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THE GERMAN PFANDBRIEF MARKET 2018 | 2019

German pfandbriefe under the influence of europe

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PREFACE

The German Pfandbrief market is subject to significant European influence: on the one hand, the European Central Bank (ECB) – and its monetary policy measures – determines the direction for the yields and risk spreads pertaining to European covered bonds. Even German Pfandbriefe have not been able to escape the over-arching trend of wider swap spreads for covered bank bonds on the international market. It is fair to assume that the main reason for this trend is the impending tapering of covered bond purchases by the ECB from the autumn of 2018 onwards. On the other hand, a draft bill setting out a regulatory framework for the harmonisation of European covered bond legislation was submitted in March of this year. The new law will also require amendments to the German Pfandbrief Act – although these, by European standards, are likely to remain at a manageable level.

The importance of real estate finance for Pfandbrief banks is reflected in the share of real estate lending in total issuance volumes. Mortgage Pfandbriefe will likely account for approximately 80 per cent of aggregate volume in 2018. Accordingly, mortgage banks will remain the issuer group with the highest volumes, ahead of the Landesbanken.

„The German Pfandbrief Market 2018/2019" gives an overview of current market developments; it also takes an in-depth look at the European perspective regarding the harmonisation of covered bond legislation, and at the planned European Secured Notes. We also analyse current discussions concerning ‚green' mortgages, and outline the legal basis for Pfandbriefe in detail.

DZ HYP

September 2018

GERMAN PFANDBRIEFE UNDER THE INFLUENCE OF EUROPE

- **ECB's monetary policy determines direction of yields and swap spreads of German pfandbriefe**
- **Harmonisation of European covered bond frameworks also likely to bring changes to the Pfandbrief Act**
- **High ratings of pfandbriefe continue to benefit from solid legal foundations in Germany**

Summary

Europe has a major influence on the German pfandbrief market. For the moment, the European Central Bank (ECB) still determines the direction of yields and swap spreads in the European covered bond market with its ongoing expansive monetary policy. This also applies to German pfandbriefe. Since the beginning of the year, pfandbrief swap spreads have widened slightly, although this trend is more pronounced in the case of longer-dated bonds from ten years upwards than at the short end of the maturity spectrum. The most important reason for this general trend which can be observed in the covered bond market is the decline in purchase volume under the ECB's third covered bond purchase programme (CBPP3). From 2019, it is likely that only redemptions from the various ECB bond purchase programmes will be reinvested. Whether covered bonds which mature will be reinvested in the same asset class is not yet clear. Assuming that redemptions from CBPP3 in the first half of 2019 are reinvested evenly in the covered bond market over the first six months of the year, this would mean a monthly purchase amount of EUR 2bn, i.e. half of what the ECB was still purchasing at the beginning of 2018. Support for swap spreads is therefore set to decline. However, expected ECB purchases should prevent any general surge in risk premiums.

The harmonisation of European covered bond frameworks is progressing. The European Commission published its proposal for a directive on covered bonds in March 2018. Further adjustments will have to be made, especially in relation to the definition of suitable covered assets and requirements concerning the homogeneity of the cover pool. On the whole, though, the principles-based draft can be seen as very successful. The German Pfandbrief Act is likely to require a number of adjustments in the detail in light of the directive, but in many respects, it is likely to have been the source of ideas for the European framework. The regulations should be published by the spring of 2019 at the latest if this European project is to be completed before the forthcoming European elections which are likely to take place from 23 to 26 May 2019. After publication, it would be the turn of member states of the European Union (EU) to implement the new guidelines from Brussels into national law. The process should not be detrimental to pfandbrief holders. The pfandbrief's strengths include a solid framework in law which provides a resilient foundation for the high credit worthiness of this asset class – a fact which is recognised again and again by the rating agencies.

MARKET DEVELOPMENT

Yields and swap spreads

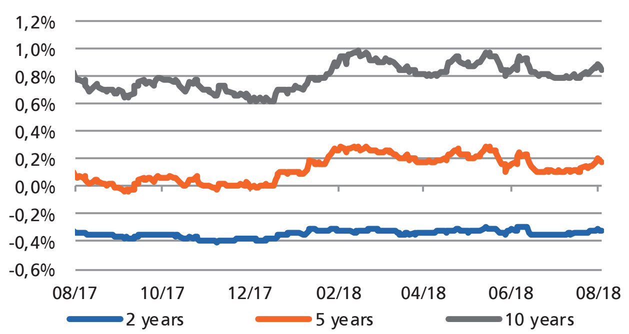
Yields remain low

Yields within the eurozone are still at a low level. Although there was incipient speculation about rising interest rates in the eurozone at the end of 2017 which pushed the yields of ten-year Bunds temporarily up to 0.8 percent at the beginning of 2018, yields then started to come down again. One contributory factor may have been growing worries among market participants about economic prospects in view of international trade disputes. Apart from ever widening protectionist measures being implemented by key global economic areas and uncertainty surrounding the Brexit negotiations, investor sentiment has also been hit by political developments in Italy in the first half of 2018. Even though economic momentum in Europe has so far not suffered any lasting damage, these issues nevertheless have the potential to cause turbulence in the bond markets in future.

Slightly higher pfandbrief yields, not least on the back of higher swap spreads

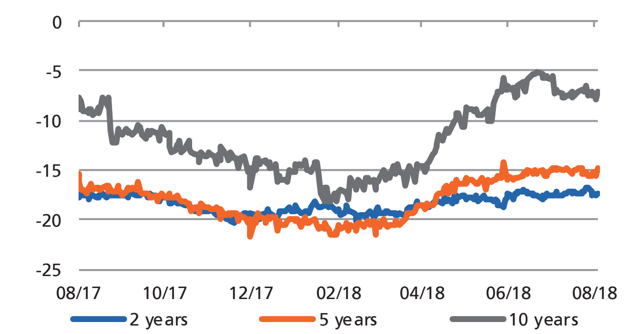
In the wake of the performance of Bund yields, the yields of German pfandbriefe also remained low. However, on average and compared with the corresponding Bunds, the yields of ten-year pfandbriefe have not declined by as much since February. A slight widening of the Bund swap spread and the start since March of a widening of the asset swap spread of pfandbriefe in H1 2018 which has mainly affected longer maturity segments, have contributed to a fluctuation of generic pfandbrief yields between 0.8 and 1.0 percent up to mid-July. The asset swap spreads of German pfandbriefe were therefore unable to escape the dominant trend in the international markets for covered bonds. The main cause for the current trend towards a gradual widening of swap spreads for covered bonds is likely to be foreseeable changes in the ECB's third covered bond purchase programmes (CBPP3).

GENERIC PFANDBRIEF YIELDS
PER CENT



Source: Bloomberg, DZ BANK Research presentation and calculations

GENERIC PFANDBRIEF SWAP SPREADS
BASIS POINTS



Source: Bloomberg, DZ BANK Research presentation and calculations

Political risks in Southern Europe have not had any impact on the pfandbrief market

Apart from geopolitical factors, the ECB's monetary policy and political developments in Italy and Spain also had an influence on the swap spreads of covered bank bonds. An increase in political risks in Italy since the spring has mainly had an impact on Italian covered bonds and hardly spilled over to any other market segments or German pfandbriefe. However, the risk premiums of cédulas – the Spanish covered bonds – also rose disproportionately at the end of May/beginning of June, although it is impossible to say with the utmost certainty whether this is contagion from Italy. The reason for the widening could also be closer to home since the fall of the then Spanish government and formation of a new minority government fell precisely within the timeframe of the widening of Italian covered bond spreads.

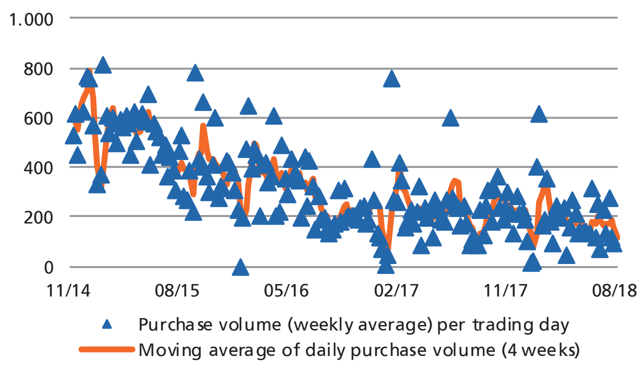
Focus from 2019 onwards likely to be on reinvestment

Although political risks remain an important factor for individual country segments, the overriding tendency for the swap spreads of covered bonds including pfandbriefe in the next few months is still likely to be determined by the ECB's monetary-policy measures. Bond holdings in the context of the ECB's asset purchase programme (APP), which also includes CBPP3, are not expected to increase any further after December 2018. The central bank is planning to purchase net new assets for its overall APP holdings worth EUR 30bn per month up to and including September 2018. From October, the increase in the APP portfolio will then be cut to EUR 15bn per month. The end of net bond purchases still depends on economic growth and inflation in the eurozone. However, there would be major barriers to any continuation of net purchases after 2018. If the ECB winds up net asset purchases, as expected, at the end of the year, market participants will turn their attention to the reinvestment announced by the ECB in the context of the APP. Redemptions into the APP portfolio from bonds which are set to mature are expected to continue to be reinvested for some time. As such, monetary impetus is likely to remain at the level it reaches at the end of 2018. Until then, it remains to be seen how long the ECB will continue with these reinvestments, although it is likely to do so for some time and beyond 2019.

Increase in holdings under CBPP3 have been slowing down for some time

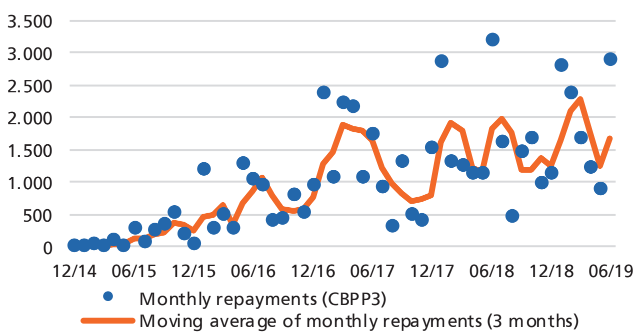
CBPP3 is one of the components of the APP. Since October 2014, the ECB has purchased covered bonds under this programme. As at 17 August 2018, CBPP3 holdings amounted to EUR 256.9bn (valued at amortised purchase cost). The pace of increase in CBPP3 holdings has been tailing off steadily for some time. There are many reasons for this. At the beginning of 2018, the monthly APP purchase volume was reduced from a total of EUR 60bn to EUR 30bn. This obviously also had an impact on the monthly purchase volume under CBPP3 as a sub-programme of the APP. In addition, bonds available in the secondary market have declined steadily over time. When CBPP3 was launched, the ECB was still purchasing EUR 500m worth of bonds per trading day on average, sometimes even more. Meanwhile, by July 2018, the purchase volume had fallen to an average of around EUR 150-200m per trading day. In addition, the increase in holdings is being slowed down by rising maturities in the CBPP3 portfolio, in line with the general trend. In 2017, EUR 15.6bn worth of bonds matured in the CBPP3 portfolio; the figure was just EUR 8.6bn in total in 2016. This year, bonds amounting to EUR 18.3bn are set to mature in the CBPP3 portfolio, and covered bonds amounting to EUR 10.9bn were already redeemed in the first half. The ECB expects redemptions totalling EUR 11.8bn from bonds maturing in the CBPP3 portfolio in H1 2019.

REDUCTION IN PURCHASE VOLUME PER WEEK UNDER CBPP3
EUR M



Source: European Central Bank, DZ BANK Research presentation

VOLUME OF BONDS MATURING IN THE CBPP3 PORTFOLIO RISING
EUR M, FIGURES FROM JULY 2018, ECB ESTIMATES



Source: European Central Bank, DZ BANK Research presentation

If the expected redemptions from bonds maturing in the CBPP3 portfolio are reinvested in the covered bond market, this would mean an average monthly purchase volume of around EUR 2bn from January 2019. This figure assumes that the ECB evens out its purchases over this period. In other words, the ECB will not replace the bonds only once they have matured, because that would lead to excessive fluctuations in monthly purchase volume. Although this will mean a marked decline compared with the ECB's monthly CBPP3 purchase volume of around EUR 4bn on average in H1 2018, demand from the central bank is likely to continue to support covered bond swap spreads and hence also German pfandbriefe. The fact that the ECB is already reducing its CBPP3 purchases gradually during the course of 2018 has already led the swap spreads of all covered bonds, including German pfandbriefe, to widen slowly from their low level at the beginning of the year. A general surge in swap spreads seems improbable though in view of the likely reinvestment of redemptions from the CBPP3 portfolio. A further gradual widening of the swap spreads of German pfandbriefe (and other European covered bonds) is probably on the cards, assuming the ECB does not stop its CBPP3 purchases from one day to next and that it uses redemptions to reinvest in the covered bond market.

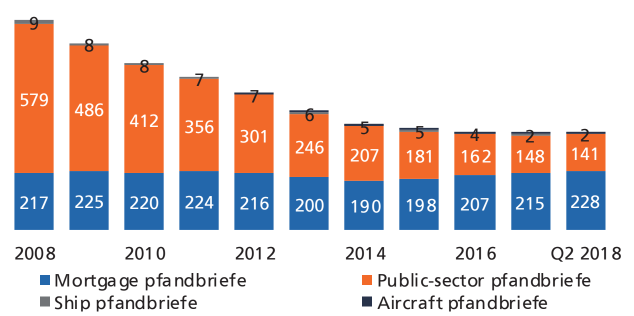
Gradual widening of spreads even if ECB uses redemptions to reinvest in covered bonds

Outstanding volume and new issues

At the end of Q2 2018, the outstanding volume of German pfandbriefe had risen by around EUR 4.3bn to some EUR 370.6bn against the beginning of the year. This data is based on the latest quarterly reports from the pfandbrief banks. The growth momentum of mortgage pfandbriefe has more than offset the decline in other types of pfandbriefe. Mortgage pfandbriefe have therefore increased their market share to 61 percent. The outstanding volume of pfandbriefe in euro benchmark format (issue size of at least EUR 500m and three active market makers for the bond in question), amounted to around EUR 114.8bn in mid-2018. As such, euro benchmark pfandbriefe reached a 31 percent share of the total volume outstanding in the pfandbrief market. The market share of registered pfandbriefe reached 44 percent in April 2018. At the same time, the share of registered pfandbriefe has continued to decline slightly in 2014 in relation to the total size of the pfandbrief market, whereas it has previously risen continuously to a high of 49 percent.

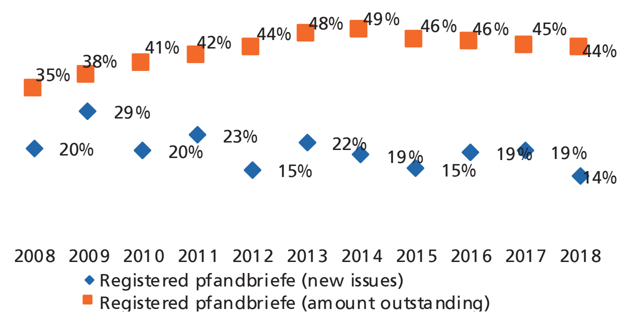
Slight growth in outstanding pfandbrief volume in H1 2018

OUTSTANDING VOLUME AT THE END OF Q2 2018 AT EUR 370.6BN
FIGURES IN EUR BN



Source: vdp, DSGV, issuers, DZ BANK Research presentation and calculations

SHARE OF REGISTERED PFANDBRIEFE IN RELATION TO TOTAL VOLUME OF PFANDBRIEFE DOWN SLIGHTLY SINCE 2014



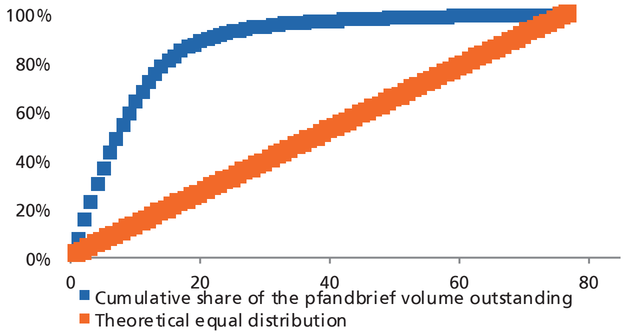
Source: Bundesbank, DZ BANK Research presentation and calculations
figures for 2018 as per April

There were a total of 77 active pfandbrief banks in mid- 2018 – in other words, banks which not only have a pfandbrief licence, but have also already issued at least one pfandbrief. Apart from these banks, there are still a number of further German lending

Mortgage banks still the strongest issuer group in terms of volume

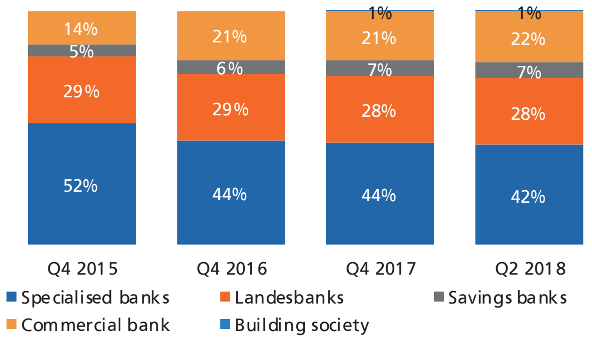
institutions which, although they have been awarded a pfandbrief licence by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), have not yet made any use of it. The ten biggest pfandbrief banks in terms of volume already account for around 65 percent of the total outstanding pfandbrief volume. The merger of DG HYP and WL BANK to form DZ HYP at the end of July will lead to a further increase in this concentration of the volume outstanding. The breakdown between the various issuer groups has hardly changed from the end of 2017 to mid-2018. The merger to form DZ HYP had had no influence on this. The mortgage banks remain the strongest issuer group in Germany in terms of volume, followed by the Landesbanken. Since 2017, one building society (Bausparkasse) has also been using mortgage pfandbriefe as a funding instrument. A number of other building societies are likely to follow this lead. However, for the time being, this issuer group's market share is likely to remain small.

TEN STRONGEST ISSUERS IN TERMS OF VOLUME ACCOUNT FOR AROUND 65 PERCENT OF OUTSTANDING PFANDBRIEFE



Source: vdp, DSGV, issuers, DZ BANK Research presentation and calculations

HARDLY ANY CHANGE IN BREAKDOWN OF OUTSTANDING PFANDBRIEF VOLUME BETWEEN ISSUER GROUPS



Source: vdp, DSGV, issuers, DZ BANK Research presentation and calculations

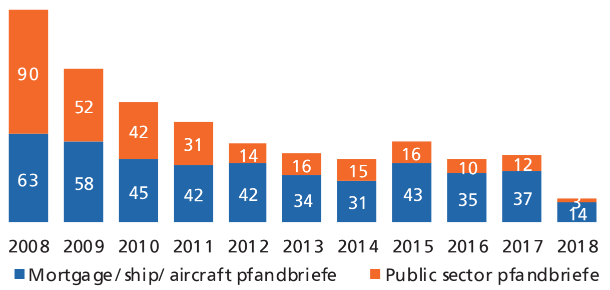
Further increase in share of mortgage pfandbriefe

The Association of German Pfandbrief Banks (Verband deutscher Pfandbriefbanken, vdp) expects a total issue volume in Germany of EUR 50bn in 2018 (all currencies and bond formats), of which mortgage pfandbriefe will account for EUR 39bn. If this forecast proves correct, the issue volume this year will be similar to the volume in 2017. This year, the share of mortgage pfandbriefe could even increase further against 2017. As per April 2018, mortgage pfandbriefe accounted for around 80 percent of this year's pfandbrief new issue volume, according to the Bundesbank.

Benchmark pfandbriefe still on growth course

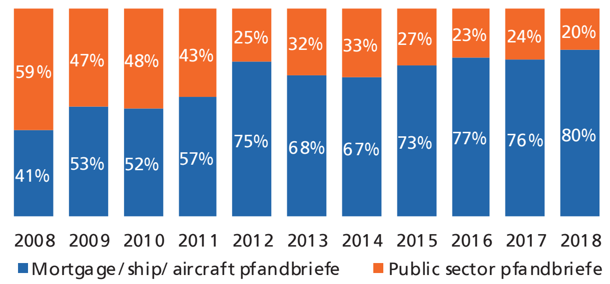
There was very strong issuance activity from German pfandbrief banks in the market for euro-denominated benchmark covered bonds in H1 2018 compared with 2016 and 2017. Up to and including the end of July, the issue volume of pfandbrief banks had reached a total of EUR 19.7bn since the beginning of the year. This is already in excess of the figure of EUR 18.4bn for the whole of 2017. The primary-market had clocked EUR 23.5bn by the end of 2016. In relation to the number of primary-market transactions (euro benchmark covered bonds only), there has already been more activity by German pfandbrief banks in 2018 with 37 new issues or taps than in 2016 or 2017. In addition, this year, the volume of new euro benchmark pfandbriefe exceeds the amount of bonds set to mature, which means that this market segment continues to grow. At the end of July, German pfandbriefe had a market share of 20.1 percent in the primary market for euro benchmark covered bonds, just marginally ahead of issuers from France which so far have a share of 18.5 percent. Last year, French covered bonds ranked in first place in primary-market statistics, ahead of German pfandbriefe.

GROSS NEW ISSUE VOLUMES IN THE PFANDBRIEF MARKET: VDP EXPECTS A SLIGHT INCREASE TO EUR 50BN IN 2018
FIGURES IN EUR BN



Source: Bundesbank, DZ BANK Research presentation and calculations, figures for 2018 as per April

GROSS NEW ISSUE VOLUME BY PFANDBRIEF TYPE

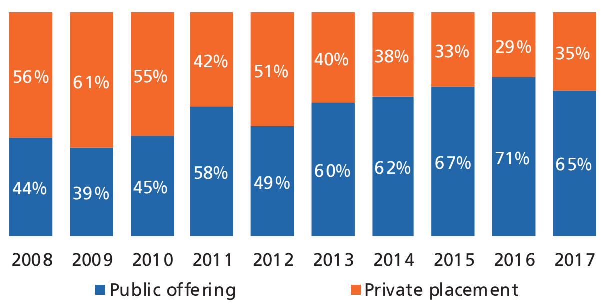


Source: Bundesbank, DZ BANK Research presentation and calculations, figures for 2018 as per April

Publicly issued pfandbriefe, such as euro benchmark pfandbriefe, have been gaining importance in the last few years. Between 2007 and 2010, they accounted for between 39 and 45 percent of the new issue volume. The figure reached 65 percent in 2017 after peaking at 71 percent in 2016 – the highest level of the last ten years. Publicly issued pfandbriefe included not only benchmark bonds (issued size of at least EUR 500m but less than EUR 1bn) and jumbo pfandbriefe (issue volume of EUR 1bn or more), but also smaller bonds, so long as the new issue was offered publicly in the context of a book building process. These bonds are described by the vdp as traditional pfandbriefe (however, this category also includes registered pfandbriefe). The proportion of benchmark and jumbo pfandbriefe in relation to the total new issue volume has fluctuated between 41 and 57 percent since 2014 and we expect a share of the same magnitude this year as well. This means that these bond formats will once again make an important contribution to the funding mix of German pfandbrief banks this year.

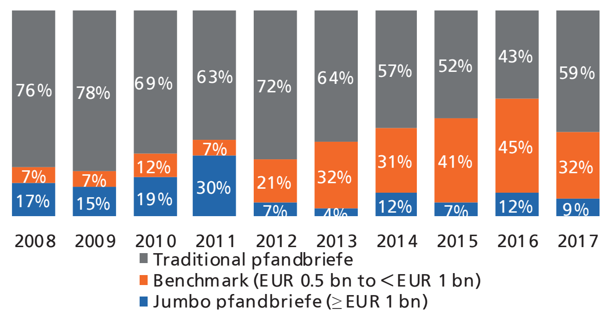
Benchmark and jumbo pfandbriefe make significant contribution to the banks' funding mix

ISSUANCE FORMAT: SHARE OF PRIVATELY PLACED PFANDBRIEFE GENERALLY DECLINING
PFANDBRIEF NEW ISSUES SPLIT BY FORMAT



Source: Verband deutscher Pfandbriefbanken, DZ BANK Research presentation and calculations

BENCHMARK AND JUMBO PFANDBRIEFE MAKE SIGNIFICANT CONTRIBUTION TO FUNDING MIX OF BANKS
PFANDBRIEF NEW ISSUES SPLIT BY BOND SIZE



Source: Verband deutscher Pfandbriefbanken, DZ BANK Research presentation and calculations

German pfandbrief banks were not the only ones to be very active in the primary market for euro benchmark bonds in H1 2018. The end of net purchases by the ECB under CBPP3 may have prompted a number of other issuers to carry out planned new issues sooner rather than later in order still to benefit as much as possible from support

Slew of new issues in H1

through the ECB's purchases. As we already explained earlier, the reduction in ECB purchases under CBPP3 has led to a process of gradual widening of the swap spreads of covered bonds. Issuers are therefore being forced to offer ever bigger incentives to attract a sufficient number of investors for their new issues. As a rule in current market conditions, slightly higher swap spreads are being offered for new bonds in the price building process for a new issue than the secondary market level. By and large, these new issue premiums (NIPs) are in line with the market average for new German pfandbriefe or slightly below. Apart from the country of origin of the issuer, there are still many other potential factors which may influence a bond's new issue premium.

NIPs fluctuate over time

NIPs do not remain constant over time. They reflect the current supply and demand situation. Based on our analysis, NIPs for euro benchmark covered bonds were on average 4.2 basis points in 2016, whereas they only reached an average of 1.7 basis points in 2017. The total issue volume of euro benchmark covered bonds amounted to EUR 125.5bn in 2016, split between 145 new issues and 14 taps. In 2017, there were 135 new issues and 15 taps, amounting to a total of EUR 112.6bn. We have evaluated the NIPs of new issues and taps of euro benchmark covered bonds for the years 2016 and 2017 and 2018 (from the beginning of the year up to and including 17 July) based on specific features (where the information was available to us), and analysed how each potentially helps explains NIPs. The results can be summarised as follows:

No extra premium for soft bullet mortgage covered bonds

» The asset class of the cover pool and repayment structure of the covered bonds (hard versus soft bullet) do not seem to have any systematic influence on the level of NIPs of euro benchmark covered bonds. Here, market standards already seem to have become clearly established. In other words, investors buying soft bullet mortgage covered bonds should not expect any special premium at the moment.

Influence of ECB's purchase programme

» Although the ECB's third covered bond purchase programme has significantly dampened the swap spreads of bonds eligible for purchase, the NIPs of CBPP3-eligible bonds are nevertheless higher than those of non-eligible bonds because the relevant secondary market curves are distorted downwards. Historically low interest rates for some years now are another result of the ECB's monetary policy. Issuers are therefore issuing ever longer-dated bonds for which though they do not seemingly have to pay any pronounced and systematically higher NIPs. This is surprising since investors normally expect higher credit spreads with longer-dated bonds.

Ratings seem to have an influence on NIPs

» Covered bond ratings seem to have an influence on the level of NIPs: the poorer the rating, the higher the premium. However, there is scant data available for the poorer rating categories. The same is true of rare or first-time issuers of euro benchmark covered bonds. The view that these issuers have to pay higher NIPs seems plausible from a financial point of view, but it is virtually impossible to deliver any statistically significant proof in view of scant data points.

All seems to come down to the bid-to-cover ratio

» In the end, we believe that the strength of supply and demand as measured by the bid-to-cover ratio is the most important yardstick for NIPs. The lower the demand for a bond, the higher NIPs have to be to ensure order books are sufficiently filled. Ultimately, it all seems to come down to the bid-offer-ratio.

Outstanding volumes of relevance for pfandbrief ratings

Data on outstanding and new issue volumes in the pfandbrief market are also relevant for the ratings of covered bonds. The importance of pfandbriefe for the German financial system is a major factor for the rating agencies. From this, the agencies work out to what extent pfandbrief holders could hope for special support from the pfandbrief community or even from the public sector in the event of a crisis. In order to assess the importance of a covered bond market for a country, the rating agencies often use market data such as outstanding and new issue volumes which are then set against other financial and economic statistics. S&P's regular surveys of the German pfandbrief market are one such example (e.g. "The German Pfandbrief Market: Ongoing Success Story or Further Decline Ahead" of 12 September 2017). S&P looks at the share of pfandbriefe in relation to the total funding of banks and at the relationship between pfandbrief volume and Germany's GDP. In the case of Germany, the agency comes to the conclusion that pfandbriefe are still of major importance for the German financial system. In the following section, we look in closer detail at what ratings are doing in the German pfandbrief market.

PFANDBRIEF RATINGS

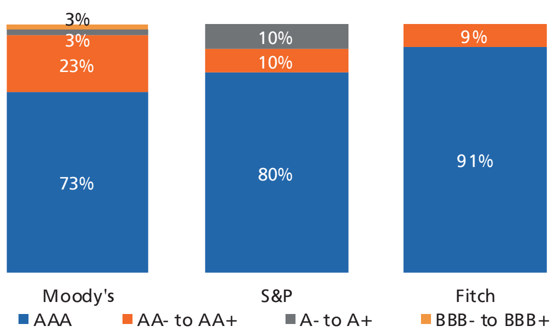
No major changes in rating methodologies

The rating agencies' methodologies for covered bonds have remained largely unchanged in the last 12 months – apart from a number of smaller adjustments of a more technical nature. In April 2018, S&P announced the introduction of a new rating for banks. The Resolution Counterparty Rating (RCR) is designed to assess the likelihood of default of bank liabilities which are not subject to a bail-in risk. In other words, the RCR relates to bank liabilities which cannot be assigned a haircut in the event of a restructuring or rescue case and/or cannot be changed into equity. Similarly to Moody's Counterparty Risk Assessment, the RCR could become the new anchor point for the covered bond rating (Reference Rating Level, RRL) for S&P. In the weeks after the announcement of the introduction of the new rating, RCRs have been gradually assigned to relevant banks. As per the end of July 2018, however, the agency had not said anything about possible changes to its covered bond rating methodology, although major changes are unlikely since the RRL already factors in the positive effects through the bail-in rules for covered bond holders.

Ratings expected to remain stable

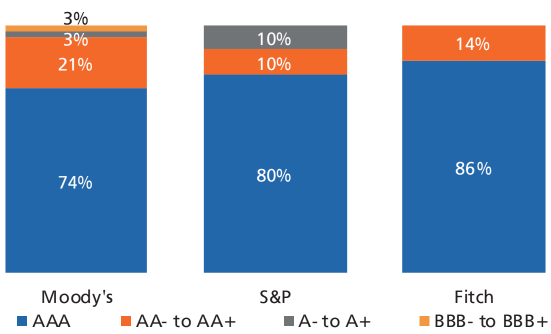
The rating breakdown for pfandbriefe has hardly changed since mid-2017 either. Moody's assigns by far the most ratings to German pfandbriefe (40). The percentage of pfandbriefe with an AA rating from Moody's has remained more or less unchanged at 95 percent. The breakdown of the ten pfandbrief ratings has remained totally unchanged in the case of S&P. In the case of Fitch, there has been some movement in the allocation of the 14 published pfandbrief ratings since the end of Q2 2018 since it is very sensitive to any additions or deletions. All in all, investors do not seem to face any immediate threat of downgrades from the agencies. The ratings for pfandbriefe should remain stable in the next few months. This offers the opportunity to take a little look behind the scene in order to assess the influence of property prices, lending standards and energy-efficient buildings on the analysis of the rating agencies for the key segment of mortgage pfandbriefe.

BREAKDOWN OF PFANDBRIEF RATINGS BY AGENCY
AS PER Q2 2017



Source: Fitch, Moody's, S&P, DZ BANK Research presentation and calculations

BREAKDOWN OF PFANDBRIEF RATINGS BY AGENCY
AS PER Q2 2018



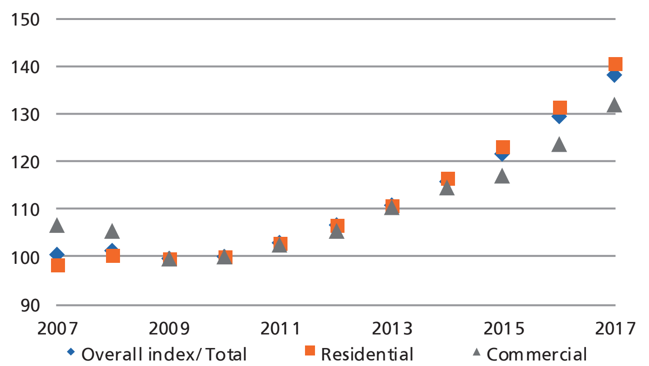
Source: Fitch, Moody's, S&P, DZ BANK Research presentation and calculations

Rising house prices and macroprudential measures

Sharp rise in property prices in Germany

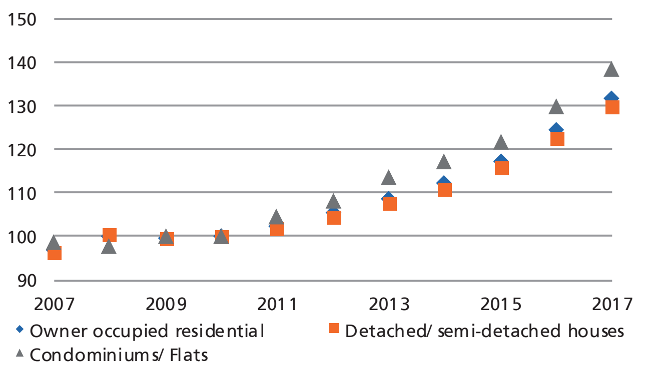
Property prices in Scandinavia but also in non-European countries such as Australia and Canada are being closely watched by many market participants. For some years, house prices have also been rising in Germany, above all in metropolitan areas, and very fast in some areas. The Association of German Pfandbrief Banks (vdp) presented current figures for the German property market, which confirmed the currently strong upward price momentum. The vdp property price index rose by 8.8 percent in the first quarter of 2018 compared to last year. This is the highest growth rate since index calculations began in 2003. Residential property prices are rising faster than those of commercial buildings. Prices of multi-family homes in particular are increasing disproportionately. In addition the vdp presented figures on price trends in major German cities. The index for the Top-7, which includes trends in Berlin, Düsseldorf, Frankfurt am Main, Hamburg, Cologne, Munich and Stuttgart, shows much stronger growth than the overall market. The rapid upward price momentum here was also driven by developments in the market for multi-family homes.

GERMAN PROPERTY PRICES CONTINUE TO RISE, RESIDENTIAL PROPERTIES AHEAD
2010 = 100



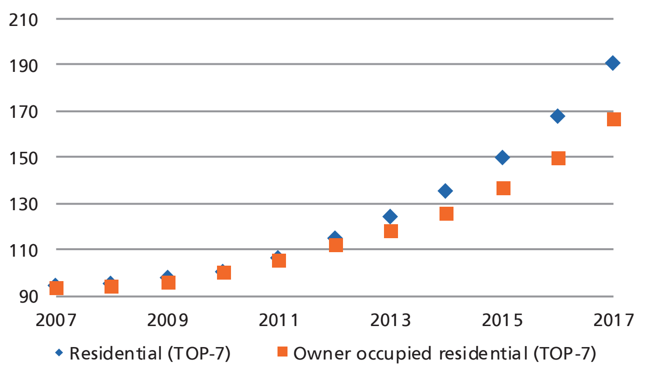
Source: vdpResearch, DZ BANK Research presentation

PRICES OF OWNER-OCCUPIED HOMES RISING FASTER THAN THOSE OF DETACHED AND SEMI-DETACHED HOUSES
2010 = 100



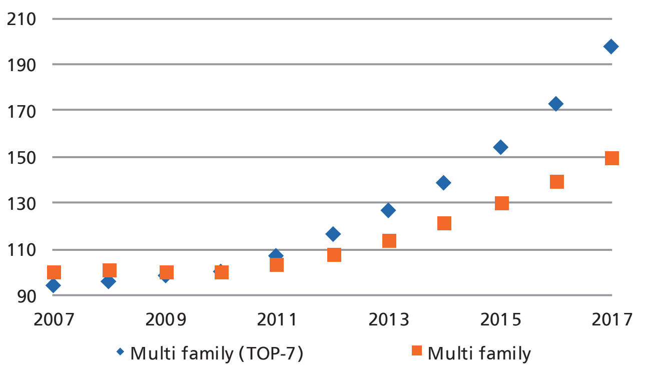
Source: vdpResearch, DZ BANK Research presentation

PARTICULARLY STRONG GROWTH IN LARGE GERMAN CITIES, OWNER-OCCUPIED HOMES LAGGING BEHIND
2010 = 100



Source: vdpResearch, DZ BANK Research presentation
TOP-7 comprises Berlin, Düsseldorf, Frankfurt am Main, Hamburg, Cologne, Munich and Stuttgart

PRICES OF MULTI-FAMILY HOMES IN LARGE CITIES HAVE RISEN PARTICULARLY DISPROPORTIONATELY IN LAST THREE YEARS
2010 = 100, CHANGES IN CAPITAL VALUE



Source: vdpResearch, DZ BANK Research presentation
TOP-7 comprises Berlin, Düsseldorf, Frankfurt am Main, Hamburg, Cologne, Munich and Stuttgart

No sign of the price trend weakening for residential buildings

The vdp reflects an easing of conditions as a result of the construction of new owner-occupied apartments. However, as a result of positive economic conditions and continuing low interest rates, demand still seems to be exceeding supply, and the vdp still therefore sees no sign of the price trend weakening. Our property experts see no reason at the moment for major price corrections, but the risks are growing. Slight increases in interest rates and gloomier economic prospects are weighing on property prices which have risen sharply.

Residential mortgages in Germany: higher regular repayments and longer fixed interest periods

House prices in Germany grew faster than private household incomes between mid-2014 and mid-2017. This is one of the conclusions of another report by the vdp based on data from a survey of vdp member institutions conducted in H1 2017 (see "vdp Spotlight Real Estate – Structures of Residential Property Finance 2017" published on 25 October 2017). This vdp report examines the trend in residential mortgage financing in Germany. The financing needs of borrowers are increasing as a result of the upward trend in house prices. Nor have low mortgage interest rates fallen any further in the last years. Correspondingly, interest costs have increased for private households. The debt burden ratio (the total burden of borrowed funds divided by net household income or debt service to income, DSTI), which captures the borrower's debt-servicing capacity, for an average residential mortgage has increased from 23 percent in 2013 to 25 percent in mid-2017. The property price to income ratio grew slightly in the same period from 6.1 to 6.3. This means that, on average, the price of a single family house corresponds to 6.3 times the borrower's annual net income. In the last two years, the average net monthly income of borrowers has increased from EUR 4,100 to EUR 4,400. The vdp figures show that borrowers are using low interest rates to increase their loan repayments. The initial annual repayment rate increased from 1.85 percent in 2009 to 3.23 percent in mid-2017. The average fixed interest period for fixed rate loans grew from around ten to just over 14 years in the same period.

DATA ON PROPERTIES AND FINANCING FOR THE YEARS 2015 AND 2017

	Year	Single family houses (owner-occupied only)	Freehold apartments		
		total	total	owner-occupied	let
Floor area (sqm)	2017	143	83	88	76
	2015	146	86	93	74
Property price (cost of acquisition excl. ancillary purchase costs in EUR)	2017	334,000	235,000	253,000	207,000
	2015	298,000	215,000	239,000	171,000
Borrowed funds (EUR)	2017	261,000	186,000	203,000	160,000
	2015	229,000	163,000	179,000	135,000
Borrowed funds ratio (= borrowed funds / property price)	2017	78 percent	79 percent	80 percent	77 percent
	2015	77 percent	76 percent	75 percent	79 percent
Monthly household net income (EUR)	2017	4.400	4,400	3,500	5,900
	2015	4,100	4,100	3,600	5,000
Total monthly debt burden (EUR)	2017	1,090	810	830	780
	2015	940	720	770	650
Debt burden ratio	2017	25 percent	18 percent	24 percent	13 percent
	2015	23 percent	18 percent	21 percent	13 percent
Property price to income ratio (property price as a multiple of annual net household income)	2017	6.3 : 1	4.5 : 1	6.0 : 1	2.9 : 1
	2015	6.1 : 1	4.4 : 1	5.5 : 1	2.9 : 1
Data basis (number of transactions)	2017	793	734	446	288
	2015	774	802	521	281

Source: vdpResearch based on data from vdp member institutions, DZ BANK Research presentation

Banks are sufficiently capitalised to cope with the effects of a fall in house prices

In its monthly report of February 2018, the Bundesbank estimates that properties in German cities are overvalued by 15 to 30 percent. According to the central bank, home loans account for around 30 percent of total bank lending. It has therefore looked more closely at the potential impact of a fall in house prices, using two stress-test models. The Bundesbank looked at the influence of a fall of 30 percent in house prices and of a simultaneous increase in the unemployment rate to 8 percent. The tests showed that, in such a scenario, although the common equity tier 1 capital ratio of German banks would fall overall by 0.6 to 0.9 percent, the Bundesbank still feels that the institutions would be sufficiently capitalised to cushion any losses from an increase in impairments in the mortgage book (see "Two stress tests examine the resilience of German banks to a drop in real estate prices" in the Bundesbank's Research Brief of June 2018). The studies therefore supply arguments which explain why Germany has so far not taken any macroprudential measures in respect of lending.

DIW critical of macroprudential rules in Germany

Macroprudential measures to limit risks arising from home loans are set out in §48u of the German Banking Act (KWG). There is some controversy surrounding these measures, as illustrated by a study by the German Institute for Economic Research (DIW) published on 25 July 2018. The Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) can only implement its macroprudential instruments with a general disposition, for which the preconditions are unclear, in the DIW's view. According to the DIW, there are no concrete criteria. Moreover, it states, critics would like to see absolute caps set for example for the rules on DSTI. Ultimately, the DIW has doubts about the BaFin's options for macroprudential measures. The research institute believes that the available tools make it difficult to respond appropriately and in time to crises. According to the DIW, there is still a lack of clear rules on timing for the implementation of macroprudential measures. There are already countries in Europe which seem to be further down the road on this point than Germany.

Focus on debt limitation advantageous

Other countries, above all in Northern Europe, already set lending rules for the banking sector some years ago. What lessons can be drawn from the experience of these macroprudential measures? In a current analysis Fitch concludes that loan limits based on private household incomes in Norway and Sweden have helped to slow the trend in house prices there (see Fitch: “LTI Rules And Rates To Drive Scandinavian House Prices” of 2 July 2018). In addition to the ratio of household debt to income (DTI), other factors which exert a particularly strong influence on the house price trend are excess demand for homes, income growth, and interest rate movements. According to the agency, the upward trend in property prices in Scandinavia in recent years reflects the ability of private households to take on increasingly large loans prompted by very low and declining mortgage rates in this period, and this has driven debt ratios up sharply. According to Fitch, the regulatory authorities initially reacted by imposing loan to value (LTV) limits for new lending business. The banks have also been obliged to review borrowers’ debt-bearing capacity at stressed (in other words raised) interest rate levels when granting loans. However, the agency believes that these measures have had only a limited impact on the trend in household debt. DTI limits would be more effective. A borrower’s debt-servicing capacity, measured by the DSTI, could be positively influenced by prolonging the loan term (in other words by extending repayments over a longer period, and with a potential initial interest-only period) and by very low interest rates. For example, very long loan terms (or repayment plans) have long been the rule rather than the exception in Sweden for these reasons.

Authorities make greater use of debt multiples

The responsible public bodies in the Scandinavian countries have imposed income-based debt limits since 2017. In Norway, a maximum DTI multiple of five applies. This means that a mortgage loan may not exceed five times the relevant household income. In Denmark, the proportion of borrowers with short, variable rate mortgages and a DTI multiple of four or more is restricted to 15 percent of new bank lending business. Fitch believes that this limits the access of heavily indebted borrowers to a type of loan product which is regarded as high-risk. Since 2018, stricter repayment criteria have applied to Swedish mortgage borrowers with a DTI multiple of 4.5 or more. Heavily indebted households must accordingly make greater efforts at an early stage to gradually reduce their debt. Variable rate mortgages are widespread in the Scandinavian countries. In Sweden in particular, these loans are also often arranged on an interest only basis, at least at the beginning of the loan term. Rising interest rates could therefore hit heavily indebted households particularly hard. Other things being equal, if mortgage interest rates rise quickly, the number of loan defaults would be expected to increase. Fitch's covered bond analysis is therefore based on strict stress assumptions for the house price trend in the Scandinavian countries, particularly in regions close to major cities, where house prices have risen more sharply than in rural areas.

Finland the exception

Finland lags slightly behind the general macroprudential trend in the Nordic region. The situation there is similar to Sweden or Norway, with the mortgage market dominated by variable rate loans. Although household debt levels are fairly high, they are lower than in other Nordic countries. The financial supervisory authority currently regards a maximum LTV limit of 85 percent as sufficient for new loan business. First-time buyers of a residential property for their own use may even have a LTV of 95 percent for their loan. Lending restrictions based on the borrowers' DTIs are not currently applied in Finland.

Impact on the rating profile of mortgage pfandbriefe

In Germany, the legal foundations were created in 2017 which set out a framework for the financial regulatory authorities to take macroprudential measures in the lending business. These include measures which can be linked to DTI multiples. The situation in the property market in Germany differs from the situation in Northern Europe in many respects. Unlike in Scandinavian countries, loans in Germany are generally at a fixed rate of interest and the borrower is bound to this rate for a long period. German borrowers, moreover, are taking advantage to a greater extent of low interest rates at present to pay off their loans faster than their Scandinavian counterparts. The increase in house prices in Germany does not seem to be at an end yet and an interesting question for investors is therefore how the degree of household debt could affect the ratings and/or credit worthiness profiles of mortgage pfandbriefe.

Debt figures more important than LTVs for lending

Using DTI multiples to impose restrictions on lending business are a stricter form of intervention in bank lending than using LTV limits. It is understandable that the Nordic supervisory authorities initially introduced macroprudential rules for LTVs in new bank business several years ago. Ultimately they had to tread a fine line between mitigating future credit risks for the banks on the one hand, and avoiding any very adverse impact on the house price trend on the other. The example of the Scandinavian countries therefore seems to show that this balancing act can succeed. When calculating DTI multiples, it makes sense to factor in all private household debt. This means that the DTI multiplier should not only take account of mortgage debt, but also of consumer loans such as car finance. This will give a more realistic picture of a household's debt status.

OVERVIEW OF MACROPRUDENTIAL INTERVENTION IN EUROPEAN COUNTRIES

Country	Macroprudential intervention	Current regulation valid from
Northern Europe and UK		
Denmark	Borrowers with loans the equivalent of more than four times their gross income, and where the LTV exceeds 60 percent, are not permitted to take out any ARM loans* with terms of less than five years. Interest-only loans are permitted to only a limited extent, or in exceptional cases. Anticyclical capital buffer: 0.5 percent (from March 2019)	July 2017
Finland	Maximum LTV for new residential mortgages: 85 percent, except for first-time buyers (private individuals purchasing their first residential property). A maximum LTV of 95 percent applies to them. No anticyclical capital buffer	July 2018
Norway	LTV limit of 85 percent for all new residential mortgages and 60 percent for flexi loans (mortgage loans with no fixed repayment plan). Also maximum 60 percent LTV for second homes and holiday properties and rented properties in Oslo. Minimum 2.5 percent of original loan amount as annual repayment or repayment schedule with a maximum loan term of 30 years for all loans with a LTV of more than 60 percent. Borrower's total debt may not exceed five times gross annual income. The above thresholds may only be exceeded each quarter for 10 percent of loans (only 8 percent in Oslo). Violations of the criteria must be reported regularly to the supervisory authority. When the loan is granted a review must be carried out to determine whether the borrower could still afford repayments if the interest burden were to increase by 5 percentage points. Anticyclical capital buffer: 2.0 percent	July 2018
Sweden	LTV limit of 85 percent for all new residential mortgages. Regular repayments must be made for residential mortgages with a LTV of more than 50 percent. The level of repayment depends on the LTV and the debt multiple. Borrowers with a DTI multiple of up to 4.5 must repay 1 percent (2 percent) annually if the LTV is between 50 percent and 70 percent (more than 70 percent). Anticyclical capital buffer: 2.0 percent	March 2018
UK	Loans with a DTI multiple of 4.5 or more may only account for a maximum of 15 percent of a bank's new mortgage business. When granting loans, banks must monitor whether the borrower could still afford to service the debt if the mortgage rate were to increase by 3 percentage points. Anticyclical capital buffer: 1.0 percent from 28 November 2018 (previously 0.5 percent)	June 2014
Central and Eastern Europe		
Czech Republic	The proportion of payments of interest and principal relative to current household income may not exceed 45 percent (debt service to income, DSTI). The DTI multiple may not exceed 9. The LTV for new residential mortgages may not exceed 90 percent, and no more than 15 percent of a bank's mortgage book may consist of LTVs of 80 percent to 90 percent. Anticyclical capital buffer: 1.5 percent from 1 October 2019 (previously 0.5 percent)	October 2018
Hungary	For households with net monthly income of up to (more than) HUF 400,000, payments of interest and principal may not exceed a proportion of 25 percent (30 percent) of household income if interest on the mortgage loan is adjusted within the next five years. For an interest rate adjustment in ten years' time or later, figures of 50 percent (60 percent) and 35 percent (40 percent) apply to loans with a fixed interest period of between five and ten years. From 1 July 2019 the net income threshold will be raised to HUF 500,000. No anticyclical capital buffer	July 2018
Slovakia	The proportion of new loans with a DTI multiple of more than 8 may not exceed 20 percent of new loans granted. The DTI includes both property and consumer loans. By 1 July 2019 this proportion will be reduced to 5 percent in three equal stages. The LTV for new residential mortgages may not exceed 90 percent. The proportion of a bank's new mortgage loans with a LTV of more than 80 percent may not exceed 35 percent. This threshold will also be reduced to 20 percent by 1 July 2019 in three equal stages. Anticyclical capital buffer: 1.5 percent from 1 August 2019 (previously 0.5 percent)	July 2018

Other European countries		
Austria	Legal framework has been enacted for supervisory authorities to intervene in bank lending with macroprudential measures. The relevant supervisory authority has not yet used any of its new powers. However, Austria's central bank (Austrian National Bank) proposed in June 2018 to limit LTVs for new home loans to 80 percent. According to the central bank, the debt service ratio should not exceed 30 percent (40 percent) of current household income in the case of variable-rate (fixed-rate) mortgages. Moreover, the National Bank recommends a maximum loan term of 35 years. No countercyclical capital buffer	2017
Germany	Legal framework has been enacted for supervisory authorities to intervene in bank lending with macroprudential measures. The relevant supervisory authority has not yet used any of its new powers. No countercyclical capital buffer	2017
Portugal	Banco de Portugal has published recommendations regarding new lending from which banks may only deviate if they have good reasons to do so. The term of new loans may not be 40 years. The average term of new loans is to be reduced gradually to 30 years by 2022. LTV ceiling of 80 percent (90 percent for first-time home buyers) DSTI ceiling of 50 percent (based on disposable net income of borrower/household income). No countercyclical capital buffer	July 2018
Countries outside Europe		
Australia	Interest-only new loans are now limited to a maximum of 30 percent. Banks are required to implement their own strict limits for interest-only loans with an LTV of over 80 percent and to ensure that interest-only mortgages with an LTV of 90 percent or more are the exception. Investor home loans may not account for more than 10 percent. In April 2018, the Australian Prudential Regulation Authority (APRA) announced that this 10 percent cap would no longer have to be applied from 1 July 2018 so long as banks meet specific requirements. These include a bank having adhered to this limit for at least the past six months. Banks are required to check debt sustainability. The borrower's income must be sufficient to be able to service the mortgage even in the event of a 2 percentage-point increase in interest rates. Moreover, borrowers should have a financial cushion. The regulator expects banks to limit lending of especially risky loans, such as high DTI or high LTV. No countercyclical capital buffer	December 2014/ March 2017
Canada	There are no general guidelines for bank lending standards. However, in October 2016, the guidelines on government guarantees for home loans were tightened. The criteria to qualify for these guarantees include caps on the mortgage LTV and the borrower's DTI, for example. These mortgages with a government guarantee may not be used for the cover pools of Canadian covered bonds. Borrowers must be able to service their mortgage payments in a timely fashion, even in the event of an increase of 200 basis points in the agreed interest rate or when applying the Canadian Central Bank's five-year benchmark rate. Moreover, the banks must set themselves suitable LTV limits for new lending. No countercyclical capital buffer	October 2016 January 2018

Source: Fitch, Moody's, DZ BANK Research presentation, * Loan terms are adjusted regularly – usually every one, two or three years - in line with the mortgage banks' refinancing costs in the capital market

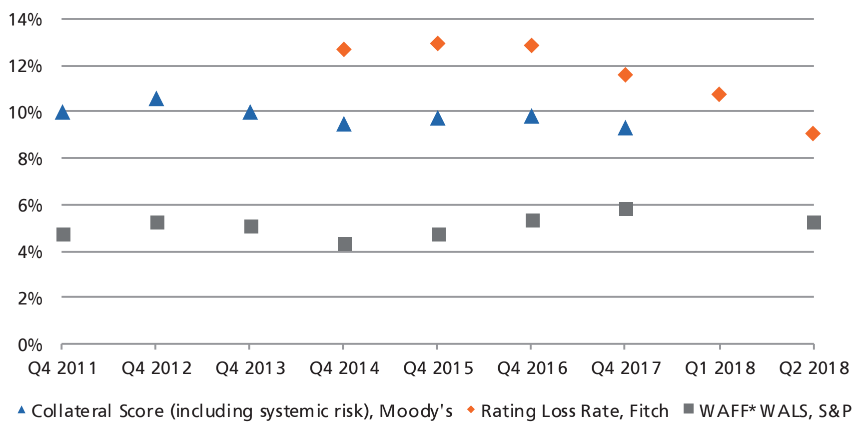
Positive impact on covered bondholders

From a long-term perspective, macroprudential measures should in any case have a positive impact on the cover pool quality of the covered bond programmes affected. The rating agencies are likely to agree on this point. However, the resulting benefit for covered bondholders will tend to be indirect, since macroprudential intervention by the supervisory authorities – including the anticyclical capital buffers listed in the table – is intended to curb potential default risks in the banks' loan books in future. For covered bondholders, the LTV limits contained in the legal frameworks on which covered bonds are based are considerably more important, because they guarantee a certain minimum quality of claims in cover pools.

Rating agency ratios currently show a positive trend

The developments in the German property market described in this study and the banks' lending standards naturally also have an impact on the quality of the cover pools of their mortgage pfandbriefe. However, in the case of German mortgage pfandbriefe, there has been no deterioration in the rating agencies' corresponding credit risk ratios; on the contrary, they have improved slightly. The collateral score used by Moody's to indicate potential losses (as a percentage) for the cover pool in a stress scenario after of default of the issuer was recently 9.3 percent (status in Q4 2017); this is a slight reduction in relation to the previous quarter and hence an improvement. The equivalent ratio from Fitch (Rating Loss Rate) is pointing in the same direction with an improvement to 9.0 percent (status in Q2 2018). The expected loan defaults for the cover pool – WAFF/WALS in the case of S&P – fell to 5.3 percent as at Q2 2018. The difference in the level of the respective average figures for German mortgage pfandbrief per agency can be explained in the light of various factors. Firstly, the stress tests and analysis methods used by the agencies differ. In addition, the average figures each relate to different universes, because the number of mortgage pfandbriefe rated varies from one agency to another. A sensible evaluation of the absolute level of individual average ratios is therefore not possible. However, the changes in ratios are currently all going in the same direction.

TREND IN CREDIT DEFAULT RISKS IN THE COVER POOLS OF GERMAN MORTGAGE PFANDBRIEFE
RATING AGENCY RATINGS



Source: Fitch, Moody's and S&P, DZ BANK Research presentation

Current initiatives with green mortgages & co. and their credit relevance

Energy Efficient Mortgages Initiative reaches important milestone

The Energy Efficient Mortgages Initiative (EEMI) reached a further milestone on 14 June 2018. The EEMI is aimed at creating a standardised European framework for energy-efficient mortgages. At the same time, data relating to these loans will also be collected. Falling in this category are mortgages on buildings for both residential and commercial use which have been built in a particularly energy-efficient way or whose energy efficiency is to be enhanced through modernisation measures. The likely pilot phase which will last at least two years and involve the participation of 37 European banks and the support of 23 further organisations has now begun. The banks will test the framework discussed during a consultation phase at the be-ginning of the year 2018 in their day-to-day lending over the next few months. The experiences gleaned from the test runs carried out by the participating banks will later on be integrated into a market standard for energy-efficient mortgages. In addition, during the pilot phase, data on credit risks surrounding energy efficient mortgages will also be collected. The EEMI hopes to use the data to underpin its thesis that mortgages on more energy-efficient buildings are also a better credit risk than mortgages on conventional properties because they are of greater intrinsic value. The aim of this initiative led by the European Mortgage Federation (EMF) and the European Covered Bond Council (ECBC) is ultimately to make a contribution to the European Action Plan on Sustainable Finance. As part of the initiative, the European Commission has committed itself to look into the possibility of including sustainable criteria in the regulatory framework for financial institutions.

Moody's says privileged capital status for the financing of green and sustainable projects would be "credit negative"

Regulatory privileges, such as a reduced risk weight for banks, are generally based on low default risks for the asset class concerned. In a report entitled "European Commission proposal to lower capital requirements for banks' green assets is credit negative" of 18 December 2017, Moody's warns against potentially higher credit defaults on green investments, for which adequate capital cover might not be in place. The rating agency is thus implicitly saying that green financing transactions do not per se have a lower default probability. As far as mortgages are concerned, experience shows clear risk determinants. The default probability for residential mortgages is primarily dependent on the borrower's income. Perhaps households which live in energy-efficient homes make savings on electricity and heating costs. Under otherwise constant conditions (if other consumer spending is unchanged) this would have a positive impact on disposable income and thus the borrower's debt-servicing ability. Perhaps the abovementioned project demonstrates how significant the impact will be on credit ratings. As the saying goes, a property valuation is based on only three factors: "location, location, location!". The intrinsic value of a property is also presumably dependent on its construction. A particularly sustainable method of construction would raise the value of the property accordingly. However, the costs would probably also be higher than for a conventional construction. As a consequence, it may be that only households with above-average incomes (and better credit ratings) can afford sustainable housing. The relevant building regulations relating to energy consumption are also frequently adjusted. Buildings which are currently designated as "green" might be classified as "conventional" tomorrow. Buildings which are ten years old or more (and for which the original financing is still in place and which are still very habitable) would presumably lag behind standards which are being increasingly tightened, reducing their original valuation advantage over time. This argument is likely to apply, not only to owner-occupied homes, but also to commercial property financing. Moody's warns against additional risks in relation to exotic asset classes from the project financing sector if new technologies are superseded faster than expected, and if supposedly sustainable projects become obsolete earlier than anticipated due to technical progress. The empirical evaluations still to be carried out of certain sustainability features of buildings in relation to default probabilities of financing and the intrinsic value/recoverability of collateral will not be easy. Irrespective of whether these features are successfully demonstrated, or the EU Commission ultimately awards privileged capital status for green and sustainable asset classes, harmonisation of the relevant definitions for the banks' lending businesses would be advantageous.

S&P treats green mortgages like loans on conventional buildings

As regard credit risks in connection with property financings, S&P draws attention to the fact that the data available for green mortgages is still too sparse at present to be able to judge conclusively whether loans for energy-efficient buildings have a lower credit risk than loans for conventional buildings (see "Credit FAQ: What's Behind The Rise In Green Covered Bond Issuance?" of 26 June 2018). For this reason, this feature is not (yet) part of the agency's credit analysis. For that reason, green mortgages are currently treated by S&P like all other mortgages. However, the agency concedes that green impact could be considered indirectly. If a sustainable and energy-efficient building method leads to a higher property valuation over the long term, this factor would have a positive impact on the assessment of the loan through the valuation of the collateral and hence on the LTV of the loan.

Growth potential, but at present international standards for green mortgages still missing

Even though the number of green covered bond issuers was still quite small as per mid-2018, S&P anticipates significant growth potential for this asset class. In S&P's view, public sector covered bonds secured through claims on the public sector entities also offer an attractive option for green investments. As an example, the agency quotes public sector infrastructure and renewable energy-generating installations. At the same time, S&P concedes that the focus in the covered bond market is currently on mortgages.

Although the International Capital Market Association (ICMA)'s Green Bond Principle (GBP) provides a standard for green covered bonds which is generally accepted by market participants at present and is widely used, the main difficulty as things stand at present is clearly to identify matching claims on the issuers' balance sheets. In this respect, according to S&P, issuers from different countries use different criteria. In general, Energy Performance Certificates (EPC) or certificates from independent auditors are used. The lack of uniform international standards for EPCs however, hampers the comparability of green and energy-efficient buildings, according to S&P. The agency lists the following points as factors which would help the further growth of green covered bonds in future:

- It must be easy to identify green mortgages. Initiatives such as the EEMI are helping have a positive influence on this point.
- Legislative initiatives which help improve transparency and disclosure around green lending.
- The expansion of the covered bond model to new asset classes.

New instruments needed to refinance infrastructure measures

Even though the number of German pfandbrief banks and covered bond issuers from Europe issuing green covered bonds has been increasing since 2014, this remains very much a niche market for the moment. The initiative mentioned above to standardise green mortgages could make an important contribution towards the development of this bond segment. Sustainable or green assets however, are not restricted to the mortgage market. Sources of renewable energies and related infrastructure projects are another field for green financings. However, wind farms are now suitable assets for the cover pool of traditional covered bonds. Here, new refinancing channels would be needed if these asset classes are to be used for secured bank bonds (as is being proposed by S&P). In Luxemburg, the legal framework was introduced at the beginning of 2018 for Lettres de Gage Energies Renouvelables (LdG Vertes). LdG Vertes are aimed at enabling the refinancing of projects to generate electricity from renewable sources of energy. In conjunction with this, the relevant authorities at European level are also mulling over the creation of a new refinancing instrument for banks which would be similar to covered bonds in its basic structure. The current status of this asset class of "European Secured Notes" is summarised in the next chapter and set in the context of current efforts to harmonise European covered bond frameworks.

EUROPEAN PERSPECTIVE

Projects relevant to covered bonds

Apart from the debate surrounding green mortgages, there are currently two further discussion points at EU level: firstly, work is ongoing on European Secured Notes (ESN); secondly, preparations are currently underway for a European framework on the harmonisation of covered bond frameworks in the member states. The project for harmonised quality standards is already quite far advanced and could still be concluded before the next election to the European Parliament in 2019. Essentially, ESN would fit in well into the European framework for covered bonds. However, the European Banking Authority (EBA) only published its Assessment of ESN on 24 July 2018. Further groundwork still has to be done on this project. If, in view of the fact that they are close to bank covered bonds in essence, the decision is taken to include ESN into the draft directive on European covered bonds which is already at an advanced stage, this would considerably delay the project on the harmonisation of European covered bond frameworks. In his article "Pfandbriefe und Gedeckte Bankschuldverschreibungen (Teil 2)“ [“Pfandbriefe and covered bank bonds (part 2)", available in German only] in issue 15/2018 of the Europäische Zeitschrift für Wirtschaftsrecht (European Journal of Business Law, EuZW), Otmar Stöcker describes in detail the developments of the last 50 years which have led to the harmonisation of covered bond frameworks in Europe. The author sees advantages in including ESN in the EU Covered Bond Directive. It would mean that relevant regulations which are the same for ESN and covered bonds could be used without the need to draw up a parallel rulebook. The legal structures for both funding instruments were very similar or even identical in many points. At the same time, however, in spite of the many similarities, the author believes there should be a clear distinction between ESN and covered bonds in view of completely different assets classes in the cover pools of ESN.

EBA recommendations for European Secured Notes

ESN are intended to make a contribution to the European Capital Market Union

The concept of European Secured Notes has been under discussion for a number of years. This new type of refinancing instrument is intended to make a contribution to the European Capital Markets Union. ESN are very similar to covered bonds, because they represent secured claims against financial institutions (dual recourse). For ESN, however, unconventional asset classes (claims against small and medium-sized enterprises or project and infrastructure loans) are to be used as cover assets, if compared to traditional mortgage or public sector covered bonds.

Dual recourse enhances confidence in SME ESN

SME ESN could make a contribution to overcoming the current lack of standardisation for SME investments and would complement SME securitisations. SME ESN are favoured by the fact that new, more risk-averse investors could be attracted given that the dual-recourse structure that has been tried and tested in the covered bond market would also be used for this new financing instrument for the SME market, thus creating confidence among investors. The EBA hopes that the procyclicality within the SME lending business could be alleviated through a crisis-proof refinancing instrument. However, the EBA would currently favour simple, transparent and standardised (STS) securitisations for the refinancing of SME loans and prioritise increases in their attractiveness. In the opinion of the supervisory authority, the best-practice recommendations included in the report "EBA Report on EU Covered Bond Frameworks and Capital Treatment" of December 2016 would applicable to SME ESN on many points, but in the case of some key points, these would also have to be modified, e.g. in respect of the composition and liquidity hedging of the cover pool and transparency requirements for ESM programmes.

Limiting concentration risk in the cover pool and minimum 30 percent over-collateralisation

In terms of the composition of the cover pool, the authority calls for only SME loans or leasing claims that meet the Capital Requirements Regulation (CRR) definition to be permitted. In its recommendations for SME ESN, the EBA rules out overdraft facilities or claims from factoring due to their often short lives. A certain level of quality for the cover assets should be ensured via the banks' lending standards, whereby the claims should not be impaired, at least initially, when they are registered in the cover pool. To ensure granularity within the cover pool, the EBA proposes that at least 500 different exposures are contained in the cover pool, with no single borrower allowed to account for more than 2 percent of the total volume of cover assets. The over-collateralisation for SME ESN should be at least 30 percent in the EBA's view. Defaulted claims should not be taken into account in the calculation of over-collateralisation.

Infrastructure loans not suitable for ESN

In terms of ESN for infrastructure financings, the EBA concludes that this new type of bond does not meet the best-practice criteria of 2016; nor does it suggest any adjustments to this type of claim. Infrastructure loans are normally structured on a bespoke basis for each individual project and can be highly complex. The cover assets for these ESN are therefore likely to be very mixed in nature. The EBA also expects that the cover pool will typically not be granular. Compared with average claim sizes in the case of a mortgage covered bond, the claims from infrastructure financings in the cover pool of an ESN would be significantly lumpier. For that reason alone, it will be difficult to create a market for infrastructure ESN in which the risk profile of the individual bonds is easily comparable. In addition, the infrastructure financings in the case of ESN would remain on the balance sheet of the banks (issuers) and would continue to be a burden on equity capital. For that reason too, it would make more sense from the EBA's point of view to use securitisation techniques for the refinancing of infrastructure projects instead of a dual-recourse instrument such as ESN. Transferring the claims to a special-purpose vehicle would relieve the burden on the banks' equity capital. As refinancing channel, the EBA is proposing yet-to-be defined EU infrastructure bonds and offering to conduct an analysis of standardisation options for such a category of bonds. The EBA is not alone in its reservations about infrastructure ESN. Ratings agency Fitch also expressed criticism about this class of bond in May 2018. If the European Commission nevertheless wishes to create the legal basis for infrastructure ESN, the claims that are eligible as cover assets should be restricted according to the EBA. Only financings for projects already in the operational phase should be permitted for ESN. A loan for the development or construction of an infrastructure project would accordingly be much riskier and is therefore not suitable for a dual-recourse instrument according to the EBA.

Obvious similarity with covered bonds: dual recourse

There is no objection in principle to the creation of a European regulatory framework for ESN that complements the covered bond market and expands the refinancing opportunities for banks. In relation to covered bonds, the EU is currently working on a new directive aimed at harmonising legal standards for European covered bank bonds and further improving them as a whole in line with the EBA's 2016 best-practice criteria. For SME ESN, the EBA concludes that with certain adjustments to its best-practice criteria for covered bonds these can be viewed as being met for the new class of bond as well. With the dual recourse principle, ESN already possess what we see as the most important characteristic of a covered bond. On the one hand, there are many – in our view intended – similarities with covered bonds in the transaction structure of ESN. These similarities are designed to increase acceptance of the new refinancing instrument among investors and ultimately constitute the basis for justifying preferential regulatory treatment.

Having your cake and eating it

However, we get the impression that the EBA – presumably along with other market participants – is worried that European Secured Notes will be lumped together with harmonised European covered bonds. The fear is that standards in the covered bond market will be diluted and the (perceived) quality of secured bank bonds reduced as a result. With ESN, an asset class would be born that looks like covered bonds and is rightly set to be given similar preferential regulatory treatment. The main difference is that exotic cover assets are used for ESN, which is not the norm for traditional covered bonds. The EBA and other market participants are ultimately shying away from the final step: the acceptance of ESN in the covered bond market and therefore the ultimate accolade for ESN. For us that sounds a little bit like having your cake and eating it.

Market isn't sitting waiting for SME ESN

In terms of the choice of name given to ESN, an attempt is already being made to create a clear distinction with the covered bond market. However, defining the bond segments is only one aspect. Another issue would be how far banks currently need a new funding instrument such as SME ESN. An attempt was made to establish this asset class in Germany in 2013 with the SME covered bond from Commerzbank. However, it remained confined to a euro benchmark bond from this programme – which has since been repaid. The market for aircraft and ship pfandbriefe is another example. Despite the lustre given to these bonds by the German Pfandbrief Act, these market segments have failed to make any headway for a number of years. The numbers of volumes outstanding for these pfandbrief categories have steadily shrunk to ever lower levels. Covered bond investors seem to have a degree of scepticism about exotic cover assets, which presumably seem unattractive to some against the backdrop of the current, generally very tight spread levels. This is compounded by another factor. In the case of the Commerzbank SME covered bond, the concept of the conditional pass-through (CPT) – which originally stems from structured finance – was used to boost the bonds' rating. In the case of SME ESN the top rating would not always be a foregone conclusion. If SME ESN had CPT structures (as the EBA is suggesting) they would become increasingly similar to SME securitisations.

ESN would lie between covered bonds and unsecured bank bonds

So, why not go the last mile? If SME ESN had persona non grata status in the covered bond market and the (perceived) transaction structure already approaches that of securitisations, why shouldn't a clear priority be placed on securitisations when it comes to refinancing SME and infrastructure loans? Like the EBA, we do not think the banks currently require a new refinancing instrument such as ESN, which would lie between traditional covered bonds and unsecured bank bonds. Risk premiums for covered and unsecured bank bonds would need to widen more sharply for an economic incentive to arise for issuers to use ESN because they offer better conditions compared with unsecured refinancing instruments. However, European STS securitisations would also be available to the banks; besides a certain refinancing advantage over unsecured bank bonds, they also offer to reduce the burden on equity capital. The latter cannot be achieved with ESN. In addition, investors ultimately need to play their part too. If the new ESN are aimed at traditional covered bond investors, a lot of persuasion would presumably need to be done in advance. And if traditional ABS investors are already in the sights of issuers for expanding the SME and infrastructure market, standardised securitisation transactions would be an effective tool.

Could ESN be an alternative to senior preferred bonds?

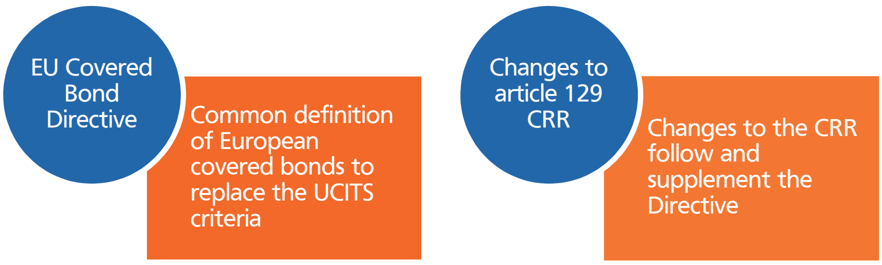
ESN could obviously be compared with senior preferred bank bonds, too: although the latter would only be involved in losses in the late stages of a restructuring, bail-in risk does exist in principle. Bail-in risk is to be ruled out for ESN. If the new covered bond class were to be given additional favourable treatment, such as that of highly liquid assets in the context of the liquidity coverage ratio, then ESN would presumably also enable more investors in unsecured bank loans to be reached. Investors would, however, need to be offered high risk premiums, even if the swap spreads of the ESN were to rank below the senior preferred debt due to the absence of bail-in risk. The market would have to find an equilibrium in which issuers save enough in refinancing costs with ESN compared with senior preferred bonds and at the same time a sufficient number of investors perceive ESN as an attractive investment. This would require a greater spread differentiation for the individual refinancing instruments. The benefits from ESN would presumably be greatest for banks with a weaker credit profile. Moody's expects that Italian and Spanish banks would gain the most from ESN at the moment (see "European secured notes provide new funding source for banks; assets pose complex credit risks" published on 11 September 2017). ESN could be a refinancing option for other banks if the financial market as a whole is in crisis and investors would like to have higher spreads compared with covered bonds but do not want to enter into significantly higher risks (i.e. no bail-in risk). The question as to where ESN will be positioned within the banks' refinancing toolkit in future remains open. It is also unclear whether investors perceive ESN as a "soft" covered bond or as "hard" senior preferred debt. Proximity to the securitisation market may also be a dominant factor. Perceptions of the new ESN will depend on whether the ESN ratings are improved by reaching into the structured finance toolbox or whether issuers deliberately accept poorer ratings for plain vanilla bullet ESN in order to create proximity to senior preferred debt via the rating. What's clear is that swap spreads for ESN will vary depending on the strategy. Where this new class of bond will ultimately be positioned on the market – closer to bank investors and senior preferred debt or ABS investors and corresponding securitisation transactions – is difficult to gauge right now.

Key points of the EU directive on the harmonisation of European covered bond frameworks (EU Covered Bond Framework)

Reform based on the EBA's recommendations from the end of 2016

Harmonising the covered bond legislation within the EU has been under discussion for some time. As part of its efforts to build a European Capital Markets Union the European Commission published a further package of proposals on 12 March 2018. One of the proposals relates to covered bonds and draws heavily on the best practice recommendations of the EBA presented at the end of 2016 (see our report "EBA presents three-step harmonising model" of 21 November 2016). At the heart of the proposed measures is a new Covered Bond Directive ("Directive of the European Parliament and of the Council on the issue of covered bonds and covered bond public supervision and amending Directive 200/65/EC and Directive 2014/59/EU"). The harmonisation package also contains changes relevant to covered bonds in EU Directives 2009/65/EC (UCITS Directive) and 2014/59/EU (Framework for the recovery and resolution of credit institutions) as well as changes in EU Regulation 575/2013 (Capital Requirements Regulation or CRR). The new Directive and the changes in the CRR are the two pillars of the reform proposal.

TWO PILLARS OF THE EU REFORM: DIRECTIVE DEFINING EUROPEAN COVERED BONDS AND CHANGES TO ARTICLE 129 CRR



Source: DZ BANK Research

New definition of European covered bonds to replace UCITS criteria

The reform proposals replace the previous central criteria for defining covered bank bonds in article 52 (4) of the UCITS Directive with a new definition of European Covered Bonds (EUCB) based on an updated catalogue of features. Article 52 (4) will in future refer to the definitions in the new Covered Bond Directive. The UCITS criteria for defining covered bank bonds which have been used for supervisory purposes until now will be deleted. In order to be eligible for privileged regulatory treatment in future, covered bonds would have to meet the new EUCB standards. The core of the greatly expanded canon of features for EUCB remains the dual recourse principle. Holders of a covered bond have a claim on the issuer (a bank), and the fulfilment of that claim is secured on the cover pool. Covered bond investors have a prior-ranking claim to the collateral in the cover pool in the event of the issuer's insolvency. The new European definition of dual recourse has been broadened by adding a claim on the issuer's insolvency estate, if the cover assets are insufficient to meet all of the covered bondholders' claims. This claim should rank pari passu with the issuer's unsecured senior creditors. A significant credit-related component has therefore been added to the legal definition of dual recourse compared to the UCITS criteria. In addition to this core element, the draft legislation also proposes the following features for new EUCB:

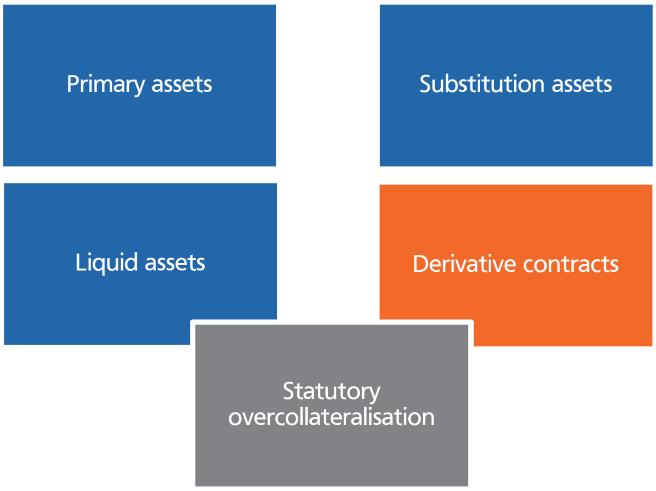
No acceleration of covered bonds due to the issuer's insolvency

» The covered bonds must be "bankruptcy remote", i.e. they must be able to survive the issuer's bankruptcy. The insolvency or resolution of the bank must not accelerate the payment obligations attached to the covered bond. Moreover, the national covered bond legislation must ensure the segregation of all relevant cover assets in the event of insolvency or resolution.

Broadly defined qualification criteria for cover assets

» The European Commission proposes that assets in the cover pool should be sufficiently homogenous. The Directive expects the assets to be similar in terms of structural features and maturity and so have a similar risk profile. Alongside the assets listed in article 129 CRR, other high-quality assets are seen as appropriate for a cover pool. For the other high-quality assets a market value or mortgage lending value must be determined and for the claims mortgages and similar security or guarantees must have been established. The draft Directive as of March therefore has a more broadly defined and general definition of potential cover assets than article 129 CRR. The definition of cover assets has attracted criticism from many market participants who wanted clearer guidelines in order to prevent a dilution of current quality standards. There have also been many queries about what constitutes a homogeneous cover pool. It was unclear, for example, whether the European Commission means that mortgage covered bonds can only be secured with residential mortgages or whether mixed cover assets consisting of mortgages on commercial real estate and on residential properties would meet the requirement of homogeneity. The draft directive is likely to be revised again around this point in view of the many calls for clarification.

BREAKDOWN OF COVER ASSETS IN THE EU DIRECTIVE



Source: DZ BANK Research

Coverage of nominal value

» Investors' claims from outstanding covered bonds, including accrued interest and administration costs (for the cover pool), must be backed by sufficient cover assets. The total nominal amount of assets in the cover pool must be at least equal to the total nominal amount of covered bonds.

Securing liquidity

» The legislation should also ensure that the cover pool has an adequate liquidity buffer for the next 180 calendar days. Liquid assets must be available to cover the ongoing net liquidity outflow from the cover pool (upcoming redemptions and coupons for outstanding covered bonds minus liquidity inflows into the cover pool during the same period). The draft directive would allow a bank's liquidity reserves to be counted as part of the cover pool reserve in the context of the liquidity coverage ratio (LCR). This regulation would mean that the liquidity reserve would not have to be included in the cover pool for the first 30 out of a total of 180 days. This would be a much weaker requirement than the existing rules under the current Pfandbrief Act. The liquidity buffer can be held in the form of assets which are also eligible for the LCR. In addition the draft Directive also permits exposures to banks that qualify for credit quality step 1 (minimum rating of AA(low), AA- or Aa3). To ensure the liquidity of the cover pool the national covered bond legislation may permit possible maturity extensions (soft bullets or conditional pass-throughs) for the outstanding covered bonds. However, the national legislation must ensure that the maturity extension of the relevant bond is governed by statute and cannot be triggered at the issuer's discretion. Moreover, issuers must provide detailed information on the events that can trigger a maturity extension.

CRITERIA ADOPTED AND MODIFIED FROM ARTICLE 52 (4) UCITS DIRECTIVE

Dual recourse

- The Directive broadens the definition by explicitly mentioning a claim on the issuer's insolvency estate if the claims of the covered bondholders cannot be fully satisfied from the cover assets

Coverage of the bonds' principal and interest up to maturity

- The Directive stipulates coverage of the outstanding nominal (including accrued interest and administration costs for the cover pool)
- Reference to the CRR for permissible assets; other high-quality assets can also be used

Issuer must be based in the EEA

- The Directive provides for the Commission to review the status of covered bonds from third countries

Covered bond public supervision

- The Directive sets out the tasks and responsibilities for the public supervision of covered bonds

Source: DZ BANK Research

NEW PROVISIONS COMPARED WITH THE UCITS CRITERIA

Transparency requirements

- Extends the existing provisions deriving from article 129 CRR (following the harmonised transparency template of the Covered Bond Label)

Maturity extensions with soft bullets and conditional pass-throughs

- General principles in the Directive on the design of possible maturity extensions for covered bonds

Pooling model

- Pooling models for covered bonds are explicitly mentioned as a permissible transaction structure

Cover pool and covered bonds in insolvency

- Assets in the cover pool must be bankruptcy-remote, i.e. segregated from the issuer's insolvency estate
- Outstanding covered bonds may not be accelerated by the issuer's insolvency or resolution

Source: DZ BANK Research

Pooling model permitted

» Pooling models, where covered bond issuers use cover assets of other banks for their programmes, are explicitly permitted in the draft Directive for EUCB.

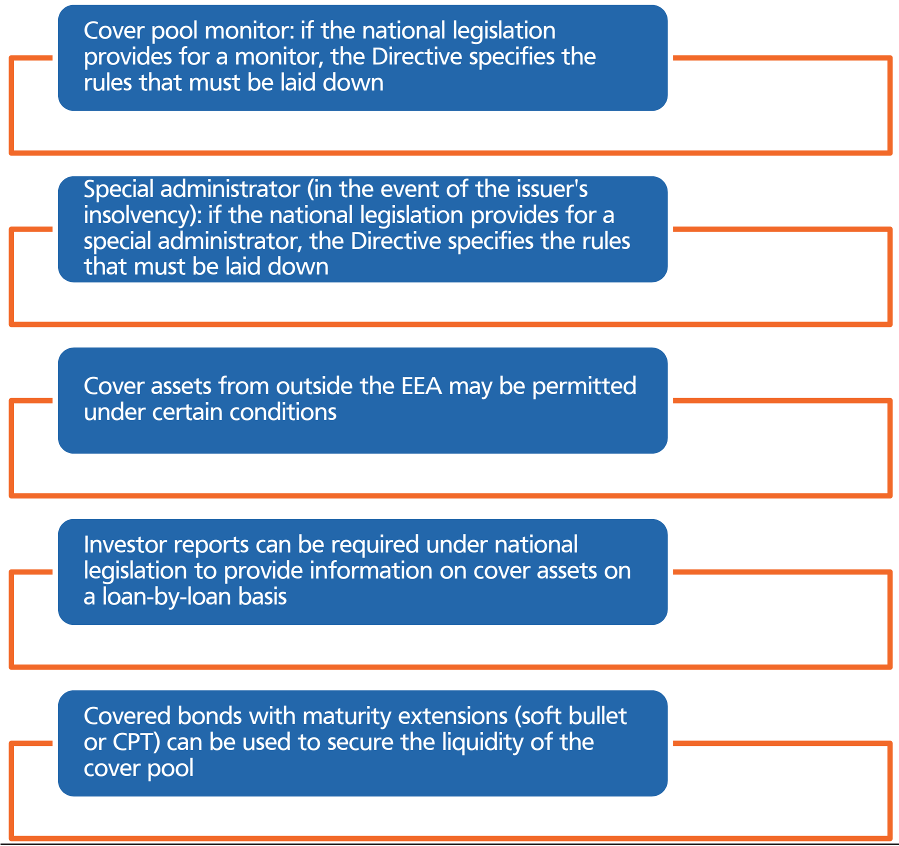
Exceptions to geographical restrictions

» Member states may permit cover assets located outside the European Union (or the European Economic Area (EEA)) for their covered bonds if these assets and their security meet European standards.

Publication obligations for issuers

» Issuers must be legally obliged to publish quarterly reports on their covered bond programmes. The main requirements have been toughened up a little compared to the disclosure requirements of article 129 (7) CRR. They now include information on the maturity structure of the covered bonds and more detailed information on overcollateralisation. The Directive even proposes that member states can require issuers to disclose information on the cover assets on a loan-by-loan basis. Issuers who are already using the harmonised transparency template (HTT) for covered bonds would therefore seem to be well placed to meet the new transparency standards for EUCB.

OPTIONS IN THE IMPLEMENTATION OF THE COVERED BOND DIRECTIVE AT NATIONAL LEVEL



Source: DZ BANK Research, CPT = Conditional Pass-Through

Option: cover pool monitor

» The Directive does not insist on the appointment of a cover pool monitor (as is required, for example, in the German Pfandbrief Act) as a mandatory part of any covered bond legislation. The EU Directive relies instead on regulations obliging the issuer to set up internal monitoring processes, which should if possible be independent. However, if a member state requires a monitor in its national covered bond legislation, the rules for the appointment of the monitor and their tasks and responsibilities must be clearly defined.

Tasks and responsibilities of public supervision

» The responsibilities of public covered bond supervision are defined more clearly in the draft Directive compared to the current UCITS criteria. This is the case, for example, with regard to the licensing procedure, the ongoing monitoring of covered bond programmes, the reporting obligations of issuers to the supervisory authority and powers for supervisors to impose sanctions if an issuer is in breach of the regulations. The national supervisory authorities are also henceforth to publish the lists of banks which have permission to issue covered bonds. The supervisory authorities will also announce regularly which covered bond programmes meet the criteria for using the EUCB label.

Option: special administrator after an issuer insolvency

» In the event of the resolution of a bank the new European Directive requires the competent authorities to cooperate in order to ensure that the rights of the covered bond holders are protected. A separate special administrator of the cover pool to represent the interests of the covered bond investors separately from the administrator of the bank is not mandatory for an EUCB (unlike for German Pfandbriefe).

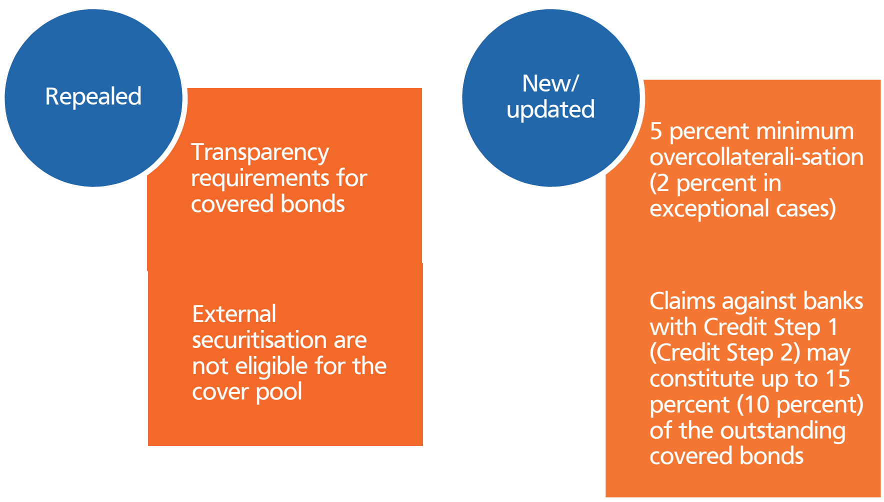
Directive to be published before mid-2019

Bonds whose legal basis fulfils the above requirements will be able to use the designation of "European covered bonds" once the new provisions have entered into force. This will not affect the protected designations that exist for covered bonds in some countries – such as for Pfandbriefe in Germany. The draft directive now has to be agreed between the European Parliament, the Commission and the Council. The clock is ticking. The Commission is hoping to publish the Directive before the next European elections in mid-2019. Member states will then have one year after the directive enters into force (so until around mid-2020 at the latest) to integrate the standards contained in the harmonising directive in their domestic covered bond legislation. The new standards for European covered bonds would then also enter into force at the same time and replace the UCITS criteria from this point on. There will be transitional arrangements for covered bonds already in circulation, for which a cut-off date still needs to be decided. These covered bonds will be subject to grandfathering rules, i.e. they will be viewed as EUCB until they mature if they met the UCITS criteria at the date of issue (even if they are not compliant with all the new features listed in the Covered Bond Directive).

Directive complemented by amendments to the CRR

The definitions of EUCB are broader and more detailed than the UCITS criteria, although they do remain fairly high-level and mark out the general boundaries of the playing field in the covered bond market. As far as the preferential capital treatment of covered bonds held by banks is concerned, the requirements that need to be met are set out in article 129 CRR. These requirements are also being amended in the course of the ongoing reform project. In many cases, the proposed rules spell out more precisely items that were left generally worded in the Covered Bond Directive.

OVERVIEW OF THE MOST SIGNIFICANT CHANGES IN ARTICLE 129 CRR



Source: DZ BANK Research

Transparency requirements to be deleted in CRR

Under the new article 129 CRR, only EUCB will be eligible for preferential treatment. This means that only European covered bonds can be made CRR-compliant. The transparency regulations currently in article 129(7) CRR can therefore be deleted without any impact on quality, since the EUCB rules already contain extended reporting requirements for covered bond issuers. The definitions of primary cover assets and substitution assets mentioned in the Directive are fleshed out in greater detail in the CRR, and the current wordings have been modified. EUCB eligible for preferential treatment may no longer contain external securitisations (such as mortgage-backed securities). Apart from this, the already familiar CRR regulations continue to apply to primary cover assets. This means that ship pfandbriefe remain eligible for preferential status under the CRR, provided the bonds meet all the other relevant conditions. The rules for substitute cover assets are fine-tuned in article 129. Claims on banks with credit quality step 1 may account for a maximum of 15 percent (10 percent for credit step 2) of the cover assets of covered bonds in circulation. The proportion of claims on banks may not exceed 15 percent in total.

New minimum overcollateralisation of 5 percent (2 percent in exceptional cases)

The collateral requirements are based on the nominals of cover assets and covered bonds. Article 129 CRR introduces a 5 percent overcollateralisation. The competent national supervisors may deviate from this new requirement, although the overcollateralisation may not amount to less than 2 percent of the calculated nominal even in exceptional cases. There are only a few exceptions in the covered bond frameworks of EEA member states which do not envisage a statutory minimum over-collateralisation. The German Pfandbrief Act requires an over-collateralisation of 2 percent in the context of a stressed present value calculation (but currently not at nominal value).

Transitional rules for CRR amendments

The proposed changes in article 129 CRR also include grandfathering rules for legacy bonds. Covered bonds that were issued prior to 31 December 2007 and are currently CRR-compliant will remain so until maturity. Covered bonds that are eligible for preferential capital treatment under the CRR and were issued prior to the CRR amendments will continue to be treated as CRR-compliant (and so eligible for preferential capital treatment), even if they do not meet the new overcollateralisation rules in the revised article 129.

Impact of reform package on the covered bond market and the Pfandbrief Act

Well drafted reform proposals

The reform proposals for new European covered bond standards are well drafted. The two-step hierarchy of definitions (definition of core elements for European covered bonds in a new directive and updated criteria in article 129 CRR coordinated with these) will afford a certain degree of flexibility, in that EUCB that fail to meet the CRR criteria can still be ascribed special status in a different way (possibly involving preferential regulatory treatment).

Third country bonds comparable to European covered bonds to be assessed

The draft Covered Bond Directive furthermore tasks the EU Commission, in cooperation with the EBA, with preparing a report for the European Parliament and Council on whether an equivalence regime could be introduced for third country covered bonds. A timeframe of three years is proposed for this report (starting one year after the new directive enter into force). The UCITS criteria that are presently still applicable require the issuer to be based within a member state of the EEA. Issuers from outside Europe are systematically excluded by this screening process and therefore only qualify for preferential regulatory treatment (in terms of their minimum liquidity ratio, for instance) in exceptional cases. Mutual recognition internationally of European covered bonds and their counterparts from third states would, in our opinion, constitute an important contribution to deepening the global covered bond market. European issuers could benefit if the globalisation of the covered bond market also leads to an expansion in their investor base.

Moderate overcollateralisation requirements appropriate

There are good reasons for formulating the catalogue of requirements for new EUCB in quite broad and general terms (principle based approach). This gives EU member states the necessary room for manoeuvre to embed the new criteria into their existing national legislation on covered bonds, without jeopardising the targeted harmonisation of European standards. Preferential treatment of covered bonds in terms of capital requirements will be tied to minimum overcollateralisation requirements going forward. The proposals of the European Commission stop short of those of the Basel Committee, which had suggested a minimum overcollateralisation of 10 percent. However, in our view we need to be cautious about standardised overcollateralisation requirements. A 10 percent limit might be far too high for high-quality portfolios of owner-occupied housing loans or quickly prove insufficient for cover pools with greater credit risk (due to the nature of the claims or country risk involved). The risk profiles of covered bond programmes moreover change over time. Regulatory requirements might be too lax in certain economic cycles, too strict in others. Thus, risk buffers that appear prudent today could in time turn out to be inadequate in one or the other direction. We see the moderate overcollateralisation requirements proposed by the EU Commission in the amended article 129 CRR as a kind of judgement of Solomon: they create a certain risk buffer, but one that is not too draconian and still allows national regulators a little leeway to the downside.

Greater emphasis on special public supervision one of the most important points

The draft Directive stresses the importance of special public oversight for covered bonds to a greater extent than the old UCITS criteria, which merely required public supervision of covered bonds to be established in legislation, without further specifying which tasks the competent authorities would be expected to perform. This gap is now being closed with what, in the context of the Directive as whole, are quite detailed requirements for covered bond public supervision. We consider this to be one of the most important qualitative improvements in the ongoing reform process. The planned lists and information that regulatory authorities will be required to publish going forward are especially helpful, since they provide investors with an official statement on which covered bonds meet the new EUCB criteria and therefore also the regulatory requirements for preferential treatment.

Reporting should preferably also include information on soft bullets

The new rules on covered bonds with the option to defer maturity date are also important, even if they do not apply to German Pfandbriefe since so far, no pfandbriefe have been issued in Germany with such an option. These requirements primarily concern the triggers for an extension and regrettably stop short of the proposals put forward by the EBA. Whether the applicable terms in the event of an extension will have to be included in the investor information in future remains unclear. In any event the draft Directive does not explicitly call for this. The inclusion of the duration of a potential maturity extension and specification of the amount of the coupon to be paid during that time would constitute key information we feel issuers could provide in a standardised format with little difficulty.

Probably only marginal adjustment requirements in the Pfandbrief Act

The new European framework for covered bonds is unlikely to lead to any major adjustment requirements in the German Pfandbrief Act. The statutory transparency rules may have to be reviewed once again. In addition, it is likely that a formal review of overcollateralisation requirements will be needed in order for a nominal minimum over-collateralisation of 2 percent to be formally anchored in law. Rules in the Pfandbrief Act concerning the eligibility of cover assets from outside the EEA are broader in their scope than those in the draft directive. In conjunction with a potential reorganisation of the geographical eligibility of covered bonds, the UK's exit from the EU may in any case lead to some adjustment requirements in the Pfandbrief Act. By and large, however, the Pfandbrief act is already likely to meet many requirements which are listed in the draft directive, including the figure (marked as optional) of a cover pool monitor or an independent cover pool administrator. The rules applying to the specific public regulator of pfandbriefe are already very detailed in German law. In this respect, the Pfandbrief Act probably gave the idea for the European covered bond framework. In the following section, we describe in detail the current rules under the Pfandbrief Act.

LEGAL FRAMEWORK

Legal framework a major quality feature

We share the view that the strength of the statutory framework underpinning German pfandbriefe is a crucial quality attribute. The Pfandbrief Act came into force in July 2005 and there have been a total of 14 amendments to the Act in its first ten years. Apart from editorial corrections and adjustments in European legislation, the content of the Pfandbrief Act has also continued to evolve steadily. The last changes to the Pfandbrief Act came into force on 3 January 2018, although they did not lead to any changes in substance, merely to the implementation of small technical adjustments in conjunction with the reference to the definition of derivatives in the German Banking Act. We would like to summarise the most important provisions of the Pfandbrief Act (PfandBG) in this section. This overview is based largely on Otmar Stöcker's article "Grundzüge des Pfandbriefrechts und des Refinanzierungsregisters" in the Bankrechts-Handbuch (2011). Our study also incorporates the changes made to the Pfandbrief Act since 2011 based on the relevant Bundestag publications. The Association of German Pfandbrief Banks (vdp) also makes the documents concerning revisions to the Pfandbrief Act available on its website; they provide interesting insights into the reasoning behind the modifications of Germany's pfandbrief legislation. A summary of these documents can also be found in a study published by the vdp, "10 Years of Pfandbrief Act – Compilation of texts and materials" published in 2015 (German original "10 Jahre Pfandbriefgesetz – Textsammlung und Materialien"), which is a direct continuation of the vdp's publication "The Pfandbrief Act: Text of the Act and materials" published in 2005 (German original "Das Pfandbriefgesetz: Gesetzestext und Materialien"). Otmar Stöcker's article "Pfandbriefe und Gedeckte Bankschuldverschreibungen (part 1)" in issue 14/2018 of the Europäische Zeitschrift für Wirtschaftsrecht (EuZW) sheds light on the historical background to the German Pfandbrief legislation and above all outlines the continuous improvements to German Pfandbrief law up to 2015. The author expects the constant round of amendments to continue. Changes in the rules and conditions in European law will always call for adjustments to the Pfandbrief Act. In addition, the aim is to preserve the benchmark status of the Pfandbrief Act among worldwide covered bond frameworks. Competitors are not being idle either and work is ongoing in other countries at constantly improving the legal framework for covered bonds.

Pfandbrief licence

Requirements to quality for a pfandbrief licence

Since 2005, the inclusion of pfandbrief business as banking business within the meaning of the German Banking Act (Kreditwesengesetz) enables all credit institutions which are authorised to engage in banking activities in principle to issue pfandbriefe. However, they need to apply to the BaFin for a licence to issue pfandbriefe. A pfandbrief licence will be issued providing the credit institution in question meets specific minimum requirements. These include the following:

Regular pfandbrief issues

- The credit institution must have a licence to engage in pfandbrief business. Pfandbrief issuers must demonstrate to the BaFin through a business plan that they intend to engage in pfandbrief business regularly and on a sustained basis.

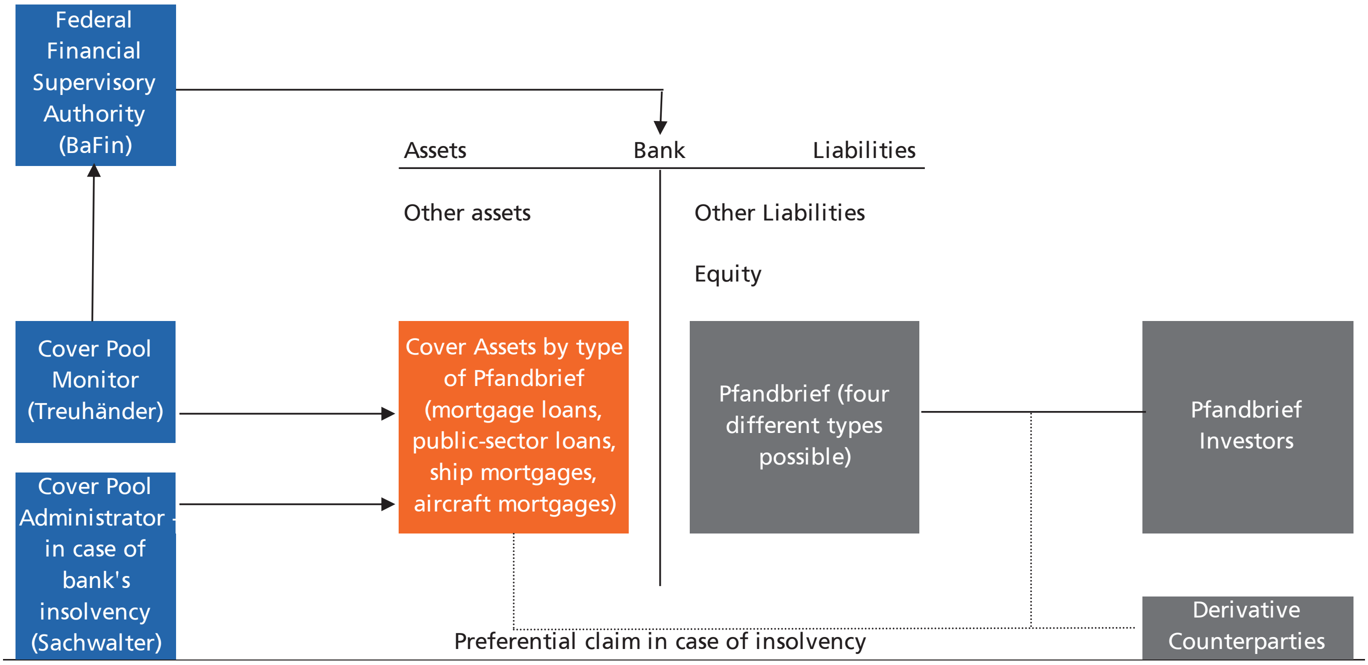
Minimum capital and suitable risk management

- The bank's core capital must be of at least 25 million euros
- The pfandbrief bank must have a suitable risk management for its pfandbrief business. The credit institution's organisational structure and resources must be geared to the pfandbrief business.

Licence can also be revoked

A pfandbrief licence once issued can also be revoked. However, this would only apply if a bank no longer met the quality requirements under the Pfandbrief Act or if the pfandbrief bank had not issued any more pfandbriefe for two years and there was no prospect of a resumption of the pfandbrief business on a sustained basis within the next six months. If a licence is revoked, the BaFin can order the run-off of the cover pools by an administrator.

GENERAL STRUCTURE OF A GERMAN COVERED BOND (PFANDBRIEF)



Source: DZ BANK Research

Four types of pfandbriefe each with their own specific cover requirements

There are four different categories of pfandbrief under current pfandbrief legislation: mortgage pfandbriefe, public sector pfandbriefe, ship pfandbriefe and aircraft pfandbriefe. The pfandbrief licence can be restricted by the BaFin to specific types of pfandbrief. The Pfandbrief Act does not stipulate a minimum issuance volume in terms of the total pfandbriefe to be issued. Nor does the Pfandbrief Act explicitly limit the outstanding volume of a bank's pfandbriefe. Instead, an implicit ceiling is set by reference to the bank's assets, in other words, a pfandbrief bank's total assets which are eligible as cover assets. In contrast, covered bond legislation in many other countries – above all outside Europe – specifies a ceiling for covered bonds. This reflects concerns that the growing practice of reserving bank assets (known as asset encumbrance) for the benefit of specific creditor groups could hollow out bank balance sheets. This would increase the risk of losses for unsecured bank creditors in the event of default. However, covered bonds are just one of a bank's activities where providing underlying collateral is standard practice. The article entitled "Asset Encumbrance and German Pfandbriefe" in the vdp publication "The Pfandbrief 2012/2013 Facts and Figures about Europe's Covered Bond Benchmark" shows in detail that, alongside covered bonds, central bank funding operations, derivatives activities and secured money-market transactions (repos) also contribute to asset encumbrance. The conflict of interest which exists between unsecured and secured bank creditors is moreover inherent to the system and also stems from the intended protection given to pfandbrief creditors in the Pfandbrief Act. Secured refinancing instruments such as pfandbriefe have provided a way for banks to obtain liquidity, precisely in times of crisis. The vdp article therefore concludes that a rigid issuance limit for pfandbriefe is not appropriate.

Risk management requirements

Actively managing the risk inherent in a credit institution and its cover pool(s) is one of the most important elements in the protection of pfandbrief creditors. In light of the fact that the risks involved in pfandbrief operations can differ from the general risks relating to other banking business, the German legislator has defined specific requirements for the risk management of pfandbrief banks. In accordance with these requirements, each pfandbrief institution must have a risk management system suitable for pfandbrief operations. The risk management system must ensure that all the risks associated with the pfandbrief business such as default risks, interest and exchange-rate risks, as well as operational and liquidity risks can be identified, evaluated, managed and monitored. The risk management system must satisfy a number of requirements, including the following:

Limit system and reduction of risks if necessary

- limit the concentration of risks through a limit system;
- establish a procedure which ensures a risk is reduced when a particular risk increases and guarantees the timely notification of decisions makers;

Flexibility and regular review

- offer the flexibility to respond to changing conditions and also be subject to at least one annual review;
- regular presentation (at least quarterly) of a risk report to the Management Board, and
- clear and detailed documentation on the risk management system.

General cover requirements and maturity-matching rules

Separate cover register for each pfandbrief category

All assets used as cover for a bank's outstanding pfandbriefe shall be recorded in a separate cover register for the respective pfandbrief type. This makes it possible to identify clearly the assets belonging to the relevant cover pool. A dedicated administrative order (cover register statutory order or Deckungsregisterverordnung) specifies the details of the required form and contents of this cover register and the information to be entered. The cover register was introduced in German pfandbrief law with the Mortgage Bank Act of 1899. The act also stipulated that pfandbrief creditors have a preferential claim in relation to the assets recorded in the cover register in the event of issuer default. The option of a direct lien over the mortgage, such as forerunners of the then Mortgage Bank Act had provided, was rejected. There were practical reasons for this: issuing mortgage certificates for all cover pool loans would have been too laborious. Moreover, at the turn of the 20th century, Germany's land registry was not yet sufficiently or comprehensively developed to serve as an alternative to registered land charges.

Nominal and net present-value cover with minimum over-collateralisation of 2 percent

The current Pfandbrief Act stipulates that the respective aggregate volume of a bank's outstanding pfandbriefe per type must at all times be covered by assets at least equal to their nominal and net present value. The calculation of this cover based on the net present value of the pfandbriefe in relation to the cover assets is subject to specific regulatory requirements defined in the Pfandbrief Net Present Value Regulation (Pfandbrief-Barwertverordnung). The Regulation requires pfandbrief banks to ensure that the net present value cover is maintained even in stress scenarios. In addition, the pfandbrief issuer must also maintain an over-collateralisation of 2 percent of the volume outstanding of pfandbriefe (including for stressed net present values).

Stress tests under Pfandbrief law

The Pfandbrief Act requires pfandbrief issuers to test the intrinsic value of their cover pools through weekly stress tests. This is intended to ensure that the cover pool's net present value continues to provide cover for the outstanding pfandbriefe even when the markets are very volatile.

The Net Present Value Regulation (Pfandbrief-Barwertverordnung) stipulates that the pfandbrief bank must also ensure that the outstanding pfandbriefe remain covered in net present-value terms even in the event of interest and exchange-rate changes. The cover assets must be sufficient to guarantee a continuing minimum net present value over-collateralisation of 2 percent.

The stress scenarios incorporate an interest-rate component and an exchange-rate component. For both components, the issuer has the discretion to choose either a static or a dynamic test. In a static test, the yield curve used to discount the cover assets and outstanding pfandbriefe is subjected to a two hundred and fifty basis-point parallel shift. In the case of the static exchange-rate stress test, the Net Present Value Regulation specifies set percentage premiums and discounts for potential currencies. In contrast to the set requirements for static tests, in the dynamic test, the stress figures for the shift in the curve and the premiums/discounts applicable to exchange rates are determined by reference to the recorded over the last two hundred and fifty trading days; however, the curve must always be shifted by at least one hundred basis points.

Pfandbrief banks can also use their own risk model for the calculation of the stress tests, providing the model has been checked in advance by the BaFin and deemed satisfactory.

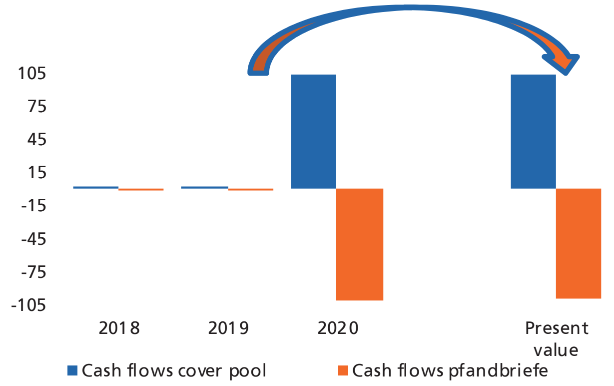
Source: DZ BANK Research based on the Pfandbrief-Barwertverordnung

Net present value calculation makes it easier to adhere to statutory over-collateralisation

In our view, the calculation rules applying to the risk-adjusted net present value still appear to be working and therefore help make pfandbriefe a safe investment for holders. However, the current calculation rules for net present value and risk-adjusted net present value under pfandbrief legislation do not cancel out the effect arising from the fact that the over-collateralisation requirement is tied to the net present value calculation under a stressed scenario. In view of the link between the statutory over-collateralisation and the net present value calculation (under a stress scenario), it is slightly easier for pfandbrief banks to meet coverage requirements in relation to a straightforward nominal value calculation. Moody's criticism regarding the current rules on net present value calculations under German pfandbrief legislation does not go far enough (see Moody’s study "Low Interest Rates Limit Protection Offered by Stressed Present Value OC Requirement" of 13 March 2017). What it should say is that the statutory over-collateralisation ratios are not only based on a net present value calculation under stressed scenario, but also that a similarly high over-collateralisation to nominal value should be required. This should not pose all too great a problem for the pfandbrief banks. In any case, as a rule, the rating agencies expect over-collateralisation ratios which are above the statutory 2 percent.

MARGIN ON LENDING BUSINESS MAY LEAD TO HIGHER OVER-COLLATERALISATION UNDER THE NET PRESENT VALUE CALCULATION THAN UNDER THE NOMINAL VALUE CALCULATION

A SIMPLE MATHEMATICAL EXAMPLE



Source: DZ BANK Research

	Cash flows cover pool	Cash flows pfandbriefe
2018	2	-1.25
2019	2	-1.25
2020	102	-101.25
	Cover pool	**Pfandbriefe**
Nominal value	100.0	100.0
Over-collateralisation (Nominal value)	0.0 percent	
Present value	103.0	-100.7
Over-collateralisation (present value)	2.2 percent	

Source: DZ BANK Research

Over-collateralisation fully at the disposal of pfandbrief creditors

Should risks arise for the intrinsic value of the cover pool, BaFin can impose higher individual over-collateralisation requirements on the respective pfandbrief bank. Through this provision, the BaFin can, if necessary, counteract the threat of a deterioration in the cover pool. The provision can have the same effect as an issue ban for a pfandbrief bank. However, in our view, compared with an actual issue ban, the BaFin's power to set a specific over-collateralisation level provides better protection for the interests of pfandbrief creditors. In addition, the Pfandbrief Act makes it clear that pfandbrief creditors shall have a preferential claims over any assets over and above the statutory over-collateralisation or over-collateralisation required by BaFin in the event of the insolvency of the pfandbrief bank.

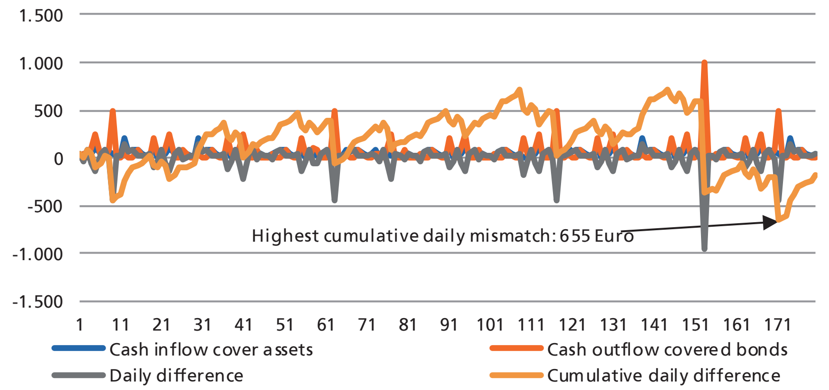
Over-collateralisation in the form of especially liquid assets

The statutory over-collateralisation shall be held in the form of liquid cover assets (statutory or minimum over-collateralisation), which are subject to specific legal requirements. The minimum over-collateralisation (sichernde Überdeckung) can be held in the form of a deposit with the Bundesbank for example or with the ECB or any other European central bank of a member state of the EU. Other eligible assets include sovereign bonds issued by member states of the EEA or deposits with appropriate credit institutions provided they have a Level 1 rating as defined by the European Bank Capital Requirements Regulation. As an exception, BaFin may allow to use claims against banks with a Level 2 rating in order to avoid concentration risks. This regulation is intended to ensure that the minimum over-collateralisation is held in as liquid a form as possible so that the cover assets are sufficient for the cover pool to meet its payment obligations even immediately after a separation from the pfandbrief bank.

Ability to make next 180 days' payments on pfandbriefe must be guaranteed

In addition, in order to safeguard the liquidity of the cover pool immediately after an insolvency of the pfandbrief bank, the Pfandbrief Act requires that the issuer must compare and check, accurately to the day, the next 180 days' claims maturing under recorded cover assets and maturing liabilities under outstanding pfandbriefe. The cumulative daily difference arising shall be calculated for each individual day. The biggest liquidity shortfall identified in this manner must be covered by a reserve of liquid cover assets such as cash deposits or government bonds. The following chart shows an example to illustrate the liquidity cover requirements in the Pfandbrief Act. The biggest cumulative daily difference (light orange line and marked with an arrow) in this example occurs towards the end of the 180-day period and amounts to six hundred and fifty five euros. This would be the amount needed in the cover pool in the form of liquid assets.

ILLUSTRATIVE CALCULATION OF 180 DAYS LIQUIDITY NEEDS
VERTICAL AXIS: EURO, HORIZONTAL AXIS: TIME IN DAYS



Source: DZ BANK Research

Combination of net present value test and 180-day liquidity rule

The matching requirements in the Pfandbrief Act are a combination of the stressed net present value of the over-collateralisation (including minimum over-collateralisation of 2 percent) and the 180-days liquidity rule. The Pfandbrief Act does not insist on full matching between the cover pool cash flows and the outstanding pfandbriefe. The issue of matching maturities is nothing new; it was already discussed at the time of the introduction of the Mortgage Bank Act in 1899. The mortgage lender had no general termination right in the case of amortising loans. In return, the mortgagee's cancellation right (prepayment risk) could be excluded for a maximum of ten years in the terms of the contract. At the same time, a mortgage bank was allowed to agree an interest-only period of ten years maximum with the borrower. In the case of pfandbrief investors, mortgage banks were allowed to waive repayment of the pfandbriefe for ten years maximum. The rule prohibiting pfandbrief issuers from granting bond creditors a call option (which applies to this day) also dates back from this period. The Mortgage Bank Act of 1899 also did not require strict maturity matching between the cover pool and the outstanding pfandbriefe. Instead, the legislator relied on the pfandbrief issuers to act in their own interest (and therefore also in the interest of pfandbrief creditors) by ensuring matching cash flows.

Other cover assets on top of ordinary cover

As mentioned earlier, the Pfandbrief Act requires the issuer to hold the required 2 percent minimum over-collateralisation and reserves for payment obligations arising during the next 180 days, but not provided for through the anticipated cash inflows from the cover assets, in the form of especially liquid assets. The Pfandbrief Act also defines specific rules for each pfandbrief type, setting out which assets are appropriate as collateral for the pfandbriefe (ordinary or regular cover), and we discuss these in detail below (see page 41). However, in order to give the pfandbrief banks more flexibility in managing their cover pools, the Pfandbrief Act also allows them to include further cover assets in the pfandbrief cover register, albeit on a limited scale. In this respect, however, the legislator also appears to have had in mind the liquidity of the cover pool over a longer horizon. The eligible further cover assets are slightly less liquid in nature than the standards defined for minimum over-collateralisation assets. However, they appear to be suited to the task of improving the cover pool liquidity in the event of the insolvency of the pfandbrief bank. Claims eligible to serve as further cover assets are identical for all four pfandbrief types, although their percentage in relation to the outstanding volume of covered bonds varies (see also the article "Further Cover Assets as a Necessary Component of Pfandbrief Cover Pools" in the vdp publication "The Pfandbrief

2012/2013 Facts and Figures about Europe's Covered Bond Benchmark"). In principle, claims defined as eligible for use as further cover assets include the following:

Claims against central banks, credit institutions ...

- Claims against the ECB, the Bundesbank or other central banks of EU member states and claims against suitable credit institutions. Claims against one and the same credit institution may not exceed 2 percent of the total volume of outstanding pfandbriefe.

... and public sector debtors

- For mortgage, ship and aircraft pfandbriefe: claims which would quality as ordinary cover for public sector pfandbriefe.

Derivatives with suitable counterparties

- Hedging transactions involving derivatives which cushion against changes in the value of the cover pool through fluctuations in interest and exchange rates can be used as further cover assets and be included in the insolvency-proof pfandbrief register. However, the Pfandbrief Act restricts the use of derivatives for cover purposes. Based on the net present value of the derivatives, the share of the pfandbrief bank's claims under the derivative transactions included in the cover assets and the share of the liabilities resulting from the derivative transactions included in the cover pool in relation to outstanding pfandbriefe must not exceed 12 percent. However, this 12 percent ceiling does not take into account derivatives used to hedge exchange-rate positions. All derivatives assigned to the cover pool are subject to special requirements regarding the underlying contractual terms. Among other things, the insolvency of the pfandbrief bank may not trigger the early termination of the derivatives.

EBA sees relaxing of CRR rating requirements as justified

The EBA announced in April 2017 that it regards the introduction of a partial waiver of rating requirements for claims against banks in Germany included in cover pools as justified. Article 129 (1c) CRR stipulates that exposures to banks with a maturity exceeding 100 days in the cover pool must not exceed 15 percent of the nominal amount of outstanding covered bonds and that these banks must at least qualify for credit quality step CQS 1 (at least AA-). If these requirements are not met, then the covered bonds in question of European institutions cannot enjoy preferential treatment in terms of risk weight under CRR. There are currently not many banks with such a high CQS. Consequently, there could be a concentration risk in the cover pool if pfandbrief banks had to be restricted for their other cover assets to just a few banks with a high CQS. After consulting the EBA, the competent national supervisory authorities have the option to waive rating requirements. The minimum rating can be reduced from CQS 1 to CQS 2 (at least A-), and then allow exposures to these banks to be a maximum of 10 percent instead of 15 percent of the outstanding covered bonds of the issuing institution. At the end of 2014, the BaFin had informed the EBA of its intention to use the waiver.

Share of additional cover assets regulated by law

In the case of mortgage, ship and aircraft pfandbriefe, the further cover assets recorded in the cover register may not exceed 20 percent of the volume outstanding of each type of outstanding pfandbrief. Claims against the ECB, central banks of EU member states and bonds of suitable credit institutions must not thereby exceed 10 percent. In the case of mortgage, ship and aircraft pfandbriefe, moreover, issuers may include in their cover pool up to 20 percent of assets which are eligible as regular cover for public sector pfandbriefe, whereby the claims mentioned above must be included in the calculation. In the case of public sector pfandbriefe, the share of further cover assets is generally limited to 10 percent of the outstanding volume of the public sector pfandbriefe. However, claims from derivatives transactions do not count towards these ceilings, irrespective of pfandbrief type. They are subject to a separate 12 percent limit as described previously.

Preferential right of pfandbrief creditor and insolvency-proof trust

Pfandbrief creditors have unconditional preferential claim over cover assets in the event of issuer's insolvency

The cover assets are intended to be unrestrictedly available to satisfy the claims of the pfandbrief investors in the event of the issuer's insolvency (insolvency-proof cover pool). In the case of public sector and mortgage pfandbriefe, the combined value of cover assets which do not guarantee the priority of pfandbrief creditors in insolvency may not exceed 10 percent of the total cover assets. In the case of ship and aircraft pfandbriefe, the ceiling is 20 percent.

Threat of enforcement action in the case of foreign cover assets

Issues in the context of the preferential treatment of pfandbrief creditors in the event of insolvency can arise above all in the international credit business. Our understanding is that all claims on borrowers domiciled in a member state of the EEA, can be regarded as guaranteeing the prior rights of pfandbrief creditors in a bankruptcy scenario in view of standardised European regulations. The EU directive on the reorganisation and winding-up of credit institutions (Winding-up Directive) means that, in the event of the insolvency of a pfandbrief bank, German insolvency legislation will also be recognised in the member states of the EEA. The preferential claim of pfandbrief creditors on cover assets located within the EEA is protected by the fact that there is no threat of secondary insolvency proceedings in a third country. In the case of secondary insolvency proceedings under foreign legislation, there would be no guarantee that cover assets located in a third country would be left out from these insolvency proceedings. It is therefore important to exercise greater caution in the case of cover assets located outside the European Economic Area. In order to preserve the expected equivalent security of the pfandbrief creditors' recourse over cover assets, the directive requires the provision of an additional contractual security in accordance with the corresponding statutory requirements in the third country in question with respect to claims on non-EEA-domiciled debtors and with regard to collateral in the form of real property or equivalent mortgage rights and to ships and aircraft located outside the EEA. This contractual assurance can, for example, provide for the appointment of a double trustee for the pfandbrief creditors while also preserving the interests of the pfandbrief bank. In a crisis situation, the trustee of the foreign assets shall guarantee the protection of the preferential rights of pfandbrief creditors on the foreign cover assets, notwithstanding foreign recognition of German measures under winding-up legislation.

Trust model ensures preferential rights of pfandbrief creditors

Potential restrictions applying to cover assets outside the EEA shall apply if the pfandbrief bank has failed to ensure that these cover assets are insolvency proof vis-à-vis the pfandbrief creditors through suitable measures. Through experience, approaches have evolved such as the model of the double trustee mentioned above. Moody's comments on these measures which apply to cover assets located in Japan, Canada, the US and Switzerland in its Special Comment of 22 July 2014, "Structural Protection Mechanisms for Non-EEA Assets in German Cover Pools". According to the agency, the trust structures used by banks for US and Swiss cover assets are suitable for limiting the potential risks to pfandbrief creditors in the event of the insolvency of the bank and therefore for guaranteeing their preferential treatment. Moody's also finished the legal analysis on cover assets located in Japan (see Moody's press release "Moody's updates on Japanese assets in German cover pools", published 15. August 2016). Also this trust structure does in Moody's view ensure the priority claim of pfandbrief creditors regarding Japanese cover assets in the event of an insolvency of the pfandbrief issuer.

Trust model for cover assets

The Pfandbrief Act generally gives issuers the option for domestic and international business to include loans and mortgages held in trust by third parties to be used as collateral. This assumes that the assets meet the general requirements of the Pfandbrief Act. Before assets held in trust can be used as collateral for pfandbriefe, it is important to ensure that the pfandbrief bank has unrestricted access to these assets (insolvency-proof trust) in the event of the trustee's insolvency. An insolvency-proof trust can be created for example by entering assets in a refinancing register. Credit institutions can use the refinancing register, which is regulated in the German Banking Act (Kreditwesengesetz) and in the Refinancing Register Ordinance (Refinanzierungsregisterverordnung), to assign mortgage-backed loans to pfandbrief banks while continuing to administer the loans or mortgages in question and retain them on their balance sheet.

German Banking Act borrows from the Pfandbrief Act

Provisions for the refinancing register in the German Banking Act are closely based on the wording of the Pfandbrief Act. The trustee credit institution (or refinancing company) shall properly maintain the refinancing register in which the assets and/or mortgages are recorded for the benefit of the pfandbrief bank. A specially appointed administrator shall audit the proper management of the refinancing register. In the event of the insolvency of the refinancing institution, the German financial services regulator BaFin shall appoint an administrator who will manage the refinancing register independently of the insolvency administrator. If necessary, BaFin can even appoint this administrator who will manage the refinancing register before insolvency proceedings are initiated. Both the terminology and the working used in the German Banking Act provisions are very similar to those in the Pfandbrief Act.

Refinancing register creates an insolvency-proof trust

Although recording of claims and mortgages in the refinancing register prevents these assets from falling into the refinancing institution's general bankrupt estate (insolvency-proof trust), the beneficiary (the pfandbrief bank) and the trustee credit institution must still conclude a formal agreement (or contract) which substantiates the pfandbrief bank's claims over the assets. This can be done for example within an agreement between syndicating banks. Entry of the assets in the refinancing register is not sufficient on its own. The refinancing company forwards an excerpt of the refinancing register to the beneficiary, which proves the beneficiary's title to claim the assets. We see three aspects of this situation as particularly important:

Contract required

» The agreement between the pfandbrief bank and the refinancing institution must be legally binding and effective. Rating agencies have warned that they will be checking this point as part of their analyses (see for example S&P "German Refinancing Registers Could Help Source Assets for Pfandbriefe", October 2007).

Assets/collateral must be assignable

» The contracts underlying claims on customers (such as loan contracts) must specifically permit the sale and assignment of the claims and, where necessary, the associated collateral (mortgages in the case of property loans).

Third-party objection rights preserved

» The recording of assets in the refinancing register does not restrict the right of third parties to object and appeal against the registered claims or mortgage securities. As we understand it, one example of this would be the undisclosed (silent) assignment of the loan claims. In this case, the borrower shall not be informed of the transfer of the loan to the pfandbrief bank (at least not immediately). The rights of the borrower, to offset mutual claims against its loan liabilities in the event of the trustee credit institution's insolvency for example, are not affected by the recording of the relevant claim in the refinancing register (see for example Fitch's Special Report "The Refinancing Register in German Structured Finance Transactions", December 2011).

Pfandbrief and refinancing register closely linked

The German Banking Act makes it clear that, even in the case of syndicated loans where several banks take only parts of the loan amount and the borrower knows about this arrangement between the banks when the loan agreement is signed (anfänglich offene

Konsortialfinanzierung), these loans are subject to the regulations applying to the refinancing register. The provision in the German Banking Act moreover ensures that cover assets recorded in a refinancing register for the benefit of a pfandbrief bank can only be deleted from the register with the agreement of the bank and that of the pfandbrief cover pool monitor (as independent controller of the pfandbrief bank's cover register). The pfandbrief bank is also authorised at any time to demand a statement of the assets recorded for its account in the funding register from the administrator of the funding register. The information right is intended to put the pfandbrief bank in a position to verify the correctness of entries effectively.

Greater complexity

In contrast to entries in the land register, the refinancing register is not open for public inspection. Pfandbrief creditors have to put their faith in the diligence of the refinancing institution, although the orderly management of the register by the administrator appointed by BaFin is subject to regular monitoring. All in all, the complexity of the transaction structure of a pfandbrief programme is increased by its inclusion in the refinancing register. From the pfandbrief investor's perspective and from the point of view of credit aspects, we believe that the use of a refinancing register also creates a weak link with the refinancing institution's credit rating.

Pfandbrief banks as refinancing platform

Refinancing registers offer several application options in the context of the pfandbrief business. Commercial banks which do not have a pfandbrief licence can use the mechanism to make cover assets available for pfandbrief banks and thereby benefit indirectly from cheap funding via pfandbriefe, assuming pfandbrief banks offer their services to other credit institutions as refinancing platforms in this way (pooling model).

Simplifying syndicated loan business

In addition, a refinancing register permits several pfandbrief banks to use syndicated loans - including subsequently syndicated loans - to constitute the cover pool for their respective pfandbrief programs, dependent on the risk ratio taken on. The advantage of using the refinancing register route in these examples is that it postpones or even completely obviates the need for any costly and time-consuming formal amendment of land registers to show a transfer of liens on properties and notification of borrowers to a later date (e.g. if this becomes necessary through the insolvency of the refinancing institution).

Structured covered bonds under German law

Another possible application for refinancing registers would be issues of structured covered bonds under German law. The transaction structure could provide for a credit institution to assign assets and associated collateral to a special-purpose vehicle (SPV). This structure would use a refinancing register to establish an insolvency-proof trust. The assets would initially remain on a bank's balance sheet, but the SPV would have the right to separate out the assets recorded in the refinancing register in the event of a bank's insolvency. As in the UK covered bond model, the SPV would guarantee bondholders' claims using the cover assets assigned to it by the issuing bank. The issuer of the structured covered bonds would have greater freedom in the choice of potential cover assets since the Pfandbrief Act's strict criteria would not apply to structured covered bonds.

Special requirements for ordinary cover assets for each pfandbrief type

Public sector pfandbriefe

Claims on local and regional governments

Germany's Pfandbrief Act only permits claims on sovereigns and local and regional governments (sub-sovereigns) or claims on public-law institutions or corporations to be used to provide cover for public sector pfandbriefe if they are either subject to a Maintenance Obligation (Anstaltslast) or Liability Obligation (Gewährträgerhaftung) or explicitly guaranteed by a sub-sovereign entity. Examples of this latter category are claims on public sector development banks or bonds from and monetary claims on public sector companies which are a public-law institution and benefit from Liability Obligation (Gewährträgerhaftung). The Pfandbrief Act lists detailed requirements for potential ordinary cover assets for public sector pfandbriefe; they can be summarised as follows:

Detailed requirements concerning borrowers

- Claims on domestic sovereign and sub-sovereign governments or public-law institutions authorised to charge fees, raise levies or impose other taxes.
- Claims on member states of the EU or of the EEA and/or their central banks and claims on regional and local authorities from member states of the European Union and of the EEA. Depending on the outcome of Brexit negotiations, the Pfandbrief Act may have to be amended in order for claims on UK public bodies which are currently eligible as cover assets to remain eligible as collateral in the cover pools of German pfandbriefe even after Brexit.
- Claims on the United States of America, Japan, Switzerland and Canada or their central banks, on regional and local governments, provided their qualify for Credit Quality Level 1 of the EU Capital Requirements Regulation and Directive (CRR/CRD).
- Claims on the ECB and other multilateral development banks and international organisations listed in the EU Capital Requirements Regulation and Directive (CRR/CRD).
- Public sector entities of an EU or EEA member state.
- Public sector entities within the meaning of the EU Capital Requirements Regulation and Directive (CRD/CRR) domiciled in the United States of America, Japan, Switzerland and Canada, provided they qualify for Credit Quality Step 1 of the EU Banking directive.
- Claims guaranteed by any of the above states or sub-sovereign entities.
- Export finance credits benefiting from a guarantee from a public sector institution or government.

Bonds including collective action clauses are eligible as cover

The Treaty Establishing the European Stability Mechanism (ESM treaty) requires the inclusion of collective action clauses (CAC) in the terms and conditions of bonds issued by ESM-treaty signatory states. The documentation governing the sovereign bonds of other countries also includes similar clauses. They allow a retroactive modification of bond terms and conditions (T&Cs), subject to the consent of the majority of the bondholders affected. The Pfandbrief Act makes it clear that sovereign bonds featuring provisions of this kind qualify for use as cover (whether as ordinary cover as in the case of public sector pfandbriefe or as further cover assets for all other pfandbrief categories).

SME loans and publicly guaranteed export finance as cover for public sector pfandbriefe

Although unsecured loans to small and midsize enterprises (SMEs) do not qualify as pfandbrief cover as-sets. Issuers have the option, however, to obtain a guarantee from a public entity (such as KfW) in relation to SME loans; the resulting guaranteed loans satisfy the defined requirements for cover assets backing public sector pfandbriefe. In the same connection, there is another way - frequently used in the past - that allows issuers to include loans relating to SME exports in the cover pool for their public sector pfandbriefe. The precondition is that these export finance arrangements must be guaranteed by, say, Euler Hermes. The use of these guarantees could also permit the inclusion of other assets such as for example aircraft loans or project finance in public sector pfandbrief cover pools in our opinion. In conjunction with Hermes guarantees, serious discussions have been ongoing for some years between the legislator, the regulatory authority, the vdp as the representative of the pfandbrief banks and Euler Hermes. One result of these discussions is that the export credit insurer has been offering a special product for pfandbrief banks since 1 December 2017. This new product is aimed at securing the insolvency pre-emption rights of pfandbrief holders even for claims which are domiciled outside the European Economic Areas (see vdp Infobrief Q1 2018).

Source: DZ BANK Research

Export finance credits with a public sector guarantee in non-European countries

Export finance credits located outside the EU and guaranteed by a public sector default guarantee must be factored in the 10 percent cap for loans which do not enjoy the absolute guaranteed preferential claim of pfandbrief creditors in the event of the insolvency of the pfandbrief bank, if the risk of secondary insolvency proceedings over the pfandbrief bank's assets in the third country in question cannot be ruled out with certainty. However, if the public export credit insurance guarantees not only the credit default risk of the export finance debtor but also the preferential claim of pfandbrief creditors on these loans in the event of the insolvency of the pfandbrief bank, then the loans do not count against the 10 percent cap.

Pfandbrief Act lacks rating rules for public sector debtors

The Pfandbrief Act allows claims on the public sector entities listed above to be fully recognised in cover calculations, irrespective of the debtor's or guarantor's credit rating. The vdp's member institutions have agreed standards for the recognition of the credit quality of public sector entities in pfandbrief cover calculation, which go beyond the requirements of the Pfandbrief Act. The vdp calls this standardised procedure the "vdp Credit Quality Differentiation Model for States" (or vdp Credit Quality Differentiation Model). When including claims on member states of the EEA and their sub-sovereign entities, vdp member institutions factor rating-based discounts into their cover calculation (a more detailed presentation can be found in the article "The vdp credit quality differentiation model" in the vdp publication "Pfandbrief 2013/2014 Facts and Figures about Europe's Covered Bond Benchmark"). The valuation discounts are updated on an ongoing basis. The currently used valuation discounts are shown in the next table.

RATING-BASED VALUATION DISCOUNTS/HAIRCUTS IN THE VDP CREDIT QUALITY DIFFERENTIATION MODEL: HARDLY ANY CHANGES SINCE 2012

S&P Rating or equivalent rating from Fitch or Moody's	Haircut used until 31 December 2013	Haircut used until 31 December 2014	Haircut used until 31 December 2015	Haircut used until 31 December 2017	Haircut used since 1 January 2018
AAA	0%	0%	0%	0%	0%
AA+	0%	0%	0%	0%	0%
AA	0%	0%	0%	0%	0%
AA-	0%	0%	0%	0%	0%
A+	0%	0%	0%	0%	0%
A	0%	0%	0%	0%	0%
A-	0%	0%	0%	0%	0%
BBB+	0%	0%	0%	0%	0%
BBB	0%	0%	0%	0%	0%
BBB-	0%	0%	0%	0%	0%
BB+	9%	10%	11%	9%	8%
BB	11%	12%	13%	11%	11%
BB-	14%	15%	16%	14%	13%
B+	18%	19%	20%	18%	17%
B	21%	23%	24%	21%	20%
B-	26%	27%	28%	26%	24%
CCC	36%	37%	38%	36%	34%
CC	55%	56%	57%	55%	54%
C	80%	81%	81%	80%	79%
D	100%	100%	100%	100%	100%

Source: vdp, presentation DZ BANK Research, as of July 2018

Mortgage pfandbriefe

Mortgage-backed loans

The only permitted cover assets for mortgage pfandbriefe are mortgage-backed loans which meet specific conditions. This means for example that only mortgages may be used for cover purposes which are secured on real property, rights equivalent to real property or rights under foreign law which have the same effect as rights equivalent to real property under German law. Further requirements imposed on mortgage loans include mandatory insurance and a loan-to-value (LTV) calculation.

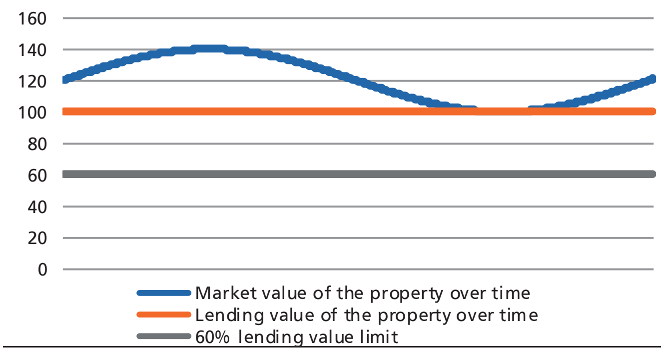
Lending value calculation only takes into account a building's permanent attributes

The LTV calculation only recognises the property's long-term sustainable asset value or cost value based on the cost approach (Sachwert) and income value (Ertragswert), and therefore the property's lending value will generally be lower than the market value. The approach for calculating a property's mortgage lending value is specified in detail in the Regulation on the Determination of the Mortgage Lending Value (Beleihungswertermittlungsverordnung or BelWertV). The lending value has to be identified in accordance with the prudential principle, i.e. based solely on the property or land's permanent features and the resulting sustainable yield. The lending value is driven by the income value of the property. The income value is the upper bound for the lending value. If the sustainable asset value for the property is more than 20 percent lower than the income value, the sustainability of the income generated by the property must be double-checked. In case needed, the income assumption for the property has to be reduced. For this reason, a property's lending value does not exceed its market or sale value as it fluctuates over time. The lending value must not contain any speculative element. The lending value has to be identified by an independent appraiser who plays no part in the decision to lend. This person must possess the necessary professional experience and specialist know-how to perform lending value appraisals. The procedures for establishing the lending values of properties in Germany and abroad are subject to the same requirements.

Less stringent requirements for loans falling below small-loan threshold

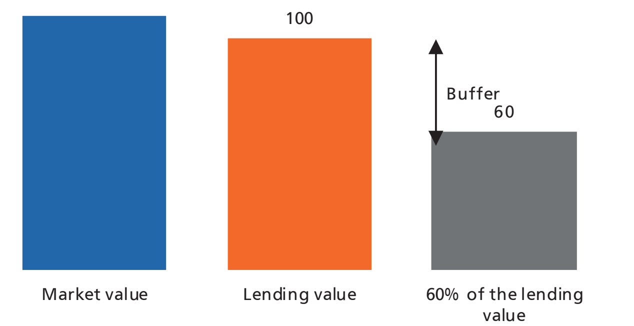
Germany's pfandbrief legislation allows an exception for houses in Germany (owner-occupied). If the building is used partly for commercial purposes, then the proportion of income from this commercial use may not exceed one third of the total gross income generated from the property as a whole. In addition, the loan amount many not exceed four hundred thousand euros. The amount of such loans in a pfandbrief bank's retail business must factor in potential pre-existing charges on a property. The ceiling is determined by the loan amount to be secured, in other words, the amount of the surety which is entered into the land registry and which is available to the Pfandbrief bank. According to the vdp, the bulk of the domestic retail business comes under the small-loans rules (see vdp Infobrief Q4 2015). In such cases, the banks can use a simplified process to calculate the LTV. One concession for small loans is that there is no obligation to carry out a valuation appraisal for the property. In the case of small loans as defined in pfandbrief legislation, simplified documentation is sufficient for the valuation calculation, which can be implemented for example through standardised forms. Automated valuation processes, based on hedonic pricing models, for example, can be used to support the valuation of a home. Assessing the location of the property and its state of upkeep can be done using standardised formulations or through a set scale. A further concession relates to the person carrying out the valuation. The valuer in question must be sufficiently trained; must be independent and may not take the final lending decision. In some cases, it is possible to make do without viewing a property, and external viewing will suffice.

LENDING VALUE ONLY REFLECTS BUILDING'S PERMANENT ATTRIBUTES



Source: vdp, presentation DZ BANK Research

60 PERCENT LTV LIMIT OFFERS ADDITIONAL PROTECTION



Source: DZ BANK Research

Sharp fall in prices triggers revaluation

What is special about the lending value concept is that the figure in question should apply over the full term of the loan. The Regulation on the Determination of the Mortgage Lending Value does not affect other laws requiring regular reviews of property valuations, however. Above all in the case of commercial property for example, it is mandatory for the assumptions underlying valuations to be regularly tested. If there is any question about their accuracy, then the lending value may also need to be reassessed. As a rule, therefore, in context of the pfandbrief legislation potential changes in loan to value only arise because the loan is repaid. Increases in value through a rise in property prices (resulting from a rise in market values) have no effect on a property's lending value or therefore on the loan's LTV. However, should property prices fall significantly in a region, then the lending values for properties in this region have to be reviewed and adjusted if necessary. This strategy for accommodating market fluctuations treats a price fall of at least 20 percent for residential property (minimum of 10 percent in the case of commercial property) as the threshold which triggers a revaluation of the properties.

Market changes concept as first step in the monitoring process

Article 208 (3) CRR which has been in force since 2014 sets out a three-step process in connection with monitoring property values in the context of the credit business. The first step e.g. using statistical methods such as the concept of market changes for commercial (every year) and residential property (every three years) checks whether there are indications of any sustained and significantly fall in house prices. In Germany, granular models have become established which highlight price fluctuations for several types of properties based on postal costs. One concrete example of how this is put into practice is the vdpResearch's property market monitoring, which, according to the Association of German Pfandbrief Banks is used by around 90 percent of German lenders (see vdp's Infobrief of Q3 2017). If there has been a sharp fall in property prices (10 percent for commercial properties and 20 percent for residential properties), then the second step in the monitoring process will involve a review of the property valuation. The review must be carried out by a valuer who is independent from the credit decision process and property qualified. Should the review confirm the significant fall in value indicated by the model, then in a third step, a revaluation of the property must be carried out. In order to meet CRR requirements, the market value is used to monitor the lending value of a property, which is per se is conceived as being separate from temporary fluctuations in the market. If the market value of a property falls below the lending value after a revaluation, then its lending value must be reviewed and, where appropriate, the property must be revalued if fluctuations in market price are regarded as lasting.

Lending-value concept smoothes LTV trend

The prudential principle which is reflected in the lending values has the effect of smoothing LTV changes over time. Rising or moderately falling property prices do not affect the current LTV. Another objective of the lending value rules is to achieve cautious property valuations which are sustainable in the long term. However, this comes at the cost of transparency, since lending-value based LTVs do not reflect current property values.

European loan-to-value methodology

At European level, there has been a discussion about a harmonisation of the valuation of property in the context of capitalisation requirements for banks. A maximum harmonisation which might have led to a standard for property valuation for the purpose of capitalisation calculations, seemed possible at the beginning of 2015. The EBA presented a very detailed draft for a regulation standard which would not have left any leeway for countries to adopt their own format. Work on a European valuation standard has come to a standstill at present. For the moment, the EBA would like to clarify with the European Commission the area of application of the new technical standards and issues on the choice between market value and lending value. All in all, a principles-based harmonisation with leeway for national options would make sense because there are differences in the way the European property markets function and differences in the availability of data in individual countries (see vdp Infobrief Q4 2016).

The Association of German Pfandbrief Banks regards a principles-based method for calculating the lending value as an opportunity to define a European lending value which could be used by a fairly large group of users. The vdp has coined the term "long-term sustainable value (L-TSV)" for a possible principle-oriented European standard. The L-TSV Network was set up to promote this idea; it is working towards the L-TSV becoming the foundation for valuation for lending purposes. In addition, the new network would like to contribute towards the development of a new method of calculating lending value which could be adopted internationally. The principles of the German calculation methods cannot be transferred directly to all European property market because the methods are strongly tailored to specific German features.

Source: vdp, presentation DZ BANK Research

Blanket LTV ceiling of 60 percent

Under the terms of the Pfandbrief Act, only first-lien mortgage loans with the first ranking 60 percent of the property's lending value may be used as cover for mortgage pfandbriefe. This ceiling applies irrespective of whether the loan is on a residential-use or commercial-use building. Although loans whose current LTV is above 60 percent can be included in the cover pool, the cover they provide is calculated solely on the prime portion of the loan up to the 60 percent limit (soft LTV limit); this is because the pfandbrief creditors' preferential claim over the loans in the event of the pfandbrief bank's insolvency is capped at this 60 percent ceiling. We regard this regulation as an extremely strong provision which protects pfandbrief creditors.

Fitch analysis confirms positive impact of LTV concept

Fitch's report "Market vs. Mortgage Lending Values in Pfandbriefe" of 4 September 2017 highlights the advantages of the mortgage lending value (MLV) in relation to the market value of a property from a lending point of view. The use of the MLV in conjunction with a loan to mortgage lending value (LTMLV) limit of 60 percent under the Pfandbrief Act creates a substantial safety cushion for cover assets. In the report of September 2017 mentioned above which takes into account the mortgage pfandbriefe valued by Fitch at that time, the agency comes to the conclusion that house prices could fall by 50 percent without the loans in the cover pool suffering any losses. Fitch highlights two reasons for this. Firstly, the LTMVT would not be above market value from the time of its conception, but rather below that; and secondly, any later increases in house prices would create a buffer for the valuations. As mentioned, any later increase in property values is not factored in subsequently into the original LTMLV. However, the agency stresses that these buffers would disappear again in the event of falling property prices.

ILLUSTRATIVE LENDABLE VALUE CALCULATION:
TWO PILLARS PRINCIPLE USING THE EXAMPLE OF A NEWLY-BUILT OFFICE BUILDING

Income approach (first pillar)		**Cost approach (second pillar)**	
Land value		Land value	
600 square meter à 5,200 Euro per square meter	3,120,000 Euro	600 square meter à 5,200 Euro per square meter	3,120,000 Euro
Gross income		Value of the building	
2,000 square meters of office space à 30 Euro per square meter and month sustainable rent	720,000 Euro	Building costs: 11,500 cubic meters à 520 Euro per cubic meter	5,980,000 Euro
15 underground parking spaces à 110 Euro per parking space and month	19,800 Euro	Depreciation (0 Euro, as new building)	0 Euro
Gross annual rent	739,800 Euro	Subtotal	5,980,000 Euro
Less operating expenses (costs that are not allocable to tenants)		Plus costs of the outside area (3 percent)	179,400 Euro
- Management costs (3 percent of gross income)	22,194 Euro	Subtotal	6,159,400 Euro
- Maintenance costs	31,125 Euro	Less safety margin pursuant to section 16 (2) BelWertV of 10 percent	615,940 Euro
- Loss of rental income risk (4 percent of gross income)	29,592 Euro	Subtotal	5,543,460 Euro
Total operating expenses	82,911 Euro	Plus incidental building costs pursuant to section 16 (3) BelWertV of 16 percent	886,954 Euro
In percent of gross income	11.2 percent	Value of the building	6,430,414 Euro
Minimum operating expenses according to BelWertV	15.0 percent	Land value	3,120,000 Euro
Stated operating expenses	110,970 Euro	**Depreciated replacement cost value****	**9,550,414 Euro**
Net annual income	628,830 Euro	**Depreciated replacement cost value (rounded)**	**9,550,000 Euro**
Capitalisation rate: 6.00 percent			
Expected return on land	187,200 Euro	Income value / depreciated replacement cost value - 1	6.83 percent
Net income of building	441,630 Euro	The depreciated replacement cost value is only 6.83 percent below the income value (which is less than 20 percent), therefore the lending value is based on the income value (the sustainability of the income generated by the property has not to be double-checked in this case).	
Income value of the building*	7,136,741 Euro		
Land value	3,120,000 Euro		
Income value*	**10,256,741 Euro**	**Mortgage lending value (income properties)**	**10,250,000 Euro**
Income value (rounded)	**10,250,000 Euro**	**Inclusion in cover (lending limit 60 percent)**	**6,150,000 Euro**

Source: vdp, presentation DZ BANK Research, BelWertV = determination of the mortgage lending value or Beleihungswertermittlungsverordnung, * capitalisation rate 6 percent, remaining useful life 60 years, multiplier 16.16 according to Annex IV of BelWertV, * income value (Ertragswert), ** cost value or sustainable asset value (Sachwert)

Moody's also highlights two strengths of the German approach - the 60 percent LTV ceiling (strict by international standards) and the conservative valuation rules which flow from the Determination of the Mortgage Lending Value. The study "German Mortgage Covered Bonds: Pfandbrief Act is Conservative in its Treatment of Rising House Prices" of 24 June 2013 uses a numeric example to demonstrate how, in a rising property market, the lending value concept leads to a gradual accumulation of valuation reserves which ultimately bolster the security of pfandbrief creditors (see example one in the following table). In other countries, rises in house prices can be used to increase the portion of the mortgage which is eligible as collateral. Rises in house prices therefore lead (more or less automatically) to an increase in the size of the cover pool (see example two in the following table), a fact which hampers the build-up of latent valuation reserves as in the case of the German LTV concept.

Also Moody's highlights lending value concept as positive factor

LENDABLE VALUE CONCEPT GENERATES VALUATION RESERVES WHEN HOUSE PRICES RISE

	Example 1: Property is not revalued	Example 2: Property is revalued
LTV limit	60 percent	60 percent
Loan size	90	90
Starting situation:		
- Property value	**100**	100
- Qualifying loan value for cover pool purposes	60 (= 100 * 60 percent)	60 (= 100 * 60 percent)
percentage house price can fall by before the cover pool suffers a potential liquidation loss	40 percent (= (100 – 60)/100)	40 percent (= (100 – 60)/100)
Position after house prices rise by 50 percent:		
- New property value	150	**150**
- Qualifying loan value for cover pool purposes	**60** (= **100** * 60 percent)	**90** (= 150 * 60 percent)
percentage house price can fall by before the cover pool suffers a potential liquidation loss	60 percent (= (150 – **60**)/150)	40 percent (= (150 – **90**)/150)

Source: Moody's, presentation DZ BANK Research

As with public sector pfandbriefe, mortgage pfandbriefe are also subject to geographical restrictions on top of the cover asset requirements discussed. Cover assets need to originate in the European Economic Area, Australia, Canada, Japan, New Zealand, Singapore, Switzerland or the US. The Pfandbrief Act may have to be amended, depending on the results of Brexit negotiations, if mortgage loans from the UK, which are currently eligible as cover assets, are to remain in the cover pools of German pfandbriefe even after Brexit. As already mentioned earlier, only mortgages on land, or leasehold rights or similar rights under a foreign legal system can be used as cover assets which are comparable with leasehold rights under German law. In 2005, the vdp formed a round table which regularly carries out a comparison of international security rights over real property. The method used is described in the article by Andreas Luckow "Grundpfandrechte – internationaler Vergleich auf einen Blick" in the magazine Immobilien & Finanzierung issue 03 – 2016. A detailed description can be found in volume 54 of the vdp publication series "Grundpfandrechte 2016 in Europa und darüber hinaus". The analysis is well thought out and very soundly based. The panel of international experts sitting at vdp's round table works out a standardised set of questions for each country. Responses are evaluated using a scoring process designed to enable a comparison of different legal systems. The comparison looks at four different perspectives, which are then combined into a whole. At first, the four perspectives take into account the various interests of the lending bank, of the borrower, of the subordinated and unsecured creditors and the general applicability of the security rights, separately from one another.

Geographical restrictions

- Bank's perspective/enforcement: the issue here is how quickly the holder of a mortgage could exploit the security and get proceeds in line with its ranking.

Enforcement

- Perspective of the owner of the property: the interests of the owner of the property are diametrically opposed to the interests of the lending bank in questions of realising the value of an asset. All legal frameworks try to ensure that there is a reconciliation of interests in order to ensure a fair enforcement process.

Factoring in the interests of the borrower

- Bank's perspective/usability: As regards the issue of the usability of a mortgage, the interests of the borrower and lender are fairly even. The issue here is how flexibly the mortgage can be used. For example, can it be used for several exposures? In this case, vdp's round table comes to the conclusion that non-accessory mortgages which envisage a separation between the loan claim and the mortgage and which are linked through a security agreement offer crucial advantages.

Advantages for non-accessory mortgages

- Perspective of the legislator: this regroups aspects such as how the legislator reconciles interests between the parties involved and how it protects the rights of subordinated or unsecured lenders.

Format of reconciliation of interests

Taking the assessment of vdp's round table as a whole, the security rights which ultimately form the basis for securing the mortgage pfandbrief stand out especially well in Germany, Norway, Sweden and Switzerland. In contrast, security rights in Belgium, Italy and Slovakia have the weakest rating (as of 2017). The laborious, detailed and very soundly-based analysis carried out by vdp's round table shows just how multi-tiered the role of security rights is. The analyses also show how much individual legal frameworks can differ and that a closer look at these issues is well worth it.

Marked differences in individual legal systems

There are provisions under the Pfandbrief Act for mandatory insurance against risks depending on the type and location of a building if loans in the cover pool are secured against these properties. In the event of the pfandbrief bank becoming insolvent, the insurance benefits also stand the pfandbrief creditors in good stead. In practice, these general building-insurance requirements come up against real life which is where there are always new challenges for pfandbrief banks in the international lending business through changes in the insurance industry. It is often impossible to insure against damage to buildings from earthquakes and other natural disasters such as tornadoes and flooding at replacement value of the property. However, using statistical methods and based on location, it is possible to predict fairly accurately the probable maximum loss, or PML, depending on the fabric of the building. The total sum insured can then be set based on the PML. Companies which own several buildings often take out a blanket insurance for all the buildings. If the buildings are located in different places for example, the total sum insured in the policy is not calculated simply by adding the value of all the buildings. The total sum insured can be smaller because of an imperfect correlation between the probability of fire damage for example happening to all properties at the same time.

Building insurance mandatory

In addition, some property owners agree an excess for their building insurance which aims to reduce the insurance premium. The Pfandbrief Act takes these aspects into account in so far as it allows three options with regard to level of insurance:

Excess reduces insurance premium

- expected replacement costs of the building;
- probable maximum loss which is very unlikely to be exceeded,
- respective outstanding claims on the loan.

A more detail presentation of this issue can be found in the article by Andreas Luckow on new arrangements for building insurance for cover assets for mortgage pfandbriefe "Neuregelung der Gebäudeversicherung bei Deckungswerten für Hypothekenpfandbriefe" in Immobilien & Finanzierung, issue 03 - 2015 of February 2015.

Ship pfandbriefe

Rights in ships and ships under construction

Loan rights backed by ship mortgages quality to serve as ordinary cover assets for ship pfandbriefe. The loans may only relate to ships or ships under construction which are recorded in a public register. The loan term may not extend beyond twenty years from launch. The regulator may permit exceptions in individual cases. Loans secured by foreign registered ships or ships under construction can only be included in the cover pool under certain conditions defined by the Pfandbrief Act. Ships and ships under construction have to be insured for at least one hundred and 10 percent of the loan's residual sum through the term of the loan.

60 percent LTV and duty to insure

The calculation of the lending value of ships and ships under construction is also subject to explicit rules, including the same 60 percent LTV ceiling for assets that applies to mortgage pfandbriefe. The lending value for ships and ships under construction must be determined by an independent and expert appraiser. The valuation must take account of the ship's long-term characteristics (permanent features) as well as its age and possible uses. The valuation process must include an inspection of the ship. The calculation of the ship's lending value must have regard to the following four market values/prices:

Current market value

» The current market value is an estimate for the price that a ship might fetch in the normal course of business on the valuation date, when both buyer and seller are acting with the requisite prudence and without duress (i.e. no fire sale).

Average market value

» The average market value refers to the average market value fetched by comparable ships over the ten years preceding the year of valuation.

New-build price

» The new-build price is the construction price agreed with the yard plus reasonable standard add-on costs.

Purchase price

» The purchase price is the contractually agreed price for acquiring the ship being valued.

Ship's lending value based on lower of cost or market principle

The ship's lending value may not be higher than the current and/or average market value. If the average market value for the last ten years cannot be established, then additional safety discounts must be applied: either 15 percent (if the average relates to less than ten but more than three years) or 25 percent (if the average is based on three years or less). If neither the current nor the average market value can be determined, then another suitable method must be used, but in this case, the ship's lending value must not exceed 75 percent of the new-build price or purchase price.

Fall in price can trigger revaluation

The ship's lending value should reflect its long-term value. If however there should be good reason subsequently to question whether the assumptions underlying the valuation might not have deteriorated significantly, then these assumptions must be tested and amended if necessary. The Regulation on the Determination of the Mortgage Lending Values of Ships and Ships under Construction (Schiffsbeleihungswertermittlungsverordnung) stipulates that this applies particularly in cases where the general market price level has fallen sharply. As with property loans, the Regulation on the Determination of the Mortgage Lending Values of Ships and Ships under Construction does not affect other laws requiring regular reviews of ships' lending values.

Aircraft pfandbriefe

Aircraft mortgages which extend to the engines

Loans secured by a right in rem in aircraft (aircraft mortgage) qualify as ordinary cover assets for aircraft pfandbriefe. Only aircraft recorded in a public register are eligible. The registered lien or foreign aircraft mortgage must also cover the engines, which account for a large proportion of the value of an aircraft. As we saw with ship mortgages, the duration of the loan on an aircraft may not exceed twenty years. The regulatory authority can allow exceptions in individual cases. Loans secured by foreign registered aircraft may also be included in the cover pool under certain conditions defined in the Pfandbrief Act. The aircraft must be insured throughout the term of the loan for at least one hundred and 10 percent of the respective loan outstanding.

Independent expert must appraise the aircraft's value

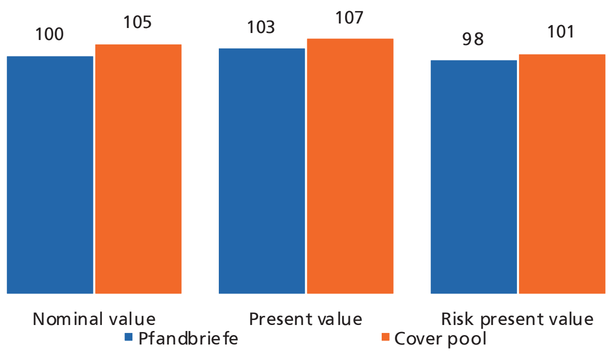
As in the case of property and ship loans, the aircraft loan may not exceed the first 60 percent of the value of the aircraft (aircraft lending value) in order to qualify as cover asset. The underlying lending value of the collateral for aircraft pfandbriefe is also subject to explicit rules defined in the Regulation on the Determination of Aircraft Lending Values (Flugzeugbeleihungswertermittlungsverordnung), and these are similar to the provisions governing ships. The aircraft lending value must be determined by an independent expert appraiser. The valuation must focus on the aircraft's long-term features. In contrast to the methodology for identifying the lending values of ships, the process for aircraft essentially focuses on the market price and the average market price in the last ten years along with the plane's value given well-balanced market conditions and in relation to the aircraft's average state (the aircraft's estimated value factoring in its maintenance condition). The lending value shall not exceed any of these three figures. If the average market price of the last ten years is not available, then the value based on the aircraft's average state is assumed to be the lending value, subject to a 10 percent markdown. As we saw with the valuation of real property and ships, the valuation of aircraft is also subject to possible review. The Regulation on the Determination of Aircraft Lending Values cites strong fluctuations in aircraft prices as one reason which could make a revaluation necessary. However, the Regulation does not affect other rules requiring the review of aircraft lending values.

Transparency regulations applying to quarterly reports

Mandatory reporting statutes

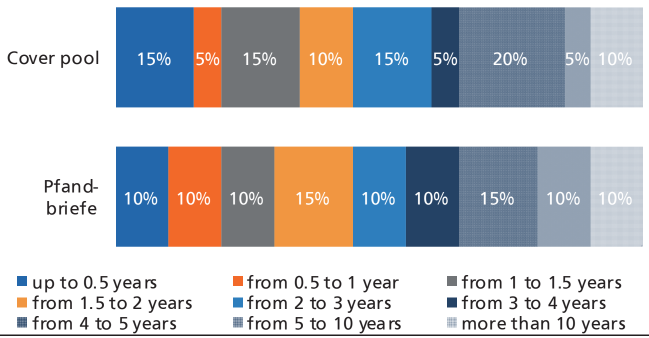
Investors' information needs have increased over the last years. The legislator is trying to meet the greater needs of investors for information by repeated additions to the existing reporting obligations of pfandbrief issuers in order to improve transparency with respect to the composition of the cover pools for market participants through every amendment. All pfandbrief banks are required to publish a minimum standard of information on the outstanding pfandbriefe and cover assets in a publicly accessible form on a quarterly basis. For example, the Pfandbrief Act requires the pfandbrief banks to disclose the respective total volume of the outstanding pfandbriefe in each category as well as the corresponding cover pools in the amount of the nominal value, the net present value and the risks-adjusted net present value. In the case of the risk-adjusted net present value, only the result of the stress scenario which leads to the smallest overcollateralisation has to be disclosed. The pfandbrief banks must also provide a breakdown of the maturity structure (broken down by fixed-interest periods) of the pfandbriefe and of the cover pools in the given maturity bands. Cover assets and pfandbriefe with a fixed-interest period of up to twenty four months must reported in four bands of six months each. This is followed by three further maturity bands of one year each up to a maximum fixed-rate term of five years. The last two maturity bands are five to ten years and over ten years. In order to give investors a feeling for possible interest-rate or currency mismatches in the context of a bank's pfandbrief business, mandatory disclosures include a breakdown of the cover pool and outstanding pfandbriefe based on fixed and variable rates. In addition, the net present value of open currency positions between cover assets and pfandbriefe has to be disclosed and the current net present value of the derivatives in the cover pool must be disclosed.

AGGREGATED COVER POOL AND OUTSTANDING PFANDBRIEF VALUES
ARBITRARY NUMERIC EXAMPLE: IN EURO



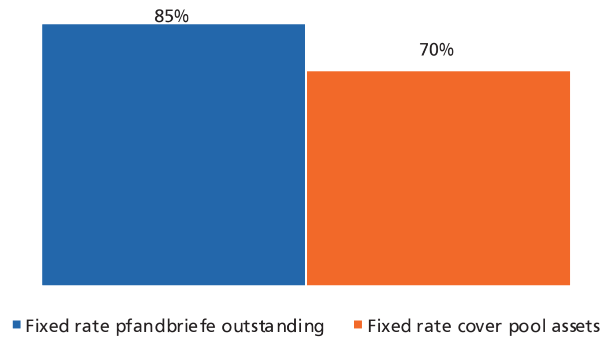
Source: DZ BANK Research

FIXED-INTEREST PERIODS OF COVER POOL AND OUTSTANDING PFAND-BRIEFE
ARBITRARY NUMERIC EXAMPLE



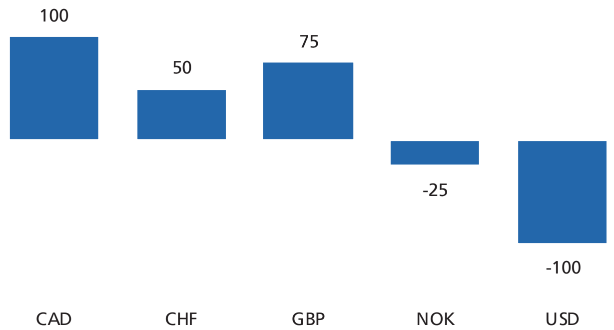
Source: DZ BANK Research

INTEREST ON THE COVER POOL AND OUTSTANDING PFANDBRIEFE
ARBITRARY NUMERIC EXAMPLE



Source: DZ BANK Research

CURRENCY MISMATCHES BETWEEN PFANDBRIEFE AND COVER POOL
ARBITRARY NUMERIC EXAMPLE: NET PRESENT VALUE IN EURO



Source: DZ BANK Research

Information on non-performing loans and geographical breakdown

Issuers are required to report separately for each pfandbrief type the aggregate amount of non-performing loans (in arrears by over ninety days). This shall solely include loans whose arrears are equivalent to 5 percent or more of the total claim on the loan in question. In addition, the geographical breakdown of the cover pool by country also has to be disclosed. This must include details of ordinary and further cover assets.

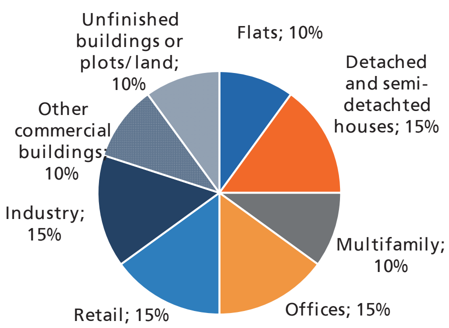
Assets which exceed defined caps to be shown separately

Issuers are also required to report the amount of assets which form part of the cover pool but against which they cannot issue pfandbriefe because of restrictions or ceilings imposed in the Pfandbrief Act. One such example would be further cover assets; their percentage share in the cover pool is capped by the Pfandbrief Act. If for example, the proportion of further cover assets in the cover pool should exceed the statutory ceiling, then these surplus further cover assets must be reported separately. In addition, there is also a cap on the amount of cover pool assets located outside the EEA for which preferential claim of pfandbrief creditors in the case of bankruptcy of the issuer is not established beyond doubt. Pfandbrief banks are required to report any breaches of this ceiling. Moreover, there are further regular disclosure requirements for each pfandbrief type.

Specific information on mortgage pfandbriefe

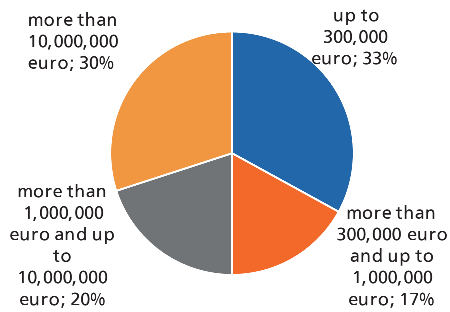
Issuers have to disclose the breakdown of the property loans in their mortgage pfandbrief cover pool by property type and loan receivables volume. They must also disclose the volume-weighted average seasoning of the loans in the cover pool. This figure is to be reported on an aggregated basis for all the property loans and not separately for residential and commercial property. The seasoning figure is an interesting parameter above all in the case of owner-occupied homes. Empirical data and statistics show that the longer a household services its loan, the more the probability of this borrower falling into arrears dwindles over time. In our view, it would therefore be better to show the seasoning of home loans and commercial loans separately. However, this poses a practical difficulty, namely in which category to assign mixed-use properties. A borderline case could be for example that of a self-employed architect who lives and works in the same building, which also serves as collateral for the loan.

MORTGAGE PFANDBRIEFE: STRUCTURE OF COVER POOL PROPERTY LOANS BY PROPERTY TYPE
ARBITRARY NUMERIC EXAMPLE



Source: DZ BANK Research

MORTGAGE PFANDBRIEFE: BREAKDOWN OF LOANS BY SIZE CATEGORY
ARBITRARY NUMERIC EXAMPLE



Source: DZ BANK Research

Illustrative average LTV calculation

Pfandbrief banks are also under obligation to report regularly the average LTV of the cover pool backing their mortgage pfandbriefe. In the following table, we have shown an illustrative calculation for the average LTV.

Weighting with loan value

A loan's LTV is calculated by setting the loan principal against the lending value of the plot of land or property, including any up-front expenses. Only the loan components recognised for cover-calculation purposes feed into the LTV calculation; in other words, no loan's LTV will ever exceed the statutory ceiling of 60 percent. The loans are weighed with the respective current principal. In the example shown below (which assumes that all loans are recognised in the cover pool as far as possible), the average LTV comes out at 59.2 percent.

ILLUSTRATIVE LTV CALCULATION

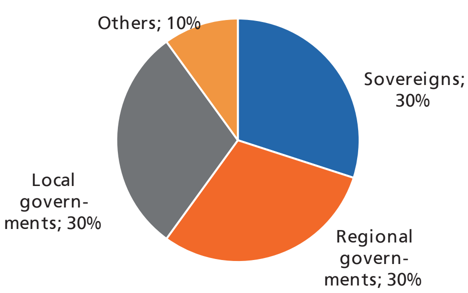
	Loan 1	Loan 2
Prime mortgage	20	400
Second-lien mortgage	80	600
Lendable value	100	1.000
Reckonable value of primary-lien loan	20	400
Reckonable value of secondary-lien loan	30	550
LTV of prime cover loan*	20 percent	40 percent
LTV of secondary cover loan**	50 percent	60 percent

Source: DZ BANK Research
* LTV of prime loan: reckonable value of prime loan relative to lendable value.
** LTV of secondary loan: reckonable value of secondary loan plus the value of the prime loan relative to lendable value. Both are subject to an absolute top limit of 60 percent (statutory limit on the recognition of mortgages as collateral in mortgage pfandbrief cover pools).

Proportion of public sector guaranteed export finance credits must be disclosed

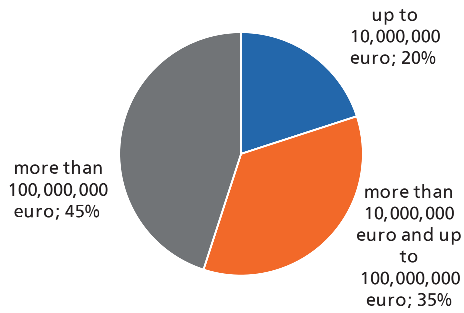
In the case of public sector pfandbriefe, a breakdown of municipal and state loans in the cover pool by borrower type must be disclosed in line with the structure level of the regional and municipal authority. Issuers must also disclose the proportion of export finance credits with a public guarantee in the cover pool. Although the specific state level guaranteeing the export financing is not explicitly disclosed, it is fair to assume that, as a rule, the central government guarantees that the terms of the loan are met in the case of public sector guaranteed export finance credits. The claims must also be split by group size, although the breakdown of these groups is different from what it is in the case of mortgage pfandbriefe.

PUBLIC SECTOR PFANDBRIEFE: STRUCTURE OF COVER POOL STATE-SECTOR LOANS BY BORROWER TYPE
ARBITRARY NUMERIC EXAMPLE



Source: DZ BANK Research

PUBLIC SECTOR PFANDBRIEFE: BREAKDOWN OF LOANS BY SIZE
ARBITRARY NUMERIC EXAMPLE

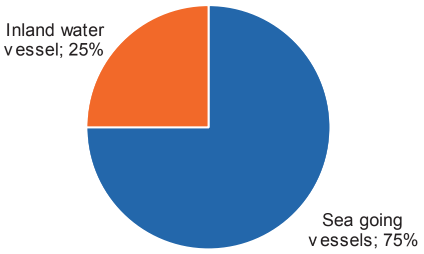


Source: DZ BANK Research

Few details in the case of aircraft and ship pfandbriefe

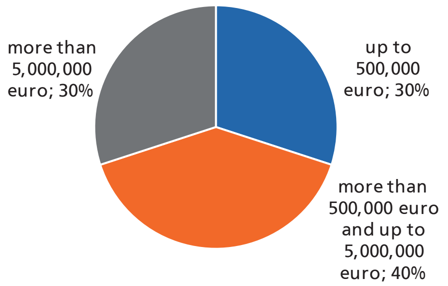
The statutory requirements in the context of transparency rules for aircraft and ship pfandbriefe are less detailed than they are in the case of mortgage pfandbriefe. In the case of ship pfandbriefe, issuers are merely required to disclose whether the ships used as collateral for the mortgage are sea-going or inland waterway vessels. In the case of aircraft pfandbriefe, there is not even a roughly comparable breakdown of the cover assets by type of aircraft. The pfandbrief bank merely has to indicate the share of aircraft mortgages in relation to the cover assets overall. In the case of aircraft and ship pfandbriefe, claims also have to be broken down into the prescribed size categories, whereby other size categories apply than in the case of mortgage and public sector pfandbriefe. Pfandbrief banks which issue aircraft and ship pfandbriefe often give detailed information of cover assets in investor presentations and therefore go beyond legal requirements. The low level of detail required by the Pfandbrief Act in the case of these pfandbrief types may reflect the fact that they are both niche products in the pfandbrief market.

SHIP PFANDBRIEFE: BREAKDOWN BY TYPE OF SHIP
ARBITRARY NUMERIC EXAMPLE



Source: DZ BANK Research

AIRCRAFT AND SHIP PFANDBRIEFE: BREAKDOWN OF LOANS BY SIZE
ARBITRARY NUMERIC EXAMPLE



Source: DZ BANK Research

Information can be downloaded centrally from the websites of banking associations

For years now, the vdp has provided the compulsory disclosures of its member institutions on their pfandbrief programmes in standardised form on its website. The German Association of Savings Banks (Deutsche Sparkassenverband, DSGV) has been offering a similar service since 2016 based on the vdp's data format. Reports can now be found on the vdp's website which conform with an international standard (Harmonised Transparency Template, HTT) for over half the vdp member banks. The Covered Bond Label launched by the ECBC assumes regular reporting in the HTT. The major of vdp pfandbrief banks voluntary provide quarterly reports in HTT format on top of their statutory disclosures, even without a covered bond label. Detailed information on the cover pools of individual pfandbrief banks can also be found in DZ BANK Research's "Covered Bond Monitor: Germany".

Independent monitoring by cover pool monitor

Cover pool monitor checks compliance with statutory requirements on ongoing basis

A new concept in German pfandbrief law was created as long ago as 1899 to oversee compliance with statutory cover requirements, namely the cover pool monitor (Treuhänder). As was the case back then, every pfandbrief bank is still required to appoint a cover pool monitor and at least one deputy for this post, whose task it is to ensure that the cover register is properly maintained and to check the prescribed cover for the pfandbriefe. The appointment is made by the BaFin after consultation with the pfandbrief bank. The cover pool monitor operates independently to ensure compliance with the statutory and supervisory requirements relating to the pfandbrief cover. The pfandbrief bank needs the prior consent of the cover pool monitor to issue new pfandbriefe or to remove assets from the cover pool. Prior to the issue of new pfandbriefe, the cover pool monitor is required to issue a certificate confirming that there will still be sufficient cover after the issue to comply with statutory requirements.

Extensive information rights

In order to enable the cover pool monitor to perform his duties, he is empowered at any time to inspect any bank documents that are relevant to pfandbriefe and to ask for any information about the bank's outstanding pfandbriefe and the assets entered in the cover register. In addition, the Pfandbrief Act also stipulates that both the cover pool monitor and its deputies must have the expertise and experience necessary to perform their duties. The Pfandbrief Act does not explicitly stipulate any formal qualification requirement such as chartered tax adviser or accountant. The law only voices the assumption that a qualification as certified auditor or sworn accountant would suggest that the "requisite expertise is given".

Special supervision by BaFin

BaFin usually audits cover pools every two years

In addition to its independent control through a cover pool monitor, BaFin also exercises a special public supervisory role over a bank's pfandbrief business. Pfandbrief issuers are therefore not only subject to supervision by the relevant banking authorities such as the ECB as banks, but also subject to special supervision by BaFin in relation to their pfandbrief business. BaFin is empowered to issue any instructions that are appropriate and necessary for the operations of the pfandbrief bank to continue to comply with the Pfandbrief Act and any related ordinances. Of crucial importance is the right of the supervisory authority to audit samples of pfandbrief cover pools in order to check their compliance with legal requirements. As a rule, these checks take place once every two years (for more details, see article "The supervision of Pfandbrief banks" in the vdp's publication "The Pfandbrief 2013/2014 Facts and Figures about Europe's Covered Bond Benchmark").

BaFin also plays key role in the event of issuer insolvency

In addition, BaFin is empowered at any time to take measures of its own such as issuing recommendations for management or appointing monitors for the cover pool. BaFin proposes a cover pool administrator (Sachverwalter) at the latest at the start of the insolvency of a bank. For a more detailed discussion of the role of the administrator and provisions in the event of a pfandbrief bank's insolvency, see the later section "Administrator of a pfandbrief bank with limited business activities".

Information rights and intervention powers for BaFin

Under the European banking union framework, the ECB took over the supervision of some, but not all, pfandbrief banks in November 2014. At the same time, within the context of the reporting system on the economic situation of cover pools and of the special supervision of the German pfandbrief market, the BaFin is in a strong position, including for banks for which the ECB has taken over responsibility. As the responsible regulatory and supervisory authority for the German banks' pfandbrief business, BaFin has the power to define specific cover add-ons for each individual cover pool. The intention is to give the BaFin administrative power to order a cover add-on if it considers the general statutory minimum over-collateralisation requirement of 2 percent based on a stressed present value to be inadequate to the task in light of the cover pool's specific composition. This is intended to give BaFin the ability to react to individual variations in the collateralisation of pfandbrief liabilities. The rationale for this part of the Pfandbrief Act cites the following examples of when a higher minimum cover requirement might be justified:

- The cover pool assets' market values deviate considerably from the value assumptions factored into the cover calculation.
- There are significant risk concentrations in the cover pool.
- The cover pool contains a considerable proportion of assets whose intrinsic value depends on the solvency of companies associated with the pfandbrief bank.
- Significant interest and exchange-rate mismatches exist between the cover assets and pfandbrief liabilities where these are not already adequately taken into account through the requirement to provide appropriate risk cover based on the risk-adjusted cover calculation.

Will reassignment of voluntary over-collateralisation become more likely?

Potential mismatches between outstanding pfandbriefe and the cover pool assets are likely to play a central role in the imposition of individual cover add-ons. A difficult issue to judge, although luckily purely hypothetical so far, is how a bankruptcy court which has appointed a cover pool administrator would rule on the possible transfer of parts of the cover pool to the bankrupt estate. There are considerable hurdles in the way of reassigning cover pool assets. At the same time, however, the potential official imposition of a minimum over-collateralisation for a pfandbrief bank by BaFin is a strong statement which a bankruptcy court is likely to take into account when ruling on this issue.

Administrator of a pfandbrief bank with limited business activities

Cover pool administrator continues to administer pfandbrief business of non-bankrupt estate

In the event of the issuer's insolvency, a pfandbrief bank's cover pools become a pfandbrief bank with limited business activity. In spite of its insolvency, the original issuer remains the legal entity responsible for the cover pool. After the insolvency of the pfandbrief bank, it is no longer represented by its executive board but rather by a cover pool administrator. At the request of BaFin, the competent court shall appoint one or two natural persons to act as cover pool administrator. A cover pool administrator can even be appointed by the competent court before the pfandbrief bank defaults if BaFin deems this necessary. The administrator shall continue to conduct the pfandbrief bank's pfandbrief operations separately from the bank's bankruptcy estate as an insolvency-free fund. The Pfandbriefe shall not automatically be called in for redemption upon opening of insolvency proceedings against the pfandbrief bank; instead, they shall be repaid in line with the originally agreed maturity from cover pool cash flows. In addition, the pfandbrief creditors will not be involved in any potential restructuring process of the issuer. Pfandbrief creditors are therefore not forced to forfeit part of their secured claims against the issuer in order to participate in the bank's rescue (bail-in).

Assignment of cover pool plus pfandbriefe to third-party pfandbrief banks

The number of pfandbrief banks with limited business activities corresponds to the number of cover pools. If a pfandbrief bank has several cover pool registers, for example one for public sector pfandbriefe and one for mortgage pfandbriefe, then there will be one pfandbrief bank with limited business activities for each cover pool after the issuer's insolvency. The administrator therefore performs legal transactions required to wind up the cover pool while ensuring the full and timely satisfaction of the pfandbrief creditors. The administrator may assign all or parts of the cover pool together with the corresponding pfandbriefe to another solvent pfandbrief bank. In this case, the solvent pfandbrief bank would assume the liabilities arising from the pfandbriefe of the original pfandbrief bank and take over the administration of the cover pool. Should it prove impossible to find a solvent pfandbrief bank, then the administrator shall oversee an orderly run-off the cover assets. Only when all the pfandbrief creditors' claims have been satisfied in full can any remaining cover assets be used to meet the claims of the bank's other creditors.

Conversion of pfandbriefe into shares during the major banking crisis after 1900

No investor in German pfandbriefe has ever made a loss since the German Mortgage Bank Act (HBG) came into force on 1 January 1900. At the beginning of the 20th century, the outstanding volume of pfandbriefe was around 6.5bn marks (the equivalent of around EUR 33bn)*. The first few years of the 20th century were marked by a major mortgage bank crisis during which two banking groups, the Preußenbank Group with Preußische Hypotheken Actien-Bank and the Deutsche Grundschuldbank along with the Pommernbank Group with the Pommersche Hypotheken-Aktien-Bank and the Mecklenburg-Strelitzsche Hypothekenbank were involved. The banking crisis was triggered by excessive risk-taking in lending and refinancing business activities during a period of economic stagnation following the great stock market crash (Gründerkrach) of 1873 after the boom of the founders' period (Gründerjahre). Bankruptcy proceedings only had to be opened for one of the institutions listed above – the German Grundschuldbank. The crisis was caused by transactions predating 1900 which were not permissible under HBG rules. Moreover, the bank had issued bonds ("Realobligationen") rather than pfandbriefe. However, the restructuring of the other institutions meant that pfandbrief holders had to waive coupon payments or accept their postponement along with the conversion of interest claims into equity. In addition, a certain number of pfandbriefe were also converted into equity, whereby pfandbrief holders even had to waive part of the nominal value. The meetings of pfandbrief holders at the time had agreed to this approach. This rescue plan is very similar to the scenario of a present-day bail-in. The only difference is that current bail-in rules generally exempt holders of secured covered bonds from a haircut. However, the above is true if gains on banking shares which only materialise after the bank rescues are taken into account and offset accordingly. It is also true to say that since the HBG came into force, no bankruptcy proceedings have been opened against any mortgage bank which was bound by the statutory requirements and business restrictions laid out in HBG. Although the financial and sovereign-debt crisis triggered by the Lehman Brothers collapse in September 2008 also plunged a number of German mortgage banks into a serious crisis, the institutions in question were either rescued in time through state aid or through mergers, so that the potential danger for pfandbrief holders was quickly nipped in the bud.

Source: DZ BANK Research based on Tim Lassen's article "Lehren aus der Hypothekenbankkrise von 1900" (Lessons learned from the mortgage bank crisis), Immobilien & Finanzierungen, issue 18 – 2003, * see "Das Reichs-Hypothekenbankgesetz in seiner wirtschaftlichen Bedeutung" (1909), converting marks into euro is difficult to say the least. Based on information from the Bundesbank's website, we have used a factor of 5 for the above conversion.

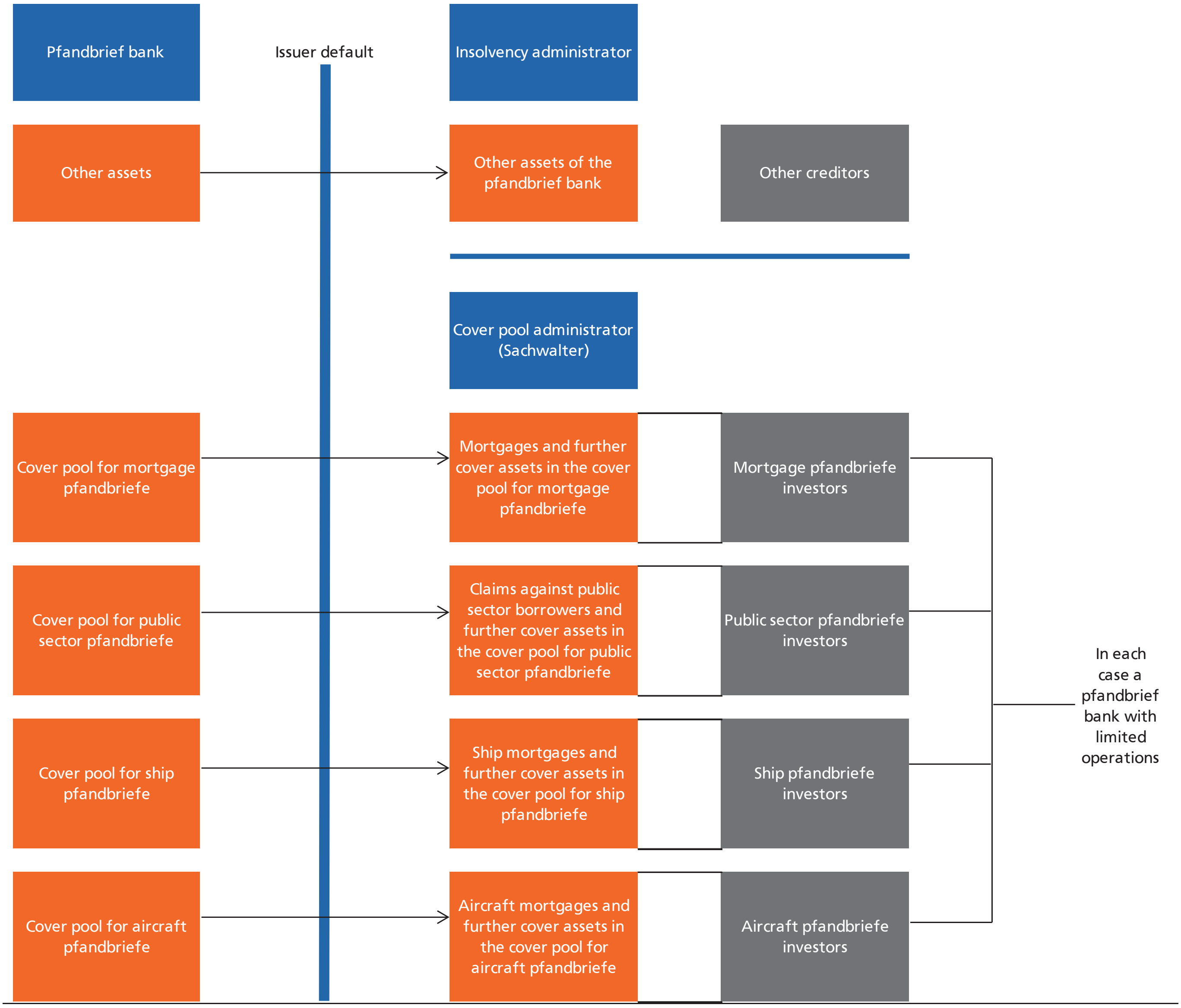
Liquidity gaps under scrutiny

The liquidation of the cover pools can give rise to liquidity risks if the duration of the cover assets exceeds that of the outstanding pfandbriefe. The refinancing risks arising from liquidity gaps are a particular focus of attention for the rating agencies which see this as a major source of risks in their rating analysis. The Pfandbrief Act gives the cover pool administrator full authority to do everything necessary to ensure the timely repayment of the pfandbriefe. The administrator has the discretion for example to take out bridging loans or to sell cover assets in order to ensure the prompt fulfilment of the payment obligations associated with the pfandbriefe. In order further to limit liquidity risks following the insolvency of the pfandbrief bank, the Pfandbrief Act even provides a formal option for the administrator to enter into funding operations with the Bundesbank in order to bridge any temporary liquidity shortfalls, namely by treating the non-bankruptcy estate as a pfandbrief bank with limited business activities, thus meeting the formal criteria for access to central bank liquidity.

New ECB rules likely to bar administrator access to refinancing via the Bundesbank

However, the ECB has decided that institutions whose business purpose is to wind down their activities, i.e. "wind-down entities", would no longer qualify for repo transactions with the central bank in future. This decision was announced in July 2017. In our view, it is unlikely that the ECB wanted to invalidate arrangements laid out in the Pfandbrief Act with this new rule. However, in our opinion a pfandbrief bank with limited business activity would fit in well with the ECB's definition of a "wind-down entity". A pfandbrief bank with limited business activities would then probably no longer meet the amended formal ECB requirements for access to central bank liquidity. The Bundesbank could then provide liquidity for the cover pool by purchasing pfandbriefe newly issued by the administrator, if the bonds were taken onto the Bundesbank's own books. As things stand at present, however, these are mere theoretical conjectures.

PFANDBRIEF CREDITORS' PRIORITY IN BANKRUPTCY



Source: vdp, presentation DZ BANK Research

Operational risks: Who administers the cover pool?

A more technical question concerns the operational risks that could present following the insolvency of a pfandbrief bank, namely the issue of what resources are at the disposal of the administrator in the performance of his duties. The Pfandbrief Act makes it clear that the cover pool administrator is entitled to use the pfandbrief bank's staff and infrastructure in order to fulfil his function. The cover pool shall cover any actual costs incurred. However, there is still the issue of how long it takes before the administrator can start his work and what happens to the cover pool during the transition period, especially if payments are due. The rules laid down by the Pfandbrief Act, namely 2 percent over-collateralisation and the requirement to maintain 180 days of cover-pool liquidity, give the administrator a certain amount of time immediately after the start of insolvency proceedings against the pfandbrief bank and after the split of the cover assets from the rest of the pfandbrief bank's assets.

Special representative with information rights

We believe that the regulations concerning the role of the cover pool administrator in the Pfandbrief Act target operational risks and attempt to make the administration of the cover pool as efficient as possible following the insolvency of a pfandbrief bank. For example, if a pfandbrief bank faces the threat of insolvency, BaFin is empowered to appoint a special representative who can subsequently take over the role of cover pool administrator if necessary. This special representative shall only have access to information which is intended to prepare him for the possible subsequent function of administering the pfandbrief bank with limited business activities (the insolvent pfandbrief bank's cover assets). This gives the persons involved the necessary time to work their way into the cover pool's complex administration without causing a public stir.

Clear responsibilities

The provisions of the Pfandbrief Act assign clear authorities. The responsibilities for the court decisions concerning the nomination and appointment of the cover pool administrator are defined in insolvency law. BaFin has the right to propose a candidate when an administrator is appointed – this can be even before the pfandbrief bank becomes insolvent. However, the actual appointment of the administrator is always reserved for the competent court, irrespective of whether the pfandbrief bank has already defaulted or not. The Pfandbrief Act also makes it clear that the cover pool administrator and the pfandbrief bank's insolvency administrator are equal partners. The pfandbrief bank's insolvency administrator has no power to dispute the cover pool administrator's actions performed in the proper course of his duties. The preamble to the law is quite clear that this is the case even if the action has the effect of reducing the insolvent pfandbrief bank's entitlements.

Advisory committee to advise cover pool administrator

The Pfandbrief Act writes the cover pool administrator's entitlement to remuneration into law. The specific terms of an appropriate compensation package for services rendered and the reimbursement of outlays will be regulated by an administrative order which the Federal Ministry of Finance is empowered to issue in the Pfandbrief Act. On the other hand, the administrator is liable to the pfandbrief bank with limited business activities for any losses caused by breaches of his duties. The Pfandbrief Act also stipulates that a business decision does not constitute a breach of the administrator's duties if the administrator could reasonably assume that he was acting in the interests of the pfandbrief creditors based on appropriate information. Another provision is the administrator's power to appoint a committee of up to five members. This body of expert shall support the cover pool administrator and provide advice on complex issues where necessary. The advisory panel is a way for the administrator of avoiding the need to call on external advice on specific urgent issues. At the end of 2012, the rating agency Fitch noted on record that the administrator faces a very complex task with the resolution and/or administration of the cover pool. This slightly more critical stance in relation to previous assessments of this aspect has meant that an interim result in the context of the qualitative assessment of pfandbriefe has turned out one notch lower, although, all in all, the change did not have a negative impact on the overall valuation (see Fitch press release: "D-Cap Unchanged for 18 German Covered Bond Programmes" of 4 December 2015).

Run-off of cover assets on self-administration basis a long-winded process …

If the cover pool administrator determines, however, that it is not possible to assign the cover pool and outstanding pfandbriefe to another solvent pfandbrief bank and that the intrinsic value of the cover assets is no longer sufficient to fully satisfy the creditors' claims, then a separate insolvency procedure needs to be initiated for the cover pool. In this event, the pfandbriefe would be called in and the cover pool liquidated. The proceeds would be paid out to the pfandbrief creditors in equal parts. The Pfandbrief Act also gives the administrator the option to continue to operate an illiquid or over-indebted pfandbrief bank with limited business activities for its own account. In this scenario, BaFin now has the option - as an alternative to initiating bankruptcy proceedings over the cover pool - to order it to continue its core operations if this is in the creditors' interest (self-administration of the cover pool or Eigenverwaltung). Should the creditors committee oppose this option unanimously, the competent court would decide whether or not to uphold the continuation order.

... but offers the chance of higher recovery rates like CPT covered bonds

Although running off the cover pool assets on the basis of self-administration could take longer than a normal insolvency process, recovery rates could be higher. We believe that the flexibility created by this additional option should it become necessary to wind up the cover pool is helpful as a way of avoiding a fire-sale situation due to forced liquidation. This provision serves the interests of the pfandbrief creditors in our view. These provisions are in our view very similar to the repayment structure of a conditional pass through (CPT) covered bond. Upon issuer default and in the event of an illiquid cover pool a CPT covered bond will be repaid according to the cash inflow into the cover pool. This repayment options substantially reduces the refinancing and liquidity risk for the cover pool. Rating agencies view a CPT option as a significant strength in their credit analysis. If the CPT option is triggered, rating agencies would not consider this as a default event. On the other hand, rating agencies view the beginning of the Eigenverwaltung (i.e. the continuation of core operation of the cover pool as an alternative to an insolvency proceeding for the cover pool) as a default event. Therefore the provisions on the German concept of Eigenverwaltung does not strengthen the credit profile in the view of the rating agencies at present.

Residual legal risks following the insolvency of a pfandbrief bank

Other issues in the context of the insolvency of a pfandbrief bank

The options we have described above for administering the cover pool (or a pfandbrief bank with limited business activities) following the insolvency of the issuer mainly aim to mitigate operational risks and secure the pfandbrief creditors' preferential claim on the cover pool. When analysing the potential issuer insolvency scenario, rating agencies investigate the extent of the threat to the cover pool's intrinsic value in specific circumstances. In this context, we consider the following legal issues:

Reassignment of cover assets (claw back risk)

- The Pfandbrief Act ensures that pfandbrief creditors have a preferential claim over the entire cover pool (including the entire over-collateralisation). As regard the liquidity of the cover pool, as we have described earlier, the issuer has to maintain the necessary over-collateralisation in the form of liquid cover assets. In addition, the 180-day rule aims to ensure that sufficient liquidity is available to cover payment obligations in connection with the cover pool during the next six months. However, the pfandbrief bank's insolvency administrator can attempt to reclaim some of this over-collateralisation. In order to do so, however, he must demonstrate to the competent court that the assets in question will clearly not be needed to satisfy the pfandbrief creditors' claims. BaFin's ability to impose individual over-collateralisation levels on pfandbrief banks now gives a further reference point for bankruptcy courts to use when coming to a decision. We believe that the hurdles in the way of a potential reassignment (claw back risk) of parts of the cover pool to the bankrupt estate of the insolvent pfandbrief bank are generally very high. They should prevent any available free over-collateralisation being automatically handed back to the pfandbrief bank's bankrupt estate.

Setoff risks

- Pfandbrief bank customers who have both cash on deposit at the bank and a loan from the bank could try to offset opposing (or mutual) claims against each after the issuer's insolvency. However, the Pfandbrief Act obviates this potential offset risk to pfandbrief creditors if for example the pfandbrief bank's cover pool assets are to be netted off against for example (due) deposits held with the insolvent bank. Cover pool assets and liabilities falling due can be netted off however; the aim in this case is to reduce the volume of the cover pool and the volume of the outstanding pfandbriefe by the same amount.

Commingling of cash flows

» It is unlikely to be the norm for pfandbrief banks that all their cover pool related cash flows will be accounted for separately and booked to a separate clearing account even before the insolvency of the issuer. For this reason, the rating agencies point out that there is a risk for the cover pools that, after the insolvency of the issuer, the cover pool administrator might not have direct access to all cash flows into the cover pool. In the worst-case scenario, it could become impossible to separate cash inflows from the bankrupt estate and they could therefore become entirely lost to the cover pool. We believe that this risk is mitigated by the fact that a cover pool administrator can be appointed even before the pfandbrief bank defaults. The administrator would then have the opportunity to initiate appropriate precautionary measures such as the prompt redirection of cash flows. The Pfandbrief also makes it clear that cash inflows which replace assets in the cover pool automatically belong to the cover pool. However, this assumes that cash inflows are booked to accounts listed in the cover register for the pfandbriefe. We understand this phrasing as intended to give the pfandbrief banks the option to limit the pfandbrief creditors' potential loss risk which can arise through the irreversible commingling of cover pool receipts with the pfandbrief bank's other assets and eventual loss of the bankrupt estate, especially in the event of the bank's insolvency.

Provisions against residual legal risks

Even though the residual legal risks for pfandbrief creditors in the event of the insolvency of the issuer outlined here as examples cannot be excluded with absolute certainty, there are nevertheless regulations in the Pfandbrief Act which limit these risks and contribute to avoiding them at best. In our view, these are quality features of the legal framework of German pfandbriefe.

Our assessment

Pfandbrief Act offers very high level of protection

The Pfandbrief Act offers pfandbrief creditors a high level of protection – including by international standards. This helps explain why the pfandbrief is currently one of the safest investments available. We also believe that the rest of the financial sector would probably provide mutual support in the event of a pfandbrief bank getting into difficulties, since protecting the pfandbrief "brand" would be very much in the interests of German banks.

SUMMARY PFANDBRIEF ACT

Covered bond categories	Mortgage pfandbriefe, public sector pfandbriefe, ship pfandbriefe, aircraft pfandbriefe
Issuers	Universal banks holding a pfandbrief license
Specialist banks principle	No
Special public supervision	Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)
Independent, periodic cover pool monitoring	Yes (trustee/Treuhänder)
Main categories of permitted "regular" cover assets	Depends on pfandbrief category: mortgage loans, public sector loans, ship finance or aircraft finance
Other permitted cover assets	For all pfandbrief categories: claims on the ECB, central banks and other qualifying financial institutions (up to 10 percent), derivatives Additionally for mortgage, ship and aircraft pfandbriefe: claims on public sector entities (up to 20 percent including asset types named above)
Geographical restrictions on cover assets	Public sector pfandbrief: EEA, Switzerland, USA, Canada, Japan Mortgage pfandbrief: EEA, Australia, Canada, Japan, New Zealand Singapore, Switzerland, USA Aircraft pfandbrief, ship pfandbrief: no restrictions
Loan-to-value (LTV) ceilings	Residential mortgages: 60 percent Commercial mortgages: 60 percent Ship mortgages: 60 percent Aircraft mortgages: 60 percent
Basis for calculating LTV	Mortgage lending value
Do covered bond creditors have a prior claim on the portions of loans in excess of the LTV ceiling?	No
Specific cover regulations	Aggregate claims on a single credit institution may not exceed 2 percent of outstanding pfandbrief volume Present value of derivatives: max. 12 percent Cap on pool share of non-EEA countries that do not guarantee priority of pfandbrief creditors in bankruptcy: max. 10 percent
Statutory minimum over-collateralisation	2 percent (in present-value terms in stress test context)
Do covered bond creditors also have a prior claim on cover assets in excess of the statutory minimum over-collateralisation?	Yes
Issuance cap	No
Cover calculation/matching and liquidity rules	Present-value and nominal cover required, issuer must maintain a 180-days liquidity buffer
Stress test included in cover calculation rules?	Yes
Special regulations governing covered bond repayment modalities*	No
Treatment of covered bonds in insolvency event	Servicing continues as per issue T&Cs

Source: European Covered Bond Council (ECBC), DZ BANK Research

Adaptability of German pfandbrief a strength

Repeated revisions of the Pfandbrief Act since its creation in 2005 underline the fact that the German legislator is prepared to respond to changing general conditions and to adjust the legal framework governing German pfandbriefe promptly. This phenomenon is nothing new, merely a continuation of established practice since the introduction of the Mortgage Bank Act. However, the frequency of changes to the Pfandbrief Act has increase compared to the frequency of amendments implemented during the reign of the Mortgage Bank Act. At the same time, it is a good thing in our view that, so far, the legislator has regularly reviewed the legal framework and, where necessary, re-aligned it to a continually changing regulatory environment and new market standards. If anything, it is clear from the discussion on a harmonisation of European covered bond frameworks that very few amendments would have to be made to the Pfandbrief Act – proof, if proof be needed, that regular adjustments to the Pfandbrief Act have created and maintained a modern framework which conforms with current international standards and indeed can be seen as a model for such standards.

REGULATORY TREATMENT OF GERMAN PFANDBRIEFE

Revised Basel III accord makes provision for privileged capital status for covered bonds and is thus based on European standards

Covered bonds and therefore also pfandbriefe are more and more recognised worldwide. In its revision of the Basel III accord, the Basel Committee on Banking Supervision (the Basel Committee) makes provision for privileged capital status for covered bonds, bringing it in line with European banking law ("Basel III: Finalising post-crisis reforms" of December 2017). This means that, under the credit risk standardised approach, a lower risk weight will apply in future to a covered bond than to senior unsecured bank debt. The Basel Committee's formulations are largely based on European banking law. The UCITS criteria have formed the basis for the definition of the "covered bond" concept in the Basel III rules. For the covered bonds to qualify for privileged treatment, the cover pool may contain only claims on public sector entities or mortgage loans. No mention is made of ship or aircraft loans. Up to 15 percent of the cover pool may nevertheless consist of claims on financial institutions if the risk weight does not exceed 30 percent. Duties of disclosure are also formulated for the covered bond programme, which are in line with those contained in the European Capital Requirements Regulation (CRR). However, one aspect of the Basel Committee's criteria goes beyond the applicable European law: nominal over-collateralisation of 10 percent must be maintained at all times for a covered bond which qualifies for privileged status. The Basel Committee is thus sticking to its principles here. Very similar criteria, including the 10 percent over-collateralisation requirement, were also already formulated in April 2014 as a precondition for assigning a reduced exposure value to covered bonds when calculating large exposures (see our Covered Bond Biweekly of 30 April 2014).

Criteria of UCTIS and CRR/CRD met

German pfandbriefe meet the requirements of article 52(4) of the Directive regulating Undertakings for Collective Investment in Transferable Securities (UCITS). Pfandbriefe are also eligible in principle for use as collateral for funding operations with the ECB. With the exception of aircraft pfandbriefe, all other categories of pfandbriefe also meet the criteria defined by the CRR. In principle, banks can use any type of pfandbrief for their liquidity portfolios in the context of the Liquidity Coverage Ratio (LCR), assuming the bonds meet specific requirements, e.g. in relation to issue volume and ratings. On 22 September 2017, the EBA issued a statement (Single Rulebook Q&A) saying that covered bonds secured by aircraft loans do not meet the requirements for eligibility as high-quality assets in the context of calculating the LCR (neither as Level 1 assets or Level 2A or Level 2B assets). The EBA's interpretation would mean that the requirements for preferential treatment always had to be met in order for covered bonds to be eligible for LCR purposes. In our view, however, this does not conform to the underlying LCR rules. A fundamental requirement for LCR eligibility in Article 10(1)(f)(i) LCR Regulation is that covered bonds should meet the general requirements of Article 52(4) of the UCITS Directive or meet the prerequisites for preferential treatment as per paragraph 4 or 5 of Article 129 CRR. This "or" rule would no longer have any meaning whatsoever if the EBA interpretation were applied. There is another curious rule. In principle, aircraft, mortgage and ship pfandbriefe qualify as high-quality liquid assets (HQLA) so long as they are rated at least A3 or A-. If the rating for aircraft and ship pfandbriefe along with mortgage pfandbriefe, which are partly secured by commercial property loans, falls below this threshold, then a classification in the HQLA 2B category is still possible. Financings for aircraft, commercial real estate or ships are explicitly excluded from HQLA category 2B.

SUMMARY OF THE REGULATORY TREATMENT OF PFANDBRIEFE

Relevant regulation	Treatment/assessment of Pfandbriefe
Criteria of article 52 (4) UCITS directive satisfied?	Yes
Do the cover assets meet the criteria of article 129 (1) CRR?	Yes (mortgage pfandbriefe, public sector pfandbriefe, ship pfandbriefe), No (aircraft pfandbriefe)
LCR eligible in principle?	Yes, but pfandbriefe backed by aircraft, commercial property or ship financings and rated lower than A3 or A-, are not HQLAs.
ECB eligible in principle?	Yes

Source: DZ BANK Research

Definition of cover assets

Article 129 CRR regulates under what circumstances investors in the banking sector may apply a privileged risk weight when calculating their regulatory capitalisation requirement (credit risk standard approach). In the first paragraph of this article, a conclusive list is given of those assets which may be included in the cover pool for a privileged treatment of the covered bonds to be possible in principle. Aircraft loans are not included in the assets listed in article 129 CRR.

Transparency requirements must also be met

In addition, in order for the covered bonds ultimately to quality for a privileged risk weight, investors must also be in a position to demonstrate that they have access to information on the cover assets which is updated at least half-yearly. According to the vdp, the transparency requirements of the Pfandbrief Act should meet CRR requirements.

OVERVIEW: EURO-BENCHMARK-PFANDBRIEFE

We have included all DZ HYP's euro denominated pfandbriefe with an individual issuance volume of at least EUR 250m. All these pfandbriefe are hard bullet.

EURO-BENCHMARK-PFANDBRIEFE (WITH AN ISSUANCE VOLUME OF AT LEAST EUR 500M)

As of 23 August 2018	ISIN	Pfandbrief type	Due date	Coupon (in per cent)	Volume (EUR m)	Indicative swap spreads (in basis points)	LCR-Category
DZ HYP	DE000A13SW15	Mortgage pfandbrief	10.09.2018	0.025%	500	-20	1
DZ HYP	DE000A12UGK4	Public sector pfandbrief	20.11.2019	0.250%	500	-17	1
DZ HYP	DE000A1REYW6	Mortgage pfandbrief	29.01.2020	1.375%	500	-17	1
DZ HYP	DE000A1R1CU6	Mortgage pfandbrief	29.05.2020	1.125%	500	-16	1
DZ HYP	DE000A12T606	Mortgage pfandbrief	21.01.2021	0.250%	500	-17	1
DZ HYP	DE000A11QBA6	Mortgage pfandbrief	21.07.2021	0.875%	500	-17	1
DZ HYP	DE000A1MLZQ1	Mortgage pfandbrief	29.03.2022	2.500%	500	-16	1
DZ HYP	DE000A14KK32	Mortgage pfandbrief	29.07.2022	0.500%	500	-16	1
DZ HYP	DE000A14KKJ5	Mortgage pfandbrief	30.09.2022	0.125%	500	-16	1
DZ HYP	DE000A161ZU5	Mortgage pfandbrief	24.03.2023	0.200%	500	-16	1
DZ HYP	DE000A2G9HC8	Mortgage pfandbrief	30.06.2023	0.250%	500	-12	1
DZ HYP	DE000A161ZL4	Mortgage pfandbrief	27.10.2023	0.625%	500	-16	1
DZ HYP	DE000A2BPJ45	Mortgage pfandbrief	01.03.2024	0.125%	500	-16	1
DZ HYP	DE000A13SWZ1	Mortgage pfandbrief	05.06.2024	0.625%	500	-14	1
DZ HYP	DE000A12UGG2	Mortgage pfandbrief	18.09.2024	1.125%	750	-15	1
DZ HYP	DE000A2AAW12	Mortgage pfandbrief	06.12.2024	0.050%	500	-12	1
DZ HYP	DE000A2AASB4	Mortgage pfandbrief	06.06.2025	0.375%	750	-13	1
DZ HYP	DE000A161ZQ3	Mortgage pfandbrief	02.02.2026	0.750%	875	-14	1
DZ HYP	DE000A14KKM9	Mortgage pfandbrief	31.03.2026	0.375%	500	-12	1
DZ HYP	DE000A2BPJ78	Mortgage pfandbrief	16.06.2026	0.500%	500	-12	1
DZ HYP	DE000A2AAX45	Mortgage pfandbrief	31.08.2026	0.100%	500	-13	1
DZ HYP	DE000A2AAW53	Mortgage pfandbrief	30.09.2026	0.500%	500	-12	1
DZ HYP	DE000A14J5J4	Mortgage pfandbrief	01.04.2027	0.500%	750	-12	1
DZ HYP	DE000A2G9HD6	Mortgage pfandbrief	30.06.2027	0.750%	500	-9	1
DZ HYP	DE000A2BPJ86	Mortgage pfandbrief	30.08.2027	0.625%	750	-11	1
DZ HYP	DE000A2GSP56	Mortgage pfandbrief	22.03.2028	0.875%	750	-10	1
DZ HYP	DE000A13SR38	Mortgage pfandbrief	18.01.2030	0.875%	750	-4	1

Source: Bloomberg, DZ BANK Research, * green pfandbrief, ** based on S&P's pfandbrief rating

SUB-BENCHMARK-PFANDBRIEFE (BONDS WITH A VOLUME OF AT LEAST EUR 250M, BUT LESS THAN EUR 500M)

As of 23 August 2018	ISIN	Pfandbrief type	Due date	Coupon (in per cent)	Volume (EUR m)	Indicative swap spreads (in basis points)	LCR-Category
DZ HYP	DE000A2BPJ60	Public sector pfandbrief	26.02.2025	0.625%	250	-6	2A
DZ HYP	DE000A2BPJ60	Public sector pfandbrief	23.03.2037	1.375%	250	6	2A

Source: Bloomberg, DZ BANK Research

I. Imprint

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