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Germany: Technical Note on the Future of German Mortgage-Backed Covered Bond (PFandBrief) and Securitization Markets

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FINANCIAL SECTOR ASSESSMENT PROGRAM UPDATE

GERMANY

THE FUTURE OF GERMAN MORTGAGE-BACKED COVERED BOND (PFANDBRIEF) AND SECURITIZATION MARKETS

TECHNICAL NOTE

JULY 2011

INTERNATIONAL MONETARY FUND
MONETARY AND CAPITAL MARKETS DEPARTMENT

Contents Page

GLOSSARY

ABS	Asset-backed securities
CBPP	Covered Bond Purchase Program
CDO	Collateralized debt obligation
CLO	Collateralized loan obligation
CLN	Credit-linked note
CRD	Capital Requirements Directive
ECB	European Central Bank
EEA	European Economic Area
EU	European Union
FSAP	Financial Sector Assessment Program
GSE	Government sponsored enterprise
IRB	Internal ratings based
IRBA	Internal Ratings Based Approach
LCR	Liquidity coverage ratio
LTV	Loan-to-value
MBS	Mortgage-backed securities
MERS	Mortgage Electronic Registration Systems
NSFR	Net Stable Funding Ratio
RBA	Ratings based approach
RMBS	Residential mortgage-backed securities
RSA	Revised standardization approach
SFA	Supervisory formula approach
SME	Small- and medium-sized enterprise
SPV	Special purpose vehicle
TSI	True Sale International
VAT	Value added tax
VDP	Association of German Pfandbrief Banks

I. Introduction and Summary[1]

1. **As part of the 2011 Financial Sector Assessment Program (FSAP) Update for Germany, this technical note reviews recent developments of mortgage covered bond (*Pfandbrief*) and mortgage securitization markets in Germany, and explores future prospects for each against the background of ongoing regulatory changes.** It first examines the characteristics of the two markets and their performance through the crisis, and then examines some of the policy reactions that are currently tending to favor covered bonds over securitization. After that, some of the systemic vulnerabilities associated with covered bonds are discussed.

2. **The note concludes that, on an even playing field, covered bonds and securitization should be viewed as complementary rather than competing funding vehicles that are needed, especially at a time when banks require stable sources of funding.** Both funding sources increase the range of available financial products that benefits borrowers, financial intermediaries, and savers. During periods of market stress, covered bonds provide the time-tested funding backstop, albeit mainly for the most credit-worthy banks. Securitization is also worth cultivating, because it works better for less credit-worthy banks that originate high-quality loans, and it provides issuers with more flexibility regarding collateral assets, security design, and payment structure than do covered bonds.

3. **However, both products can create systemic problems in stress situations, and, as a result, expose a wider set of creditors to balance sheet vulnerabilities.** The sustainability of greater *Pfandbrief* and securitization issuance and its implications for collective burden sharing mechanisms cannot be ignored. While both structured finance techniques facilitate cost-efficient funding over time horizons beyond the short-term maturity of unsecured borrowing, their inherent asset-backing curtails the scope of asset recovery for non-collateralized creditors in the event of resolution. Extensive legal protections granted to covered bond holders encumber banks' highest quality assets. In the case of Germany, there are no encumbrance limits on cover pools, and in the new banking resolution framework, depositors will continue to be treated as subordinate to *Pfandbrief* investors. Although it could be argued that lower funding costs decrease the probability of issuer distress *ex ante*, potentially lower recourse may entail higher contingent liabilities to the deposit insurance scheme *ex post* as a greater share of the issuer's balance sheet is subjected to creditor claims that displace some recovery value that would otherwise be available under resolution.[2]

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[1] The primary authors, Andreas (Andy) Jobst and John Kiff,are grateful to Christian Buck, Daniel Hardy, Jörg Janotte, Elias Kazarian, and Jay Surti for helpful comments.

[2] This consideration has an impact on issuer valuation, but might not be fully reflected in market prices. In cases of securitization, the removal of assets from the balance sheet eliminates the valuation problem of *ex post* contingent liabilities.

4. **The individual and systemic relevance of *Pfandbriefe* could adversely impact credit supply and create a "too-important-too-fail" market.** The application of covered bonds is confined to only a small range of assets that can be included in cover pools, which would give rise to originator preference for certain types of loans in absence of alternative funding sources. A greater dependence of issuers with little or no deposit-taking capabilities on covered bonds as a source of funding could lead to a disintermediation of lending to economic sectors which are eligible for covered bond use. Moreover, the relevance of *Pfandbrief* issuance for bank funding may make it difficult to resist calls for the bailout of a distressed issuer if authorities are determined to keep this important market open. This risk of moral hazard is mitigated by strong legislation, which not only ensures high levels of over-collateralization (the minimum requirement is 2 percent; a higher level may be required depending on the composition of the cover pool), but also includes the possibility of segregating the cover pool assets into a specialized *Pfandbrief* bank with limited business activity *(Pfandbriefbank mit beschränkter Geschäftstätigkeit)*. Such an entity is administered by a special trustee (the so called cover pool administrator) that is entitled to conduct all banking transactions necessary to maintain the cover pools and the liquidity of issued *Pfandbriefe*. However, the authorities may still be tempted to intervene to avoid any potentially complex resolution with respect to a few specialized banks that are extremely dependent on *Pfandbrief* funding.[3]

5. **Hence, the authorities should investigate the merits of a reformed securitization market in an effort to balance the encouragement of covered bonds with the potential impact that they may have on bank failure resolution and deposit insurance programs.** While some misguided securitization strategies have precipitated the severity of the recent financial crisis, efforts to restore a sound market should not be ignored. For instance, greater transparency about the underlying assets, as demanded for securitization, may reduce some of the systemic concerns arising from more pervasive covered bond issuance. Securitization also becomes more important for the conservation of capital in addition to raising funds.

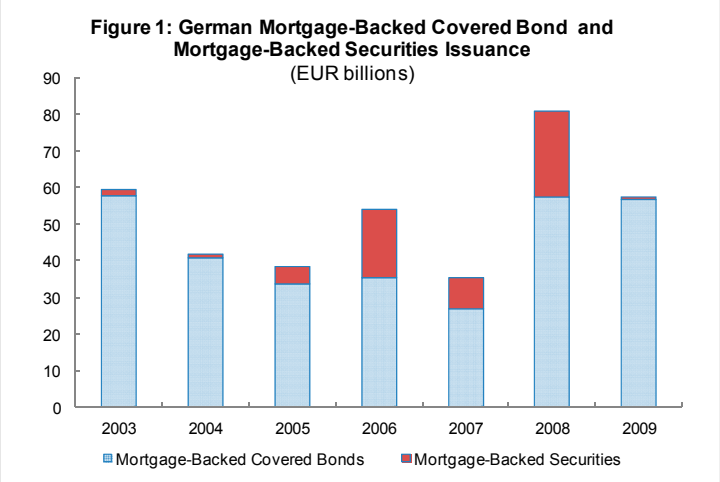
II. COVERED BONDS VERSUS SECURITIZATION

6. **German mortgage funding is very much bank deposit-based, with capital markets-based funding less than one-fifth of outstanding loans.** By contrast, about two-thirds of all mortgages in the United States are funded in capital markets.

[3] For instance, Germany's main public sector finance banks, Hypo Real Estate Group (Deutsche Pfandbriefbank (GER) Depfa (IRL))) and Eurohypo, had limited access to senior unsecured funding and required either government or parental support during the credit crisis.

A. German Mortgage Covered Bonds *(Hypotheken-Pfandbriefe)*

7. **In Germany, *Pfandbriefe* (literally "letter of pledge") have long been the preferred method of capital market-based mortgage funding (Figure 1).**[4] *Pfandbriefe* are debt obligations secured by a dedicated reference (or "cover") portfolio of assets, with the issuer being fully liable for all interest and principal payments. Underlying collateral assets are held on balance and all obligations related to *Pfandbriefe* are backed by the exclusive claim on the cover pool that is recorded in the cover register. In contrast, mortgage-backed securities (MBS) are usually designed to be "bankruptcy remote" from issuers, so performance is based solely on the assets, and securitizers have little to no "skin in the game."



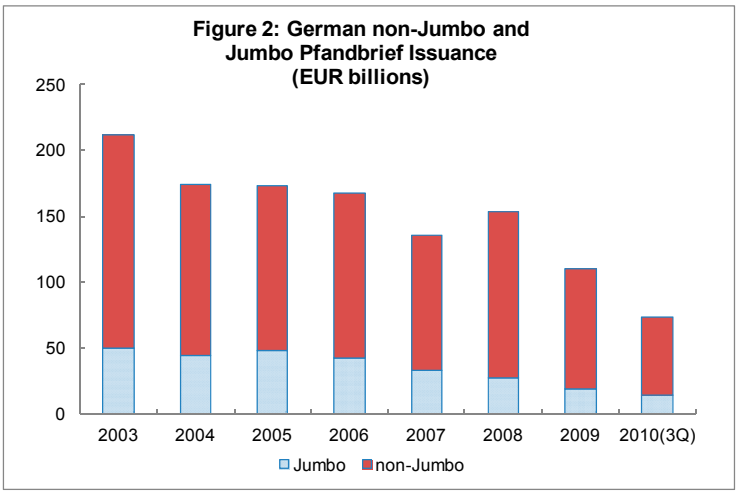
8. **Mortgage-Backed *Pfandbriefe* now constitute about 10 percent of covered bonds outstanding globally.**[5] The creation of the single currency (the euro) improved liquidity and gave the covered bond market added momentum. Another important development was the enhanced liquidity brought to the market with the introduction of the "Jumbo *Pfandbrief*" in 1995 (Figure 2).[6] These covered bonds are typically large (at least €1 billion outstanding) and meet certain minimum liquidity criteria (e.g., a minimum number of market makers committed to quote continuous two-way prices). Also, more recently, after the trough in the primary market during the first six months following the collapse of Lehman Brothers in September 2008, issuance volumes were boosted significantly by the European Central Bank's (ECB) €60 billion Covered Bond Purchase Program (CBPP) that was active from June 2009 to June 2010.[7] Nevertheless, German non-Jumbo *Pfandbrief* issuance has always

[4] Although the creation of the first *Pfandbrief* instrument was attributed to an executive order of Frederick II of Prussia in 1769, it was only when the *Mortgage Bank Law* was passed in 1899 that the *Pfandbrief* took its present form. The first legal guidance for the issuance of covered bonds was adopted in France in 1852 with the *Loi sur l'obligation foncière et communale*.

[5] Covered bonds now globally constitute a US$3 trillion market, of which about one third are *Pfandbriefe* (which includes mortgage-backed transactions) issued by German banks.

[6] Jumbo versus non-Jumbo *Pfandbriefe* issuance is only available on an aggregated basis i.e., backed by mortgages, public-sector loans, ships, and aircraft. The data for both Figures 1 and 2 are from the Association of German *Pfandbrief* Banks (*Verband Deutscher Pfandbriefbanken*). Some of the non-Jumbo issuance is comprised of registered notes (*Namenspfandbriefe*), which are popular with insurance companies who can account for them at book value.

outstripped Jumbo issuance, a pattern that has extended through the crisis period. The total stock of *Pfandbriefe* has significantly declined in recent years to about EUR 664 billion, largely due to regulatory changes (see below), while the number of issuers has grown to 66 institutions.[8] However, covered bond issuance has been increasing rapidly as secured long-term funding sources that attract more favorable regulatory treatment under the recently proposed capital adequacy and liquidity rules.



9. **The cover pool eligibility requirements for mortgage *Pfandbriefe* are quite conservative by international standards of "safe" loans.** The issuance of *Pfandbriefe* is based on German legislation that goes back at least to 1899, the most recent of which was the *Pfandbrief Act* of 2005, which was amended in 2009 and 2010. Only a maximum of 60 percent of the mortgage "lending value" (MLV) may be taken into account. In addition, the lending value is a more conservative measure of collateral value than the property values that are used in most other markets for lending purposes (for example, in loan-to-value (LTV) limits). The lending value represents a "prudent assessment of the future marketability of the property that takes into account the long-term and sustainable value of the property under average conditions in the property market in the region where the specific property is situated and must not exceed the market value" (Moody's, 2010a).[9] However, the 60 percent restriction does not limit lending to 60 percent of the lending value, but any excess cannot be funded via *Pfandbrief*, and, thus, would be subordinated to the cover pool-designated collateral if it were collateralized. Besides mortgage loans, public sector loans, ship loans, or aircraft loans (so far no emission based on aircraft loans) can be used as collateral in cover pools of the respective *Pfandbrief* classes.

10. **In addition, *Pfandbrief*-eligible mortgages have to be located within the European Economic Area (EEA), Canada, Japan, Switzerland, and the United States.**

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[7] Like other crisis-time support programs, such as the ones in Norway and Denmark, the CBPP has been essential in stabilizing the covered bond market at large. For instance, the ECB estimates that after the programme, the long-term equilibrium between covered and unsecured issuance was altered (ECB, 2011). Note that the CBPP was established generally for all covered bank bonds eligible as collateral for monetary policy operations of the Eurosystem and not only for German *Pfandbriefe*.

[8] Since the specialist bank principle (Spezialbankprinzip) has been abolished, all credit institutions are allowed to apply for a licence so that the group of issuers has become increasingly heterogeneous.

[9] Lending values are typically 10 to 15 percent lower than market values.

As of September 30, 2010, non-German loans comprised 21 percent of the average mortgage *Pfandbrief* cover pool, of which about half were commercial mortgages.[10] Moody's (2010a) identifies a number of ways in which covered bondholder rights might be materially compromised when the loans are not located in Germany. However, outstanding loans in countries where the preferential rights of covered bondholders might not be ensured are restricted to 10 percent of the cover pool.[11]

B. German Mortgage Securitization

11. **German residential mortgage-backed securities (RMBS) issuance volumes have been small compared to that of covered bonds (see Figure 1).** RMBS transactions involve the transfer of the risk associated with a portfolio of mortgage loans into special purpose vehicles (SPVs) funded with the issuance of one or more "tranches" of securities (Jobst, 2008a and 2008b; Boxes 1 and 2). Tranche holders are paid in specific order, starting with the "senior" tranches (least risky) working down through one or more levels to the "equity" tranche (most risky). If some of the expected cash flows are not forthcoming (e.g., some loans default), then, after any cash flow buffers are depleted, the payments to the equity tranche are reduced. If the equity tranche is depleted, then payments to the "mezzanine" tranche holders are reduced, and so on up to the senior tranches.

12. **Most German MBS transactions have been completed via KfW PROVIDE synthetic securitization platform (Box 3).** In most other mortgage securitization markets, cash is the dominant format. In a "cash" securitization, the SPV buys the loans outright (i.e., a "true sale").[12] However, there have been only four German cash RMBS transactions since 2000, one of which was done using the True Sale International (TSI) platform (see Box 1).[13] In a synthetic securitization, credit derivatives are used to transfer the risk associated with the loans from the bank's balance sheet to the SPV. The proceeds from the sale of securities are used to buy liquid high-quality collateral to fund contingent payments on the credit derivatives, and pay interest and principal on the securities.

13. **Before the creation of this issuance platform, a number of structural impediments had long prevented efficient mortgage securitization in Germany.** For example, it was not until 1997 that the German banking regulator first permitted banks to

[10] The cover pool data covers all of the member banks of the Association of German *Pfandbrief* Banks, who are responsible for about 97 percent of all outstanding *Pfandbriefe*.

[11] All EU member countries are exempt from the 10 percent limit, but it applies to all of the other eligible countries; Canada, Iceland, Liechtenstein, Japan, Norway, Switzerland, and the United States.

[12] The other three cash RMBSs since 2000 were GMAC Bank E-MAC transactions.

[13] There have been 14 TSI-certified securitization transactions going back to 2005, 7 of which were auto loan-backed ABS, and two each of consumer loan-backed ABS, commercial mortgage-backed securities, and collateralized loan obligations (CLOs) backed by loans to small- and medium-sized enterprises (SMEs).

securitize assets. By then, the United States and most (Western) European countries had already put in place securitization legal frameworks. Moreover, only in 2003 was the German trade tax *(Gewerbesteuer)* law, a major obstacle to true sale securitization in the past, amended by the Act to the Support of Small Businesses *(Gesetz zur Förderung von Kleinunternehmen und zur Verbesserung der Unternehmensfinanzierung)*, which exempts SPVs purchasing certain receivables originated by banks in (true sale) securitization transactions from income tax. Also in 2004, value-added tax (VAT) on receivables servicing was removed.[14] In addition, the Refinancing Register was introduced in 2005; prior to that, mortgage transfers had to be recorded in the respective land register, which was expensive and had to be done for each individual loan (amounting to thousands in a typical securitization transaction).[15] The Refinancing Register streamlines true sale securitization of mortgages while ensuring that loans are bankruptcy remote from the lender as soon as they are registered (Fitch, 2010).[16]

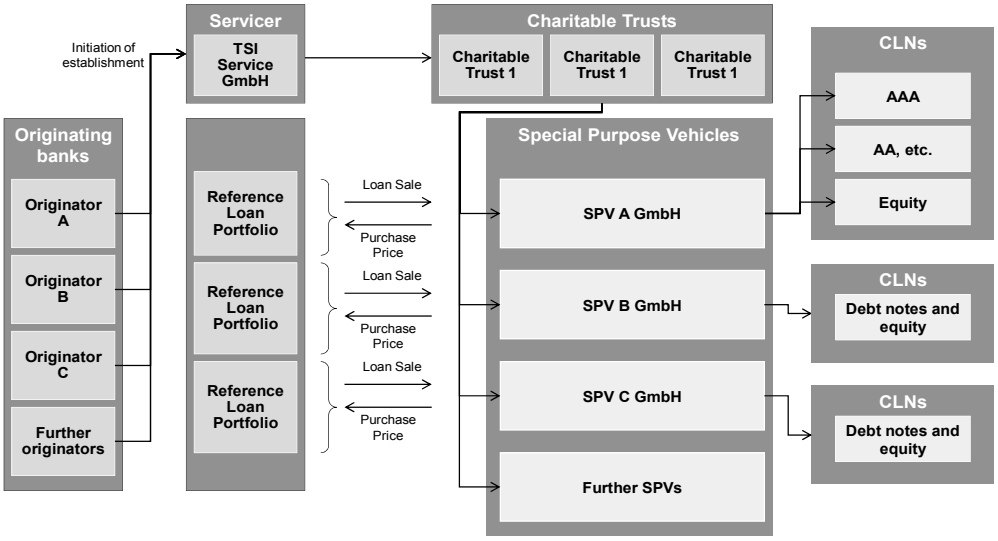
[14] The VAT exemption applies only if servicing rights are retained by the lender, as is typically the case in Germany.

[15] "The origin of the problem is the fact that in Germany a mortgage loan and the respective mortgage collateral are legally separated. The Banking Act amendment now allows an assignee to separate the mortgages from the insolvency estate of the seller without the need of land registration but only by registering the mortgage for the beneficiary in the Refinancing Register." (FitchRatings, 2007).

[16] The Refinancing Register sounds very much like the Mortgage Electronic Registration Systems (MERS) used by some securitizers in the United States to electronically track the ownership of mortgage loans. However, the MERS is a privately-run operation designed to facilitate multiple ownership transfers, whereas the Refinancing Register is regulated by BaFin and not designed for on-selling.

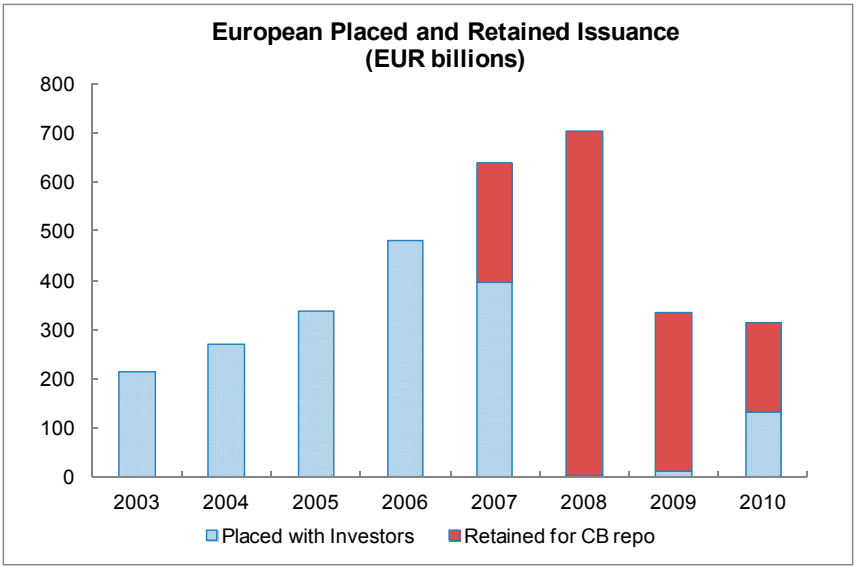
Box 1. The German True Sale Securitization Initiative

The TSI GmbH platform was created in 2003 by a consortium of German commercial banks to provide issuers of transactions backed by German collateral assets with a cost-efficient standardized issuance platform that is compliant with national competition law and regulatory requirements. The TSI platform allows participating banks to securitize reference loan portfolios through a specially created limited-liability SPV owned by three charitable foundations. It is commonplace for charitable foundations to act as SPV shareholders, in order to achieve tax-exempt status, and, thus, eliminating income taxation on funds managed by the SPV. The use of multiple foundations ensures the loans are "bankruptcy remote" from the originating banks. TSI Services GmbH, a limited-liability subsidiary of TSI, organizes and coordinates the establishment of the SPV.



Box 2. Recent European Mortgage Securitization Issuance

Since the beginning of the crisis, European MBS issuance appears to have stepped up a notch, but in this case looks can be deceiving. Most of the 2008-09 MBS issuance was not placed with final investors, but instead has been retained to post as collateral against central bank repo facilities. The figure below shows this for combined European MBS and ABS issuance (these data for just MBS are not available). However, the market's dependence on central bank repos has tailed off in 2010. In addition, some real "green shoots" are appearing in the Dutch and U.K. prime residential MBS markets, but perhaps only because covered bonds are currently not a viable option in those markets.

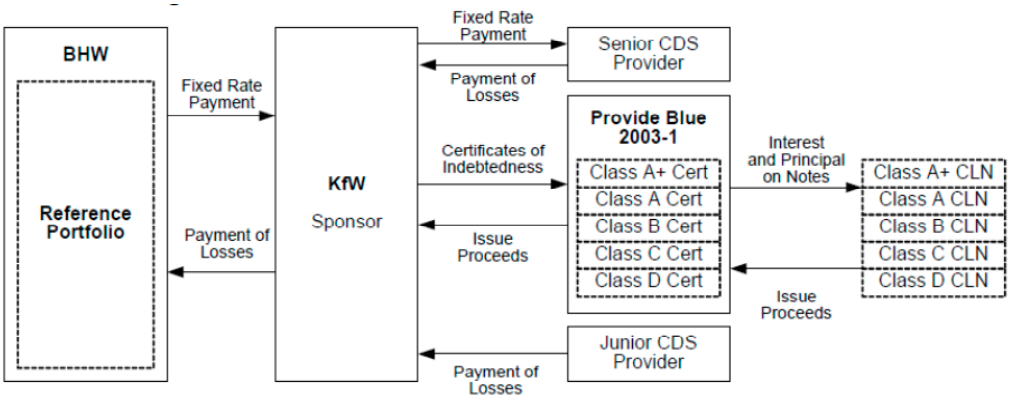


14. **It is difficult to judge the impact of these initiatives on securitization markets, because, since shortly after they were enacted, global and European private-label mortgage securitization markets have virtually shut down (see Box 3).**[17] Furthermore, these markets are likely to remain moribund until the uncertainties regarding the plethora of legislative and regulatory initiatives aimed at making securitization more robust subside. While most of the current proposals are unambiguously positive for securitization markets and financial stability, some proposals—such as those designed to improve the alignment of issuer and investor interests and accounting changes that will result in more securitized assets remaining on balance sheets—may be combined in ways that could weaken the economics of all forms of securitization, including desirable forms (IMF, 2009).

[17] Private-label securitization products comprise those not issued or backed by governments and their agencies. Also, issuance volumes discussed here do not include those retained by the issuer expressly to post as collateral against central bank repo.

Box 3. The KfW PROVIDE Securitization Platform

Since 2001 15 partially-funded synthetic RMBS transactions have been issued via KfW's PROVIDE securitization platform. The originating bank buys default protection on the reference loan portfolio from KfW. KfW hedges its default exposure by buying protection from highly-rated banks on the riskiest ("equity") and least risky ("senior") tranches of risk, and issuing "certificates of indebtedness" to an SPV credit linked to the reference portfolio. In notional value terms, the senior tranche comprises about 80 to 90 percent of the portfolio, but in default risk terms it is the least risky. The risk associated with the equity tranche, which comprises almost all of the expected default loss, is often retained by the originating bank. Hence the notional amount of credit-linked notes (CLNs) issued by the SPV to investors to fund its default-conditional payments to KfW is usually a small fraction of the notional size of the loan portfolio.



Besides providing cost-effective funding, programs like PROVIDE also encourages greater standardization of securitization structures and lower heterogeneity of asset pools, which helps to keep costs low.

KfW also runs the very similar PROMISE program that provides cost-efficient funding support to bank-originated loans to SMEs. By helping financial institutions to achieve regulatory capital relief for securitized SME lending, the PROMISE platform creates more scope for future SME loan origination. Annex 1 discusses the role of other German SME securitization vehicles.

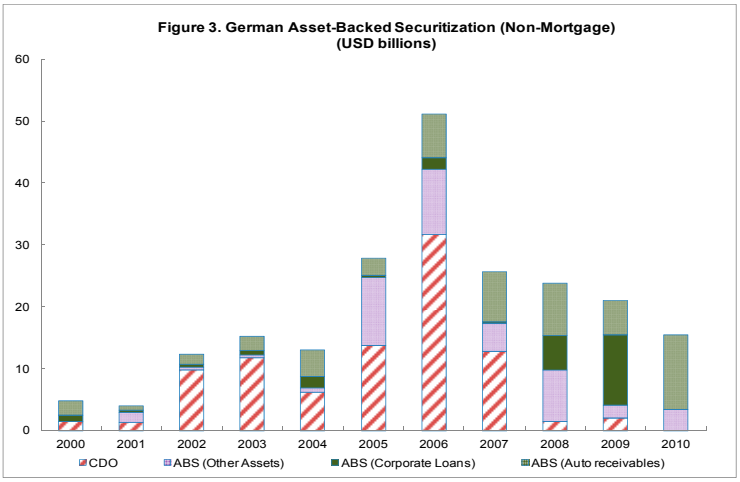
15. **However, it should be noted that German securitization markets performed very well during the credit crisis—albeit at a low level of issuance relative to past issuance in other countries, with mortgage issuance representing only a relatively small share.** As opposed to cases of countries where doubtful underwriting standards, poor collateral selection, and incentive problems between arrangers and managers became the undoing for many types of securitization, the German securitization market has not experienced a situation that would require a fundamental rethinking of certain modes of securitization. The performance of German securitization during the credit crisis proved very resilient—both at the collateral and product level, with default rates way below the international average. In fact, the loan portfolios underlying German SME securitization transactions issued between 2005 and 2007 have recorded cumulative net default losses of merely 0.16 percent until end-

2010, which stands in sharp contrast to cumulative loss rates of almost 20 percent of securitized U.S. subprime mortgage portfolios. Overall, default rates for German securitization transactions on residential mortgages, consumer loans and SME credits, which form the largest share of issuance activity, are around 0.30 percent—or less than half of the European average of 0.65 percent (Table 1).

Table 1. Comparative Performance of Securitization Markets in Germany, Europe, and the United States
(In percent, as of end-June 2010)

Country	Losses	Rating Stability
Germany	0.2-0.7 (auto ABS, lease ABS, RMBS, SME CLOs) 7.0 (mezzanine tranches of SME-sponsored transactions)	n.a.
of which: KfW's PROMISE/PROVIDE	<0.1	>90.0 (stable or rating upgrade)
of which: TSI-certified transactions[18]	0.1-2.7	>92.0 (stable or rating upgrade)
Europe	0.65	>82.0 (stable or rating upgrade)
United States (sub-prime)	15.0-20.0	>50.0 (stable)

16. **There are several features that might explain the stability German securitization markets.** In general, securitization structures have traditionally been more closely associated with the real economy, which is reflected in the dominance of SME loans and car lease receivables as the main collateral types (Figure 3 and Box 4), rather than speculative structures aimed at regulatory arbitrage. In this regard, securitization has become a tried and tested funding option for German SMEs and car manufacturers, whose access to capital market funding even at the height of the credit crisis contributed to Germany's strong economic recovery in 2010.



[18] 60 percent of all TSI-certified issues are backed by consumer credit.

Box 4. Small- and Medium-Sized Enterprise Securitization in Germany

Loan securitization represents a diversified funding source that offers several benefits to SMEs. Securitization reduces entry barriers to capital markets normally available only to large corporates and helps SMEs to rebalance their financial structure towards longer maturities while attracting new investors with previously limited exposures to SME risks. Securitization also lowers the economic cost of capital and eases funding constraints of the primary lenders by encouraging the use of standardized and more efficient origination and loan pricing processes, leading to lower transaction costs. In addition, regulatory capital relief from synthetic structures raises the amount of capital available to SME lending by banks.

However, operational and fundamental constraints, such as reporting standards and credit scoring, render to securitization of SME-related claims more costly than others. In particular, the lack of long time series data on the default frequency of SMEs; the heterogeneity of SME portfolios which differ from each other in terms of size, corporate form, business activity, and geographic location; and insufficient volumes of long-term loans (which complicate the estimation of the cash flows pattern of SME portfolios) continue to hamper faster market growth.

In Germany, SME securitization remains largely limited to indirect transactions, where banks issue securitized debt backed by SME-related claims.[19] Most transactions are balance sheet CLOs on replenishing portfolios with synthetic transaction structure (Jobst, 2006), such as KfW's PROMISE program, where issuers sell credit protection (together with various third-party guarantees) to create partially funded and highly-leveraged investment on the performance of designated credit exposures (without actually purchasing the reference assets). In contrast, smaller corporations in capital-market based financial systems (e.g., the United Kingdom and the United States) have successfully enlisted the help of banks as arrangers of own securitization transactions as a way to secure *direct* capital market access.

17. **In particular, mortgage securitization in Germany involves some characteristics that were missing in other jurisdictions, most notably the United States.** For instance, securitized mortgage loans in Germany are subject to traditionally conservative loan origination standards with high equity participation under the same credit law as non-securitized loans, with servicing being retained by the originator (Table 2).

[19] Most SME transactions have been synthetic due to the large footprint of the PROMISE program, while the Spanish market is dominated by true sale transactions; that being said, both markets are evolving, blurring this historical distinction as truer sale transactions are structured in Germany.

Table 2. Comparison of United States and German Loan Origination and Securitization

	United States (sub-prime)	Germany
Credit origination	Break-up of the value chain and commission-driven origination and servicing (quantity rather than quality; moral hazard problems). No regulation.	Loan origination and servicing remains with the financial institution. Securitized loans are subject to the same credit law.
Credit quality	Low credit standards: high LTV, interest-free teaser periods, exotic payment options.	Traditionally conservative loan origination with high equity participation (e.g., mortgage loans).
Funding purposes	Securitization of third-party originated loans (off-balance).	Securitization part of ongoing balance sheet operations (with seasoned loans only)
Risk sharing	Separation of risk between securitizer and investor (principal agent problem).	First loss position usually retained by securitizer.

C. Comparison of Covered Bonds with Securitization

18. **Covered bonds are debt obligations secured by a dedicated reference (or "cover") portfolio of assets, with the issuer remaining fully liable for all interest and principal payments, which feature ensures that the issuer's incentives with respect to the performance of the reference asset portfolio are fully aligned with investor interests.** This stands in contrast to pre-crisis private-label mortgage securitization, in which securitizers had little direct interest in the performance of the securities issued against the reference portfolios.

19. **MBS have been used as funding and risk management tools by U.S. lenders for about 20 years, but in Europe, and especially in Germany, covered mortgage bonds as funding vehicles have been in existence for more than 100 years.** The key difference between the two instruments is that, if the reference asset portfolio fails to generate sufficient cash flows, or if the value drops below the notional value of the issued securities, covered bond investors have an unsecured claim on the bankruptcy estate of the issuer.[20] The cover pool is fenced-off from the issuer's other assets in the case of a default, and is over-collateralized, so that the value is in excess of the face value of the bonds that it backs. Thus, covered bond investors enjoy dual recourse to both reference assets and the issuer.

[20] Moreover, an independent cover pool monitor shall ensure that the prescribed cover for the Pfandbriefe exists all time. Prior to issue, the cover pool monitor shall issue for the Pfandbriefe a certificate confirming that the prescribed cover exists and has been recorded in the relevant cover register. In addition the Pfandbriefbank shall ensure continually by way of suitable calculation models and document in lucid manner that the prescribed cover is given at all times. On the basis of suitable random checks the supervisory authority checks the cover for the Pfandbriefe at points in time that shall be determined.[20] Moreover, these bonds insulate investors from prepayment risk, whereas most MBS are "pass-through" securities that do not.

20. **While covered bonds serve primarily as funding and market risk management instruments, securitization is employed for market and credit risks transfer, economic and regulatory capital relief, and balance sheet management.** Since covered bonds are issued on the back of a pool of mortgage loans that remain on the balance sheet of the originator, they do not provide the credit risk transfer benefits and the same degree of regulatory capital relief normally associated with securitization. While covered bonds tend to be originated and issued by one and the same entity, in a securitization transaction the issuer transfers the risk associated with a loan portfolio to a separate entity, which is financed by issuing debt or equity claims based on the cash flow from these assets to investors. In this way, all of the risks related to the underlying reference portfolio is removed from the balance sheet and legally segregated ("bankruptcy remoteness").

21. **Covered bond investors have a preferred claim in the event of an issuer default and are not usually exposed to prepayment or other optionality risk.** Issuers are usually fully liable with respect to their registered capital if reference assets fail to generate sufficient cash flows for the repayment of investors. Thus, covered bond investors enjoy dual recourse to the issuing bank and, in case of issuer default, preferential access to the pool of underlying assets. Because covered bonds are both obligations of the issuing lender and collateralized by the underlying cover portfolio, they are viewed as less risky than either. Hence, for example, rating agencies reward covered bonds with a rating "uplift" beyond the standalone rating of the issuer (Box 5). In comparison, securitization product investors do not benefit from any institutional guarantee and so their investment returns depend solely on cash flows generated by the designated reference portfolio.

22. **Although securitization transfers most credit risk to capital markets, the risks to senior tranche holders is supposed to be mitigated by various built-in structural features.** However, investors and credit rating agencies vastly underestimated the potential losses on U.S. private-label RMBS, calling into question the adequacy of these features and the trust placed in the rating agencies. Covered bonds typically have fewer of these structural protections (usually only over-collateralization), but if the underlying assets fail to generate sufficient cash flows, or if the balance of cover pool assets drops below the principal and interest owed, then investors still have an unsecured claim on the bankruptcy estate of the issuer up to the par amount of the covered bonds.

Box 5. Covered Bond Credit Rating Uplift

Covered bond credit ratings are usually higher than issuers' senior unsecured debt ratings, because a default requires both an issuer default plus insufficient funds/liquidity in the cover pool. Hence, issuer credit ratings can be regarded as a "floor" to covered bond ratings, and the degree to which the covered bond rating is higher is called the rating "uplift." The covered bond rating methodologies used by the three major rating agencies are broadly similar, but their uplift levels do seem to broadly differ (see table). For example, it would appear that Standard & Poor's (S&P) provides the greatest uplift, and Moody's the least. It must be kept in mind that, because AAA/Aaa is the highest possible rating, the uplift can be constrained by the issuer rating. For example, there is zero uplift on Royal Bank of Canada covered bond ratings, because the bank itself is rated AAA/Aaa.

According to Batchvarov and others (2010), the minimum issuer credit rating for achieving a triple-A covered bond rating is BBB- (Fitch), Baa2 (Moody's) and BBB+ (S&P). However, among the mortgage covered bonds examined for the table, the minimum ratings were A- (Fitch), A3 (Moody's) and A- (S&P).

Comparative Mortgage Covered Bond Average Rating Uplifts			
	Fitch	Moody's	S&P
Fitch vs. Moody's vs. S&P	3.8	3.1	4.3
Fitch vs. Moody's	4.0	3.3	n/a
Fitch vs. S&P	3.8	n/a	4.3
Moody's vs. S&P	n/a	3.1	4.3
Number Rated	55	70	30

23. **Covered bonds are typically subject to stringent national laws (e.g., requiring a low weighted average LTV ratio).**[21, 22] Private-label securitization products are free from these legal requirements.[23]

[21] The vast majority of covered bonds are issued under "special law" frameworks that set uniform standards for product structures, collateralization and cover pool credit quality. These include French *obligations foncières*, German *Pfandbriefe,* Danish *særligt dækkede realkreditobligationer,* and Spanish *cédulas*. However, issuers in countries that do not have special covered bond laws have been issuing "structured" covered bonds in which all of the terms and conditions are defined in the issue-specific legal documentation. Although special laws reinforce some of the product rigidities mentioned earlier, they also provide a degree of standardization and a regulatory stamp of approval, which results in more cost effective funding. Also, in some jurisdictions (e.g., Europe) special law covered bonds get preferred regulatory treatment, such as reduced regulatory risk weightings and higher holding limits.

[22] The 60 percent MLV restriction does not preclude the use of *Pfandbriefe* to fund mortgages with LTVs greater than 60 percent. The restriction only specifies that a maximum of 60 percent of the mortgage lending value may be counted towards the cover pool. Hence, 80 percent LTV mortgages can be funded in the *Pfandbrief* market, and the credit risk transferred synthetically using, for example, KfW's PROVIDE mortgage securitization platform.

[23] Private-label securitization products comprise those not issued or backed by governments and their agencies. For example, the definition excludes products issued by the U.S. government-sponsored enterprises (GSEs) such as Fannie Mae, Freddie Mac, and Ginnie Mae, which provide institutional guarantees in return for certain restrictions imposed on mortgages that they purchase and securitize.

24. **However, the on-balance sheet nature of covered bonds requires full capital coverage of the underlying reference portfolio, which limits the range of potential issuers even where covered bond issuers are not subject to special licensing.** Moreover, the range of eligible high-quality assets that can be funded with covered bonds is typically quite narrow. In contrast, securitization offers issuers considerable flexibility to create securities with distinct risk-return profiles in maturity structure, security design, and asset type. For instance, it offers the prospect of better asset-liability management, because the issued securities just pass all cash flows through to investors, and the asset portfolio can be actively managed, which is not the case with covered bonds.[24] In addition, issuers can fund themselves at a cost of capital beyond their own credit rating, because the securitization vehicle is bankruptcy remote, with securitized debt representing non-consolidated interest in underlying assets. Moreover, the dispersion of risk across a diversity of investors will likely be greater through the structuring techniques typical securitization.

25. **On the one hand, securitization offers more flexibility than covered bonds to create securities with distinct risk-return profiles.** On the other hand, the narrow scope of assets eligible for Pfandbrief cover pools ensures that only high quality assets are entailed in these pools. In practice, covered bond ownership dispersion by investor type seems as wide as that of securitization products. Also, securitization can be used to transfer market, funding, and credit risk to capital markets, whereas covered bonds transfer only market and funding risk. Hence, RMBS issuers can enjoy additional risk management and regulatory capital relief benefits (but at a price). Structural differences between covered bonds, securitization, and general obligations are summarized in Table 3.

[24] However, the cover pools for Pfandbrief are monitored on an on-going basis and adjusted to maintain the quality level.

Table 3. Covered Bonds, Mortgage-Backed Securities and Senior Unsecured Debt Comparison

	Senior Unsecured Debt	Covered Bonds Based on		Mortgage-Backed Securities
		Special Law	General Law	
Issuer		Lender		
Payments	Lender	Lender (until its insolvency)		Special Purpose Vehicle
Preferential claim on collateral?	No	Yes		
Residual recourse to issuer?	After all secured and other claims (e.g., tax) have been settled	Yes /1		No
Payment acceleration?	On issuer default	Typically upon an event of issuer default AND cover pool default		On specific events—e.g., performance trigger breaches
Collateral pool dynamics	No direct recourse to a dedicated pool of collateral	Typically dynamic; issuer must maintain quality and size of the cover pool; nonperforming and/or maturing collateral has to be replaced with performing collateral or well provisioned.		Typically static, but issuer can sometimes add new assets as the pool pays down
Collateral defined by:	n/a	Special covered bond law	Individual program terms	Transaction documents
Repayment from:	Bank operating cash flows	Bondholders ranking *pari passu* among each other have a preferential claim on the assets in the cover pool; in the event of issuer insolvency, the cash flows from the cover assets is used to meet the claims of investors when they come due.		Securitized assets
Supervision and monitoring	General bank supervision/CRA	Bank supervision and bond trustee/CRA	Bond trustee/CRA	Bond trustee/CRA
Asset-liability management	n/a	As defined by special law	As defined in program terms	Typically pass-through
Repayment structure	Typically bullet	Typically bullet, but potentially soft bullet structure /2		
Issuer Capital Relief		No		Yes
Disclosure requirements		Some, depending on jurisdiction		Heavy

Source: German authorities, market participants, and staff analysis.

1/ Covered bonds usually enjoy *full recourse* to the issuer's assets, but in some cases they have only *limited recourse*. Partial recourse situations include covered bonds issued in Hungary, Portugal and the United States. Also, covered bonds issued in France by the Sociétés de Credit Foncières and the CRH only have limited recourse, and the privileged claims of Spanish cédulas are somewhat limited.
2/ A soft bullet structure allows for a (typically 12-month) due payment reprieve after a "failure-to-pay" event to allow the administrator to achieve sufficient liquidity.

III. New Legislation and Regulations Affecting Securitization[25]

26. **A number of new legislative and regulatory initiatives have been introduced to make securitization safer for investors, and for the financial system as a whole.** They are broadly designed to increase transparency at both the collateral as well as securities level in order to ensure that investors can account for the risk exposure of their securitization product holdings appropriately. However, various regulatory changes, whether proposed or already implemented, should be carefully assessed as to their joint impact on the restoration of a viable securitization market.

A. Making Securitization Products Safer Through Risk Retention and Transparency

27. **The collapse of private-label securitization markets, and perception of the role of securitization as a major cause for the global credit crisis, has led to serious doubts about the merit of unbundling, transforming, and re-distributing credit risk.** In particular, in some markets, securitization facilitated slippage of underwriting standards and excessive risk-taking to a point where the inability of issuers to gauge actual credit risk and the flexibility of asset managers to subvert investment mandates intensified the potential of systemic vulnerabilities to credit shocks.

28. **By substituting intermediated lending with capital market finance, securitization creates considerable agency cost (which is ultimately borne by investors) (Box 6).** Since issuers transfer away some (if not all) of the credit risk associated with the securitized assets to a bankruptcy-remote issuing agent, such a SPV or conduit, either via a transfer of title ("true sale securitization") or the purchase of credit protection ("synthetic securitization"), they are less incentivized to prudently screen and monitor their performance. At the same time, arrangers have superior information about the true valuation of these assets. Since arrangers underwrite the sale of securitized debt, they might choose certain reference assets and transaction structures to optimize own payoffs (rather than the ones of ultimate investors) (Jobst, 2009). In this context, a number of recent empirical studies have shown that the quality of securitized loans deteriorated in the years leading up to the crisis. For example, Dell'Ariccia (2008) found that lending standards experienced greater declines in countries with higher mortgage securitization rates. Also, empirical studies have been able to identify a negative relationship between lenders' readiness to securitize loans and the ex-post performance of such loans (Berndt and Gupta, 2009; Downing and others, 2009; and Elul, 2009).[26]

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[25] Note that his analysis is general in nature and should not be viewed as a legal opinion. It makes no representation as to the validity of the information as financial and legal structures can and do change without notice.

[26] However, the link between securitization and ex-ante lending standards is not so clear cut. Krainer and Laderman (2009), Demyanyk and Van Hemert (2008), and Purnandam (2009) find that lending standards in the U.S. mortgage market tended to be lower for securitized loans (than for loans held on the lender's balance

29. **It is quite common for issuers of securitization transactions to retain economic interest in the issued securities and/or the underlying assets, which should result in a better alignment of interests with investors (Kiff and others, 2010; Jobst, 2010).** Besides the creation of reserve funds and overcollateralization, variable proceeds from excess spread, representations and warranties, and credit enhancements via third-party guarantees, issuers usually retain the most junior claim in a securitization structure as a low-cost risk sharing and support mechanism.[27] For example, most German issuers retain the most junior (or equity) tranche of their transactions. Anecdotal evidence from German issuance suggest that even before the credit crisis some issuer retention was always present and continues to increase as regulatory arbitrage through risk transfer (via synthetic structures) is giving way to efficient funding (via true sale structures) as the main motivation of securitization.

30. **Also, revolving loan issuers often provide "implicit recourse" when underlying assets underperform by increasing credit enhancements, or buying underperforming loans at a price greater than fair value and selling assets to the SPV for less than fair value.**[28] However, there is no empirical research on the impact of risk retention on issuer due diligence and post-issuance performance, mainly due to a lack of retention data. Also, it is

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sheet). On the other hand, Bhardwaj and Sengupta (2009) as well as Bubb and Kaufman (2009) find evidence to the contrary. For some background on the macro-financial linkages of securitization, see Goswami and others (2009).

[27] The "excess spread" is the difference between the interest received from securitized assets and what is paid out to bondholders. Some of this is usually trapped in a reserve account to cover defaults and provide additional credit enhancement. Portions of these reserve accounts can accrue to issuers if the loan portfolio performance exceeds preset trigger levels. Excess spread accounts are effectively subordinated to the most junior tranche of a transaction. Representations and warranties allow bondholders to return back to originators loans that do not meet pre-agreed upon quality standards. However, they are a weaker form of retention because arrangers and other participants that play multiple roles may be reluctant to trigger "loan putbacks". Also, representations and warranties depend on originators having enough capital and liquidity to make good on their warranties, which may not always be the case.

[28] Implicit recourse raises the issue of trade-off between ensuring adequate levels of credit enhancement for MBS investors versus safeguards to protect the originator's unsecured creditors. Also bank supervisors officially frown on the use of implicit recourse, because it violates key "true sale" principles that permit the removal of the loans from bank balance sheets, and the associated regulatory capital relief. The frown is "official" because, despite frequent regulatory warnings, implicit recourse remains commonplace, probably because the "smoking gun" is so hard to prove. For example, it is easy to hide recourse transactions in the regular removals and contributions of loans from SPEs in revolving loan securitizations. Revolving loan securitizations are usually subject to contractual accelerated amortization provisions ("clean-up calls" and "removal of accounts provisions"). Also, most credit card receivable and home equity line of credit securitization transactions use master trusts that issue multiple series of securities backed by the same loan pool. Hence, an issuer can provide implicit recourse by issuing a new series of securities backed by more or higher quality loans.

difficult to separate out the adverse impact of structural flaws and general economic conditions on the performance of securitization transactions.[29]

31. **In any case, risk retention requirements will become an inherent element of the regulatory framework governing securitization in the most important markets.** To incentivize stronger issuer due diligence effort, European and U.S. authorities are amending securitization-related regulations to incentivize issuers to retain an economic interest in the securitization products they issue. The CRD was amended to provide incentives for issuers to retain at least 5 percent of the nominal value of originations. In the United States, the *Dodd–Frank Wall Street Reform and Consumer Protection Act* also calls for 5 percent retention.[30] A recent revision to the German Banking Act also imposes the 5 percent retention requirement, which will automatically increase to 10 percent on January 1, 2015. Besides various requirements that qualify investment in German securitization transactions, investing institutions are required to limit their investments to securitizations, where the originator or sponsor maintains some retention; investors are required to demonstrate their capacity to assess the risk of the reference portfolio and the issuer.[31] In any case, the 5 percent requirement is not likely to be difficult to meet, since most German issuers of mortgage securitization have traditionally retained the riskiest (equity) tranche due to the prevalence of synthetic structures to attain regulatory capital relief.[32]

[29] Also, theoretical work shows that the link between issuer risk retention and due diligence incentives is complex, and depends on the quality of the loan pool and expected economic conditions (Fender and Mitchell, 2009, and Kiff and Kisser, 2010).

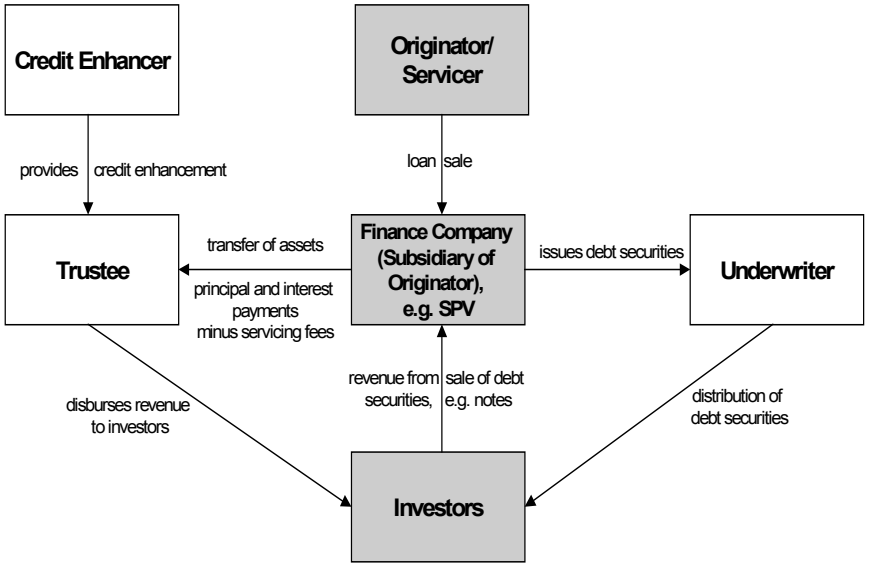
[30] Several retention options are on the table, including retaining just the riskiest ("equity") tranche and equal amounts of all tranches ("vertical slice"). For a discussion of various alternatives, see Fender and Mitchell (2009), as well as Kiff and Kisser (2010).

[31] According to recent amendments to the German Banking Act (§18 a and 18b of the *Kreditwesengesetz* (KWG)), investors also need to demonstrate the capacity to analyze and assess the risk of reference portfolios, complete stress tests and conduct regular monitoring of the portfolio performance.

[32] In these structures, the junior tranche would usually represent between 8 and 11 percent of the issue size.

Box 6. Incentive Problems in Securitization

The main cause of the credit crisis can be traced to market failure stemming from conflicts of interests between different agents in the securitization process and ill-designed mechanisms to mitigate the impact of asymmetric information. By substituting intermediated lending with capital market finance, securitization can create considerable agency costs (which are ultimately borne by investors) if agents are tempted to pursue their own economic incentives. The most prominent incentive problems involve frictions among the borrowers, originators, issuers, arrangers, and investors as well as additional agents, such as servicers, credit rating agencies, and third-party guarantors, whose functions are the direct result of the fragmentation of risk ownership in securitization (and the incentive problems it creates).



Source: Jobst (2006).

First, valuation uncertainty about the quality of securitized assets could lead to moral hazard by securitizers if they have limited liability on downside risk. Since securitization is predicated on the transfer of credit risk, securitizers have an incentive to limit their (unobservable but costly) effort of screening borrowers once they are protected from any adverse performance of the "reference portfolio" of securitized assets. This friction is exacerbated by potential collusion between originators and borrowers, which may result in the misrepresentation of creditor quality.

The information advantage of the securitizer with regard to the quality of collateral assets and their historical performance could also give rise to adverse selection. The complex security design of securitized debt suggests superior information of arrangers about the true valuation of securitized debt. Since arrangers underwrite the sale of ABS, they might choose certain reference assets and transaction structures to optimize own payoffs (rather than the ones of ultimate investors). Therefore, rational issuers (and investors) would form negative beliefs about the actual quality of reference assets. On the assumption of all (or most) assets (and transactions) to be of poor quality, they would request a reservation utility in the form of a lower selling price and/or higher return ("underpricing") as compensation for the anticipated investment risk of receiving a disproportionately large exposure to poorly performing assets (compared to any residual claims retained by the securitizer).

Box 6. Incentive Problems in Securitization (Concluded)

Finally, uncertainty about the true quality of securitized assets creates a principal-agent problem between asset managers and investors. Since investors cannot observe the effort of asset managers in screening potential investments and selecting the best trades, over-reliance on credit ratings for complex transactions, such as collateralized debt obligations (CDOs), and insufficient due diligence might encourage managers to engage in asset substitution. In "active" CDO structures, a manager is entrusted with the task of monitoring and, if necessary, trading credits within a dynamic reference portfolio of one or more credit-sensitive asset classes (and possibly different issuers and/or industry sectors) in order to protect the collateral value from impairment due to a deterioration in credit quality. However, investors in managed CDOs do not know what specific assets the CDO managers will invest in, and understand that those assets will change over time as managers alter the composition of the reference portfolio. Thus, investors face both credit risk as well as the risk of poor management.

Given these possible incentive problems, stakeholders in the securitization process have adopted remedial measures. Issuers typically commit additional internal and external resources to a securitization transaction, such as reserve funds, variable proceeds from excess spread, and retain some securitized exposure, which, in substance, provide some degree of added protection to other parties to the transaction and serve as costly signals of asset quality. Arrangers, who oversee the transfer of assets to the trust and underwrite securitization transactions (after consultation with one or more rating agencies), conduct (continuous) due diligence on originators, including the review of financial statements, underwriting guidelines, and background checks, while originators make a number of representations and warranties about the borrower and the underwriting process. Investors overcome the principal-agent problem vis-à-vis asset managers by imposing investment mandates and ex post evaluation of asset performance relative to benchmarks, which align investment strategies with their own risk-return expectations.

32. **In addition, disclosure requirements, coming not only from laws and regulations but from central bank collateral frameworks, are weighing on the market, again more-so on securitization markets.** For instance, a wave of "securitization to repo" transactions with the ECB has motivated the latter to institute greater transparency about collateral assets and their performance over time. Making more and better information about the underlying assets as well as the securitization structures available to investors should help to reduce their ratings reliance, and allow them to develop more informed opinions about the securities. However, establishing an efficacy of disclosures also requires striking the right balance between more and better information. For most, loan pool stratification tables and statistical summaries may be sufficient, while sophisticated investors (i.e., those investing in equity and mezzanine tranches) may have interest in more detailed information. The idea of supplying loan-level data has met with some resistance because of the risk of violating data protection and privacy laws, but these concerns can be addressed by "scrubbing" sensitive information from the data (ECB, 2010). Also helpful is the provision of cash flow models to analyze the loan level data and generate transaction cash flows for securitizations.[33] While such tools

[33] For example, in the United States, the SEC recently revised "Regulation AB" requires ABS issuers to file on the SEC website an open source computer program that provides investors with a tool to analyze deal transaction cash flows. The Bank of England will also require that issuers of RMBS that are eligible at the Bank's Discount Window Facility make deal models publicly available.

exist in the rating agency space as well as the public domain (for example, Intex models), the cost can be prohibitive for smaller investors.

33. **Mention should be made here of current, industry-led efforts aimed at restoring investor confidence by highlighting the stability-enhancing characteristics of the German securitization markets.** In the first half of 2010, True Sale International GmbH (TSI) has created the so-called "German securitization standard" (*Deutscher Verbriefungsstandard*), which involves the certification of transactions based on collateral quality, performance reporting and the degree of investor protection.[34]

B. Making Securitization Products Less (and Covered Bonds More) Attractive to Investors

34. **Other recent revisions to prudential regulations will make it less attractive for financial institutions to invest in securitization transactions.**[35] For example, the capital requirements against securitization products held in bank trading books will be aligned with the higher ones on banking book holdings. Also the new Basel III liquidity risk framework, which is planned to come into effect in 2015, is likely to weigh on both markets, but particularly on securitization.

(i) Some regulatory incentives are shifting investor demand to covered bonds. For example, securitization products are not considered "liquid assets" in the new Liquidity Coverage Ratio (LCR), i.e., which is defined by the stock of high quality liquid assets divided by the estimated net cash outflows over a 30-day period. Covered bonds are the only bank-issued security to be eligible for the LCR buffer. Although liquid covered bonds rated "AA-/Aa3" or higher can count toward liquidity coverage, their eligibility as "Level 2" liquid assets is limited to 40 percent of the amount of high-quality assets (subject to a haircut of 15 percent). Level 2 assets also include other 20 percent risk-weighted government and public debt securities as well as corporate debt rated "AA-/Aa3" and higher. Also, the bonds must trade in large,

[34] These standards are similar to the detailed disclosure requirements set out in Section 28 of the *Pfandbriefgesetz*. In addition, the *Association of German Pfandbrief Banks* (VDP) edits and summarizes the data published under Section 28 of the Pfandbriefgesetz for its member banks, comprising 97 percent of the *Pfandbrief* market. Data are published quarterly in a standardized format in machine-readable form (PDF, XLS and CSV), including historical data going back to December 31, 2008. For more information, see http://www.pfandbrief.org/statistics.

[35] Basel II/III and the amended EU Capital Requirement Directive (CRD) also make uneconomic the re-securitization vehicles (e.g., arbitrage asset-backed commercial paper conduits and structured investment vehicles) that fueled much of the pre-crisis structured finance boom.

deep and active markets and have not experienced a bid-ask spread of over 50 basis points in the last 10 years.[36]

(ii) Also the new Net Stable Funding Ratio (NSFR), which as currently envisaged, approximates the ability of banks to offset liability run-offs under stress conditions, could weigh on both markets, again more so on securitization markets. When operative in 2018, it is expected to require banks to hold 100 percent stable funding for all structured finance products, 65 percent against residential mortgages warehoused for securitization, and 20 to 50 percent against covered bonds. In addition, the treatment of bank securitization activity in new leverage ratio will follow the accounting treatment, including that related to retained positions as well as other forms of credit enhancement (e.g., contractual liquidity support). For example, for non-derecognized transactions, the underlying assets will be included in the leverage calculation, and credit risk mitigants will not be recognized.

35. **In addition, the capital requirements on ABS and MBS held by European banks will be higher than "CRD compliant" covered bonds issued by EU credit institutions that have similar risk profiles (see above).** Under the Basel II/III CRD-revised standardized approach, "AAA/Aaa"-rated RMBS issues are assigned a 20 percent risk weight, whereas a same-rated Capital Requirement Directive (CRD) compliant covered bond would be assigned a 10 percent weight. Similar preferential treatment is also available to covered bonds under the internal ratings-based approach (Batchvarov and others, 2010). In addition, new European insurance regulations ("Solvency II") will substantially raise reserve requirements against ABS and RMBS tranches rated "A-/A3" and lower. Solvency II will also increase reserve requirements to covered bonds, but not to the same degree as on same-rated securitization products. More importantly, the reserve requirements for covered bonds will be lower than for senior unsecured debt issued by the same bank.[37]

C. Need for a Balanced Approach to Regulating Covered Bonds and Securitization

36. **Legislative and regulatory reforms will probably make securitization markets safer for investors and the system as a whole, but care should be taken not to stymie the restoration of securitization markets.** Few of the really egregious flaws in the securitization process were present in German markets, with most issuers retaining

[36] The covered bond community has expressed disappointment with these restrictions, but they are backed by the same assets as the securitization products that are not eligible. Also, the jumbo covered bond market had to shut down intermittently between August 2007 and January 2009, and the European Covered Bond Council, the industry standard setter, had to loosen market maker requirements several times (ECB, 2008).

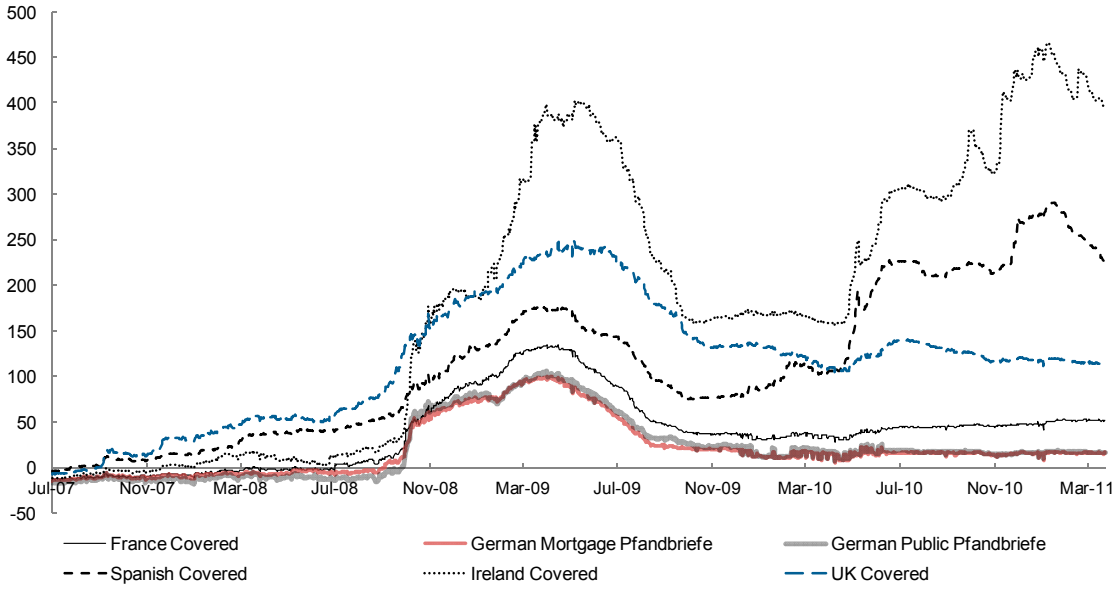
[37] The conclusions regarding the impact of Solvency II are based on the analysis of Bachmann (2010). However, Solvency II remains a work in progress, so all conclusions should be viewed as preliminary.

substantial exposure to the assets they were securitizing. Hence, for example, going beyond a 10 percent retention requirement to be imposed in 2015 risks undermining the utility of risk transfer and diversification of the securitization process. However, EU directives and other law reform initiatives at the EU level may have implications for German legislative reforms, and, thus, could result in even higher risk retention requirements.

D. Systemic Risk Considerations

37. **While covered bond issuance has remained stable through most of the financial crisis, it has not been immune to distressed market conditions, and recent market disruptions have given pause for thought (Figure 4).** After having briefly come to a halt in 2008, global issuance of "jumbo" covered bonds recovered steadily from 2008 levels and reached $175 billion in 2010, close to pre-crisis levels of 2006-2007. Issuance of smaller size covered bond transactions has held up well during the financial crisis compared with many other financial instruments, and covered bond credit spreads, particularly on those issued under special law frameworks (such as *Pfandbriefe*) remained relatively narrow until the collapse of Lehman Brothers in September 2008. However, spread widening since then suggests that covered bonds are not immune to the troubles of their issuing banks, deteriorating asset quality of the underlying collateral (especially in countries suffering housing busts), or even a decline of perceived creditworthiness of sovereigns.

Figure 4. Credit Spreads on *Pfandbriefe* and Covered Bonds
(Basis points)



Source: Deutsche Bank

38. **In addition, "AAA/Aaa" ratings assigned to covered bonds may be vulnerable to downgrades as rating agencies tighten their liquidity and counterparty risk**

management criteria.[38] More specifically, rating agencies have recognized that the liquidity risk inherent in covered bond structures was insufficiently addressed in past rating approaches, and have started focusing more on the impact of issuer default on timely payment of principal (and the liquidity of reference assets) rather than demand higher quality collateral, given that the underlying loans typically mature later than the bonds. The revised liquidity risk criteria are making it harder for some issuance programs to obtain the highest credit rating.[39] In some cases, this may result in higher regulatory capital requirement risk-weights under new CRD, which sets out the rules for Basel II/III implementation in Europe (Box 7). More recently, the rating agencies have tightened the criteria they apply to covered bond derivative counterparties, but most covered bond programs should be able to deal with this by amending some of their transaction documentation.

39. **German bank cover pools comprise substantial portions of the total assets of the banks that issue them, and the legal protection granted under German law to *Pfandbrief* investors gives priority to the rights of the Pfandbrief investors over the rights of unsecured creditors and depositors.** Such protection refers to both the assets being segregated for the benefit of bondholders but also to the other unsecured assets of the issuing entity (at *pari passu*). The investors who hold *Pfandbriefe* issued by these banks are well over-collateralized.[40] At the same time, the cover pools amounted to at least 60 percent of total assets of three prominent mortgage banks. Furthermore, substantial proportions (close to 30 percent) of the cover pools of some of banks are comprised of foreign commercial mortgages and public sector loans.

40. **The cover pools amounted to at least 60 percent of total assets of three prominent mortgage banks. Furthermore, substantial proportions (close to 30 percent) of the cover pools of some banks are comprised of foreign commercial mortgages and public sector loans.**[41] As the proposed liquidity risk regulations and the new banking

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[38] Also coming under pressure are *Pfandbriefe* backed by public-sector loans, which comprise the larger part of the *Pfandbrief* market (€433 billion outstanding versus €231 billion of mortgage *Pfandbriefe* on September 30, 2010). However, outstanding Public *Pfandbrief* have been dwindling as the supply of eligible domestic loans has been shrinking since state guarantees for Landesbanken and savings banks were abolished in 2005. In aggregate, about 32 percent of public *Pfandbriefe* cover pools were comprised of loans to public-sector credit institutions as of end-September 2010. Some issuers have solved this problem by stuffing their cover pools with non-German credit risk, so that in aggregate about 26 percent of Public *Pfandbriefe* cover pools were comprised of cross-border public sector loans as of end-September 2010.

[39] Note that amendments to the *Pfandbriefgesetz* in CRD II Implementation Act in November 2010 stipulate that even in the case of insolvency of the issuer, the special administratorcan ensure the liquidity of the cover pool.

[40] The *Pfandbrief Act* specifies minimum over-collateralization (two percent on a stressed present value basis) and a 180-day minimum liquidity requirement. Furthermore, credit rating agencies have been tightening their risk management criteria for top-tier ratings beyond those required by the *Act*.

[41] Asset encumbrance means that assets are not available to meet the claims of unsecured creditors and depositors.

resolution regime have created greater incentives for the issuance of covered bond (in lieu of senior unsecured bonds) to diversify and lengthen the funding profile of the issuing bank, extensive legal protections granted to covered bond holders encumber banks' highest quality assets. In the case of Germany, in the new banking resolution framework, depositors will continue to be treated as subordinate to *Pfandbrief* investors. Although covered bond issuance is expected to increase at rates more in line with asset growth going forward, the substitution of covered bonds for unsecured debt has a significant impact on the assessment of contingent liabilities in resolution events. As banks continue to diversify their funding sources by means of covered bond issuance, there is a potential tension between the rights of covered bond holders and those of the deposit insurance scheme. In this regard, greater *Pfandbrief* issuance implies greater downside to the pillar-based deposit insurance scheme to offset a shortfall of assets available to satisfy eligible depositor claims.[42]

41. **Some of the prominent bank bailouts in Germany during the credit crisis involved large covered bond issuers, leading to perceptions that the German authorities are prepared to offer systemic support to the *Pfandbrief* brand.**[43] The banks in question included Düsseldorfer Hypothekenbank (April 2008), Hypo Real Estate Group (Deutsche Pfandbriefbank (GER), Depfa (IRL), October 2008), and EuroHypo AG (May 2009).[44] For example, in the case of Hypo Real Estate Group, the covered bonds were seen as being sufficiently collateralized, but there were questions regarding the ability to liquidate it in the wake of the Lehman Brothers bankruptcy (Wookey, 2008).

[42] Such an effect would be amplified if issuers select higher quality assets are used for covered bonds, especially in those countries that do not have restrict asset encumbrance while leaving only lower quality assets unencumbered. Moreover, a continued decline in the issuance of senior unsecured bonds in favor of covered bonds, which cannot be converted into equity, would also compromise the effectiveness of bail-in frameworks.

[43] There never has been a German *Pfandbrief* default, and nor has a German *Pfandbrief* bank ever failed. In fact, prior to the crisis, the only covered bond issuer bankruptcy was in 1883 – the Austrian issuer *Böhmische Bodencredit*. In that case, the failed bank's covered bond obligations were transferred to another bank two years later, interest payments were reduced, and the bonds redeemed in full in 1901 (Engelhard and Seimen, 2010).

[44] Allgemeine Hypothekenbank Rheinboden AG came under strain before the crisis in October 2005.

Box 7. Regulatory Capital Treatment of Holdings of Credit Institutions[1]

The regulatory capital requirements for non-securitized mortgages vary according to the risk characteristics of the loans. For banks using the standardized approach, Basel II assigns a 35 percent risk weight to residential mortgage loans that meet certain strict qualifying criteria (e.g., in terms of loan-to-value ratios). If these criteria are not met, a risk weight of 75 percent or higher applies.

Capital requirements for mortgage covered bonds can be substantially lower than those for mortgages kept on bank balance sheets. The actual weights for securitized mortgages will depend on whether the holding bank is using the revised standardized approach (RSA) or the internal ratings-based approach (IRBA). For banks using the RSA, the lowest weight for covered bonds is 20 percent (the same as applied to unsecured debt issued by the same issuing institution). However, for European banks using the RSA, certain "CRD-compliant" covered bonds issued by European Union (EU) credit institutions can be assigned a 10 percent weight.[2]The table below shows that the weights will depend on the credit rating of the issuing institution, so that a CRD-compliant covered bond issued by "single A"-rated credit institution is assigned a 20 percent weight, versus 50 percent on its unsecured debt.[3]

Basel II RSA Risk Weights for Senior Unsecured Debt and Covered Bonds					
	Originating Institution's Credit Rating (in percent)				
	AAA/AA	A	BBB	BB	B
Senior unsecured debt and non-CRD-compliant covered bond	20	50	50	100	150
CRD-compliant covered bond	10	20	20	50	100

MBS generally require more regulatory capital than covered bonds. RSA risk weights for RMBS rated "A" or higher are the same as those for non-CRD-compliant covered bonds rated by same-rated credit institutions. For example, a single-A rated RMBS tranche would be assigned a 50 percent weight, the same as the unsecured debt of a single-A rated bank. However, a BBB/Baa rated tranche would be assigned a 100 percent weight, versus 50 percent on BBB/Baa rated unsecured bank debt.

Basel II RSA Risk Weights for Residential Mortgage-Backed Securities					
	Tranche Credit Rating (in percent)[4]				
	AAA/AA	A	BBB	BB	B
For non-originating bank	20	50	100	350	1250
For retained tranches	20	50	100	1250	1250

1/ This analysis reflects the Basel II/III standardized approach. See Batchvarov and others (2010) for an assessment of the impact of using the IRBA, which applies the so-called "ratings-based approach (RBA)" to rated tranches and the "supervisory formula approach (SFA)" to unrated tranches retained by originators. For investing banks, unrated tranches would need to be fully deducted from capital unless the application of the SFA is granted by the national supervisor.
2/ To be more specific, the bonds must meet the requirements of Article 22(4) of Directive 85/611/EEC (UCITS 22(4)), and be secured by eligible assets prescribed under the European CRD. Also the issuer must be subject to special public supervision by virtue of legal provisions protecting bondholders that have a preferential claim on a subset of the issuer's assets in case of issuer default. See Chapter 2.3 of ECBC (2010).
3/ The table assumes that the relevant jurisdiction has mandated the use of the *credit assessment-based method* ("Option 2") where the risk weight of an issuer's senior unsecured debt depends on the issuer's external credit rating. The *central government risk weight-based method* ("Option 1") bases the risk weight of an issuer's senior unsecured debt on the external credit rating of the central government of the jurisdiction in which the issuer is incorporated.
4/ All unrated tranches are deducted from capital under the RSA

E. Summary and Conclusions

42. **On an even playing field, covered bonds and securitization should be viewed as complementary rather than competing funding vehicles.** During normal times, they both increase the range of available financial products, benefiting borrowers, financial intermediaries, and savers. During periods of market stress, covered bonds provide the time tested funding backstop, albeit mainly for investment-grade banks (rated "BBB-/Baa3" and better). Moreover, the legally defined quality principles for selection of underlying assets and the strict segregation of assets of *Pfandbrief* covered pool suggests little valuation uncertainty even in distress situations. In regard to securitization, the multitude of complex relationships between issuers, arrangers and liquidity providers in securitization transactions could introduce an element of uncertainty in times of stress, such as the adverse impact of originator insolvency (despite the insulation of the reference portfolio of securitized assets). Current efforts aimed at regaining investor confidence by highlighting the stability-enhancing characteristics of the German securitization markets are steps in the right direction.

43. **At the moment, the structural underpinnings of mortgage finance in a bank-dominated financial system are stacked up against securitization.** As a result of a combination of a conservative credit culture, including low household indebtedness (with little consumer credit), and heavily-regulated mortgage underwriting practices, the resulting loan books are more cost-effective to fund with deposits and *Pfandbriefe*. Also, even though legal and structural constraints governing the issuance of *Pfandbriefe* have limited the diversity of mortgage products available to borrowers, they seem satisfied with what is on offer. For example, such constraints tend to preclude the offering of prepayment options, which can undermine asset-liability matching, conventional bullet payment structures and result in breaches of cover pool over-collateralization conditions.[45]

44. **Restarting securitization as an alternative to *Pfandbriefe* can help mitigate potential constraints on credit supply as banks face large and pressing funding needs over the coming years while unsecured funding remains impaired, especially at longer maturities.** German banks might find it difficult to refinance approximately EUR 250-300 billion of maturing credit per year over the next five years if debt markets were to remain volatile (Moody's, 2010b).[46] Although German issuers benefit from a strong sovereign, their

[45] Almost all *Pfandbrief* issuance is in the form of fixed-rate bullet maturities, but *Pfandbrief* regulations stipulate that cover assets must always exceed outstanding securities, and sudden shortfalls could result from prepayments. If this problem could be overcome, in theory, derivative transactions could be used to hedge prepayment risk. However, in practice, there are various legal and operational problems with using them. For example, a swap revaluation could oblige the cover pool to put forward cover assets as collateral, which could cause the pool to break its over-collateralization floors. However, Danish covered bonds incorporate call option features that allow banks to offer prepayment options, by effectively transferring the prepayment risk to investors (IMF, 2011, and Surti, 2010).

[46] Moreover, most government-guaranteed bank bonds are redeemable over the medium-term, and are likely to be replaced by covered bonds rather than unsecured issuance.

funding costs are subject to spillover effects from exposures to fiscally-challenged countries. Given their international wholesale funding profiles, such rollover risk impacts individual banks at varying degrees depending on their maturity profiles and downsizing targets.[47] As long as these funding challenges persist, both covered bonds and securitization are crucial to mitigate potential constraints on credit supply.

45. **Further incubating securitization as an alternative to *Pfandbriefe* limits excessive reliance of intermediation on particular funding structures.** While *Pfandbriefe* continues to enjoy high investor confidence due to their legal and structural robustness and their implicit systemic public sector support, and provide an established source of funds, limitations on eligible collateral and payment structures exclude credit supply to commercial entities (which could be commoditized via securitization). The new banking resolution framework could also create an investor preference for *Pfandbriefe*, which, in light of high refinancing demand of German banks over the short- and medium-term, could make funding via unsecured senior debt more costly (and, thus, delay the exit from current crisis support measures in the form of government-guaranteed debt issuance) and create preferences for lending to those economic sectors whose credits are eligible for cover pools. Thus, promoting securitization might contribute importantly to ensuring a stable and comprehensive supply of credit in a bank-dominated financial system.[48]

46. **However, the greater use of both products has implications for bank resolution and collective burden sharing mechanisms.** While both structured finance techniques facilitate cost-efficient funding, their inherent asset-backing curtails the scope of asset recovery for non-collateralized creditors in the event of resolution.[49] In particular, for covered bonds there is an invariable trade-off between ensuring that covered bonds are attractive and cost-efficient funding vehicles versus ensuring adequate protection to the interests of the issuer's unsecured creditors.

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[47] For instance, most Landesbanken have so far benefitted from relatively stable funding provided by savings banks, they will face the expiry of significant volumes of government-guaranteed debt in 2014 and 2015.

[48] Although issuance by German banks accounted for a respectable 15 percent of the overall European issuance in 2010 (at about EUR 80 billion), it remains still too small to accommodate expected refinancing need over about EUR 250 billion annually until 2015.

[49] Although securitization removes assets from bank balance sheets, they are not necessarily the bank's highest quality assets. Hence, with more viable mortgage securitization markets, banks could tap cost effective funding without encumbering their highest-quality assets.

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