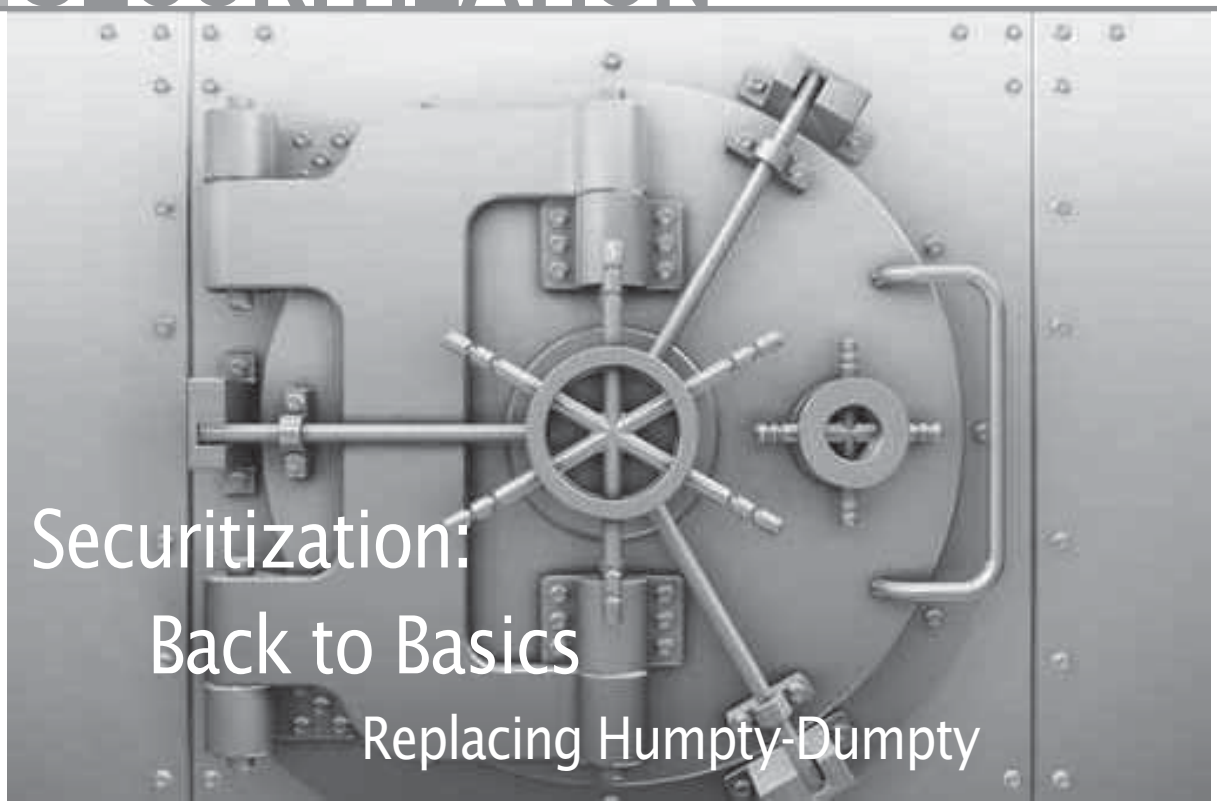

Securitization: Back to Basics

Replacing Humpty-Dumpty

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1. Introduction

The securitization of assets was first introduced to the American mortgage markets in the 1970s. The market for securities backed by these mortgages (the so-called mortgage-backed securities or MBS) was given a special impulse by the public authorities who endorsed these emissions. After the initial success of this type of transaction, the emissions were supported by an increasingly more diverse series of assets, including assets (such as revenues from leases) and bank assets (such as future payments associated with business loans). At the beginning of this century, the securitization market had become one of the most prominent fixed income sectors in

the world and was, in fact, one of the fastest-moving. At the end of 2006, however, a change could be witnessed in the capital market. Like "Humpty-Dumpty", securitization has taken a big fall. For the first time, it became clear that the risky subprime mortgages in the United States that served as collateral for many of these mortgage-backed securities actually represented a lower value than was previously assumed and adopted (see also Crouhy, Jarrow and Turnbull, 2008). Home owners came into financial distress as a result of rocketing variable rates and were no longer able to pay the increased interest. Many investors who had invested in these MBS saw their portfolios downgraded by the credit rating agencies, and investors booked tremendous losses that no-one had anticipated.

Has securitization come to an end? In October 2009 the International Monetary Fund published a report on navigating the financial challenges lying ahead. In it, the IMF makes the case that restarting the securitization markets is critical to limiting the real sector fallout resulting from the credit crisis amid financial sector deleveraging pressures. Mobilizing illiquid assets and transferring credit risk away from the banking system to a more diversified set of holders continues to be an important objective of securitization, and the structuring technology in which different tranches are sold to various investors is meant to help to more finely tailor the distribution of risks and returns to potential end investors.

Because the concept of securitization - by its very nature and complexity - is not always well understood, this article deals with the building blocks of securitization. Next, the motivation is discussed that lies behind the structure of a securitization transaction, and finally the risks and limitations associated with this phenomenon are considered.

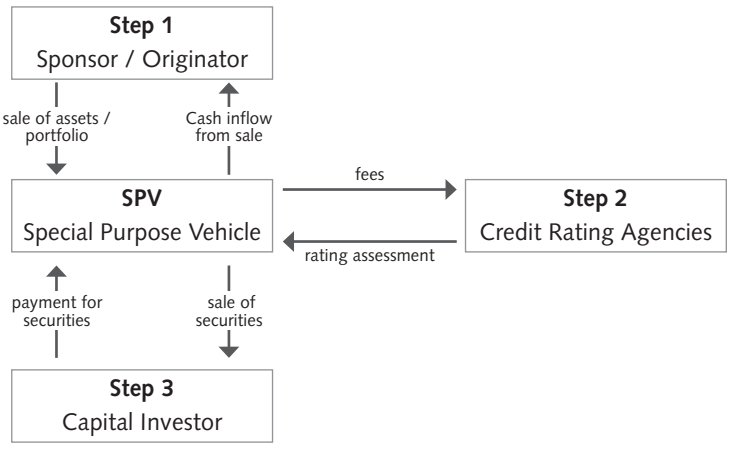
2. What is securitization?

2.1 Definition of securitization

Unfortunately, the term 'asset-backed securitization' is used differently by many, since usage is not entirely consistent. Asset-backed securitization first appeared in bank funding. Hess and Smith (1988), for example, explained asset-backed securitization in the context of financial intermediaries to manage interest rate exposure. The authors defined asset-backed securitization as a financial intermediation process, which re-bundles individual principal and interest payments of existing loans to create new securities. More recently, the term 'asset-backed securitization' has come to be used to refer to so-called 'structured finance', the general process by which illiquid assets are pooled, repackaged and sold to third-party investors. *So, asset-backed securitization can best be defined as the process in which assets are refinanced in the market by issuing securities sold to capital investors by a bankruptcy-remote special purpose vehicle*. This definition comprises the fundamentals of asset securitization and is visualized in Figure 1.

In step *one* the originator identifies future claims or other assets that generate income. This will be merged into what is known as the portfolio. The originator will sell the assets and the future cash flows to an established entity, the SPV. The SPV is a company for special purposes, usually set up by a financial institution with the specific intention to purchase the portfolio and facilitate the sale. In step two the quality of the collateral is assessed, usually by a credit rating agency that has the task to evaluate the credit risk of the collateral and the amount of credit support in the structure. The credit institution receives payment for its services. In step *three* interest-bearing securities are sold to investors, and the investors receive

Figure 1: How does securitization work?



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a spread as compensation for the credit risk they bear in the structure. Under normal circumstances the SPV pays the investors interest and principal that is generated by the cash flow of the portfolio, minus a service fee.

2.2 What can serve as collateral?

Securitization was initially used for simple, self-liquidating (or financial) assets such as mortgages. However, in principle, it does not matter what type of assets is used: even operational assets with a stable cash flow can be structured in a portfolio and sold to investors. However, there are substantial differences between financial assets and operational assets. A very important distinction between financial assets and operational assets lies in the management of the assets. This also has a substantial impact on the credit risk (see also Ayotte and Gaon, 2005, on the impact of collateral on credit risk).

Financial assets

One example of financial assets is a standard mortgage. If the mortgage is closed, the originator or mortgage lender, in principle, has no further liabilities towards the mortgage taker. After all, the mortgage is closed, and the provisions relating to future payments by the mortgage taker to the mortgage lender are stipulated in a contract. This commitment will end or wind up when the mortgage is paid off and the contract between the mortgage lender and mortgage taker has ended. This characteristic makes it relatively easy to construct a portfolio of several mortgages and sell to investors. In fact, after the pool is sold no active management on behalf of the originator is needed to generate cash flows. In this particular case, the *economic* and *legal* ownership of the mortgage moves from the mortgage lender/originator to the capital investor. Often the originator remains involved by servicing the payment from the mortgage taker to the capital investor.

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Operational assets

In contrast to financial assets, with the securitization of operational assets the legal ownership often remains with the originator and it is only the *economic* ownership that moves on to the investor. The originator requires legal ownership because the originator needs to exploit the assets for the full term of financing. Consider the following example. If a football club were to sell future proceeds from the sale of stadium tickets to an SPV, the originator must continue to offer his management services to football spectators - in the form of managing the stadium - and to enable spectators to purchase tickets at the box office. Thus, the legal ownership of the assets will not move on to the investor, since the securitization structure requires the originator to have a permanent managerial involvement to produce revenues.

In summary, the securities issued by the SPV are not restricted by a mortgage or similar assets, but can also be supported by operational assets. Blum and DiAngelo (1997) and Choudhry and Fabozzi (2004) note that the capital market in which these asset-backed securities are traded are classified into: asset-backed securities (ABS), mortgage-backed securities (MBS), and collateralized debt obligations (CDO). As a general rule, the emissions that are supported by a mortgage are called MBS, and emissions supported by debt securities or similar assets are named CDOs (see classifications Nomura, 2004 and Fitch, 2004). Collateral supported by consumer-related assets such as car loans, consumer loans and credit cards are referred to as ABS (see Moody's, 2002). In this area, the following points should be noticed:

- The securities sold by an SPV can be supported by a highly diverse number of assets. This is not only restricted to mortgages, but also assets which require active management may serve as collateral.
- The capital markets in which these securities are traded are composed of three important

classes: ABS, MBS and CDO.
- There are several forms of securitization transactions, each with different collateral and with different levels of credit risk. More complex assets, such as assets that require substantial management, typically have a larger (credit) risk.

3. The allure of securitization

Securitization started out as a way for financial institutions and corporations to find new sources of funding, either by the off-balance sheet financing of assets or by refinancing the portfolio against a lower cost of capital (Greenbaum and Thakor, 1987; Fabozzi and Roever, 2003).[1] These methods have swamped the loan costs and, in the case of banks, lowered the minimum capital requirements. In turn, securitization has two substantial properties that will – theoretically speaking - result in lower borrowing costs compared with the issue of standard corporate bonds: *bankruptcy remoteness* and *subordination*. Both properties are described below.

Bankruptcy remoteness

Legal concepts in the field of securitization are varied and follow separate accounting and tax rules. They also have different tax consequences for both originators and investors. In spite of fundamental legal differences, it is the primary objective of an SPV to facilitate the sale of the assets and to ensure that the SPV - for bankruptcy purposes - is a separate legal entity separate from the originator.

According to Moody's Investor Service (2002), it may be possible to achieve a rating substantially above the corporates' unsecured rating by issuing senior classes that have significantly lower leverage than the corporate bonds of the originator. Jobst (2008) states that this is achieved by the detachment of the assets from the originator's balance sheet (and its credit rating). This phenomenon allows issuers to raise funds to finance the purchase of assets more cheaply than would be possible on the strength of the originator's balance sheet alone. For instance, a company with an overall "B" rating with "AA"-rated assets on its balance sheet might be able to raise funds at an "AA" rather than "B" rating by securitizing those assets. Unlike traditional debt, securitization does not inflate a company's liabilities. Instead, it produces funds for future investment without balance sheet growth.

Thus, the result of bankruptcy remoteness is that the SPV generally issues securities that are rated higher (and in many cases significantly higher) in comparison with other alternatives, such as the issuance of ordinary secured debt by the company. This is the result of the risk mitigation generated by isolating the assets from the bankruptcy and other risks of the parent company through the securitization structure. Hence, the holder of an asset-backed bond is in a position similar to that held by the holder of an ordinary secured bond with regard to the originator, because repayment of the bonds takes place from a defined pool of assets. The *difference* is that

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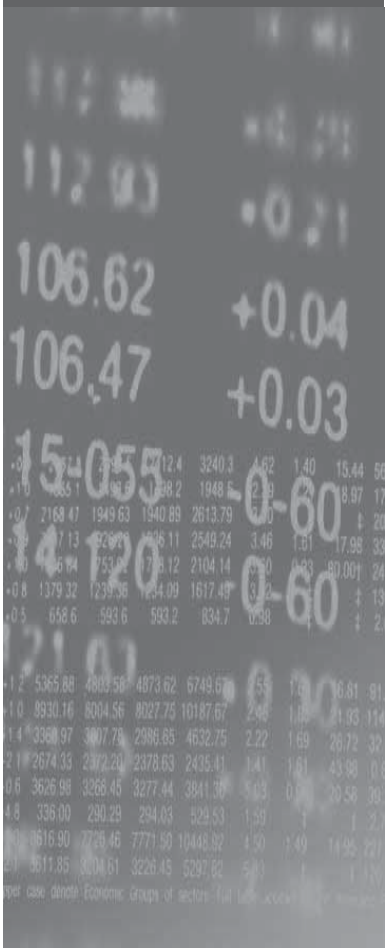

[1] If the loan cash flows are pooled but kept on the balance sheet of the issuing entity, this is considered a "covered bond". This method has the advantage that the issuer has an incentive to screen and monitor the loans, but because they remain on the issuer's balance sheet, capital must still be held against them, reducing the benefits of securitization. Nonetheless, the advantages of capital-market-type financing - selling the bonds to investors - allows for more intermediation.

the holder of an asset-backed bond is not affected by the non-performance of the originator's other assets, whereas the ordinary bondholder is.

Subordination

The portfolio is divided into several tranches, each connected to a different level of credit risk and sold separately (see DeMarzo, 2005, on the properties of tranching). The reimbursement (nominal value and expected interest) as well as the losses are assigned to various tranches in accordance with their seniority. The least risky tranche, also known as the super senior tranche, has the first right to the income that is produced by the underlying collateral, while the most risky tranche (junior) is the last tranche to be entitled to that income. The conventional securitization structure implies a design at three levels: junior, mezzanine and senior tranches. This structure concentrates the losses to the most junior tranches. Usually these tranches are relatively small-sized, but they are nevertheless exposed to the lion's share of the credit risk. Crouhy, Jarrow and Turnbull (2008) offer a further explanation of the way in which subordination and the size of the bonds in a transaction determine how the risk of the underlying portfolio is evenly divided under the tranches.

Example

Let us illustrate the principle of subordination by means of an example. Here, we use a master structure of three emissions: junior class C of €10 million; class B mezzanine of €50 million, and a senior class A of €40 million. Now imagine that the originator sells only class A and B, and that class C is retained by the originator. The investor would bear the risk in the event that the losses on the underlying portfolio exceed the cumulative subordination level of 10% (€10 million divided by a total of €100 million). If the losses cumulate to 10%, the junior class C will be wiped out. Losses between 10% and 60% translate into losses to the holder of the mezzanine class B. Finally, losses between 60% and 100% result in losses to the holder of A senior class.

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In essence, securitization is based on the sale of credit risk by the originator to the investor by means of the SPV (see Riddiough, 1997). For investors, the benefit is that they can invest in a wider variety of assets that are available by securitization. However, this is not the only advantage. The subordination structure helps originators to create tranches with different risk and return profiles (Plantin, 2004). Pension funds, for example, require a larger diversity of investing in securities with a low-risk profile – a market that was dominated by debt issuance by governments. Buying securitization securities would give them the opportunity to optimize their portfolio at relatively low transaction costs. In this respect, the following considerations should be taken into account:

- Securitization allows for the transfer of credit risk from the originator to the seller.
- Bankruptcy remoteness makes sure that the bankruptcy risk of the originator can be circumvented. In principle, the SPV is originators' bankruptcy-proof.
- The originator has the opportunity to sell securities with different risk-return relationships so that the investor is in a better position to diversify its risk.
- In theory, the most senior tranche will have nothing to fear from any losses, as long as the loss is limited to the subordinate tranches. This assumption, as has turned out in many structures with subprime collateral, was false and has led to a decline in investor confidence in terms of investing in these types of products.

4. Challenges in reviving the securitization market

Over the past ten years, the securitization landscape has changed dramatically. It is no longer the traditional assets such as mortgages and consumer loans that play a leading role. In spite of warnings about the limitations of credit risk modeling, today's world sees a greater variety of classes of assets packaged and sold to investors, including income from an accumulation of other income-producing securities that have been issued earlier by SPV's, the so-called re securitizations that are often structured in CDOs.

Securitization products have become too complicated, making reliable pricing or risk estimation too difficult to evaluate, especially when the quality of the collateral is hard to define and assumptions on poor correlation and diversification have to be made because of the complexity of the structures. To revive the securitization market,

the Central Bank would be the best candidate by far to monitor the methodologies of the credit rating agencies and to formulate minimum requirements concerning the data used by these agencies. Policy is needed in this area, and the question can be asked whether credit rating agencies should in fact restrict the assessment of structures only to those cases in which the underlying assumptions are truly acceptable - or at least restrict themselves to assessing those securities that actually allow for a reliable assessment of market disruptions. If this means that structured securities are to be simplified, this would, in itself, send a good signal to the capital market. Furthermore, it would also be reasonable to require the originator to invest a substantial amount in each level of seniority in the structure and not, as has happened, in the most subordinate (junior) tranche only. In this way, the originator also bears the risk of potential losses in each layer of the structure and is better aligned with the interests of investors.

It is a positive development that various securitization securities have recently entered the market, for instance those introduced by SNS Bank through the Holland Mortgage Backed Series (Hermes) XIV, in February 2010. Still, a critical view remains necessary when it comes to credit ratings and the spreads that are paid on these securities in comparison with corporates (see also *Consultative document, Proposed enhancements to the Basel II framework, issued for comment by 17 April 2009*). It cannot be denied that in comparison with corporates the credit ratings of securitization transactions are currently under pressure as a result of the association with the subprime mortgages. And this is precisely what should be bothering the credit rating agencies and the central banks, for is not the risk associated with an triple A rated corporate the same as that of an triple A rated MBS? Investors translate insecurity into higher premiums for MBS in comparison with corporates, despite the fact that they all have the same rating. This is unacceptable. Given the pivotal role of securitization as an alternative and flexible funding channel, a failure to restart it would come at the cost of prolonging funding pressures on banks and a diminution of credit. What is needed is well-founded and balanced policy to put securitization together again, replacing Humpty Dumpty.

Humpty Dumpty sat on the wall,
Humpty Dumpty had a great fall;
All the king's horses and all the king's men
Couldn't put Humpty together again.