in our example will be offered at different coupon rates, class A being the lowest because it carries the least credit risk and is therefore the cheapest funding source for the SPE; class C would have the highest coupon rate and therefore the costliest funding source for the SPE because it has the lowest credit rating. Suppose the weighted average cost of the three coupons is 7%.

As will be explained later, the SPE is almost like a non-substantive shell entity. As such, after it acquires the asset pool from the originator, it does not have the wherewithal required to collect the receivables, and therefore cannot perform the collecting and servicing function itself. Generally, the originator company, who has proximity with the borrowers and typically has an infrastructure and systems in place for doing so, retains the servicing function; the originator company is now in a servicer role instead of an ownership role, which it had prior to the securitization transaction. In some cases the servicing function may be transferred to an independent third-party entity that specializes in servicing loans. The decision as to whether to retain servicing with the originator company or to have it transferred to an independent third-party entity will be driven by economics rather than by structural considerations.

Let us assume in our illustration that the servicer is paid a servicing fee of 50 basis points per annum. The difference between the weighted average interest accruing on the loans of 8.55% and the weighted average cost of the three coupons plus servicing fee is 1.05%. This difference is referred to as the excess spread. The SPE may issue residual income certificates or one or more interests that will sweep this residual income from the SPE. The residual interest may be held either by the originator or sold to willing buyers.

Let us see what each of the parties realized as a result of this securitization transaction:

- The originator received immediately after the transaction was consummated funding of U.S.\$100 million. Assuming class C with a par value of U.S.\$3 million was held by the originator, the actual funding the originator obtains is only U.S.\$97 million. In addition, the originator obtained the residual interest in the transaction, representing the cash left over after paying the investors in class A and B.
- Investors had the choice of three different classes of securities from which to select, each carrying a different credit rating and coupon rate. These securities might also have other different investment features beyond the credit rating, such as differences in interest rate risk (i.e., duration and convexity).
- The SPE was a creature designed for enabling the transaction; consequently, there are no regrets that the SPE gets nothing at all.

While the pool is transferred to the SPV, as explained above, it has no infrastructure to actually manage the collections on the receivables. Logistically, the best party to continue to manage the collections is the originator company itself, as it has an existing franchise with the customers. Consequently, the originator company typically continues to manage the collections and render other borrower services<sup>1</sup>. Of course, the servicer would expect a servicing fee for doing so. The cash flows collected each month by the servicer are used to repay the principal, as well as interest, for the securities issued by the SPE, either with or without their reinvestment.

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<sup>1</sup> The services to the borrowers, collection of cash flows, and remittance of cash flows to investors, and basic investor services, are collectively known as the servicing function.

### **What is an asset-backed security?**

The securities issued by the SPE are referred to as asset-backed securities<sup>2</sup>. In our example, classes A, B, and C are the asset-backed securities. These securities differ from a usual capital market instrument which is an exposure to the issuer's business. An asset-backed security is simply an exposure to a pool of specified assets. Returning to our earlier example, the investors who acquire classes A, B, or C are not concerned with the generic risks of the business of the originator company. Even the bankruptcy of that company cannot affect investors, though there will be some shock to the servicing function if it is being performed by the originator company. The servicing will have to be transferred to another servicer, but assuming that can be done smoothly, the investors will continue to enjoy the cash flows generated by the asset pool.

The investors are, however, exposed to the risks of the asset pool. These risks may be multifarious - for example, delays, defaults, prepayments, legal challenges, and so on - and they will be discussed later. What is critical to understand is that investors in the asset-backed securities are exposed to the risks of the asset pool not the risks of the originator company's business. Therefore, an asset-backed security is not a claim on an entity but a pool of assets.

Two important points arise here. Firstly, the distinction between claims on assets and claims on entities is, to an extent, ephemeral. In the final analysis, the two seem to merge: any claim on an asset is a claim on an entity as no asset is a value by itself. Secondly, any claim on an entity is also ultimately a claim on the assets of the entity, as all such claims are paid off from the assets of the entity. The very concept of limited liability companies makes all financial claims as claims on assets.

To understand the significant difference, and to appreciate the basic indifference, between an asset-backed security and a traditional bond, let us examine their nature. In our example above, we had three classes of securities: class A [U.S.\$95 million], class B [U.S.\$2 million], and class C [U.S.\$3 million]. They are all backed by the common pool of assets of U.S.\$100 million. Since class C is the junior-most here, it will be the first one to absorb losses in the pool of assets. The first dollar of realized loss on the assets will be allocated to class C, which means class C will suffer a write off of principal to the extent of such realized loss. Class C continues to absorb losses until it is wiped out, at which point class B starts suffering losses. In other words, the probability of class B suffering losses is the same as that of the losses in the asset pool exceeding the size of class C. Likewise, if the losses exceed the combined size of classes B and C, class A would default.

Let us now look at a corporate bond. Assume an entity having total assets of U.S.\$100 million has the following capital structure: equity of U.S.\$3 million, preferred stock of U.S.\$2 million, and senior unsecured bonds of U.S.\$95 million. As it might be obvious, we have contrived to put the same numbers here as in the example of asset-backed security, though it would be rare to see such a highly leveraged company. Look at the moot question: when do the bonds in our example default? Obviously, when the losses of the entity exceed the equity and preferred stock, which is the same as the probability of class A defaulting in our example of asset-backed securities. We can use these parallels to appreciate the

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<sup>2</sup> There is no uniform name for the securities issued by the SPV, as such securities take different forms. These securities could represent a direct claim of the investors on all that the SPV collects from the receivables transferred to it - in this case, the securities are called "pass through certificates" or "beneficial interest certificates" as they imply certificates of proportional beneficial interest in the assets held by the SPV. Alternatively, the SPV might be re-configuring the cash flow by reinvesting it, so as to pay the investors on fixed dates, not matching the dates when the transferred receivables are collected by the SPV. In this case, the securities held by the investors may be called "pay through certificates." Alternatively, as these securities are essentially the obligations of the SPV that are discharged by the receivables from the assets transferred to it, the obligations could be referred to generically as "asset-backed obligations," and specifically as "asset-backed bonds" or "asset-backed notes." The securities issued by the SPV could also be named based on their risk or other features, such as senior notes, junior notes, floating rate notes, and so on. Yet another way of referring to asset-backed securities is based on the term of the paper concerned; if the paper is short-term commercial paper, it is referred to as asset-backed commercial paper, otherwise referred to as "term paper."

indifference between traditional bonds and asset backed-securities. The creation of structured securities of different classes is not unique to securitization. There is a hierarchy of different financial instruments on the liability side of a corporate balance sheet which has different levels of priority. All financial instruments are backed by assets, and therefore, in the ultimate analysis, all securities are asset backed.

However, there is a significant difference between assets of the entire enterprise and those that are isolated as a specific pool. The bond in question above is a claim on all assets of the entity. The asset-backed securities are a claim on an isolated pool. The securitized pool is like a miniature corporation; it came out of the aggregate assets of the originator company's business. But once the isolation of the pool happens, investors in the transaction are only impacted by the risks of those specific assets, and not the general business risks of the mortgage lender. From the open-ended enterprise of the originator company, we are now focused on a closed-end, deconstructed asset pool.

This discussion leads to an important feature of an asset-backed security: whether asset-backed or entity-backed, there is no value-added merely by securitizing assets. The only source of value-added is by a sort of inter-creditor arrangement whereby an asset-backed investor is provided two advantages - legal and structural preferences.

Legal preference refers to the preference that an asset-backed investor enjoys over a traditional investor as a claimant on the assets of the operator. A traditional investor essentially has a claim against the operator. If the operator were to run into financial problems, the investor's claim is subject to bankruptcy administration, which in most countries is a time-consuming process and might be legally preceded by other statutory claims. An asset-backed operator has a claim over the assets of the operator, as those assets have been hived off and made legal property of the investors. Therefore, these assets subserve the claims of the investors before they can be claimed by anyone else. Creating this legal preference is the key to securitization.

Structural preference refers to the stacking order of mutual rights among the different classes of investors. In our example earlier, we had three classes of investors, who had so aligned their rights that one becomes safer at the cost of the other. The senior-most, class A is safest by piggy-backing on classes B and C, and likewise, class B piggybacks on class C. This structuring of mutual rights is not unique to securitization since every capital structure of any corporation has some liabilities which are prioritized to others, but the structuring becomes more meaningful in case of securitization in view of the isolation of entity risks.

We used the term inter-creditor arrangement above as the genesis of the two preferences. That an investor in an asset-backed security enjoys both a legal and structural preference over the traditional investor is a matter of mutual arrangement among the various "creditors" (including, for this purpose, the asset-backed investor) of an entity. A preference is understandably an advantage that one has over the other, and looked at the other way around, it is only gained by the acceptance of deference by the other creditors. Therefore, the advantage that asset-backed investors gain is at the expense of the other creditors. Does this mean that the sum of the parts is no different from the whole?

### **Legal preference by isolation**

As discussed earlier, the legal preference of the asset-backed investor over a traditional investor is key to the very economics of securitization. Much of the need for the present day methods of securitization would disappear if it were possible to allow a certain group of investors a bankruptcy-proofing device whereby certain assets, if not all, of a corporation would first be used to pay them off<sup>3</sup>. One might argue that in countries such as the United States there are rules for the priority of creditors in the case of bankruptcy (rules of absolute priority) that can be used to protect different classes of creditors by creating a preference against a specific asset. However, as has been found in numerous studies [Merton (1977), Meckling (1977)], the principle of absolute priority is the exception rather than the rule in a Chapter 11 bankruptcy. Thus, securitization strives at arbitraging the law by ensuring that at least some specific assets are free from any other claim and can be used to pay off only the asset-backed investors.

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<sup>3</sup> Covered bonds are generally used in some European countries and have arguably served as an effective alternative to isolation-type securitization devices.

The device used for creating this legal preference is simple: transfer of assets, often referred to as a “true sale.” The originator company in our example transfers a stream of receivables (i.e., the loans) to the SPE. This transfer should be a legally recognized transfer, such that the receivables now become the legal property of the SPE. Being the property of the SPE, obviously, the receivables are not affected by any bankruptcy of the operator, or claims of the general creditors of the operator.

In securitization parlance, this legal transfer is often referred to as “isolation.” Isolation is only a perfected, irreversible legal transfer. That the receivables are isolated from the originator company means that the receivables are beyond the legal powers of either the originator company, or the originator company’s liquidator, or creditors, or for that matter, anyone with a claim against the originator company.

In the United States, a recent legal challenge that the holders of a security in a securitization are protected from the creditors of the originator company when there is true sale is the bankruptcy of LTV Steel Company, Inc. (LTV). In this bankruptcy, filed in the United States Bankruptcy Court for the Northern District Court of Ohio on December 29, 2000, LTV argued that its two securitizations were not true sales but merely disguised financing transactions, which meant that the creditors of LTV are entitled to the cash flows of the assets that LTV allegedly merely transferred but did not sell to the SPV. LTV in an emergency motion to the bankruptcy court in which it put forth this argument asked the court for permission to use the cash flow from the two securitizations with the provision that LTV provide adequate protection to holders of the securities issued in the securitization. While in an interim order the bankruptcy court granted LTV permission to use the cash flow from the asset pools used in the two securitizations, because the case was settled, the bankruptcy court did not have to rule on LTV’s argument of whether there was a true sale of the assets. As part of a settlement, there was a summary finding that LTV’s two securitizations were in fact a true sale. For investors in the securities issued in a securitization, however, what was troubling about this case is that the court decided to permit LTV to use the cash flows prior to the settlement<sup>4</sup>.

#### **Use of special purpose vehicles**

The dual objectives of transferring assets to investors and at the same time creating a capital market instrument can only be achieved by utilizing a transformational device known as an SPV. The legal entity is created for the single purpose of holding the assets sought to be transferred by the originator and the subsequent issuance of securities such that the securities are no different from a claim over those assets. Thus, investors do not have to acquire or hold the assets of the originator directly, but they do so indirectly through the SPV. The SPV, as an intermediary between the originator and the investors, sits with the assets as a sort of legalized facade for the multifarious and nebulous body, which are the investors.

#### **Structured finance and securitization**

The term “structured finance” refers, very broadly, to financial solutions or products which are structured to meet specific needs. In a narrow and more common sense, the word is used almost interchangeably with securitization. We noted in the example above that one of the crucial features of securitization is the creation of different classes of securities such that they are assigned different ratings. The senior-most of the securities is quite often rated triple A. The highest rating for the senior-most class is explained by two factors: isolation of the assets from the bankruptcy risks of the originator and hence originator-independence and the creation of a credit risk mitigation device by subordination of classes B and C, such that those lower classes provide credit support to class A. It is possible to say that the size of classes B and C was so computed as to meet the rating objective for class A. Likewise, the size of class C was so computed as to have class B accorded the desired rating. In other words, the entire transaction was engineered, or structured, to meet specific investor needs.

It would be wrong to assume that investors are always interested in triple A rated securities. Quite obviously, the securities with this rating carry the smallest spread to Treasuries or some other benchmark.

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<sup>4</sup> It should be noted that while “true sale” is a significant legal issue in securitization, the question is whether a sale in “true.” This implies determination of the truth of what is apparently a sale; the question is therefore subjective. While market practitioners try to learn from past experience and construct transactions that abide by certain true sale tests, there cannot be an absolute safe harbour.

Investors have different risk-return profiles, based on their liability structures, and the objectives of their respective investors or stakeholders. Hence, there might be yield-hungry investor looking for a triple B rated security, but with a substantially higher spread. Thus, use of structured finance principles allows the originator company to create securities that meet investor needs. Rating is not the only basis for structuring of securities. There are several other features with respect to which securities may differ. Interest sensitivity (i.e., duration and convexity), maturity or average life, cash flow pattern, and prepayment/call protection are just a few examples of such features.

### Getting into details

In this section we will take a closer look at securitization by reviewing asset pool characteristics, credit enhancement mechanisms, liquidity support, and others.

#### Asset pool characteristics

What exactly is an asset pool and what is the relevance of having an asset pool as opposed to a single asset? One of the essential features of securitization we noted above was the creation of several classes of securities, and the resulting upliftment of the rating of the senior classes. The whole concept of creating classes or tranching is based on a probability distribution of default risk, such that the probability of suffering extreme losses, that is, lots of loans in the pool going bad, is extremely low.

Figure 1 illustrates this point. The probability distribution curve shows the amount of losses and their respective probabilities. The probability of having no loss at all is about 13.6%. The probability of 1% loss in the pool is about 27%, and likewise, the probability of 2% of the pool being lost is also about 27%. However, as we move to the right hand side, the probabilities start declining sharply. The probability of a 7% loss is only 0.3%, and that of losing 10% is 0.003%. With those numbers, an originator company can, via the SPV, create four classes of securities as shown in the Figure 1 – class D taking the bottom 3% of the liabilities, class C 2% of the liabilities, class B 2% of the liabilities, and class A the balance 93%. Quite obviously, losses up to 3% will be taken by class D, losses from 3.01 % to 5% will be taken by class C, from 5.01% to 7% by class B, and losses in excess of 7% will be taken by class A.

The probability distribution shown in Figure 1 is the very crux of structured finance. If we had just one loan, there is nothing like a probability distribution. There will be only two possible occurrences: either the loan defaults or the loan survives. If the loan defaults, most of the loan (1–recovery rate) is lost. If the loan survives, the loss is zero. Hence, as may be understandable by a bit of reflection, the whole concept of tranching does not work in the case of a single asset. It would also be obvious that in order to develop into the kind of probability distribution that is presented in Figure 1, the pool must be diversified. The more diversified and the more granular the pool, the more fine will be the right hand side of the probability distribution, making it easy to create the classes of securities. The feature of a highly concentric pool is very similar to that of a single loan transaction. In fact, the single loan may be compared to a pool with a correlation of 1 (i.e., all loans are so correlated that the loans either default together or survive together).

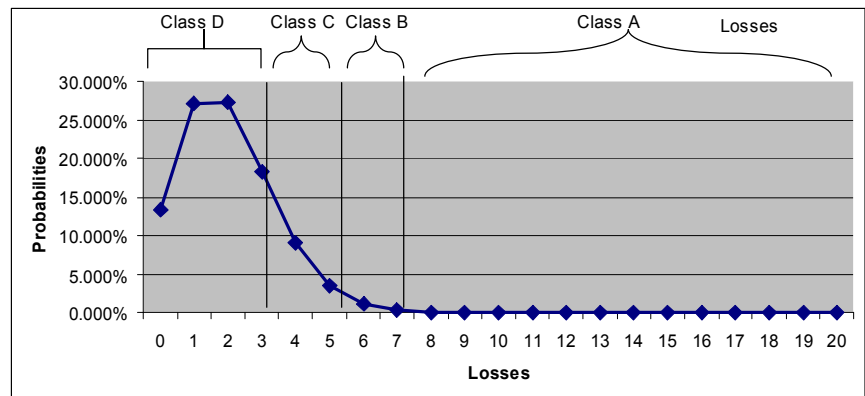


Figure 1 - Probability distribution for a pool of loans and the creation of classes of securities

While the guiding principle of diversification is understandable, how exactly is the pool created? In other words, how do we narrow down from the whole loan book to creating a securitizable pool? Recommended practice is that a pool is not created by cherry-picking. However, elaborate selection criteria is always set forth so as to select assets that qualify for the selection criteria. The fixation of the selection criteria itself is consistent with the desired quality of the pool. For example, a pool of prime loans will not have loans that



fail the “prime” criteria, but a pool of subprime loans will obviously not have prime loans. Examples of selection criteria may be the number of months in default at the time of transfer, number of months in default at any time in the past, minimum and maximum rate of interest, minimum and maximum remaining maturity, minimum and maximum LTV ratio, minimum and maximum debt-to-income ratios, and so on.

### **Credit enhancement**

Having identified the asset pool, the most significant task is to understand the risks inherent in the pool. While this will depend largely on the type of collateral, for most financial assets there will at least be the following risk areas: credit risk, that is, the risk of default; liquidity risk, that is, temporary shortfalls in collections or cash flows, so that cash falls; interest rate risk; and in case of certain collateral classes, principally those for long tenures such as residential mortgage loans and commercial mortgage loans, the risk of prepayment

Credit enhancement refers to the devices put in place to mitigate the risk of default in the asset pool. As we have mentioned earlier, the sizing of credit enhancement is done so as to achieve a target rating for the securities. The credit enhancement level for each class of security is different, as might be evident from the probability distribution in Figure 1.

**Excess spread** - The most basic and the most natural form of credit enhancement for any pool is the level of excess spread inherent in the transaction. Excess spread is the difference between the weighted average rate of interest inherent in the receivables (this is true for loans or loan-type transactions) and the weighted average funding cost of the transaction. Since the receivables are mostly transferred at par, the loans carry the same rate of interest at the SPV level as they carried at the originator level. The funding cost of the transaction is the coupons payable on the different classes, which is obviously lesser than the weighted average rate of interest on the loans, thus leaving the excess spread.

One of the most basic principles of pricing of loans is that the lender charges a risk premium for credit risk, that is, the expected losses on the asset pool. Hence, the excess spread is presumably sufficient to absorb the expected losses from the asset pool, and other forms of enhancement, noted below, are needed essentially for unexpected losses. However, there are several situations where the excess spread is either not enough, or is more than enough, due to, for instance, movements in rates of interest, higher origination profits, presence of subvention or promotional loans, etc.

Excess spread is the most common form of basic credit enhancements in a securitization transaction. However, excess spread levels are affected by the rate of prepayment, since costlier loans in the asset pool are expected to have a higher propensity to be prepaid. Hence, excess spread levels may fall over time. In rare cases, excess spread levels may do just the opposite.

**Subordination** - Creation of a stacking order of liabilities is also the most common, almost universal, feature of securitization. In our earlier example, classes A, B, C, and D represent the four different classes. Class D is the most junior of all and is referred to as the first-loss class; that is, it is the first class of security to suffer losses if the losses exceed excess spreads. Class C has the benefit of subordination of class D; therefore, the credit enhancement at class C level is 3% plus the excess spread. Likewise, the credit enhancement at the class B level is 5% plus the excess spread, and that of the class A level is 7% plus the excess spread.

**Over-collateralization** - In appropriate cases, the same impact as in the case of subordination can be created by over-collateralizing the liabilities. For instance, if the total funding raised is U.S.\$100 million and if assets backing them up are worth U.S.\$105 million we have a 5% over-collateralization. The over-collateralized assets are a sort of subordinated share of the seller, which is available to offset losses in the pool.

**External credit enhancements** - If the repayment of any of the classes of liabilities is guaranteed or backed by the credit of a third party, that form of credit enhancement is referred to as external credit enhancement. The most common form of such credit enhancement is the guarantee from a financial guarantee company, or a monoline insurance company. Monoline insurance wraps or external

enhancements are most commonly used in transactions which have a strong originator-dependence (for example, servicing risk is too high), or where the collateral is located in jurisdictions which do not have a tested history of either securitization or enforcement of claims.

### **Liquidity support**

While credit support is needed to absorb defaults, liquidity support is required to meet temporary shortfalls in collections such that the expected schedule of payments to investors may be maintained without disruption. The most common reason for the shortfalls is the monthly arrears in collections, so very likely in case of retail pools. The most common forms of liquidity support are servicer advances, cash reserve, and external line of credit. Cash reserve, it may be noted, is both a form of credit and liquidity support. The cash reserve might either be funded outright or may be created by pooling excess profits until the target amount of reserve is created.

### **Prepayment risk mitigation**

Prepayments, that is, the repayment of a loan or part thereof prior to its schedule, is quite a common feature in the case of asset pools backed by retail loans. In case of residential mortgage loans, a loan may be paid before final maturity either because the house is sold or because the borrower finds it better to repay the existing loan taken at a higher rate and refinance the property at a lower rate that may prevail in the market.

To the extent prepayment happens for non-economic reasons, such as the sale of the property, it will not result in an adverse economic outcome for the investor if the prevailing market mortgage rate is less than the note rate paid by the borrower. However, if the borrower elects to prepay because it is economically beneficial because the prevailing mortgage rate is less than the note rate paid by the borrower, this will have an adverse economic consequence for the investor. While prepayment is a risk in all cases where the borrower is contractually permitted to prepay without mark-to-market losses, it causes the maximum damage in case of long-tenure collateral classes such as residential mortgage loans and commercial mortgage loans<sup>5</sup>. Therefore, prepayment protection devices are mostly limited to securitizations of these types of assets only.

A common prepayment protection device used in mortgage securitizations is the prepayment-protected classes such as planned amortization class structures. Similar to the way in which the subordinated classes provide credit support to the senior classes, there is a support class that sweeps more than the expected prepayment and thus provides prepayment protection to the planned amortization class. Yet another device is to differentially allocate prepayment of principal to different classes such that one class is more sensitive to prepayments than others.

### **Motivations for using securitization**

Securitization appeals to both non-financial and financial corporations. The four primary reasons for raising funds via securitization are reviewed below.<sup>6</sup>

### **Potential for reducing funding costs**

The cost of funding depends on the credit rating assigned to a debt obligation issued by an entity. In the case of a corporate bond, the rating will depend on the credit quality of the corporation. In the case of an SPV, because of legal preference and deference, the rating agencies will assign a rating to each security in a securitization based on the expected performance of the asset pool and the priority of a security in the structure. What is key is that the rating assigned to each security issued by the SPV will be independent of the financial condition of the originator company. Consequently, the originator company can have a speculative-grade rating but the SPV can issue one or more securities with a much higher credit rating. The rating agencies evaluating the securities in the structure will advise the originator company on how the transaction must be structured in order to obtain a specific rating for each security in the securitization. More specifically, the issuer will be told how much “credit enhancement” is required in the structure in

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<sup>5</sup> Unlike residential mortgage loans, commercial mortgages have different forms of prepayment penalties embedded in the loan agreement.

<sup>6</sup> For regulated financial entities there is another reason for securitization. It is a tool for managing risk-based capital requirements (i.e., attaining optimal capital adequacy standards).

order to achieve a specific credit rating for each bond class. The higher the credit rating sought by the originator company, the more credit enhancement a rating agency will require for a given collateral.

Even after factoring in the cost of credit enhancement and other legal and accounting expenses associated with a securitization, the behavior of firms provides support that securitization is less expensive than issuing corporate bonds. For example, consider the auto manufacturers. In 2001, the rating downgrades of the firms in this industry pushed Ford Motor, General Motors, and Toyota Motor to issue in early 2002 asset-backed securities backed by auto loans rather than issue corporate bonds. Consider the case of Ford Motor Credit. It issued U.S.\$5 billion in the first two weeks of 2002. Since 2000 when there was the first threat of the parent company's credit rating being downgraded, Ford Motor Credit reduced its exposure from U.S.\$42 billion to U.S.\$8 billion, substituting the sale of securitized car loans rated triple A. In fact, from 2000 to mid 2003, Ford Motor Credit increased securitizations to U.S.\$55 billion (28% of its total funding) from U.S.\$25 billion (13% of its total funding). It is noteworthy that as the ratings of the auto manufacturers were downgraded in May 2005, the ratings on several of their securitization transactions were actually upgraded due to high subsisting levels of credit enhancement.

### **Diversifying funding sources**

Corporations seeking funding in the asset-backed securities market must be frequent issuers in the market in order to get their name recognized in the asset-backed securities market and to create a reasonably liquid after-market for trading their securities. Once an issuer establishes itself in the market, it can look at both the corporate bond market and the asset-backed securities market to determine its best funding source by comparing the all-in-cost of funds in the two markets, as well as non-quantifiable benefits associated with securitization. [For a further discussion, see Chapter 9 in Kothari (2006).]

### **Managing corporate risk**

Securitization is one of several corporate risk management tools available to management. When assets are sold in a securitization, the originating company no longer bears the interest rate or credit risk of those assets. Ford Motor Credit offers a good example of this. Since 2000, management has employed securitization to reduce the credit risk of its car loan portfolio.

### **Achieving off-balance-sheet financing**

If properly structured, securitizations remove assets and liabilities off the balance sheet of the originator company. The argument put forth by those who employ securitization is that the reduction in the amount of the originator company's on-balance-sheet leverage can help enhance its return on equity and other key financial ratios. However, it is probably reasonable to assume that today many equity and corporate debt analysts give recognition to both reported and managed (i.e., reported plus off the balance sheet) leverage in their analysis of firms that utilize securitization, particularly following the actions by the Securities and Exchange Commission (SEC)<sup>7</sup> and the Financial Accounting Standard Board (FASB)<sup>8</sup> regarding off-balance sheet financing after the Enron bankruptcy.

It is important to note, however, that SPVs in securitization had nothing to do with how SPVs were used by Enron to mislead investors. Enron's management used SPVs for a variety of illegal purposes. Unfortunately, this tainted the view of SPVs in the mind of the public despite the fact that SPVs for securitizations are used in quite a different way than their abusive use by Enron.

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<sup>7</sup> More specifically, SEC requirements, Section 401(a) of the Sarbanes-Oxley Act of 2002 (SOX) and its amendments deal with disclosure in periodic financial reports. With respect to off-balance sheet transactions, SOX requires that a company in its annual and quarterly filings with the SEC discloses all material off-balance sheet transactions, arrangements, obligations (including contingent obligations), and other relationships of the issuer with unconsolidated entities or other persons, that may have a material current or future effect on financial condition, changes in financial condition, results of operations, liquidity, capital expenditures, capital resources, or significant components of revenues or expenses.

<sup>8</sup> The basic financial reporting issue is whether or not the SPV should be consolidated with the corporation. The FASB on January 17, 2003 issued FASB Interpretation No. 46 ("Consolidation of variable interest entities"), a complex set of rules and principles for consolidation applicable to SPVs.

### **Securitization and financial disintermediation**

With the aid of securitization corporate borrowers can obtain funds directly from the capital market rather than from financial intermediaries such as banks. In the absence of a public debt market, all financial transactions involving corporate borrowing are done directly with a lender. Let us assume that the potential lenders are individual investors and there are no financial intermediaries. In this scenario, there will be a direct lender-borrower relationship between the individual investor and the corporate borrower. The individual investor must have the ability to analyze the financial condition of the corporate borrower, prepare the legal documentation for the loan, service the loan, and, if the borrower fails to perform, institute legal proceedings against the borrower to recover the outstanding principal and unpaid interest for the loan. More than likely, an individual investor will not have the capability of performing these services and must therefore engage third parties to undertake these activities, paying a fee for these services. Moreover, the lender must have sufficient funds to provide the full amount of the funds requested by the borrower and agree to accept the entire credit risk. Of course, the lender could ask other individuals to participate as part of a lending group to obtain a larger pool of funds that can be lent, as well as spread the credit risk and other costs associated with the loan among the members of the group.

At least three problems arise in a world without public debt markets and financial intermediaries: transactional difficulty, informational difficulty, and perceived risk. Transactional difficulty arises because an individual investor may not have sufficient funds to satisfy the amount needed by the borrower, nor might the tenure of the loan sought by the borrower match what the individual investor is willing to grant. There is informational difficulty because the individual investor may not be capable of assessing the creditworthiness of the borrower. Finally, the individual investor's perception of the risk associated with a loan will be based on only the credit risk of the borrower with no opportunity to diversify that risk over other borrowers.

It is because of these disadvantages associated with individual investors lending to corporations, as well as lending to other individuals, that there is a need for financial intermediaries. A financial intermediary raises funds from individual investors and then uses those funds to lend to corporations and individuals. Consequently, it can accommodate the demand for a larger amount of funds than a typical individual investor. Financial intermediaries provide one or more of the following three economic functions: they provide maturity intermediation, reduce risk via diversification, and mitigate the costs of contracting and information processing. Let us look at each of these.

A financial intermediary, such as a bank, can provide loans for a length of time that can accommodate the needs of a borrower. This is difficult for an individual investor to do. A financial intermediary makes loans with a range of maturities despite the fact that the claims it issues on itself can be short-term. For example, a bank can borrow funds by issuing certificates of deposit with maturities ranging from six months to five years and yet manage its duration risk exposure so as to be able to issue bank loans from three months to say 10 years. This role performed by financial intermediaries, referred to as maturity intermediation, has two implications for financial markets.

Firstly, it offers borrowers more choices for the maturity for their loans and investors with more choices for the maturity of their investments. Secondly, it lowers borrowing costs because while an individual investor may be reluctant to commit funds for a long period of time and thereby charge borrowers a higher cost to extend maturity, a financial intermediary is willing to make longer-term loans at a lower cost to the borrower. Hence, borrowing costs are reduced.

Individual investors who have a small sum to invest would find it difficult to achieve diversification. Yet by investing in a financial intermediary, individual investors can attain cost-effective diversification.

Financial intermediaries maintain staff to handle the tasks associated with granting a loan. These associated costs, referred to as information processing costs, can be done more efficiently by financial intermediaries than by individual investors. The costs of writing loan contracts and enforcing the terms of the loan agreement, referred to as contracting costs, can also be done more cost effectively by financial intermediaries, as compared to individual investors. This reduces the cost of borrowing for those seeking funds.

Let us see how securitization can fulfill these roles. Consider first maturity intermediation. As we have explained, a pool of assets can be used to create asset-backed securities with different maturity ranges. For example, a pool of 30-year residential mortgage loans can be used to create securities with maturities that are short, intermediate, and long term. Diversification within an asset type is accomplished because of the large number of loans in a typical securitization. Finally, the costs of contracting and information processing are provided in asset securitization. The contracting costs are provided by the originator of the loans. Information processing is provided at two levels. The first is when a loan is originated. The second is when a rating agency rates the individual asset-backed securities in the transaction.

There is one activity that is performed by some financial intermediaries that is not replaced by securitization. The asset-backed securities created from a securitization transaction must still be distributed to the public and a secondary market maintained. Technically, the distribution of securities and the maintaining of secondary markets is not a role of a financial intermediary. Rather, it is the role played by investment bankers. As more corporations shift from borrowing from financial intermediaries, the role of underwriting by investment banks will increase while their role as lenders will decline. Thus, with a securitization, the types of fees generated by financial intermediaries will change. Fee income from loans and the corresponding costs charged in granting those loans (which are embedded in the loan rate) will be replaced by fees for distributing and market making.

A concern with financial disintermediation is that it may reduce the effectiveness of monetary policy because banks derive more of their funding from capital markets; likewise, disintermediation results in more direct funding by capital markets rather than through banks. Thus during periods of tight monetary policy, banks can originate loans and then securitize the loans rather than holding them in their portfolio. This avoids the need for banks to fund the loans originated. Loutskina and Strahan (2006), for example, show how securitization has weakened the link between bank funding conditions and credit supply in the aggregate and as a result has mitigated the real effects of monetary policy. Frame and White (2004) and Bank for International Settlements (2003), for example, have shown that the mortgage hedging activities of the two government-sponsored entities, Fannie Mae and Freddie Mac, have at times moved Treasury rates. Two empirical studies by Federal Reserve economists support the view that based on mortgage loans securitization has had a significant impact on monetary policy [Estrella (2002) and Kuttner (2000)].

### **Conclusion**

Securitization is as necessary to any economy as organized financial markets. As has been explained in the article, securitization results in the creation of tradable securities with better liquidity from financial claims that would otherwise have remained bilateral deals and been highly illiquid. For example, very few individual investors would be willing to invest in residential mortgage loans, corporate loans, or automobile loans. Yet they would be willing to invest in a security backed by these loan types. By making financial assets tradable in this way, securitization reduces agency costs thereby making financial markets more efficient and improves liquidity for the underlying financial claims thereby reducing liquidity risk in the financial system.

A concern with securitization is that with lenders able to remove assets that they originate from their balance sheet and therefore transfer credit risk via securitization, this process has motivated lenders to originate loans with bad credits. Given the ability of lenders to pass along subprime loans into the capital market via credit enhancement that we have described in this article, lenders have been viewed by critics of securitization as abandoning their responsibility of evaluating the creditworthiness of potential borrowers.

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