

Mortgage Securitization: What Are the Drivers and Constraints from an Originator's Perspective (Basel I/Basel II)?

by Dr. Mark Odenbach

Mortgage securitization is a treasury and risk management tool that is increasingly used by mortgage originators all over the world. This article examines some of the reasons for the success story relating to mortgage securitization. Furthermore, this paper discusses a number of drawbacks and disadvantages a mortgage originator has to overcome or accept when using the technique of mortgage securitization. The analysis is based on the current Basel I environment and tries to anticipate the future impact of Basel II on lenders' interest in utilizing mortgage securitization.

In particular, this article addresses the following questions:

- What are the mortgage securitization drivers and hurdles in the Basel I world?
- Traditional securitization or synthetic securitization? Why do mortgage banks choose one or the other?
- What is the likely impact of Basel II on the attractiveness and usefulness of securitization?

Many mortgage securitizations are driven by regulatory considerations. Hence, a solid knowledge of the regulatory framework is required to fully appreciate the key reasons for securitization and to understand the regulatory obstacles in the way to a successful transaction.¹

PART 1. SOME KEY PRINCIPLES OF MORTGAGE BANKING

A. The Business of Mortgage Banking

In Germany, licensed mortgage banks (*Hypothekendarlehenbanken*) and other entities are in the business of granting mortgage loans to their customers (mortgage lending). A mortgage loan is an asset on the books of the mortgage lender. In making the loan secured

on the mortgaged property of the borrower, the lender is "originating" that asset, so the mortgage lender is called the "originator." Originators finance their portfolios of mortgage loans by way of funds received from equity investors (shareholders in particular) and from debt investors, such as depositors and bondholders.

B. Risks and Investor Relations

The relationship between the originator and its equity/debt investors is critical to the commercial success of the originator. To preserve its investor base, the originator must constantly satisfy its investors. In this regard, it is important to note that, unavoidably, each originator is exposing its equity and debt investors to a number of different types of risks. Hence, investors must rely on the originator's ability and willingness to control and mitigate these risks. The list of the most relevant risks includes:

- The "risk of default" of the assets selected and serviced² by the originator. Primarily, if the lender's portfolio deteriorates noticeably, the lender's shareholders will suffer market value losses whereas the originator's creditors are

Dr. Mark Odenbach, principal, Abrahams & Odenbach, a firm of capital management consultants, based in Frankfurt/Main. Odenbach is a structured finance practitioner with a ten-year track record, particularly in securitization. He is also a qualified German and English lawyer. Odenbach appreciates the support provided by Lee Summerlin, consultant with Abrahams & Odenbach, towards the realization of this article.

firstly exposed to down-grade and market value risk in respect of their bonds and secondly to the risk that the originator defaults.

- "Liquidity risk" which, for example, materializes if maturing debt, particularly deposits, cannot be repaid because, for example, fewer customers than expected decide to deposit fresh funds with the lender or because there is a "run" on the deposits of the relevant lender.
- "Interest-rate risk" which derives from a mismatch between a lender's funding costs and the interest derived from its assets. Interest-rate risk may, for example, affect a lender when the lender has, on the one hand, issued long-term debt at relatively high costs and, on the other hand, its customers take advantage of falling interest rates by prepaying existing loans (prepayment risk) and by subsequently re-mortgaging at lower rates. Another typical scenario of interest-rate risk occurs where a lender grants long-term (e.g., 15 years) mortgage loans at fixed rates and funds these loans by way of short-term variable rate deposits.
- General "operational and business risk" which can take many forms; e.g., legal risk or the risk that, due to severe competition, a lender's spread falls below the margin necessary to carry its fixed costs or that, on the grounds of "reputational issues," the lender's borrower/depositor base breaks away.

All these risks, and others, compose an originator's overall insolvency risk.

Generally, the originator will only be able to successfully finance its lending activities for as long as its *debt* investors take the view that the originator's equity capital portion is large enough to take up potential losses and, further, that the risk premium (i.e., in-

terest rate) offered by the originator is sufficient to compensate for the remaining risk that the originator's debt is down-graded or that the originator becomes insolvent.

Moreover, an originator will only be able to issue new *equity* shares to the public to the extent the originator can demonstrate a "track record" of successful portfolio origination and management and the originator delivers a competitive return on equity (i.e., dividend paid plus/minus market value increases/decreases).

Both debt and equity investors need to be convinced of the quality of the originator's management and the soundness of the originator's strategy.

While bank managers are normally conscious of the risks they manage on behalf of their investors, bank managers are also tempted to please the same audience (in particular equity analysts and equity investors) by implementing growth strategies. In some cases, these strategies have been flawed or overly ambitious and have caused the relevant banks to get into serious financial difficulties.

C. Basel I

Bank defaults can spell disaster for their creditors and the economy as a whole. A default of one of the major international banks can trigger a chain reaction in the global financial system and impact negatively on the world economy. Therefore, in 1988, the Basel Committee proposed the first Basel Capital Accord³ (Basel I) pursuant to which all *international* banks must possess own funds of at least 8% of their risk weighted assets. For the purposes of risk weighting, five categories of risks were created carrying risk weightings of 0%, 10%, 20%, 50% or 100% respectively. Directly, the 8% rule applies to 100% risk weighted assets only. Against an asset which is, for example, 20%

risk weighted (in particular where the obligor is an OECD bank), the bank must hold only 20% of 8% of own funds (i.e., 1.6%).

The most important aspect of the Basel I rules is that these rules are aimed at preserving a bank's *minimum* capital base needed to support its entire portfolio. Basel I did not intend to quantify the appropriate amount of economic capital needed for the support of specific assets or asset classes, as the Basel Committee admitted that the five risks weights were "inevitably some broad-brush judgments" and that "the weightings should not be regarded as substitute for commercial judgments." In other words, when agreeing on the Basel I rules, the Basel Committee was conscious of the fact that the risk weights could lead to situations where assets are supported by too much or too little economic capital.

According to Basel I, loans *fully* secured by mortgages over owner-occupied property, or property rented by the owner, are 50% risk weighted. Furthermore, the Basel Committee stated that, in applying the 50% risk weight, the supervisory authorities would have to satisfy themselves, in line with their national housing finance system, that this concessionary risk weight is applied "restrictively" and "in accordance with strict prudential criteria."

On December 18, 1989, the E.U.'s Council issued Directive 89/647 EEC, pursuant to which the Basel I Capital Accord became the capital ratio yardstick for *all* banks (not only international banks) within the E.U. The Directive reiterated that, subject to the respective specification by the national authorities, loans fully secured on residential property (owner-occupied or owner-let) were to be assigned the 50% risk weight.

In Germany, the BAKred decided to apply the 50% risk weighting bracket to residential mortgage loans secured on the first 60% of

the property's lending value (*Realkredite*). This decision by the BAKred was in fact "restrictive," as demanded by the Basel Committee. The reason is that a property's lending value (*Beleihungswert*) is usually significantly lower than the property's market value. The lending value is the property's sustainable long-term value which is largely based on the property's permanent rental value disregarding, in particular, house price appreciation in times of overheated property markets. Because of the relationship between lending values and market values, *Realkredite* are normally fully secured as their principal amounts do not usually exceed 50% of market values.

The risk weighting of 50% for *Realkredite* is aligned with the German preference for funding *Realkredite* by way of secured mortgage bonds (*Hypotheken-Pfandbriefe*).⁴ *Hypotheken-Pfandbriefe*, or HPBs, may only be secured by way of *Realkredite* and not by way of loan portions that exceed 60% of the lending value. Because of the high quality of *Realkredite* (the collateral of HPBs), there has not been any publicly known default of HPBs since their introduction in 1769.⁵ This explains why HPBs can be placed with investors at very low rates. Furthermore, because *Pfandbriefe* are low risk financial commodities, investment banks active in that market can only demand very moderate placement fees.

Loan portions in excess of 60% of the lending value do not qualify as *Realkredite*. They are therefore 100% risk weighted and have to be funded outside the HPB system. These second-tier loans are usually funded in the markets for saving deposits, inter-bank credit and unsecured bonds.

D. Regulated and Non-Regulated Mortgage Lenders

In many countries (United States, United Kingdom, Republic of Ireland, Australia etc.)

mortgage lenders are either licensed institutions or non-regulated mortgage companies. In contrast, non-regulated private sector mortgage providers do not exist in Germany, as regulations demand that entities active in the mortgage origination business⁶ be either a bank or insurance company, or fall within certain other categories including, in particular, public sector institutions like the *Kreditanstalt für Wiederaufbau*. Because insurers and afore-mentioned public sector institutions do not play any significant role in the origination of German mortgages, in practice therefore it can be assumed that virtually all relevant German originators are subject to Basel I, and in future to Basel II.

PART 2. FOUNDATIONS OF ASSET SECURITIZATION

A. Definition of Asset Securitization

Asset securitization (or, in short, securitization) is, essentially, a process whereby debt financing is raised in the capital markets against specific assets (the "asset pool") in a manner which seeks to insulate investors in the debt securities from risks other than the risk of the asset pool not performing in the manner anticipated. Hence, in contrast to more traditional methods of finance (see above Part I, sections A and B), debt is not raised against the promise that the originator of the assets will have enough excess cashflow to service the debt (i.e., does not become insolvent). Instead, debt investors part with their money against the expectation that the asset pool will generate enough cashflow to pay them principal and interest. Thus, in many respects the identity of the originator of the assets, the performance of its remaining portfolios, its operational risk profile and its general credit standing are immaterial in an asset securitization. When structuring securitizations, the main focus is on the asset pool, the asset pool's cashflow and on de-linking the asset pool and the cashflow from the default risk of the originator.

B. Six Securitization Reasons

Generally, originators tend to launch securitizations for at least one of the following six reasons:

- *Economic Risk Transfer*. The originator wishes to transfer the credit risk associated with the asset pool to the capital markets. For example, the originator wishes to do more business with the customers represented by the asset pool without becoming over-dependent on the credit-worthiness of the relevant customers.
- *Cheaper Funding*. The originator seeks funding at competitive rates. For instance, in situations where the originator itself has a sub-investment grade rating or is unrated but its pool of customer claims is rated investment grade, obtaining funding via that pool could be the more attractive option.
- *Diversification of Funding Sources*. The originator wishes to minimize the risk that one day it cannot raise cash through its normal methods of funding or that this would be too expensive.
- *Market Arbitrage*. Some originators, or classes of originators, are able to originate assets that capital market investors cannot buy directly from the capital markets. For example, a bank can originate consumer loan portfolios while a pension fund is unable to do so. However, a bank can bundle consumer loans and allow pension funds to invest in the resulting pools. Both sides will be motivated to do this, if they can share the spread generated by the pool in a way beneficial to both of them. Securitizations creating an arbitrage platform between certain banking markets and the capital markets are called "arbitrage securitizations."

- *Capital Ratios.* If the originator of a "traditional securitization" (see below) transfers the asset pool to the purchasing entity by way of a "true sale" for accounting purposes it will be able to use the cash injection (i.e., the purchase price) to retire debt and therefore state improved capital ratios in its (accounting) balance sheet.
- *Solvency Ratios.* A bank originator wishes to release regulatory capital by removing (highly risk weighted) assets from its (regulatory) balance sheet.

The last two securitization motives—namely, improvement of accounting ratios and of capital adequacy ratios—are both driven by the desire of bank managers to write new business without being restricted by capital-ratio-oriented analysts or investors, let alone by the regulator. The more money a bank borrows and then on-lends to its customers (with the same amount of capital-increased leverage), the higher its potential profits per share (or potential losses, of course). Moreover, because the banking markets are highly competitive, buying market share has been widely seen as a virtue in itself.⁷

C. Traditional and Synthetic Securitizations

In pursuit of the six securitization goals discussed above, the structured finance industry has developed two main structural alternatives for a securitization, namely "traditional securitization" or "synthetic securitization."

In a *traditional securitization*,⁸ the originator transfers the asset pool to an entity that is not connected with it so that the asset pool does not have to be shown in the originator's solo or consolidated accounts. The entity purchasing the asset pool (usually a special purpose vehicle, or SPV, incorporated solely for this purpose) raises the purchase price to pay the originator by issuing "mortgage-

backed securities," or MBS, which will be secured on the asset pool. The purchasing entity and the investors in the mortgage-backed securities agree that the only source of payment for the MBS is the cash generated by the asset pool and not the income or other assets of the originator (limited recourse). Despite the sale, the originator continues to service the asset pool for a fee. This servicing fee, together with other payments received by the originator from the SPV, e.g., for providing credit enhancement, allows the originator to extract from the SPV the pool's excess spread ("profit extraction"). The SPV investors and the originator agree in an intercreditor arrangement (usually part of a Trust Agreement or Trust Deed) that most of the originator's claims rank junior to the SPV investors' principal and interest claims. Investors will also seek comfort that, if the originator were to become bankrupt, this event will not interfere with their entitlement to the asset pool's cashflow.

Many bank originators are keen to release regulatory capital (securitizations driven by this motive are called "balance sheet securitizations"), but feel nevertheless reluctant to transfer the asset pool to a purchasing entity. Reasons speaking against a traditional securitization include e.g., that these transactions are legally complex and therefore expensive to complete, create tax risks, or that the originator is perfectly able to fund the asset pool, at lower costs, via its traditional funding sources (in particular *Pfandbriefe*). In such a situation, originators could prefer a *synthetic securitization*⁹ whereby the originator buys, in respect of the asset pool, credit protection (e.g., by way of guarantees, credit default swaps or credit linked notes) from the capital markets but remains the legal and beneficial owner—and the funder—of the asset pool. Synthetic securitizations are done either as fully funded transactions (where all credit protection is placed into the capital markets by way of notes) or as partly funded transactions (where partly,

the credit protection is placed into the capital markets by way of notes; the rest is transferred by way of simple bilateral credit default swaps to a limited number of counterparties).

PART 3. ASSET SECURITIZATION DRIVERS AND CONSTRAINTS IN THE BASEL I CONTEXT

A. Traditional Securitizations—Regulatory Considerations under Basel I

Traditional asset securitization was essentially developed in the United States of America in the 1970s to provide secondary market liquidity. Banks later discovered that they could also use the technique to release regulatory capital by removing highly risk weighted assets from their regulatory balance sheets.

The 1988 Basel Accord does not contain any specific rules on asset securitization. However, banks' growing activity in this area prompted the national supervisory agencies to fill the regulatory gap in relation to securitization by introducing, on a country-by-country-basis, unilateral securitization rules (i.e., rules that lack international harmonization and coordination).

In Germany, on March 19, 1997 the BAKred (*Bundesaufsichtsamt für das Kreditwesen*), now merged into the BAF in (*Bundesanstalt für Finanzdienstleistungsaufsicht*), published Circular 4/97 which governs, for regulatory purposes, the off-balance sheet treatment of traditional securitizations. Generally, banks find that the rules contained in the Circular give them a sound framework for planning and completing traditional securitizations and that the Circular is not over-restrictive.

The Circular's core criterion is that, with respect to the asset pool securitized, the originator must, subject to permitted forms of

credit enhancement (see paragraph below), lay off all and any default risk. The originator can achieve this by:

- Validly assigning the asset pool to the SPV, and
- Making sure that:
 - The SPV has no recourse against the originator in the event of borrower defaults,
 - Assets can only be substituted if the initial asset transfer was in breach of the transaction's eligibility criteria,
 - Clean-up calls do not exceed 10% of the original asset pool and
 - To the extent the originator acts as manager of the securitization, that the originator does not assume any placement risk.

In the case of revolving purchase facilities, the originator has to obtain approval from the German regulator prior to launching the transaction (Circular 13/98).

According to Circular 4/97, the originator may inject capital into the SPV only in the form of subordinated debt provided that the principal amount of the subordinated debt is fully deducted from regulatory capital. Other permissible forms of credit enhancement include over-collateralization, below par purchase prices, sub-ordination and reserve accounts. On the other hand, guarantees and other credit substitutes are *per se* detrimental to regulatory relief. In its covering note to Circular 4/97, the BAKred stated that liquidity lines, which are required in asset-backed commercial paper programs to eliminate liquidity risk and sometimes also used in term securitizations for the same purpose, must be "pure" ones (i.e., not a disguised credit enhancement).

It is perhaps a German peculiarity that assets have to be selected on a random basis given that the German regulator is determined to discourage transactions that transfer the better assets to an SPV and leave the originator and its creditors with portfolios of poorer credit quality.

B. Example of Regulatory Relief in a Traditional Securitization

The consequences of the above regulations are, for example, that an originator which is holding a mortgage portfolio of 100 (consisting of second-tier loans which are 100% and not 50% risk weighted) on its balance sheet can, by way of a traditional securitization with a retention of a subordinated interests of 2%, improve its solvency ratios as follows:

Capital usage pre-securitization

$$100 @ 100\% @ 8\% = 8$$

Capital usage post-securitization

$$100 @ 2\% [1:1 \text{ capital deduction}] = 2$$

Relief of regulatory capital through securitization

$$8 - 2 = 6$$

C. Traditional Securitizations: Non-Regulatory Securitization Considerations in the Basel I Environment

For most banks, a traditional securitization meets two securitization objectives other than regulatory relief, namely risk transfer and diversification of funding sources. Furthermore, if the sale of the asset pool is considered a "true sale" for accounting purposes, the originator will also be able to improve its debt-to-equity-ratio; this will allow the originator to write new business from a financial ratio perspective. Possibly, the bank can also benefit from market arbitrage.

But there are also drawbacks. Traditional securitizations result in the loss of the portfolio's full income stream. Despite the originator's usual right to profit extraction, normally the loss of income has a direct negative impact on an originator's margin. In addition, transaction costs can be substantial. Given these disadvantages of traditional securitizations, the technique is usually employed by originators that are forced to sell assets (e.g., because they would otherwise discontinue to possess the minimum capital ratio of 8%) or, more frequently, by originators with strong distribution capabilities that can re-build portfolios (and the related full income stream) quite rapidly.

Lenders that are in a position to issue highly rated debt, in particular HPBs, or which benefit from low rate deposits, are unlikely to obtain outright funding benefits through a traditional securitization.¹⁰ This could be different for lower rated lenders/unrated lenders or non-banks without access to cheap deposits. For these lenders, e.g., smaller banks without the right to issue *Pfandbriefe*, a traditional securitization might be the only way to access the (debt) capital markets.¹¹

In the context of German mortgage banks (*Hypothekenbanken*), the question whether funds are cheap or expensive, is not always a matter of black-or-white. It is true that a German mortgage bank is usually able to issue AAA-rated HPBs and that the pricing and distribution costs of plain-vanilla HPBs are, compared to the costs of AAA-rated mortgage-backed securities, considerably lower. However, as mentioned earlier, HPBs are inexpensive for a reason; they can only be "covered" by the first 60% of lending values (*Beleihungswert*) of the properties in the portfolio. Thus, the higher LTV or second-tier parts of each mortgage loan have to be funded by unsecured forms of medium- or long-term debt. Dependent, *inter alia*, on an individual mortgage bank's rating for unsecured debt, mortgage loan pricing varies

considerably from mortgage bank to mortgage bank. Mortgage banks, whose unsecured debt is lowly rated, should therefore, in order to stay competitive, consider second-tier securitization as a cost-efficient way to complement their HPB-funding. Another alternative would be the use of the Provide Program, see below (Section G).

D. Synthetic Securitizations—Regulatory Considerations Under Basel I

With the development of credit derivatives (which started in the second part of the 1990s, i.e., after the invention of traditional securitization), banks had become able to buy credit protection to hedge credit risk in relation to single assets and even entire portfolios (synthetic securitization). As with traditional securitization, once again national supervisors had to supplement their regulations to control a new market.

On June 16, 1999, the BAKred issued Circular 10/99 to regulate the capital adequacy treatment of credit derivatives in relation to single assets. The Circular remained silent on synthetic securitization. It says that, in order to obtain regulatory relief, the originator must ensure that the credit risk resulting from the underlying asset is effectively transferred to the seller of protection (which requires, *inter alia*, that credit events are certain enough and that credit protection claims are enforceable). Pursuant to Circular 10/99, credit linked notes (CLNs) issued by the originator are 0% risk weighted (given the up-front cashflow CLNs generate) while credit default swaps obtain the risk weighting of the respective counterparty or, in certain cases, the security provided by the counterparty.

After the release of Circular 10/99, the German synthetic securitization market grew substantially although, as mentioned before, Circular 10/99 deals with single asset exposures only and the Circular does not directly

address credit derivatives entered into in respect of entire portfolios (synthetic securitizations). Synthetic securitizations became understood as being regulated by the overall "principles" or "analogous application" of Circular 4/97, Circular 13/98 and Circular 10/99. Very soon, all new securitizations of bank portfolios were structured synthetically and the traditional form was aborted. The main reasons for this technological shift were, firstly, certain tax risks widely discussed in respect of traditional securitizations and, secondly, better funding rates available to the larger German institutions via on-balance sheet funding, HPBs in particular.

It is no surprise that in a highly innovative financial market, laxly controlled by "principles" made up of "analogies" (as opposed to specific and detailed rules), some market players feel the temptation to exploit the market's laissez-faire environment. In respect of German synthetic securitizations, this occurred notably in the context of so-called "interest sub-participations" but also in relation to other deal features. Under the terms of interest sub-participations, especially popular in 2000 and 2001, the buyer of protection, i.e., the bank, promised the most junior seller of protection to use any gross interest received from the asset pool (and in more aggressively structured transactions even gross interest received from so-called "extended reference pools") to compensate the junior seller of protection for any credit protection duties that had arisen. In other words, the junior seller of protection had an obligation to make credit protection payments to the buyer of protection while the buyer of protection had an obligation to pay the junior seller of protection the same amounts out of actual or hypothetical gross interest so that payment obligations could be netted. The end result was that, despite the junior credit default swap, the originator was still exposed to the "first loss risk" of the portfolio. The some-

what legalistic justification for this structure was that, under Basel I the risk of not receiving interest is, as opposed to the risk of losing principal, not to be supported by regulatory capital. Because sellers of protection tend to be OECD banks the remaining risk held by the originator was treated as 20% risk weighted although the first loss risk had largely remained with the originator (i.e., the buyer of protection).

In the first few months of the year 2002, the BAFin communicated quite candidly to the German banking industry, among other things by circulating a "synthetic securitization checklist," that certain synthetic structures had been engineered far too aggressively and that their use would not be permitted in future. Only deals already advanced in the "pipeline" were granted the benefit of "grandfathering," which however is bound to phase out. Moreover, the BAFin stated that—until further notice—all synthetic securitizations would, on a deal-by-deal-basis, be subject to regulatory review.

Based on recent practical experience with the BAFin, and given the "synthetic securitization check list," the current regulatory treatment of synthetic securitizations can be summarized as follows:

- The BAFin has pointed out that interest sub-participation entitlements of the seller of protection are to be limited to the net interest margin (i.e., the spread remaining after the deduction of funding costs and pool servicing costs) and that in principle the "first loss position" is to be deducted from capital on a one-to-one-basis.
- All losses on any principal pool assets are to be allocated to the respective seller or sellers of protection. This means, amongst other things, that if dur-

ing the course of a loan restructuring the originator makes any financial concessions to the borrower, these concessions will have to be taken into account when allocating losses to MBS investors.

- Generally, an asset may only be withdrawn from the asset pool if its initial inclusion constituted a breach of the deal's "eligibility criteria" or "replenishment conditions." If concentration limits are exceeded (and excess assets have to be removed from the pool), the BAFin requires that the identity of the asset to be removed is certain (*bestimmbar*) prior to its removal. In other words, the regulator disapproves of discretionary asset withdrawals as these could constitute "implicit support." According to the BAFin, in normal circumstances, the certainty test is met where it is agreed at the outset that the individual asset with the highest contribution to the violation of the concentration limits is to be removed. If the originator sells pool assets, this must happen at arm's length terms. If assets are repeatedly sold at below their notional amounts (i.e., the amounts at which they are included in the asset pool), the BAFin may revoke the advantageous solvency effects of the synthetic securitization.
- Many forms of early termination are restricted because they could constitute "implicit support."
- Non-payment of interest must be included in the definition of "Failure to Pay" and lead to loss allocation if, in respect of the smallest asset in the pool, the sum equal to one year's interest remains outstanding.
- All new synthetic securitizations must be reported to the BAFin and such report must be accompanied by proper documentation.

E. Example of Regulatory Relief in a Synthetic Securitization

Based on the facts given in the example discussed above (see section B) in respect of a traditional securitization, set out below is a calculation of the regulatory effects of a typical synthetic securitization.

For argument's sake, it shall be assumed that there are four mezzanine tranches (amounting to a total of 12%) above the first loss tranche and that the mezzanine tranches are hedged via an SPV, which collateralizes its hedging obligations by way of 0% risk weighted public sector securities. The purchase of such securities is funded by way of a corresponding note issuance. It shall be further assumed that the originator buys credit protection in respect of the top 86% (the "super senior tranche") via a credit default swap entered into with an OECD bank. In other words, the transaction is partially funded.

Capital usage pre-securitization:

$$100 @ 100% @ 8% = 8$$

Capital usage post-securitization:

$$\begin{aligned} 100 @ 2% [1:1 \text{ capital deduction}] &= 2 \\ \text{plus } 100 @ 12% @ 0% @ 8% &= 0 \\ \text{plus } 100 @ 86% @ 20% @ 8% &= 1.376 \\ \text{total usage} &= 3.376 \end{aligned}$$

Relief of regulatory capital through securitization:

$$8 - 3.376 = 4.624$$

F. Synthetic Securitizations: Non-Regulatory Securitization Considerations in the Basel I Environment

Synthetic securitizations have their economic attractions. As mentioned above, they do not prevent originators from using their

established sources of funding. As a result, compared with traditional securitizations, the residual excess spread available to high quality issuers tends to be larger in synthetic securitizations. Furthermore, in a partially funded securitization the senior portion of the portfolio is hedged by way of a bilateral (non-cash) super senior swap and not by the issuance of distributable securities; this reduces also investment banking fees.

From an originator's perspective, a synthetic securitization provides a credit hedge but does not raise finance. Also, it does not have any accounting effects as the relevant assets are not removed from the originator's balance sheet. Of the six securitization objectives mentioned earlier, usually only economic risk transfer, market arbitrage and an improvement of the solvency ratios are accomplishable through a synthetic securitization. To what degree, in a particular transaction, economic risk is transferred or retained by the originator depends largely on the proportional relationship between expected losses and the size of the retained first loss piece.

G. The Provide Program

Any paper written on the topic of synthetic mortgage securitization would, at least in a German context, be incomplete without touching on Provide, a mortgage securitization vehicle sponsored by *Kreditanstalt für Wiederaufbau*, or *KfW*. In a usual Provide transaction, a mortgage lender enters into credit default swaps with Provide at the junior, mezzanine and senior levels. The underlying portfolios contain first-tier (i.e., HPB-eligible) and second-tier loan parts. Provide issues mortgage-backed securities and collateralizes its credit protection obligations by way of 0% risk weighted KfW debt instruments.¹² As a result, subject to the exact structure of the junior swap, the originator obtains full capital relief. Moreover, given the public sector nature of its newly wrapped exposure, the originator has

gained a position where it can finance the portfolio through public sector *Pfandbriefe* (*öffentliche Pfandbriefe*) the funding costs of which are significantly below those of HPBs. Perhaps, Provide is the first synthetic securitization that enables originators to obtain cheaper funding.

PART 4. THE LIKELY IMPACT OF BASEL II ON THE ATTRACTIVENESS AND USEFULNESS OF SECURITIZATIONS FOR ORIGINATORS¹³

A. Basel II—An Overview

As mentioned before, to determine the risk weighting applicable to an individual asset Basel I uses generic obligor categories—and not economic credit risk. This has created a set of investment standards (relied on by banks) markedly different from those of capital market investors. The latter group prices debt exposure solely in accordance with perceived economic risk, credit risk in particular. As a result, banks have incentives to execute balance-sheet securitization in respect of low risk/high risk weighted portfolios.

In 1999, the Basel I Committee proposed the first working paper on a new Capital Accord (Basel II).¹⁴ As regards bank lending, Basel II is essentially the attempt to create, at a global level, standardized capital adequacy rules which follow, on an asset-by-asset basis, economic risk of default rather than formal obligor categories. Economic credit risk is to be measured, at least in principle, by external rating agencies (standard approach) or by internal ratings to be performed by the banks themselves (internal-rating based approach, or IRB).¹⁵

The Basel II concept is founded on three different Pillars. Pillar I contains the new minimum capital requirements. Pillar II introduces the Supervisory Review Process by essentially giving national regulators, on a case-by-case-basis, the right of intervention.

Pillar III aligns regulatory solvency interests with the solvency interests of the capital markets by broadening the disclosure obligations of banks.

B. Basel II and Residential Mortgages

Under the standard approach, the risk weights for *Realkredite* will be reduced from 50% to 40%, resulting in a capital charge of 3.2%. Assuming that the expected losses of a portfolio of *Realkredite* are significantly lower than 3.2%, further significant risk weight reductions are likely for banks that use the IRB approach. However, at the time of writing this article, the specific application of the IRB approach on residential mortgages was unclear and still under discussion. In particular, it was unclear whether a certain minimum capital charge would be required irrespective of measured credit risk (floor).

C. Basel II and Securitization

The original ideas of the Basel I Committee on the future treatment of asset securitizations are set out in the Consultative Document, Asset Securitization, Supporting Document to the new Basel Capital Accord, dated January 2001 (the "Supporting Document").

In respect of traditional securitizations and the standardized approach, the Supporting Document describes or discusses *inter alia*:

- Minimum operational requirements for achieving a clean break (to include the legal or economical transfer of assets and size limitations in relation to clean-up calls), and
- Minimum capital requirements for credit enhancements (enhancement may only be provided at the outset of the transaction, first loss enhancement generally to be deducted from capital, second loss

enhancement may be treated as credit-substitute if there is significant first loss protection provided by a third party elevating the second loss enhancement to investment-grade).

Relating to securitizations under IRB, the Supporting Document suggests to always deduct first loss credit enhancement tranches from capital, unless they are externally rated, in which case the IRB requirement tied to that rating would be applied.

As far as synthetic securitizations are concerned, the Supporting Document proposes to either always deduct the first loss position retained by the originator from regulatory capital, or, alternatively, to restrict the size of the first loss tranche to about the size of expected losses. On an operational level, the Basel Committee is determined to:

- Disallow the originator's right to early termination if the underlying asset pool deteriorates.
- Impose market discipline by requiring that substantive amounts of AAA-rated notes or securities be issued to the capital markets.
- Demand that notes or securities are rated at least by two rating agencies and that SPVs must, irrespective of their rating, always collateralize obligations under credit default swaps to achieve capital relief for the bank.
- Prevent a sponsoring bank from re-assuming credit risk.
- Make sure that the bank adequately discloses its synthetic securitization in its (semi) annual reports.

Further, according to the Supporting Document, the Basel Committee is aware of the danger created by "implicit support" (any ac-

tion taken by a bank originator beyond its contractual obligations based on "moral" or reputational considerations), e.g., the exchange of non-performing assets for performing assets. Therefore, the Committee proposes that a bank is penalized for "implicit support" in that all the securitization's tranches are treated as on balance-sheet assets and, if "implicit support" is provided on a second or subsequent occasion, then *all* of this bank's securitized assets—not just the structure for which "implicit support" was provided—will be treated as on-balance sheet. Finally, in the Supporting Document the Basel Committee suggests that all implicit support measures and the penalties imposed have to be publicly disclosed by the bank.

Finally, according to the Supporting Document, an originator should disclose in the context of securitizations the quantitative data about the assets securitized, the asset types securitized, the roles played by the originator, the maximum exposure arising from recourse/credit enhancement provided and the aggregate data regarding liquidity facilities provided by the originator.

Since the first publication of the Supporting Document, the financial industry has provided extensive comments and critique in respect of its contents.

At the time this article was written, the topic of asset securitization had not yet been re-transferred to the Basel Committee and securitization was still discussed at the level of the Securitization Group, the respective Basel II working group. Compared with other areas of banking, the securitization issues of the Basel II project are subject to a delay of approximately three months. Generally, Basel has not made any final or preliminary decisions on securitization and various important questions relative to it are still heavily discussed within the Securitization Group. According to the current timetable, it

is planned to finalize the third Quantitative Impact Study (QIS 3) by October 1, 2002. QIS 3 will detail the capital adequacy requirements for banks that are either securitizing or investing in securitization tranches. A further working paper will be published to provide an overview of the treatment of traditional and synthetic securitizations under the standardized approach and the IRB approach. This document will also lay out the "Pillar II" ramifications of securitization, especially relating to "implicit support," and is therefore expected to become subject to a further round of consultations with the banking industry.

Given the current state of affairs, the structure of the Basel II approach to the capital requirements for on-balance-sheet residential mortgage portfolios and for securitizations is unlikely to change, but alteration to the detail is still possible. Based on the intention behind Basel II and what we have seen of the consultation process so far, Basel II is expected to have, from a bank's perspective, a considerable impact on the securitization drivers.

On the whole, the BAFin expects that most regulatory incentives for balance-sheet securitizations will have disappeared with the introduction of Basel II. Probably, the magnitude of discrimination between capital adequacy rules and rating based credit enhancement levels will be scaled back considerably and make securitizations generally far less attractive. However, it is not very likely that the Basel Committee will be able to prevent regulatory arbitrage altogether with immediate effect, in particular because banks relying on the standardized approach will probably feel tempted to transfer their portfolios to IRB approach users or to securitization vehicles.

Moreover, the on balance-sheet risk-weighting under Basel II will be solely based on the rating of individual assets.

In other words, Basel II has not yet agreed on concepts to provide additional regulatory relief for banks that reduce their credit risk by way of portfolio diversification. Thus, at least in principle, Basel II might not be able to remove the incentive for banks to unlock by way of securitization, the "diversification value" contained in their portfolios.

In any event, after the implementation of Basel II, banks are likely to remain motivated to securitize their portfolios for non-regulatory reasons, which will continue to have an impact on banks' behavior. For example, banks will want to use securitization to distribute economic risk into the capital markets.

Most banks have core customers (e.g. property developers) and core markets (e.g. regions) and it is economically sensible to sell exposure to these core customers and markets and use the capital set free to buy mortgage-backed securities from banks active in other markets (economic risk diversification). Also, it is not implausible that Basel II could create incentives for mortgage banks to securitize lower rated (and higher risk weighted) portfolios (such as home equity loan pools) and to sell them to high yield capital market investors who are unable to originate the underlying portfolios themselves (market arbitrage). Moreover, a number of lenders might engage in securitizations to diversify their funding sources or, in the case of lowly rated or non-rated lenders, to obtain capital market funding at comparably lower costs.

If German mortgage banks continue to securitize their quality mortgage portfolios under Basel II, it is very likely that they will be doing so via cost efficient centralized multi-originator platforms, rather than through originator specific stand-alone transactions. Whether the Provide-type of transaction (sponsored by KfW) will remain their preferred choice is to be seen. Given

that Provide "converts" mortgage portfolios into public sector portfolios, which "conversion" allows the mortgage banks to tap public sector *Pfandbrief* funding, there are good reasons that Provide will survive Basel II.

Generally, it will be crucial that regulators support securitizations where they make economic sense and in this respect it is important that the Basel II securitization rules do not "strangle" the securitization industry where it could add value to the banking community.¹⁶

PART 5. SUMMARY AND CONCLUSIONS

In the current Basel I environment, mortgage securitization has become a cornerstone of mortgage banking. In countries like the U.K., where mortgage securitization is mostly done traditionally, it is unclear whether the main driver is regulatory capital relief or something else, e.g. better funding costs. In a number of continental European countries, however, where mortgage banks benefit from low funding costs achievable via *Pfandbriefe* and similar covered instruments, it has become clear that the overriding reason for mortgage securitization is regulatory capital relief. For example, all modern German mortgage securitizations are done synthetically, as this technique leaves or enhances all the benefits of the *Pfandbrief* system and also creates, compared with traditional securitizations, fewer legal and tax problems.

It is a declared objective of Basel II to remove all regulatory incentives for securitizations. For the immediate future, however, some skepticism should be allowed. For example, in respect to portfolio diversification, Basel II has not yet proposed further on-balance sheet advantages for banks that are able to reduce overall credit risk through risk diversification so that it could become attractive to securitize these portfolios. Also, less sophisticated banks that use the stan-

dardized approach could be tempted to sell high quality residential mortgage portfolios to sophisticated IRB banks. This would create "sophistication arbitrage" being a form of regulatory arbitrage within the banking industry

After the implementation of Basel II, certain mortgage lenders will continue to require the technique of securitization for reasons other than capital relief, e.g. lower funding costs (especially for lowly/non-rated banks), market arbitrage or credit risk transfer. Hopefully, Basel II will not create overly complex securitization rules with the consequence that deals that would be useful *per se* are not carried out because regulatory compliance proves too difficult or expensive.

NOTES

¹ This paper is written from a German regulatory perspective, however, many structured finance mechanics and incentives discussed herein are of a global nature so that, in essence, the conclusions drawn herein apply to other European countries as well. In this context, it is important to remember that banking regulations are harmonized, though not identical, within the E.U. This will be ever more so the case after the implementation of Basel II.

² The originator will service mortgage loans either through its own personnel or, in the case of outsourcing, through a third-party service provider. In both scenarios, the originator takes ultimate responsibility for the quality of the loan servicing.

³ See Basel Committee on Banking Supervision, International Convergence of Capital Measurements and Capital Standards, July 1988, at www.bis.org.

⁴ In many respects, HPBs are like mortgage-backed securities. Different from issuers of mortgage-backed securities in the narrow

sense, *Hypothekenbanken* tend to issue only two tranches of debt, namely the HPBs and a tranche of subordinated debt. Further, mortgage loans are secured in favor of HPB investors and not transferred to a special purpose vehicle (SPV).

⁵ See article by Hagen and Holter in this issue on page 33.

⁶ "Mortgage origination" means the initial granting of a mortgage loan and is distinct from mortgage brokerage (only distribution of third-party mortgage products without the funding component) and from purchasing existing mortgage loans (wholesale mortgage banking).

⁷ Especially mortgage lending has been regarded as a critical "success factor" in private client banking because, when applying for a mortgage, each applicant discloses all important information relating to his or her personal financial circumstances. Given this high level of disclosure, mortgage banking can help in the creation of valuable databases, in the distinction between attractive and less attractive customers and in cross-selling other financial services like insurance, asset management, credit cards, auto loans etc., to the audience identified as attractive.

⁸ See article by Batchvarov, Hani and Davies on page 43 in this issue, which includes a transaction diagram.

⁹ See also article by Batchvarov, Hani and Davies.

¹⁰ It must be noted that each securitization is complex and unique. The credit assessment of securitizations, especially in respect of the lower tranches, requires highly trained staff who must thoroughly analyze the risk profile and characteristics of the transaction at hand. As a result, the interest payable by securitization instruments is usually higher

than that of an equally (or even lower) rated "plain vanilla" on-balance sheet debt instrument. In other words, securitizations pay a complexity premium over normal debt and are therefore more expensive for the issuer.

¹¹ This is especially true for a number of Anglo-Saxon mortgage companies whose entire business model is based on two sources of funds: firstly, warehouse lines of credit from banks and secondly securitization.

¹² KfW debt is explicitly guaranteed by the Federal Republic of Germany.

¹³ This partly is based on the information available by August 15, 2002. The author

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¹⁴ See www.bis.org.par.

¹⁵ There are two major sub-forms of the IRB approach. In the foundation approach, regulators determine loss given defaults (LGDs)

while banks estimate probability of default (PDs), in the advanced approach banks estimate both LGDs and PDs.

¹⁶ Finally, non-regulated mortgage companies, operating in the U.K. and elsewhere, will not be affected by Basel II at all and are likely to continue to use securitizations as a backbone of their business. Perhaps, at some stage German banking regulations will be liberalized to allow non-licensed mortgage companies to finance German homes as well.