PREFACE

The Jumbo Pfandbrief issued in 1995 was impulse and trigger for the creation of today’s global covered bond market: covered bonds as a funding vehicle became known to an increasing number of investors – including banks – when Pfandbriefe began to be placed outside of Germany. Since then, the Pfandbrief market has successfully overcome numerous crises.

Nonetheless, as a result of the global financial markets crisis and the sovereign debt crisis, the monetary policy pursued by the European Central Bank has a dominating influence on today’s Pfandbrief market. This also significantly impacts the yields and risk premia of German Pfandbriefe. Since the ECB’s third covered bond purchase programme (CBPP3) was initiated in the autumn of 2015, the volume of covered bonds available to private investors on the secondary market has markedly fallen in the euro area. All these purchase programmes will continue to have significant long-term effects.

The importance of real estate financing for Pfandbrief issuers has been growing for years; this is also reflected in the outstanding volume of covered bonds. In terms of volume, mortgage banks are still the largest issuer group – ahead of the Landesbanken. Accordingly, the proportion of Mortgage Pfandbriefe to all outstanding Pfandbriefe has risen continuously now for more than ten years. The steadily increasing dominance of mortgage covered bonds is also visible on the international market for covered bank bonds. Even though momentum for this trend is likely to slow in Germany – and in the entire covered bond market – in future, the general tendency is likely to prevail.

The present report on the German Pfandbrief market 2017/2018 provides an overview of current developments and covers the trend topics of “green bonds” and “harmonisation of the covered bond legislation”. It also explains, in detail, the legal basis of the German Pfandbrief.

DG HYP

September 2017
GERMAN PFANDBRIEFE RIGHT ON TREND

The introduction of the jumbo pfandbrief in 1995 has had a major influence on the development of the global covered bond market. Back then, German pfandbrief issuers set in motion a trend towards the internationalisation of the European covered bond market which continues to-date with an ongoing globalisation of the market for covered bank bonds. Through the placement of pfandbriefe beyond Germany’s borders, the covered bond refinancing instrument became known to an ever wider circle of investors, which naturally also included banks. Banks recognised an opportunity which offered them covered bonds for their funding mix. Gradually, more and more countries in Europe enacted a covered bond framework or made amendments if they already had a legal framework in place. Luxembourg (1997), France, Finland (both in 1999) and Ireland (2001) started the process. Meanwhile, there is now hardly a single blank left on the European Union’s covered bond map. In 2003, the first covered bond was issued by a UK bank. The UK covered bond enjoys great popularity outside Europe since it has served as model in many countries.

In the past 20 years, the pfandbrief market has had to withstand more than just the odd crisis. Here with a brief list with key words which does not claim to be comprehensive: Asian economic crisis (1998), the crises in Brazil and Russia (1999), the attack on the World Trade Center on 11 September 2001, the collapse of the Icelandic banking system (2008), the global financial crisis (triggered by the collapse of the investment bank Lehman Brothers in September 2008), the European sovereign debt crisis which culminated with the restructuring of the Greek sovereign debt in 2012 and the decision by UK voters to leave the European Union (Brexit) in June 2016. However, it was not just these international crises which have kept the jumbo market on tenterhooks in the last 20 years. Well before the recent financial crises, there were already discussions about a suitable process for new issues, about liquidity in the secondary market and preferably investor-friendly conventions in market making. The European Union’s Savings Directive led to a big debate in 2001 and 2002 and even had an influence on issuance behaviour.

There is no shortage of topical issues at the moment either. At present, it is mainly the European Central Bank with its expansive monetary policy which is having a strong and overriding influence on the development of the pfandbrief market. Changes made to supervisory law for banks in the last few years are having an ever greater impact on the issue behaviour of banks for example. In light of this, pfandbriefe and covered bonds are currently becoming increasingly attractive as long-term refinancing instrument even for smaller financial institutions. At the same time, in spite of declarations of intent to the contrary, the relevant authorities have so far failed to limit the enormous importance of rating agencies. They still have a major influence. Topical issues at present also include green bonds and the debate about the harmonisation of covered bond frameworks in Europe. Ultimately, we can only speculate about what is likely to be a short-living fashion and what will prove to be an enduring trend. However, as an important part of the global covered bond market, the pfandbrief market is not only influenced by these developments, it is also a major driving force in the global market, exerting its own influence. Reason enough, then, for us to take a close look at current developments in the pfandbrief market in this study and at the trends mentioned above.
Growing popularity of pfandbriefe as long-term refinancing instrument

Maturities in the long-term credit business, above all in the case of residential mortgages, have increased in the low-interest-rate environment. At the same time, many households are putting their savings into bank accounts offering short notice periods. In addition, new regulatory requirements have led to an increase in demand for stable long-term refinancing sources for banks. One example in this context is the structural liquidity ratio which is the net stable funding ratio (NSFR for short). A growing number of smaller banks therefore use pfandbriefe or have publicly declared an interest in pfandbriefe as a funding instrument. In the past, smaller institutions in particular have used the capital market to meet their funding requirements fairly rarely, because communication with investors for example and, where relevant also with rating agencies, can be labour-intensive. In addition, their first foray into the capital market meant that the banks in question also had to get to grips with requirements surrounding the bond documentation. However, since the introduction of the NSFR, these hurdles no longer seem insurmountable. In the last few months, there have been a growing number of pfandbrief banks with quite a small volume of business. In addition, since mid-2017, the first building society (Bausparkasse) has entered the pfandbrief market, and others are likely to follow in the next few years.

One alternative to banks having their own pfandbrief business, especially in the case of smaller institutions, would be to participate in the funding of a larger pfandbrief bank via so-called pooling models where banks transfer loans to pfandbrief banks, which can be used as collateral for pfandbriefe. The pfandbrief bank then grants the bank participating in the pooling corresponding long-term funding which it is able to raise in the capital market through pfandbriefe. The advantage of the pooling model for smaller banks is that they not have to set up their own issue programme for pfandbriefe. In addition, smaller banks are able to benefit from the reputation of the pfandbrief bank which takes over all communication work with investors and where applicable also rating agencies. On the other hand, the smaller banks are limited to the funding offers (e.g. in terms of maturity and funding costs) put forward by the pfandbrief bank in the context of pooling. In addition, the formalities involved in the transfer of claims to the pfandbrief bank are likely to be just as onerous (even if a refinancing register is used) as if the party transferring the claims were managing a cover pool for their own pfandbriefe. In order for the pfandbrief banks to be able to use the liabilities transferred for their cover pool, the collateral put forward by the bank taking part in the pooling must also meet all the requirements set out in the Pfandbrief Act. Further information on legal issues in connection with the pooling models can be found in the section on the refinancing register (see page 446). A number of landesbanken have been offering their own pooling models for some time, and, as far as we know, a number of German savings banks take advantage of these offers. However, we are not aware of any official figures in this respect which would give a reliable idea of the volume of these pooling transactions. Bearing in mind a fairly large number of savings banks which are represented in the capital market with their own pfandbriefe, we suspect that the volume of the pooling models is still small in relation to the total size of the pfandbrief market.
German savings banks (Sparkassen) are the biggest group among pfandbrief banks based on number of issuers per bank group. Mortgage banks and commercial banks are more or less on a level with licensed pfandbrief banks at 15 and 14 respectively. For some time now, the number of mortgage banks in the German pfandbrief market has been declining as a result of mergers and acquisitions, and the trend is likely to continue. In view of the fact, as mentioned earlier, that the pfandbrief business is becoming increasingly attractive for smaller banks in current conditions, the number of commercial banks with a pfandbrief licence has grown steadily in the last few years. The last issuer group in the pfandbrief market is made up of the German landesbanken. As per the second quarter 2017, there were still nine landesbanken with a pfandbrief licence. In view of the merger of NORD/LB with BremerLB and forthcoming sale of HSH Nordbank, however, the number of pfandbrief banks in the landesbanken camp is set to fall. As yet, only one building society (Bausparkasse) has a pfandbrief licence. The number of issuers in this group is likely to grow in the next few years. The German financial supervisory authority (Bundesanstalt für Finanzdienstleistungsaufsicht or BaFin) provides a list on its website; anybody who is interested can search current pfandbrief licences and licences awarded per issuer.

The way in which the market is split between issuers looks completely different if we look at the pfandbrief volume outstanding. Mortgage banks are still the issuer group with the largest volume with a share of 43.3 per cent, ahead of the landesbanken at 29.4 per cent. The market share of commercial banks is growing. This group of institutions makes it into third place with a market share of 20.3 per cent as per the second quarter 2017. There is a striking difference between market share based on number of issuers versus market share based on volume outstanding in the case of the German savings banks. In this comparison, the savings banks are only in fourth place with a share of 6.5 of the outstanding pfandbrief volume.

If the pfandbrief banks are classified according to their volume outstanding, then the picture looks as shown in the following graph. The combined market share of the 20 (ten) pfandbrief banks with the biggest volume amounted to around 88 (63) per cent as per the second quarter 2017. Since we expect a number of mergers among mortgage banks which are among the issuers with the biggest volume, we expect a growing concentration of market share in the next few months.
The volume outstanding of pfandbriefe rose again in the first quarter 2017 for the first time in over 15 years. Although the volume outstanding of public sector pfandbriefe continues to dwindle slightly, the speed of this shrinking process has slowed down significantly in the last few quarters. In contrast, the volume outstanding of mortgage pfandbriefe has remained quite stable in the last ten years, fluctuating between EUR 189.9bn and EUR 225.1bn. The volume outstanding of mortgage pfandbriefe reached EUR 215.1bn in the second quarter 2017. As such, the proportion of mortgage pfandbriefe in relation to total pfandbrief volume outstanding has been increasing steadily for over ten years. Mortgage covered bonds still dominate the international market for covered bank bonds. Although the trend is likely to lose momentum in Germany and in the entire covered bond market in future, we nevertheless expect it to remain the underlying trend.
Yield have increased in spite of tighter swap spreads

Yields in the German pfandbrief market hit an all-time low in August 2016. The generic yields for ten-year pfandbriefe calculated by DZ BANK Research almost hit the zero line at 3.9 basis points. Meanwhile, pfandbrief yields in the mid and longer maturity spectrum have increased again slightly. The generic pfandbrief yield which we calculate for a ten-year maturity reached just under 0.9 per cent in July 2017. The yield level at the short end is still influenced by the European Central Bank's key interest rates; its deposit rate has been at minus 40 basis points since March 2016. This yardstick is likely to continue to set the way forward for pfandbrief yields at the short end of the curve.

In the last few months, the increase in yields of ten-year pfandbriefe together with the sideways movement of pfandbrief yields with a short maturity has led to a gradually steepening yield curve in the pfandbrief market. During the period from July 2016 to July 2017, the 2/10 spread increased by around 70 basis points. Around two thirds of this movement took place in the maturity segments of five to ten years. The 5/10 spread rose by 45 basis points during the same 12-month period, whereas the 2/5 spread widened by around 25 basis points. This trend was not confined to the German market segment; yields rose in the whole covered bond market. This general trend, which was mainly driven by an increase in the inflation expectations of market participants in H2 2016, which then came down again after January 2017.

The changes in the yields of German pfandbriefe mainly reflect the general yield trend in the eurozone. The risk premium on German pfandbriefe as measured by asset swap spreads (ASW), have changed very little in the 12 months from July 2016 to July 2017. The generic ASWs which we calculate for the pfandbrief market in the short and medium maturity segment are at the same level. On average, the ASWs of pfandbriefe with a two year maturity have tightened slightly more during the same period in relation to pfandbriefe with a maturity or five and ten years from July 2016 to July 2017. The ASWs of two-year bonds tightened by around 14 basis points. In contrast, the average ASW of five-year pfandbriefe tightened by around six basis points. On balance, the ASWs for ten-year bonds were practically unchanged year-on-year.
In the last few years, average AWSs in the covered bond market and German pfandbriefe have moved largely in tandem. Spreads in the pfandbrief market generally widened less than in the covered bond market as a whole. On the other hand, the tightening potential during recovery phases was less pronounced in the pfandbrief market. Pfandbriefe are therefore recommended, above all in phases when spreads are generally widening.

Pfandbriefe can remain a valuable asset even after they have been repaid

A pfandbrief certificate can remain valuable even after the repayment of the claims it securitises. However, investors (or collectors) will have to be patient. In April 2017, an old and already cancelled pfandbrief certificate came under the hammer. It was a pfandbrief from the Schlesische Landschaft (Prussian pfandbrief bank) from the year 1784. The certificate was for 20 Reichsthaler and was printed on parchment. The pfandbrief was secured on an estate in Ober and Nieder Starrwitz in the Grottau district (now in Silesia, Poland). The winning bidder paid EUR 1,150.

Was that a good deal? Had the original owner of the certificate held onto it all this time, we estimate that he would have made a 2.9 per cent return p.a. Under Prussian mint regulations, the equivalent value of 20 Reichsthaler was around 334.3 gram of fine silver. Based on the price of silver of USD 15.9 per ounce and on an exchange rate of EUR 1.145 per euro, this gives a equivalent value of around EUR 150 for 20 Reichsthaler (as at 12 July 2017). This means an increase in value of 666.67% in relation to the auction price, which, spread over the entire period since 1784, means 2.9 per cent per annum. This figure does not take into account any interest-rate effects. In addition, it is very difficult to compare the purchasing power of a Thaler in 1784 with the corresponding amount in euro now. Nevertheless, pfandbrief certificates do retain some value, so hold onto yours! Your great-great-great-great-grandchildren will thank you for it!

Source: HWPH Historisches Wertpapierhaus AG, Wikipedia.org, presentation DZ BANK Research

In the last few years, the overarching trend for ASWs was positive. In other words, spreads gradually tightened, even though there were regular reversals. Since October 2014, the European Central Bank has been purchasing covered bonds in the primary and secondary markets on a massive scale as part of its third covered bond purchase programme (CBPP3), although its influence is not limited to just the ASWs of the bonds which are eligible for purchase under CBPP3. In view of crowding out effects, the impact of CBPP3 has even spilt over to bonds which are not eligible for the ECB’s purchase programme. The ECB is expected to continue with its QE policy.

Any announcements about ECB’s future monetary policy will be of great importance
of which CBPP3 is a component - until the end of 2017, and is likely to start tapering at the earliest during the course of 2018 and eventually to allow net purchases to run out. The ECB could give indications about potential exit scenarios as early as the autumn of 2017. Any announcements by the ECB could therefore already have an impact on the swap spreads of covered bonds this autumn. The European Central Bank could reinvest any cash flows from repayments in connection with its CBPP3 portfolio in order to maintain the monetary policy impetus. However, whether or not the cash flows will be reinvested in the covered bond market is uncertain, although equally, it is not ruled out. In view of the considerable importance of ECB measures for the pfandbrief and covered bond markets, we are devoting the next section to this issue and will be looking in detail at the impact of CBPP3 and of a potential exit by the ECB from its purchase programme.
EFFECTS OF ECB PURCHASE PROGRAMMES WILL STILL BE FELT IN THE LONG TERM

Third purchase programme has now been going for three years

In September 2014, the European Central Bank (ECB) announced a third purchase programme for covered bank bonds (Covered Bond Purchase Programme 3, or CBPP3). Since October 2014, the ECB has been purchasing covered bank bonds week in and week out in the primary and secondary markets. At the end of the second quarter of 2017, its covered bond holdings in the CBPP3 portfolio had risen to EUR 222.6bn at amortised cost. The ECB had already carried out a purchase programme in 2009 and 2011 respectively. Both were aimed at stabilising the covered bond market during the years of the financial crisis and at supporting banks in their efforts to raise funds via the capital market. The first Covered Bond Purchase Programme (CBPP1) reached a total volume of EUR 60bn with purchases spread evenly over a 12-month period. In the case of CBPP2, the ECB was originally aiming for a total volume of EUR 40bn. In the end, however, it was only EUR 16.4bn. If the remaining holdings from the first two covered bond purchase programmes are also taken into account, the covered bond holdings on the ECB’s balance sheet amounted to EUR 235.7bn at the end of the second quarter 2017.

In contrast to the first two purchase programmes, CBPP3 was exclusively set up for reasons of monetary policy. The purchase of covered bonds serves to implement the supply target in the context of the ECB’s quantitative easing (QE). In October 2014, most market participants probably still doubted that the ECB would intervene on such a massive scale in the covered bond market with CBPP3 or that it would take such a large volume of bonds from the market. At the end of the second quarter 2017, holdings of covered bank bonds being purchased as part of the ongoing, monetary-policy-led Asset Purchase Programme (APP) which involves the purchase of sovereign bonds, securitisations and corporate bonds, accounted for 11.4 per cent (CBPP3 only).

In spite of major concerns on the part of many market participants about potential distortions in the covered bond market, the ECB has now acquired a significant share of the available covered bond volume via its third covered bond purchase programme. The ECB has a total of EUR 1,363bn available for its interventions in the covered bond market. This figure (as per the end of 2015) from the European Covered Bond Council is based exclusively on covered bank bonds from issuers in the eurozone which are

HOLDINGS FROM THE THREE COVERED BOND PURCHASE PROGRAMMES (CBPP) FIGURES IN EURO BN

Source: European Central Bank, as at 30 June 2017

ECB’s three covered bond purchase programmes

Source: European Central Bank, as at 30 June 2017

CBPP3 as part of the ECB’s QE

Covered bond market makes an important contribution
moreover denominated in euro. The covered bond market volume worldwide reaches a figure of EUR 2,498bn (as per the end of 2015). At the beginning of the APP, covered bank bonds offered a quick and effective way of deploying an expansive monetary impetus which the ECB has not been able to give up. However, the volume of monthly covered bond purchases has tended to decline since October 2014.

The secondary market is the most important source for the ECB's purchases. The bank's purchase options in the secondary market, however, have deteriorated steadily over time on the back of declining liquidity. The primary market has therefore become much more important for activities in the context of CBPP3 since September 2015. It seems that the ECB is still reluctant to give up the covered bond market in its efforts to implement its monetary policy targets, even though the contribution of the covered bond market to the current APP generally seems to be declining further.

**MONTHLY PURCHASE VOLUME UNDER CBPP3**

**FIGURES IN EURO BN**

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<th>09/14</th>
<th>12/14</th>
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<th>06/15</th>
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<td>ECB CBPP3 Purchases per month secondary market</td>
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Source: European Central Bank, as at 30 June 2017

We have more up-to-date figures for the segment of liquid euro benchmark covered bonds (euro-denominated, fixed-interest bonds with an issue volume of at least EUR 500m which have been placed via a syndicate of banks). In the past, there has been a positive correlation between the new issue volume in this sub-segment of the market and the ECB's purchase volume in the primary market. This means that the additional demand from the ECB through CBPP3 is clearly noticeable in new-issue order books. The data outlined below which aim to show the influence of the ECB on the covered bond market relate to the sub-market for euro benchmark covered bonds. The euro benchmark covered bonds of issuers from the eurozone account for around 46 per cent of the total volume outstanding of covered bonds in the eurozone (according to data from the European Covered Bond Council, as per the end of 2016).

After CBPP3 was announced, there was an increase in the volume of euro benchmark covered bonds issued. The volume issued in 2015 and 2016, was up on the level in 2013 and 2014. ECB purchases are likely to have contributed to this development. Additional demand from the ECB has led to a decline in risk premiums (swap spreads) for covered bonds. Accordingly, refinancing conditions for covered bank bonds have become more attractive from the point of view of the financial institutions. In the second quarter 2017, the new issue volume of euro benchmark covered bonds followed a similar trajectory to 2014 and 2015; however, it is slightly lower than in the same period last year. In this respect, it is worth bearing in mind that, from mid-2016 to the beginning of 2017, the ECB offered banks a very cheap refinancing channel with its second targeted long-term refinancing offer (TLTRO II). TLTRO II was therefore an attractive funding alternative for bank treasurers for maturities of up to four years. In addition,
there are currently regulatory incentives for banks to issue unsecured, bail-in-able debt. Both have hampered a further rise in the issue volume of covered bonds. In spite of a higher issuer volume in 2015 and 2016, the volume outstanding of covered bonds overall has been falling because more covered bonds have been falling due in the last few years than issued.

An environment of falling swap spreads and lower volumes outstanding has two major disadvantages from the point of view of investors: falling secondary market liquidity and lower return on new investments. The liquidity of bonds in the secondary market (as measured by turnover) has been declining since the beginning of CBPP3. This is entirely plausible if we consider a simple fact. At the end of 2016, the volume outstanding of euro benchmark covered bonds from eurozone issuers amounted to EUR 584bn (previous year: EUR 629bn). At that same time, the ECB's holdings from its three covered bond purchase programmes amounted to EUR 223bn (previous year EUR 174bn). This corresponds to around 38 per cent (previous year 28 per cent) of the euro benchmark covered bond volume outstanding as per the end of 2016 (figures as per 30 June 2017: volume outstanding EUR 573.4bn, ECB holdings in the CBPPs: EUR 235.7bn, ratio of the two figures: 41 per cent). Even though the ECB does not purchase solely euro benchmark covered bonds, these figures clearly show that the volume of covered bonds available to investors in the secondary market within the eurozone is declining noticeably. After all, the ECB has announced that it will hold on to the bonds accumulated as part of the CBPPs until maturity. In addition, it has become less attractive for investors to invest their money in covered bonds in view of lower swap spreads and a generally lower level of returns in the eurozone because of the ECB's current APP. Investors are therefore switching for example to the covered bonds of banks which do not qualify for CBPP3 or to other asset classes. The latter, i.e. diverting private capital into credit markets in general was and remains one of the avowed aims being pursued by the APP in order to stimulate the real economy through its expansive monetary policy. However, it could also lead European investors to buy bonds from non-European banks. This would mean that the wished-for monetary-policy impetus would not benefit the eurozone.
The fact that investors are being diverted or pushed out of the eurozone covered bond market can be demonstrated partly through order-book statistics in the primary market for euro benchmark covered bonds. The number of bids has been much smaller since 2015 than it was in 2012 and 2013, but the average volume per bid has increased accordingly. The bid-cover ratio for new issues moreover shows a decline in investor interest as a whole, because, since 2015, oversubscription multiples which can be worked out from the bid-cover ratio, have been below the level during the period from 2012 to 2014. This applies to CBPP3-eligible and non-CBPP3-eligible covered bonds in fairly equal measure. From this, and bearing in mind an increase in average volume per bid in the primary book, we can conclude that smaller covered bond investors above all have been driven out of the market, probably on the back of the fall in swap spread and yield levels.

As outlined above, it is possible to demonstrate that the ECB is driving investors out of the covered bond market. The question remains, however, which groups of investors are especially affected by this driving-out process. Since 2014, there has been a systematic increase in the share of the allocation volume going to central banks and public promotional banks as well as supranational institutions in the primary-market books for euro benchmark covered bonds. This is especially true of CBPP3-eligible bonds because of the ECB’s purchase programme, but can also be said, albeit to a lesser extent, of non-CBPP3-eligible bonds. This phenomenon can be explained in light of the fact that the covered bond market has become increasingly international in the last few years. Banks from Australia, Canada, New Zealand and Singapore have begun to issue euro-denominated bonds in the last few years. In the wake of this growing globalisation in the covered bond market which is likely to continue, the acceptance of public bodies and official institutions to invest currency and liquidity reserves in covered bonds is likely to increase. For this reason, the general increase in this investor group in the last few years seems plausible.
In our view, a much sharper increase in central banks/promotional banks in the order books of CBPP3-eligible bonds since 2015 can clearly be attributed to the ECB. At the same time, it is fair to say that the proportion of insurance companies and banks is only down very marginally in relation to asset managers. Insurance companies and banks have regulatory incentives to invest in covered bank bonds. Covered bonds enjoy preferential regulatory treatment such as lower risk weightings for capitalisation requirements. In addition, banks can also use covered bonds towards their liquidity reserves. Investors with these regulatory incentives are less sensitive to a reduced swap spread and yield level for covered bonds. However, the latter are likely to have had a major impact in driving out asset managers from this asset class. Investors with specific return expectations are likely to have turned their backs on the covered bond market, directly or indirectly via asset managers.

If and when investors driven out of the covered bond market return will depend on how long current purchases under CBPP3 carry on and the extent to which the secondary market continues to lose liquidity. Even if the ECB ceases its purchases overnight and swap spreads start to pick up again, covered bond holdings in the ECB’s balance sheet remain out of reach for investors. New investment opportunities will only come from new issues over the course of time. However, those more yield-sensitive investors who have been driven out of the market by the ECB are only likely to return to the market if conditions meet their earnings expectations. This could be through a general increase in the level of yields and/or swap spreads. If, though, interest rates remain low in the eurozone because the ECB carries on its fundamentally expansive monetary policy, then swap spreads would have to rise accordingly. This in turn would increase the refinancing costs of banks issuing covered bonds, thus reducing the attractiveness of this source of funding. It therefore remains to be seen whether banks continue to issue more covered bonds without CBPP3. Bearing in mind regulatory requirements being imposed on banks, they could in any case prioritise bail-in-able refinancing instruments in the next few months – i.e. non-secured bank bonds. All in all, CBPP3 is likely to continue to have a negative impact in the covered bond market for some years. The main reason for this is that the ECB has announced that it would keep the covered bonds acquired under its purchase programmes until maturity. In addition, the ECB is using proceeds from maturing bonds in the APP portfolio to purchase bonds. Although reinvestment in the covered bond market would dampen the threat of a widening of swap spreads for covered bank bonds, at the same time, it would extend the transition period until a return to normal of the covered bond market.

### Source
DZ BANK Research, as at 30 June 2017

### Investors enjoying regulatory incentives still in the market

### Yield-sensitive investors unlikely to return to the market until yields and swap spreads start picking up again

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**Table: Breakdown of Order Book for CBPP3-Eligible New Issues by Investor Group**

<table>
<thead>
<tr>
<th>Year</th>
<th>Banks</th>
<th>Central banks/ official institutions</th>
<th>Asset manager</th>
<th>Insurer/ pension funds</th>
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<td>36%</td>
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**Table: Breakdown of Order Book for Non-CBPP3-Eligible New Issues by Investor Group**

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<td>17%</td>
</tr>
<tr>
<td>2016</td>
<td>5%</td>
<td>9%</td>
<td>18%</td>
<td>20%</td>
<td>17%</td>
</tr>
<tr>
<td>H1 2017</td>
<td>5%</td>
<td>9%</td>
<td>18%</td>
<td>20%</td>
<td>17%</td>
</tr>
</tbody>
</table>
A decline in the CBPP3 purchase volume or an end to the programme would hit the covered bond market as a whole. The psychological effect alone on the market from the biggest investor in the covered bond market at present reining back or even ceasing its involvement is likely to put risk premiums under pressure. However, it is not just the swap spreads of bonds eligible for purchase under the programme which would come under pressure; the risk premiums of covered bonds of issuers outside the eurozone would probably also widen. It is likely that the swap spreads of those bonds which have tightened most in the past as a result of CBPP3 would widen most after the purchase programme comes to an end. We estimate that this would mean that the spreads of German pfandbriefe should come off relatively unscathed. In contrast, the covered bonds of issuers from Italy, Portugal or Spain are likely to widen disproportionately.

In addition, there are dampening factors which could limit the widening of spreads for the covered bond market overall. As we mentioned, even after the end of CBPP3, the ECB is likely to continue to replace cash flows from repayments in its holdings by reinvestments for a time. Central bank demand in the covered bond market is therefore likely to remain noticeable, even after the build-up of CBPP3 holdings has come to an end. In addition, there are likely to be spillover effects from related market segments. If CBPP3 is brought to an end together with the APP, then yields in the bond market as a whole are likely to rise. As mentioned above, rising yields are likely to bring yield-sensitive investors who could bridge the gap in demand back into the covered bond market. Apart from these dampening factors, there are transfer channels which can bring the swap spreads of covered bonds under pressure. The risk premiums on covered bonds should not be seen as separate from the spread trend of sovereign bonds. If, for example, risk premiums of Italian and Spanish sovereign bonds should widen during the time after the European Central Bank’s APP, then this could have a correspondingly negative impact on the covered bonds of these countries. In this instance also, we could expect a more stable trend for the swap spreads of German pfandbriefe in relation to covered bonds from Italy, Portugal or Spain.
RATINGS ONCE AGAIN STEADY AT A HIGH LEVEL

Since the introduction of the jumbo pfandbrief in 1995, the perception of pfandbriefe among market participants has changed more than once. At the beginning of the jumbo pfandbrief market, issuers tried to improve the liquidity of their bonds through large issue volumes. To some extent, marketing jumbo pfandbriefe as "baby Bunds" helped support the argument that, in view of their liquidity, jumbo pfandbriefe should be seen as surrogate Bunds since they offered a spread in relation to sovereign bonds. The financial and banking crisis finished winning over the overwhelming majority of market participants to the notion that pfandbriefe and covered bonds are a sound investment. Questions surrounding the credit worthiness of issuers and their pfandbriefe became increasingly important for investors and this is still the case. Pfandbrief ratings have returned to a more positive and stable trend since the banking and financial crisis, even though, by and large, they have hardly changed in the last few months. The two graphs below show the rating breakdown at the end of 2015 and 2016 respectively. More marginal changes in the rating split were caused to some extent by the withdrawal of ratings. In some cases, there were marginal rating adjustments on the back of individual developments in the case of the pfandbriefe banks in question. As a rule, rating actions were triggered by the agencies' over-collateralisation requirements or changes in the issuers' ratings which serve as reference point for the pfandbrief rates.

The trend in pfandbrief ratings in H1 2017 followed the familiar pattern of 2016. There were only a few rating actions, with the pfandbriefe affected remaining in their existing rating categories, namely AA (ratings of AA- to AA+) and A (ratings of A- to A+).

Twenty-five years ago, many - mainly German - market participants were convinced that pfandbriefe did not require an external rating. The credit quality was seen as sufficiently good per se in view of the legal and collateral requirements applicable to them. However, with the introduction of the jumbo pfandbrief and increasing internationalisation of the investor base for pfandbriefe, ratings assigned by external rating agencies gradually became established in the German covered bond market.

The following graph relates to the distribution of the pfandbrief volume outstanding as at 31 March 2017. Around 74 per cent of this volume has the highest possible rating (Aaa or AAA) from at least one rating agency. A further 18.6 per cent of the volume outstanding has a rating, albeit not triple A. Only 7.8 per cent of outstanding pfandbriefe are not rated; these are generally pfandbriefe from issuers who only have a very small volume outstanding.

Ratings have been tending upwards since the financial crisis

Rating trend continued in H1 2017

Ratings became fashionable on the back of the internationalisation of the pfandbrief market

Over 90 per cent of pfandbriefe outstanding have a credit rating
Most pfandbrief ratings are currently issued by Moody’s. The agency is also number one in the world as measured by the number of published covered bond ratings. Within the German pfandbrief market, Fitch was just ahead of S&P as at 30 June 2017 with nine pfandbrief ratings. There are further agencies such as DBRS and Scope, which are both active in the German covered bond market, but which have so far rated very few covered bonds from German issuers. For the purpose of simplification, we have therefore left out DBRS and Scope covered bond ratings from the following statistics. Moreover, the following figures relate exclusively to ratings for covered bond programmes which are subject to the Pfandbrief Act. We therefore leave out smaller market segments such as structured covered bonds which have so far only played a secondary role in terms of issue volume in relation to the pfandbrief market.

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Moody’s huge lead in terms of the number of pfandbrief ratings assigned is immediately obvious. Are there reasons for this? Most pfandbriefe are rated. The days are long gone when three external ratings were not unusual, especially for the pfandbriefe of jumbo issuers. Only a few pfandbrief banks, above all those with a higher issue volume, have two ratings for their covered bonds in some cases, in order thereby to improve their placement options abroad. The evolution towards a one-rating market is giving pfandbrief issuers a choice when selecting an agency. Issuers in and outside Germany are likely in principle to be aiming to manage their covered bond programmes as efficiently as possible. One aspect of this, in our view, relates to the requirements imposed by the agencies to reach the target rating. The rating requirements can vary and affect different aspects of the management of a covered bond programme. The level of the breakeven over-collateralisation which an agency imposes as a prerequisite for the pfandbriefe’s target rating is especially visible. The over-collateralisation of a covered bond programme was once appropriately described by representatives of Fitch as the cover pool’s own funds. This is an apt comparison since over-collateralisation is ultimately the buffer against all potential residual risks for covered bond holders if the issuer is in resolution or in default.

Moody’s currently assigns the greatest number of pfandbrief ratings

There is now more scope in the choice of rating agency
In general, when assigning a rating, the agencies expect issuers to maintain a specific over-collateralisation level within a covered bond programme over the long term if they (the issuers) wish to achieve a specific target rating. Even though the average over-collateralisation requirements of Fitch, Moody’s and S&P listed in the graph above (rhs) should be interpreted in a different way when it comes to detail, in our view, a clear trend nevertheless emerges: Moody’s currently expects an average over-collateralisation of around four per cent from German pfandbrief issuers. In the case of Fitch, the figure is 14 per cent, while S&P calls for 16 per cent to reach the maximum collateral-based uplift (target credit enhancement). For a pfandbrief bank, a lower over-collateralisation requirement means that it can use more of its cover pool for pfandbrief issues and therefore that it can use the covered bond programme more efficiently for refinancing purposes. Moody’s lower over-collateralisation requirements in relation to other agencies make the agency’s pfandbrief ratings more attractive for issuers at the moment. However, to what extent this factor influences the decision of individual pfandbrief banks, is pure speculation.

The definition for the rating agencies’ concepts which we generally refer to as “level of over-collateralisation required to maintain the rating” differ in their detail. To some extent, for example, the rating agencies expect a public commitment on the part of issuers to a specific level of over-collateralisation. There are further aspects which restrict a comparison of average over-collateralisation requirements from one rating agency to another. The averages are based on different universes. In the case of a really limited number of data points as in the case of Fitch and S&P, for example, each figure taken into account has a greater weight in relation to Moody’s because in the case of the latter, the average is based on a far larger number of pfandbrief programmes. In addition, the cover pools of individual pfandbrief banks can differ significantly from one another in their composition. There are e.g. cover pools for mortgage pfandbriefe which are secured exclusively with commercial real estate mortgages and residential mortgages. In the case of smaller banks, moreover, there are some strong regional concentrations which stand in stark contrast to cover pools with a strong geographical diversification (including international). All this also has an influence on over-collateralisation requirements which are calculated as part of the rating analysis using modelling calculations.
Part of the agencies’ rating analysis involves estimating the probability of losses which could hit the cover pool after a default of the issuer in a stress scenario. The agencies sum up the results of their analysis in the form of figures which give an indication of the possible loss from credit defaults expressed as a percentage. The higher this percentage, the greater the default risks in the stress scenario modelled. The graphs below show the average percentage figures for each of the rating agencies. In this respect, it is worth noting that the absolute level of the individual ratios is not directly comparable between the individual agencies because the assumptions made in the individual stress scenarios differ. Nevertheless, however, we find the trends which can be derived from the average figures interesting: the credit risks for mortgage pfandbriefe have been estimated as quite constant by all the agencies for some years. In contrast, Fitch, Moody’s and S&P seem to fear rising credit defaults in the cover pools of public sector pfandbriefe.

**Comparison of ratios for credit default risks**

In the two following sub-sections, we propose to examine key factors which might influence the credit quality of the cover pools of German pfandbriefe.

**Rising house prices in Germany and new macroprudential intervention options for supervisory authorities**

Strong demand led to a further rise in house prices in Germany in 2016. Prices in the forth quarter 2016 rose by an average of 6.6 per cent against the same previous-year period. The Association of German Pfandbrief Banks (Verband deutscher Pfandbrief-banken or vdp) ascribes this quite sharp rise to economic growth in Germany, low interest rates and "unexpected political changes". Above all, the price of owner-occupied flats rose slightly more than prices for one-family and two-family houses (+7.1 vs. +6.5 per cent). Demand from German and international investors for German property also seems to have buoyed prices lately. The price of commercial real estate rose by an average of 7.8 per cent year-on-year in the forth quarter 2016, outstripping price increases in the housing market for the first time since the second quarter 2014. Institutional investors mainly acquired office space. In contrast, the price momentum for retail space is much lower than for office space and housing, although it is also positive. In our view, rising house prices are contributing to current lively new build activity in Germany at present. A rising number of new buildings has so far failed to halt the rise in property prices.
In general, rating agency Moody’s does not see the price rise in the German property market as worrying at present (“RMBS, Covered Bonds and CMBS Benefit from Real Estate Price Increases to Varying Degrees”, of 27 April 2017). Nevertheless, the agency can detect signs of imbalances and overvaluations in some segments of the market. In addition, rising interest rates could trigger a fall in house prices, especially bearing in mind a high level of new building activity in Germany at present. Falling property prices would be bad for the loan books of credit institutions in the long term.

The price momentum in the housing market has decoupled from fundamental demographic and economic factors, according to the Bundesbank’s monthly report of 20 February 2017. The Bundesbank estimates that prices of owner-occupied apartments in large cities are currently inflated by 15 to 30 per cent. Prices for apartments have risen sharply, above all in Munich, but also in Düsseldorf, Frankfurt, Hamburg and Stuttgart. In our view, however, low vacancy rates in these cities suggest strong demand for housing, limiting any existing potential for a reversal from the current level.
Price rise by type of property 2016 (yoy change)

- Prices for one and two-family houses: +5.8%
- Prices for owner-occupied flats: +6.5%
- Capital value of multi-family houses: +7.1%
- Capital value of offices: +7.7%
- Capital value of retail property: +2.5%
- Capital value of storage and logistics property: +2.1%
- Capital value of mixed-use properties: +4.8%

Source: Association of German Pfandbrief Banks

According to Bundesbank figures, the surge in growth in the credit markets which began at the end of 2015 picked up momentum last year. Corporate and household debt grew by 2.7 per cent and the figure could be around 3.0 per cent this year. Although this means a further acceleration in credit growth, based on a long-term comparison and above all bearing in mind extremely cheap funding terms and the huge spending by the ECB as part of its monetary policy, German credit growth remains rather moderate over all. This is the case even though the ECB comes to the conclusion in its latest Bank Lending Survey (BLS) that more banks in Germany loosened their lending standards for home loans and corporate loans than tightened them in the second quarter 2017. A similar trend is expected in Q3.

Overly generous lending in the financial sector together with strong credit growth could sow the seeds for a future banking crisis. In H1 2017, as a preventative measure, the German government created a legal framework giving the BaFin new powers to limit new mortgage lending for residential properties. Similar and in some cases more extensive rules have already been in place for some years, for example in the Nordic countries and in the UK. In the event of a threat to the ability of the financial system to function arising from a property bubble, the BaFin is now empowered to impose requirements regarding the banks’ new lending (mortgage financing for the purchase or building of residential property). The new powers will not apply to financing for the conversion or renovation of a building, measures as part of the building of social housing or the debt rescheduling of non-performing loans. In addition, in future, BaFin will be empowered to set a ceiling for the loan-to-value (LTV) at the time of a loan being issued. A further measure in future may affect the maximum term of a terms and its regular repayment. The BaFin will be able to make exceptions to these provisions for which the government has set guiding principles in the form of thresholds. In our view, the new rules are going in the right direction. They extend the BaFin’s scope for intervention. At the same time, we do not believe that these rules would seriously restrict the pfandbrief banks new lending at the moment.

A study "Ist eine makroprudenziale Regulierung des deutschen Hypothekenmarktes geboten?" ("Is a macroprudential regulation of the German mortgage market appropriate?") published this year by the Centre for European Economic Research (Zentrum für Europäische Wirtschaftsforschung or ZEW) and the Cologne Institute for Economic Research (Institut der deutschen Wirtschaft Köln or IW) confirms that putting a cap on LTV in particular can be an effective instrument to avoid overly expansive lending at a time when house prices are rising fast. At the same time, the study acknowledges that the German financial industry is already more cautious when granting residential mortgages. The long mortgage terms among other things are highlighted as a positive factor. However, there could be a danger that the residential mortgage market could...
become over-regulated if BaFin did actually make use of these new instruments. Although they would be suitable for slowing down lending and hence any credit-based rise in house prices, stricter lending standards could make it more difficult especially for younger households to buy a home, an unfortunate development from the point of view of social policy, according to the study, since people also use their home as part of their private pension plan.

**Lending to public bodies**

The German government's budget surpluses in the last few years are having a positive impact on the credit rating of public sector pfandbriefe, according to Moody's (see Moody’s “Germany’s Public-Sector Pfandbriefe Benefit from Government’s Better-than-Expected Fiscal Surplus”, of 2 March 2017). According to figures released by the Federal Statistical Office on 23 February 2017, the fiscal surplus for all German regional and municipal authorities amounted to EUR 23.7bn in 2016. This is the highest surplus since German reunification. The balance of public revenues and expenditures is positive for the third year in a row.

Public sector pfandbriefe are primarily secured by loans to German public-sector bodies. According to Moody's the fiscal surpluses have led to an improvement in the credit worthiness of German regional and local authorities. This also has an impact on the public pfandbrief programmes valued by Moody's in view of the disparate composition of individual cover pools. As far as we can see, so far, the strong performance of Germany's public finances has hardly had a positive impact on the average collateral scores for public sector pfandbriefe calculated by Moody’s. In the last few quarters, average collateral scores for public sector pfandbriefe have hardly changed and, if anything, have tended upwards slightly. The collateral score is used by Moody’s as a measure of credit quality and reflects the potential loss which Moody’s could envisage from credit defaults within the cover pool in a stress scenario.

Pfandbrief investors and issuers are likely to have been fully aware of the risk of potential losses associated with the credit business with public debtors since the European sovereign debt crisis and the restructuring of Greek sovereign bonds in 2012, if not sooner. Through the Credit Quality Differentiation Model, pfandbrief banks have created a voluntary supplemental cover calculation which reduces the crediting of debts, if a country's rating falls below a certain threshold. This provides an incentive for banks to have loans from countries with the best possible ratings in their cover pool.

Overall, the municipal and state lending of many pfandbrief banks has declined because this area of business has lost a lot of its attraction for many pfandbrief banks in the last few years. Some banks have even announced that they will allow their public pfandbrief programmes to run out. The European Central Bank's current monetary policy is likely to have accelerated this development. The ECB's quantitative easing measures, which include the ECB purchasing public-sector bonds on a massive scale, have led to a further reduction in traditionally already poor margins on government lending business. The decline in lending volume has also led to a dwindling of the cover pools for public sector pfandbriefe. Borrower concentrations as well as geographic concentrations on specific countries or regions are more likely to happen in smaller cover pools. The rating agencies are critical of any such concentrations which contribute to higher/worse credit risk figures such as the Moody’s collateral score.
Public sector pfandbriefe are not only used to refinance state debt, but also government-guarantee loans such as export credits. Exported goods and services account for a substantial share of Germany's GDP. Accordingly, export finance is of major importance for the German economy. If an export finance loan benefits from a government guarantee against non-payment (in Germany, Euler Hermes, for example), this loan is eligible as collateral in the cover pools for public sector pfandbriefe. As per the second quarter 2017, a total of 12 pfandbrief banks had a substantial proportion of export finance loans in their cover pools. In relation to these 12 banks, export finance loans accounted for an average of around 15 per cent of the respective cover pool. Both this percentage and the number of pfandbrief banks with export finance loans in their cover pools has remained fairly stable in the last few months.

The case of Heta - the wind-down company set up to take over the assets from the Austrian bank Hypo Alpe Adria - is a notorious example which has highlighted the importance of the format of public guarantees. A lesson from the Heta debacle is that it is worth checking the quality of the guarantee. In contrast, an accessory guarantee only compensates those claims which the debtor could not meet at the end of the insolvency process. These two examples show how much guarantees from public bodies can differ and what the consequences from this can be for the periods during which a lender is covered by the guarantee. In addition, in connection with export credits to non-European borrowers, it is also worth checking to what extent government guarantees cover political risks, possible effects from potential controls on payments or the threat of offset options in connection with contrary claims among those involved, or, where there is a doubt, are to be covered by the bank or the cover pool (see Moody’s study "Export Finance Assets Provide Robust Collateral for Covered Bond Issuers" of 8 September 2016). Overall, however, we do not believe that export finance loans in cover pools are currently putting any pressure on the credit risk scores of public sector pfandbriefe of German issuers.
GREEN BONDS A RARITY IN THE COVERED BOND MARKET

Before the introduction of the jumbo pfandbrief, we believed that the majority of investors did not see the need for pfandbriefe to have an external rating. Back then, very few pfandbriefe were rated. Today, over 90 per cent of outstanding pfandbriefe have a credit rating. There is currently a small but growing number of covered bond issuers who are getting a sustainability seal of approval for their covered bonds. How much sense does a sustainability seal of approval make for pfandbriefe? In the debate about the creation of a market for green bonds, are we on the cusp of a further radical change?

The market for covered bonds with a sustainability seal of approval began in 2014. However, it has not really made any real progress since then. From 2014 to mid-2017, sustainable covered bonds amounting to a total volume of EUR 3.1bn have been issued by a total of five different banks. The bonds which we look at in this case are denominated in euro and had an issue volume of at least EUR 300m each. There are covered bonds with a sustainability seal of approval in other currencies as well. These bonds are foreign-currency bonds from the point of view of the eurozone, and come from countries such as Turkey, and have not been included in the graphs below.

However, the refinancing activities of credit institutions via sustainable bonds are not limited to covered bonds. Green covered bonds are currently a very small sub-segment of the overall covered bond market. The growth contribution from sustainable covered bonds within the market for green bonds which has shown strong growth in the last three years, is also very small. According to Fitch, the new issue volume of green bonds across all asset classes amounted to around USD 105bn worldwide in 2016. Last year, issuers from Europe accounted for 23.7 per cent, according to the rating agency. Companies and financial institutions accounted for roughly the same share of the worldwide issue volume of the green issue cake in 2016 at 43 and 40 per cent respectively. Banks accounted for around USD 42bn of the global issue volume of green bonds last year. Newly issued green covered bonds are only a fraction of this amount. Banks therefore seem to prefer to issue unsecured bonds in a green format.
The promise at the time of issue of green bonds that the proceeds will be used to finance suitable sustainable projects can be redeemed within a specific period of time. This method can be used for unsecured and covered bank bonds. Covered bond issues often hold claims which meet sustainability criteria in their cover pools at the time of issue. As far as we know, there has been no check of all the assets in a cover pool in the case of assets in a cover pool with sustainable covered bonds issued so far. However, issuers are careful to ensure that the sustainable part within the overall cover pool is always sufficient to cover the green covered bonds entirely. This approach therefore calls for a further level of reporting on the cover pool in which data on green cover assets are presented separately. To date, however, no general standards for green building loans have become established. However, there are already initial measures in hand aimed at establishing common quality criteria in order to lay the foundations for the development of a green covered bond market.

At the end of June 2017, a new European Green Securities Steering Committee (EGSSC) was launched. Its aim is to promote the development of a green securities market in Europe, including unsecured and covered bank bonds. The committee has backing from the Climate Bond Initiative and the European Covered Bond Council with the support of the United Nations. The new committee includes representatives from commercial and development banks, investors, rating agencies, industry associations and non-governmental organisations. The aim of the members of the committee in developing a green bond market is to support efforts to achieve the European Union's climate objectives. The committee's first step will be to identify regulatory hurdles for investors and issuers in relation to green bonds. In addition, members of the committee plan to work out common definitions for green bonds within the European Union.

The general term "sustainability bond" can also be applied to the market for green and social bonds. These bonds share in common the fact that issue proceeds are earmarked to finance particular projects which aim to support specific overarching social goals. The projects in question aim to generate positive external effects for the economy. This means that their benefit for society, e.g. reducing CO2 emissions, goes hand-in-hand with an economic benefit. The bonds can be roughly split into the following groups:

- **Social impact bonds** were first issued in the UK. Similar bonds were later issued in the US, Canada and Australia for example. These bonds are aimed at projects such as public services which lead to an improvement in conditions for the target groups and therefore make the need for potential support by the public purse at a

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**GEOGRAPHIC SPLIT OF GREEN BONDS**

**GREEN BOND NEW ISSUE VOLUME 2016**

- America: 8.2%
- Europe: 10.7%
- Asia (without China): 23.7%
- China: 5.6%
- Supras: 51.8%

**GREEN BONDS BY SECTOR**

**GREEN BOND NEW ISSUE VOLUME 2016**

- Corporates: 43%
- Financials: 40%
- Government & SSA: 0%
- Securitisations: 7%

Source: Fitch, calculations and presentation DZ BANK Research
later date less likely. To some extent, social (impact) bonds are funding for public-private partnerships. No covered bonds have been issued so far in this format.

There are covered bonds which meet so-called ESG criteria. The definition of an environmental, social & governance bond (ESG bond) is based on a fairly broad set of possible criteria. Firstly, the assessment factors in how environmentally-friendly a company is in its use of resources (Environmental). It also takes into account how a company works together with its customers, employees and suppliers (Social). Finally, the governance criteria look at the way in which the company organises itself in relation to management, type and scope of internal and external checks and the protection of investors. In the case of an ESG covered bond in the narrower sense, the focus is often not on the issuer as a whole, but rather on identifying parts of the cover pool which meet the ESG criteria. Then a check will be carried out to see whether these assets are sufficient to secure the ESG covered bond.

Green bonds, climate bonds or environmental bonds are issued to raise finance for projects aimed at counteracting the climate change caused by man. In the case of unsecured and covered bank bonds, green bonds serve to refinance loans for climate projects, for example. In the case of covered bank bonds, similarly to ESG covered bonds, the focus of attention is not necessarily on the issuer, but on those parts of the cover pool which meet green criteria.

The International Capital Market Association (ICMA) publishes standards for bonds which serve to finance sustainable, green or social projects. The principles for the bond groups which are split into three categories aim to make it easier for investors searching for sustainable investment opportunities. The ICMA reviews the principles once a year. The updated standards were published in June 2017. Apart from Green Bond Principles, there are now also principles for social bonds and for sustainable bonds.

The Green Bond Principles (GBP) give issuers guidelines on the key components of a green bond in order to boost their credibility. The ICMA therefore aims to help investors identify suitable green investments. It stresses the need for transparency, as evidenced by separate reports to market participants from the issuer. One example from the covered bond market is Berlin Hyp's green mortgage pfandbriefe for which the issuer provides extensive information which is freely available at www.gruener-pfandbrief.de. The four key components of the GBP are the following:

- Use of proceeds: according to the GBP, proceeds from the issue of a green bond should be used to finance specific projects. These include key areas such as renewable energies, avoiding environmental pollution, preserving biodiversity, sustainable water management and "green" buildings. The ICMA's aim with these criteria is not to carry out its own evaluation of various projects; it recommends that issuers should use an external review to check the efficacy of the measures.

- Process of project evaluation and selection: the issuer of a green bond should clearly communicate its environmental sustainability objectives and, in relation to the selection process, show how the projects fit in with the GBP. In concrete terms, this could mean which external evaluations the bond issuer uses when selecting projects.

- Management of proceeds: the use of issue proceeds should be monitored for as long as the bond is outstanding. It is important that funds are actually disbursed to the projects envisaged and that they remain there for at least the term of the
bond. Moreover, the issuer should disclose to investors how the funds are being used during any potential transition period when the projects which have been earmarked are not yet ready to be financed.

Reporting: a list of projects being financed with proceeds from the bonds should be published along with a brief description of the individual projects in question. Should an issuer not be allowed to disclose details of a project because of confidentiality issues, they should, nevertheless, try to publish information relating to the projects in question in generic terms. The ICMA has developed standards for what should be included in reports on green bonds which an issuer can use on a voluntary basis. The results of regular reviews carried out by independent qualified parties such as eco rating agencies, could also provide a second opinion for investors for part of these reports.

The Social Bond Principles (SBP) follow the outline of the GBP. The four core components of the SBP are identical to those of the GBP, albeit with one important difference: proceeds from the bond issues are not allocated to green but rather to social projects. Social projects according to the ICMA include investment in basic infrastructure measures, e.g. to provide the population with clean water or with an affordable public transport system. They also include projects to provide healthcare and education services as well as affordable housing. There is no exhaustive list of qualifying projects. The public covered bonds of Kommunalkredit Austria are one example of this type of bond. Ultimately, it is also important that social bonds should be checked and verified by independent experts to ensure that the projects being financed duly serve the common good. A regular review and publication of these second opinions is therefore also of crucial importance in the SBPs.

With some projects, it is hard to tell whether they belong in the green category or in the social category. After all, an investment aimed at improving water supply can also have a positive impact on the environment. The boundaries between the two can be fluid. In addition, a bond issuer may want to allocate the proceeds of an issue to projects which are both clearly green and clearly social. Such contingencies are covered by the Sustainability Bond Guidelines (SBG) which are a mixture of the GBP and SBP and follow the criteria set out in both categories.

The sustainability principles updated by the ICMA are an attempt to bring more order through common standards in a fast evolving market. The principles aim to help guide investors. However, even with a harmonised reporting format on the part of issuers, nothing seems to work without external auditors or second opinions from rating agencies. For this reason, the updated principles also recommend involving independent audits.

An ESG rating is drawn up by independent agencies which analyse companies based on environmental criteria. The final assessment reflects information on the companies’ ESG performance. An ESG rating can take into account the environmental impact of a company’s products or services over their entire life cycle. The assessment takes into account the entire value chain of a company, such as sourcing, production, sales, logistics, controlling, organisation and funding.

An ESG rating helps investors and consumers in their decision-making. Agencies often publish their rating on a company on an unsolicited basis (although frequently with their support in the form of rating discussions). ESG rating agencies are usually paid by investors who not only get to see the rating levels, but also get access to a database in which they can find the figures used to arrive at the ESG rating. Subscribers can...
use these data to submit the companies to an analysis using their own criteria on the basis of which they can carry out their own sustainability review. In the case of covered bond programmes, although there are a few bonds with a sustainability seal of approval, the analysis of such bonds is not based on the entire cover pool, but generally only on a part of it, which can theoretically be used as cover for the sustainable bond. ESG rating agencies in Europe include:

- Imug Investment Research rates companies, including banks. It rates the public covered bonds of Kommunalkredit Austria, for example.
- oekom research published the second opinion for Münchener Hypothekenbank's ESG pfandbrief and Berlin Hyp's green pfandbrief.
- Inrate provides sustainability ratings for companies and countries.
- rfu specialises in sustainability analysis (sustainable investments). The agency analyses companies such as banks, for example.
- Sustainalytics evaluates the sustainability of companies and countries based on ESG criteria. The agency has issued a second opinion for Caja Rural de Navarra's sustainable cédulas hipotecarias, for example.

A necessary prerequisite for green covered bonds is that the issuer has sufficient options to secure bond proceeds with sustainable assets. By far the biggest segment in the covered bond market in terms of volume is the mortgage covered bond segment. In order for a green mortgage covered bond market to be able to develop, there will have to be sufficient green mortgages in future. Even though the availability of green mortgages was perhaps not the driving motivation behind the European Mortgage Federation (EMF)’s new initiative for green mortgages, it, nevertheless, fits in with the current trend towards green covered bonds. On 9 June 2017, the EMF unveiled its Energy efficient Mortgages Action Plan (EeMAP) which is primarily aimed at supporting Europe’s contribution towards achieving the climate objectives to limit global warming.

According to the EMF, buildings in the European Union account for 40 per cent of the EU’s energy consumptions and 36 per cent of CO2 emissions. Some 75 to 90 per cent of the current housing stock is still expected to stand in the year 2050. An improvement in the energy efficient of older homes could lead to a saving in energy consumption of five to six per cent and a reduction in CO2 emissions of five per cent. European banks could trigger a virtuous circle by helping to finance the energy-efficient improvements of homes, according to the EMF. Covered bonds could form a bridge between institutional investors and households wanting to improve the energy efficiency of their home or wanting to buy homes with better insulation, if these green mortgages are used as cover assets for covered bonds.

Cheap refinancing costs via (green) mortgage covered bonds could give the banks the scope to make attractive mortgage offers to households. Banks would still be trading in their own interest. According to the EMF, green mortgages would probably be less risky than home loans for conventional houses. More energy-efficient building would cut costs for households, thus easing the burden on their budget. At the same time, well insulated buildings would be worth more than conventional buildings, and - the EMF suspects - they would also keep their value better in the long term. All in all, it would be fair to assume lower credit risks for banks in the case of this type of mortgage. The introduction of a certificate as proof of their environmentally-friendly effect is being
considered for green mortgages. For the moment, the EMF is aiming its EeMAP at residential buildings; in the long term, however, commercial real estate could also be included under this initiative.

The following areas will be targeted in the context of the EeMAP in the next few years:

- Summary of the current market standard
- Definition of indicators for energy efficiency and the certification of a building’s energy performance
- Identification of the prerequisites to achieve a "green value" assessment
- Establishing the correlation between energy-efficient buildings and lower credit default risks (at portfolio level)
- Definition and format of energy-efficient (environmentally-friendly) mortgages

As an additional incentive for banks to issue green mortgages, the EMF is proposing a preferential treatment when it comes to capital requirements for banks. In this case, banks would be compensated for setting up the new business processes required for green mortgages and covered bonds. Households would be able to finance energy-efficiency improvements to their homes using mortgages with preferential interest rates and then benefit from falling energy costs. The state and society as a whole would benefit from the positive external effects of these more environmentally-friendly buildings.

**CORRELATION BETWEEN GREEN MORTGAGES AND SUSTAINABLE/GREEN COVERED BONDS**

The initiatives of both the EMF and ICMA are pointing in the right direction. Greater standardisation of sustainability criteria would help improve the transparency in this growing market segment. However, the micro approach with the individual bonds of issuers and of a covered bond programme with sustainability status does not seem very promising. Ultimately, such a micro approach would mean that investors would have to check each individual case. Issuers would have to draw up a further, separate report for green or social projects financed with sustainable bonds. In our view, covered bonds do not lend themselves to a micro approach. What would be far more promising for the covered bond market would be if the criteria outlined above were
used as the basis for the evaluation of bond issuers as a whole. If the business activities of a bank were rated as sustainable overall, then all its outstanding covered bonds would be "green" or "social" at a stroke. This approach could help the market for sustainable (covered) bonds gain breadth and depth much more rapidly. This could be described as a "macro approach". In our view, a macro approach would be the more elegant way forward for the development of a green bond market because it would involve less work in terms of reporting and monitoring, even if it resulted in some issuers then no longer being able to issue green covered bonds. There could be banks which, though they did not meet the criteria to qualify for social or green sustainability, still wished to issue sustainability bonds - for example a covered bond - if the issuer's balance sheet included sufficient qualifying cover assets. This growth impetus would be lost to the market for green covered bonds if the macro approach described above were followed systematically. However, in our view, such financial institutions would still be able to raise money in the capital market using other refinancing instruments such as unsecured bonds with which they could then finance sustainable projects on the corporate business side. Such bonds or individual issues would probably also qualify for a sustainability seal of approval and then, at a later stage, the issuer as a whole could perhaps also qualify.

As far as green mortgages are concerned, we will be very keen to see whether proof can be established of a correlation between the financing of energy-efficient buildings and a lower credit risk. In order for a building to consume less energy, it either needs to be built in a much more sophisticated manner or, in the case of existing buildings, has to undergo energy-efficiency retrofitting. The resulting upfront investment will first have to be offset by energy cost savings before households actually feel the financial benefit. At the same time, there are also some doubts about whether the per capita climate effect is really effective even in large, expensive homes. In many countries, there is not only an increase in the number of households, but also in per capita living space. A rather small flat with five inhabitants but poor insulation is still going to be more energy-efficient per capita than the per capita consumption of a family of three people living in a large, albeit well insulated house. However, the complexity of the issue highlighted by these two examples should not prevent initiatives from continuing to make progress in the direction they have chosen.
TREND TOWARDS A HARMONISATION OF FRAMEWORKS

From mortgage to Pfandbrief Act

The covered bond market has its roots in Europe, and these, according to the European Covered Bond Council (ECBC) go back as far as the Greek concept of the mortgage and the Italian and Dutch idea of the bond. In the Middle Ages, it was already possible to use assets or income in part or in whole as collateral vis-à-vis creditors. The certificate for this type of security was called a pfandbrief in German speaking-countries, or a debt certificate or bond. Apart from the pledging of public-sector revenues, such as the toll revenues of cities, property could also be used as collateral. Pfandbriefe were issued by the borrower and transferred to the lender who returned the pfandbrief certificate after repayment of the loan.

In Germany, the term "pfandbrief" - referring to a covered bank bond - is legally protected and has been well established for a long time. Friedrich II announced a cabinet order on 29 August 1769 on the issuance of pfandbriefe in Prussia. These fixed-rate bonds allowed so-called "Landschaften" (agricultural associations) - a sort of cooperative of big landowners - to issue pfandbriefe within a specific region. The creation of the Landschaften made it possible for big landowners in Prussia to raise agricultural credits. Subject to certain conditions, the big landowners wanting to borrow funds could become members of a Landschaft. In return for pledging a property, the applicant would receive a bond. The borrower could then borrow up to half the value of the pfandbrief by selling it to investors or lenders. The borrower paid interest to the Landschaft, which then passed it on to the buyer of the pfandbrief - after deducting a handling charge. The Landschaften were mutual, non-profit-making organisations. The Schlesische Landschaft was the first to gain recognition in 1770 as a "pfandbrief institution". This was a milestone in the development of the covered bond markets, and it was followed by further institutions in Denmark (1797), Poland (1825) and France (1852) (see ECBC Factbook 2007).

Since the middle of the 19 century and even before the creation of Germany in 1871, banks developed within the confines of the German Confederation, whose activities concentrated to some extent on the pfandbrief business. Apart from the specialised mortgage banks, there were also mixed mortgage banks which offered a wider range of products. These included Hypothekenbank Frankfurt (which was to issue the first jumbo pfandbrief over a century later) and Bayerische Hypotheken- und Wechselbank. However, the individual member states of the German Confederation had their own rules for their respective mortgage banks and their pfandbrief transactions. In July 1899, after the creation of Germany, the Mortgage Bank Act was proclaimed which, from the year 1900 onwards, provide standardised rules for the pfandbrief sector and hitherto different pfandbrief systems which existed within it (see "Introduction of the pfandbrief system in Bavaria in 1864" under "Key events in Germany's banking history").

The German Mortgage Bank Act has undergone many changes in its history and been adjusted to current developments. Above all, the number of amendments has changed since the introduction of the jumbo pfandbrief in 1995. In July 2005, the existing pfandbrief legislation was replaced by the Pfandbrief Act which has created a uniform legal framework for all pfandbrief issuers in Germany. Apart from the Mortgage Bank Act for specialised mortgage banks, the Public Pfandbrief Act (Gesetz über die Pfandbriefe und verwandte Schuldverschreibungen öffentlich-rechtlicher Kreditanstalten, ÖPG) laid down a separate legal framework for landesbanken and savings banks to issue pfandbriefe. In addition, prior to 2005, ship pfandbriefe had their own Schiffspfandbrief...
The three frameworks differed in matters of detail. The variations in the ÖPG in the form of less stringent requirements compared with the Mortgage Bank Act were justified in light of the public guarantee system consisting of Gewährträgerhaftung (guarantor liability) and Anstaltslast (institutional liability) which exists for landesbanken and savings banks. However, these guarantees came to an end in 2005. The uniform Pfandbrief Act brought equal competitive conditions for all German pfandbrief banks. In this respect, the Pfandbrief Act mostly followed the strict regulations of the Mortgage Bank Act. The special-bank principle anchored in the Mortgage Bank Act and regarded at the time by some market participants as a mark of quality was eliminated in the Pfandbrief Act. Since July 2005, all financial institutions with a bank licence in Germany are allowed to apply for a pfandbrief licence.

Covered bond frameworks springing up all around the world

Although the pfandbrief may not have given birth to the covered bond market, even though the "ancestors" of the present Pfandbrief Act reach far back into the past, in our view, the pfandbrief has, nevertheless, made a significant contribution to the internationalisation of the covered bond market. An important turning point in the development of the pfandbrief market was ten years before the introduction of the Pfandbrief Act when the first jumbo pfandbrief was issued in 1995. We believe that this was a major impetus behind the internationalisation of the covered bond market which continues to date. In countries such as Denmark and Sweden, for example, there was already a well established and significant market for mortgage bonds long before 1995. However, jumbo pfandbriefe helped sell covered bonds from Germany to international investors and to make the concept of the covered bond known in more and more countries. The introduction of the euro in 1999 also made it easier to place jumbo pfandbriefe within the eurozone. Up to the introduction of the euro, the jumbo covered bond market consisted of bonds from issuers from Germany, France, Luxembourg and Spain, with German jumbo pfandbriefe clearly the biggest segment in terms of volume. A growing number of issuers joined the market in subsequent years, at first mostly from Europe. In 2006, Bank of America and Washington Mutual were the first non-European issuers to issue euro benchmark covered bonds. Ultimately, however, covered bonds have failed to gain a footing in the US. American banks seem to prefer the established refinancing channels such as the securitisation market for their mortgage business. The covered bond issue programmes have since been wound up. Although there have been several attempts in the US to create a framework for covered bank bonds, they have so far failed.

Experience shows that legal frameworks for covered bonds promote the development of a covered bond market by giving many investors confidence in this asset class. In some countries such as the UK, Netherlands and Canada, a number of banks had begun to issue covered bank bonds which were solely regulated by contract law (structured covered bonds). In these countries, a framework for covered bonds gradually began to emerge a few years after the issue of the first structured covered bond, based on the market standards of existing covered bond programmes. The UK covered bond model has been copied in many countries around the world. Outside Europe, it has become the standard for the transaction structure of covered bond programmes. In the case of the UK covered bond model, the issuer transfers the cover pool to a special purpose vehicle (SPV). The SPV issues a guarantee secured by the assets in the cover pool for the issuer’s bank bonds.
It is not just UK covered bonds which have been an inspiration in other countries. The German pfandbrief framework (above all the Mortgage Bank Act) served as a model for the framework of many European countries in the 1990s. There is one major difference between the transaction structure of a pfandbrief and the UK covered bond model. In the case of the former, the cover assets remain on the covered bond issuer’s balance sheet and are only segregated from the rest of the pfandbrief bank’s assets if the need arises. The pfandbrief model is therefore also sometimes called an integrated model.

There is a third covered bond model in Europe with French covered bonds; in this case, a bank’s covered bond business is transferred to a highly specialised credit institution. The covered bond issuer gets the cover assets from the parent institution and refinances itself by issuing covered bonds.

The development of new covered bond frameworks and review of existing frameworks continues, not least in Europe. Estonia and Croatia are working on new covered bond legislation which could be passed as early as 2018. This would remove blank spots on the European covered bond map. The framework for covered bank bonds in Slovakia and the Czech Republic, for example, is currently being reviewed. At the same time, there has been a discussion for a while at European level about a harmonisation of legal standards for covered bonds in the European Union. Even though certain market standards have already emerged as a result of the debate, there are still many differences in the detail in certain areas between the various covered bond frameworks. For example, the level of statutory over-collateralisation requirements varies as do measures to be taken if there is a danger of illiquidity in the cover pool after a default of the issuer. Not all covered bond frameworks include a liquidity buffer for the cover pool although it is regarded as an important influence factor for the rating of covered bonds, especially by the rating agencies. Eligibility criteria for cover assets such as ceilings on LTVs also vary. Future European standards could also have an impact on pfandbrief law. In the following, we therefore give a summary of how things stand in this discussion.

Harmonisation of European covered bond frameworks

The objective behind efforts to harmonise existing covered bond frameworks within the European Union (EU) are aimed at bringing about greater integration within the European covered bond market without undermining the quality of the existing framework of individual member states. In June 2017, the European Commission announced that it would present a legislative proposal for a European covered bond framework in Q1 2018. We expect the EU to initiate a directive at the beginning of 2018 which will be based on proposals made by the European Banking Authority (EBA) in EBA Report on Covered Bonds of December 2016 in which the EBA presented its three-step harmonisation model:

» The first harmonisation step would involve a new definition for covered bonds, which could be used in future as a point of reference for prudential regulatory purposes. At the same time, the EBA wants to anchor higher quality standards through the new definition. These quality standards, which would go further than the so-called UCITS criteria, would include a binding liquidity buffer requirement for the cover pool, binding requirements for the calculation of coverage, requirements regarding public supervision and harmonised standards regarding transparency/disclosure requirements and uniform conditions for maturity extensions.
The second step envisages tightening criteria in Article 129 CRR for which the EBA is proposing inter alia a clear definition of what are eligible assets, clarifications on the application of LTV limits for mortgage cover assets and minimum over-collateralisation.

The third and voluntary harmonisation step envisages guidelines relating to stress tests, a regular revaluation of underlying assets and the composition of the cover pool.

The announcement that a covered bond directive was in the pipeline was preceded by the publication of an impact study (see "Covered Bonds in the European Union: Harmonisation of legal frameworks and market behaviours"), published in May 2017. The report includes an analysis of the costs and benefits of the EBA’s harmonisation proposals. The impact study concludes that, in most cases, the costs which would be involved in the EBA’s individual proposals would be negligible. On the other hand, the benefits could be significant albeit difficult to quantify. However, the overall benefit of a dedicated EU legal framework for covered bonds would be clearly positive. Of the many aspects of detail considered in the study, the following are especially interesting, in our view:

- Eligible cover assets would not be defined in any EU guideline. National frameworks should retain the scope to apply their own definitions. For covered bonds to retain preferential risk weight treatment for capital requirements, the cover assets listed in Article 129 CRR would still be allowed.

- The EBA should set guidelines for the calculation of coverage. However, the precise formats should be a matter for national supervisory authorities.

- A harmonised over-collateralisation of 5 per cent is regarded as appropriate. A lower minimum over-collateralisation of 2 per cent could apply if all the refinancing and liquidity risks in the covered bond programme have been eliminated. In our view, the exemption is mainly aimed at Danish covered bonds.

- The EBA is proposing a liquidity buffer to cover any liquidity risks for a period of at least 180 days. Where covered bonds have a maturity extension option (soft bullet or conditional pass-through), they could be left out of the calculation of the liquidity buffer. This proposal would give covered bonds with a maturity extension option an important advantage, which is generally regarded as justified. However, issuers should not be allowed the choice of whether or not to activate the maturity extension before its restructuring or insolvency.

- The impact study also sees a clear advantage in covered bonds from issuers from outside the European Economic Area (EEA) enjoying the same preferential supervisory treatment as their European counterparts. However, only if, in exchange, European covered bonds in the respective third state (states outside the EEA) are allowed this same preferential treatment and enjoy a similar level of guarantees, i.e. a similar legal framework for their covered bonds.

With this last point, the impact study is already pointing towards a harmonisation of covered bond standards beyond Europe. Our impression is that issuers outside Europe are keeping a close watch on development because most investors for covered bank bonds are still based in Europe.

Impact study shows positive overall effect from harmonisation

Eligible cover assets

EBA guidelines for calculation of coverage

Over-collateralisation

Liquidity buffer

Mutual recognition of covered bonds from third states

European harmonisation paving the way for global standards?
The European Parliament will have its own say in the covered bond directive. In July 2017, the MEPs approved an own-initiative report on a harmonisation of covered bond frameworks. In principles, the MEPs are positive about a harmonisation of covered bond frameworks in Europe. However, they would likely to see any harmonisation via EU directive based on a principles-base approach which would allow individual members states sufficient leeway to factor in specific local factors when implementing the directive into national law. In addition, the own-initiative report makes the case for the covered bond market to be split into Premium Covered Bonds (PCB) and Ordinary Covered Bonds (OCB). Covered bonds with preferential capital requirements would be called PCBs. In contrast, bonds which only meet the criteria defined in Article 52(4) of the UCITS Directive would be called OCBs. The fundamental principle is that PCBs and OCBs should be backed by assets “of a long-lasting nature which can be valued and repossessed”. Based on our understanding of the own-initiative report, aircraft pfandbriefe would therefore be able to qualify as OCBs. The current potential classification of ship covered bonds as PCBs is to be investigated.

The European Parliament is in favour of using covered bond structures to refinance exotic and more risky assets such as loans to SMEs or to finance infrastructure projects. The bonds collateralised with these assets would be referred to as European Secured Notes (ESN) to distinguish them clearly from covered bonds, and they would be regulated together with PCBs and OCBs in an EU directive. Just like covered bonds, ESNs would be exempt from any bail-in to rescue a bank. The idea of ESNs is the result of proposals put forward by the covered bond sector. The ECBC had proposed concepts for ESNs which are very similar to those of the European Commission and the members of the European Parliament. We shall be very interested to see whether aircraft and ship financings come under the scope of ESNs in future.

**European Parliament argues in favour of splitting covered bond market**

**European Parliament positive towards harmonisation**

**European Secured Notes still on the agenda**

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**European Parliament argues in favour of splitting covered bond market**

<table>
<thead>
<tr>
<th>Premium Covered Bonds</th>
<th>• Comply with requirements for preferential capital treatment according to article 129 CRR</th>
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<tr>
<td>Ordinary Covered Bonds</td>
<td>• Comply with the basic principles for covered bonds mentioned in article 52(4) UCITS directive, but no preferential capital treatment according to CRR</td>
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<td></td>
<td>• Collateralised with long-lasting assets which can be valued and repossessed</td>
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<tr>
<td>European Secured Notes</td>
<td>• Make use of fundamental covered bond techniques</td>
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<tr>
<td></td>
<td>• Collateralised with exotic cover assets (e.g. SME loans and infrastructure investments)</td>
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Source: European Parliament, presentation DZ BANK Research, SME = small and medium-sized enterprises
Rating agency Moody's has already expressed its views on the current status of discussions on a harmonisation of European covered bond frameworks (see "Europe moves closer to credit positive harmonisation of covered bond standards" of 17 July 2017). The agency sees many points of agreement between the views put forward by the European Parliament, in the impact study and in the European Banking Authority's proposals. Among the points on which there is agreement in relation to future minimum standards, Moody's highlights as especially positive the fact that preferential supervisory treatment should be restricted to covered bonds backed by mortgages and public sector assets. However, there are also persistent disagreement on certain points. From a credit point of view, the rating agency draws attention to standards relating to rules on the calculation of coverage and the calculation of LTVs as well as over-collateralisation. According to Moody's the interplay between rules on insolvency and bank resolution legislation could lead to challenges which could be relevant to the rating. One example mentioned by Moody’s would be a standardisation of triggers for maturity extensions (soft bullet). Should the new rules in this respect lead to fresh uncertainties about the timing of a potential trigger for maturity extensions, this could be credit negative from the agency's point of view.

Our assessment

The European Union is on the right track with its principles-based approach to a harmonisation of European covered bonds frameworks. We assume that the European Commission will take into account the fundamental views of the European Parliament when it comes to drafting the directive. A standardised definition of the term covered bond would provide more clarity for the relevant prudential regulations in Europe. At the moment, the prudential preferential treatment for covered bank bonds is tied to different preconditions to some extent. The simple UCITS criteria can still be seen as the lowest common denominator. The modern quality features proposed by the EBA are clearer than the UCITS criteria, stronger and fit in better with the current covered bond market. A new, uniform definition for covered bonds would make an important contribution to the simplification of the regulatory framework in Europe, above all as a starting point for prudential special treatment.

All in all, we regard the EBA's proposed three-tier model as an elegant option for the harmonisation of European covered bond frameworks. However, the more detailed regulations in tiers one and two turned out to be, the more restricted the scope allowed to factor in specific national features would become. First hand, this loss of national leeway could help bring about a sensible modernisation of covered bond frameworks and more clarify in relation to the criteria for prudential preferential treatment. The EBA seems very keen to secure minimum standards for the prudential preferential treatment of covered bonds. Loans to SMEs should not be considered eligible cover assets for preferential covered bond treatment. The preferential treatment currently applying to covered bonds backed by ships should be reviewed. In our view, these proposals make sense. The definition of the market into a harmonised segment with stricter requirements applying to covered bond programmes and privileged prudential treatment does not mean that no innovative market segments with exotic cover assets will be able to develop further outside that market. We would be quite relaxed about a split of the covered bond market in this respect along prudential criteria. It will be interesting to see whether the European Commission also comes to the conclusion that a legal framework for ESNs not only makes sense but is also necessary. After all, the banks will have to envisage a market for this product with investors who would be prepared to buy these bonds; you can take a horse to water, but you cannot force it to drink.
**EBA PROPOSALS AND NEED FOR ADJUSTMENT IN INDIVIDUAL COUNTRIES**

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<th>Examples of EEA countries where corresponding changes would be credit positive</th>
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<td>Public supervision</td>
<td>Potentially all EEA countries</td>
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<tr>
<td>Administration of cover pool after default of the issuer</td>
<td>Potentially all EEA countries</td>
</tr>
<tr>
<td>Administration of cover pool after default of the issuer</td>
<td>Italy, Sweden, Spain, UK</td>
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</table>

Source: Moody’s, presentation DZ BANK Research

Moody’s has analysed the expected adjustments which would be necessary to retain favourable prudential treatment under CRR for individual covered bond framework based on the EBA proposals (see table above). Moody's rates as "credit positive" a convergence of frameworks to meet the new standards which would maintain the preferential regulatory treatment of covered bonds in future as well along the lines of the EBA proposals. Germany is not named specifically in the rating agency’s analysis; it seems that adjustments required for German pfandbriefe which would result from any European harmonisation are not especially significant.

In the last few years, the German pfandbrief sector has always tried not only to meet current market standards but also to set the trend with cutting-edge rules in the Pfandbrief Act. This stance is demonstrated by the many changes in the Pfandbrief Act since 2005. At present, there are discussions about the introduction of a statutory soft bullet for pfandbriefe. As outlined above, such rules could bring advantages in term of securing the liquidity of the cover pool. However, we do not expect any rules to that effect this year. We have presented at length the current status of the debate in our study "The pfandbrief: A sustainable investment in low interest-rate environment" in September 2016. It is likely that a net present value regulation is also being considered at present. At the time when the regulation was being written, the stress scenarios applied an interest rate floor of zero per cent. However, this regulation is no longer representative of the reality in the capital market.
LEGAL FRAMEWORK

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. 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").

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:

» 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.

» 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.

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.
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.

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 issuance of pfandbriefe are properly assessed and managed.
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 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;

» 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

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.

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 per cent 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 per cent.

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 250 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 250 trading days; however, the curve must always be shifted by at least 100 basis points. If the shift in the yield curve leads to negative yields, then they must be set to zero in the context of the stress calculations.

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

According to Moody's, low interest rates reduce the protection offered to pfandbrief holders from a net present value over-collateralisation (OC) calculation in a stress scenario under the German Pfandbrief Act because the discount curves are not shifted below the zero line in the interest-rate stress scenarios (see Moody's study "Low Interest Rates Limit Protection Offered by Stressed Present Value OC Requirement" of 13 March 2017). The rule set out in the Net Present Value Regulation whereby negative yields are not taken into account in any interest-rate stress scenario, is a weak point from a strictly methodological point of view. However, we believe that the recoverability of a cover pool consisting mainly of fixed-rate loans and no derivatives to hedge against changes in interest rates is generally more under threat from rising than from falling interest rates.

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 mentioned above of current rules on net present value calculations under German pfandbrief legislation therefore does not go far enough. 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 per cent.
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

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% | 0.0%
Present value | 103.0 | -100.7
Over-collateralisation (present value) | 2.2% | 2.2%

Source: DZ BANK Research

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.

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 European Central Bank or any other European central bank of a member state of the European Union. Other eligible assets include sovereign bonds issued by member states of the European Economic Area (EEA) or deposits with appropriate credit institutions provided they have a Level 1 rating as defined by the European Bank Capital Requirements Regulation. 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.

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 (red line) in this example occurs towards the end of the 180-day period and amounts to 655 euros. This would be the amount needed in the cover pool in the form of liquid assets.
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 per cent) 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 mortgagor'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.

As mentioned earlier, the Pfandbrief Act requires the issuer to hold the required 2 per cent 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. However, in order to give the pfandbrief banks more flexibility in managing their cover pools, the Pfandbrief Act also allows them to include so called 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 the European Central Bank, the Bundesbank or other central banks of European Union member states and claims against suitable credit institutions. Claims against one and the same credit institution may not exceed 2 per cent of the total volume of outstanding pfandbriefe.

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

- 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 per cent. However, this 12 per cent 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.

The European Banking Authority (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 per cent 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 per cent instead of 15 per cent 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.

In the case of mortgage, ship and aircraft pfandbriefe, the further cover assets recorded in the cover register may not exceed 20 per cent of the volume outstanding of each type of outstanding pfandbrief. Claims against the European Central Bank, central banks of European Union member states and bonds of suitable credit institutions must not thereby exceed 10 per cent. In the case of mortgage, ship and aircraft pfandbriefe, moreover, issuers may include in their cover pool up to 20 per cent 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 per cent 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 per cent limit as described previously.
Preferential right of pfandbrief creditor and insolvency-proof trust

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 per cent of the total cover assets. In the case of ship and aircraft pfandbriefe, the ceiling is 20 per cent.

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 European Economic Area (EEA), can be regarded as guaranteeing the prior rights of pfandbrief creditors in a bankruptcy scenario in view of standardised European regulations. The European Union 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 European Economic Area 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.

Potential restrictions applying to cover assets outside the European Economic Area 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.

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 (Refinanzierungs-registerverordnung), 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.

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.

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:

1. **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).

2. **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).**

3. **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).
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.

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.

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).

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).

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

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:

» 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 European Union (EU) or of the European Economic Area and/or their central banks and claims on regional and local authorities from member states of the European Union and of the European Economic Areas. 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 European Central Bank and other multilateral development banks and international organisations listed in the EU Capital Requirements Regulation and Directive (CRR/CRD).

» Public-sector entities of a European Union or European Economic Area 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.

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).

<table>
<thead>
<tr>
<th>SME loans and publicly guaranteed export finance as cover for public sector pfandbriefe</th>
</tr>
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<tbody>
<tr>
<td>Although unsecured loans to small and midsize enterprises (SMEs) do not qualify as pfandbrief cover assets. 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.</td>
</tr>
</tbody>
</table>

Source: DZ BANK Research

Export finance credits located outside the European Union and guaranteed by a public-sector default guarantee must be factored in the 10 per cent 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 per cent cap.

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 European Economic Area 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

<table>
<thead>
<tr>
<th>S&amp;P Rating or equivalent rating from Fitch or Moody’s</th>
<th>Haircut used until 31 December 2013</th>
<th>Haircut used until 31 December 2014</th>
<th>Haircut used until 31 December 2015</th>
<th>Haircut used since 1 January 2016</th>
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<tr>
<td>B-</td>
<td>26%</td>
<td>27%</td>
<td>28%</td>
<td>26%</td>
</tr>
<tr>
<td>CCC</td>
<td>36%</td>
<td>37%</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>CC</td>
<td>55%</td>
<td>56%</td>
<td>57%</td>
<td>55%</td>
</tr>
<tr>
<td>C</td>
<td>80%</td>
<td>81%</td>
<td>81%</td>
<td>80%</td>
</tr>
<tr>
<td>D</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: vdp, presentation DZ BANK Research, as of July 2017

Mortgage pfandbriefe
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.

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 per cent 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.

Mortgage-backed loans
Lending value calculation only takes into account a building’s permanent attributes
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 may not exceed 400,000 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.

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 per cent for residential property (minimum of 10 per cent in the case of commercial property) as the threshold which triggers a revaluation of the properties.
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 vdp Research’s property market monitoring, which, according to the Association of German Pfandbrief Banks is used by around 90 per cent of German lenders (see vdp's Infobrief of Q3 2017). If there has been a sharp fall in property prices (10 per cent for commercial properties and 20 per cent 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.

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 European Banking Authority (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
Under the terms of the Pfandbrief Act, only first-lien mortgage loans with the first ranking 60 per cent 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 per cent 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 per cent 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 per cent ceiling. We regard this regulation as an extremely strong provision which protects pfandbrief creditors.

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

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

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 highlights two strengths of the German approach - the 60 per cent 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.

Moody’s highlights lending value concept as positive factor
## Lendable Value Concept Generates Valuation Reserves When House Prices Rise

<table>
<thead>
<tr>
<th></th>
<th>Example 1: Property is not revalued</th>
<th>Example 2: Property is revalued</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTV limit</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Loan size</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

### Starting situation:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Property value</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>- Qualifying loan value for cover pool purposes</td>
<td>60 (= 100 * 60%)</td>
<td>60 (= 100 * 60%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage house price can fall by before the cover pool suffers a potential liquidation loss</td>
<td>40% (= (100 – 60)/100)</td>
<td>40% (= (100 – 60)/100)</td>
</tr>
</tbody>
</table>

### Position after house prices rise by 50%:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- New property value</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>- Qualifying loan value for cover pool purposes</td>
<td>60 (= 100 * 60%)</td>
<td>90 (= 150 * 60%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage house price can fall by before the cover pool suffers a potential liquidation loss</td>
<td>60% (= (150 – 60)/150)</td>
<td>40% (= (150 – 90)/150)</td>
</tr>
</tbody>
</table>

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 so called 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.

- **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.

- **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.

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.

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. 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.

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. 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:

- 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
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 110 per cent of the loan’s residual sum through the term of the loan.

The calculation of the lending value of ships and ships under construction is also subject to explicit rules, including the same 60 per cent 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:

- **60 per cent LTV and duty to insure**
- **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).
- **The average market value** refers to the average market value fetched by comparable ships over the ten years preceding the year of valuation.
- **The new-build price** is the construction price agreed with the yard plus reasonable standard add-on costs.
- **The purchase price** is the contractually agreed price for acquiring the ship being valued.

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 per cent (if the average relates to less than ten but more than three years) or 25 per cent (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 per cent of the new-build price or purchase price.

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 (Schiffsbeleihungsverwertermittlungsverordnung) 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**

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 110 per cent of the respective loan outstanding.
As in the case of property and ship loans, the aircraft loan may not exceed the first 60 per cent 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 per cent 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

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 over-collateralisation 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.
Issuers are required to report separately for each pfandbrief type the aggregate amount of non-performing loans (in arrears by over 90 days). This shall solely include loans whose arrears are equivalent to 5 per cent 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.

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 European Economic Area 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.

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

\[\text{Information on non-performing loans and geographical breakdown}\]

\[\text{Assets which exceed defined caps to be shown separately}\]

\[\text{Specific information on mortgage pfandbriefe}\]
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.

**ILLUSTRATIVE LTV CALCULATION**

<table>
<thead>
<tr>
<th></th>
<th>Loan 1</th>
<th>Loan 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime mortgage</td>
<td>20</td>
<td>400</td>
</tr>
<tr>
<td>Second-lien mortgage</td>
<td>80</td>
<td>600</td>
</tr>
<tr>
<td>Lendable value</td>
<td>100</td>
<td>1,000</td>
</tr>
<tr>
<td>Reckonable value of primary-lien loan</td>
<td>20</td>
<td>400</td>
</tr>
<tr>
<td>Reckonable value of secondary-lien loan</td>
<td>30</td>
<td>550</td>
</tr>
<tr>
<td>LTV of prime cover loan*</td>
<td>20%</td>
<td>40%</td>
</tr>
<tr>
<td>LTV of secondary cover loan**</td>
<td>50%</td>
<td>60%</td>
</tr>
</tbody>
</table>

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% (statutory limit on the recognition of mort-
gages as collateral in mortgage pfandbrief cover pools).

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 per cent. 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 per cent.
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.

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.
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**

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.

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”.

**Information can be downloaded centrally from the websites of banking associations**

**Cover pool monitor checks compliance with statutory requirements on ongoing basis**

**Extensive information rights**
Special supervision by BaFin

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 European Central Bank 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”).

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”.

Under the European banking union framework, the European Central Bank 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 European Central Bank 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 two 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.

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

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, as far as we understand, 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 (as of March 2017).

However, the European Central Bank 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 European Central Bank 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 European Central Bank's definition of a "wind-down entity". A pfandbrief bank with limited business activities would then probably no longer meet the amended formal European Central Bank 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.

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.
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.

Source: vdp, presentation DZ BANK Research
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 fulfill 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 per cent 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.

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.

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.

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).

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.

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

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:

- 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.

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 other 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.

### SUMMARY PFANDBRIEF ACT

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

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

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.

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

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.

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

German Pfandbriefe meet the requirements of article 52(4) of the Directive regulating Undertakings for Collective Investment in Transferable Securities (UCITS). With the exception of aircraft pfandbriefe, all other categories of pfandbriefe also meet the criteria defined by the European Capital Requirements Regulation (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. Pfandbriefe are also eligible in principle for use as collateral for funding operations with the European Central Bank.

SUMMARY OF THE REGULATORY TREATMENT OF PFANDBRIEFE

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

Source: DZ BANK Research

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.

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.

In principle, pfandbriefe can be included as high quality liquid assets (HQLA) in the calculation of the short-term liquidity ratio (Liquidity Coverage Ratio, or LCR). Whether or not and then in what HQLA category (Level 1, Level 2A or Level 2B) pfandbriefe may be classified depends on each bond's individual features. These include the rating of the pfandbrief, the issue volume, existing over-collateralisation and adherence to transparency requirements in accordance with article 129 CRR. The precise classification in an HQLA category must be worked out for each bond, bearing in mind the fact that there are curious exceptions. Aircraft, mortgage and ship pfandbriefe qualify as HQLA so long as they have a rating of at least A3 or A-. Should the rating for aircraft, ship or mortgage pfandbriefe secured with commercial property loans fall below this level, however, classification in the HQLA category 2B is no longer possible. Loans for aircraft, commercial property or ships are expressly excluded from HQLA category 2B.
FLOW CHART LCR ELIGIBILITY

Investor can demonstrate receipt of information (at least semi annually*) on
- value of the cover pool and outstanding covered bonds
- geographical distribution of cover assets
- type of cover assets
- loan size
- interest rate risks
- currency risks
- maturity structure of cover assets and covered bonds
- loans past due (more than 90 days, in per cent)

Art. 129 CRR or 52(4) UCITS

special law designed to protect covered bond-holders?

EEA member?

Rating (second best)

at least A-?

at least AA-?

at least AA-?

Minimum issue size (in Euro or equivalent)

500m?

250m?

250m?

500m?

Over-collateralisation

OC ≥ 2%?

OC ≥ 7%?

OC ≥ 10%?

OC ≥ 2%?

OC ≥ 7%?

Cover pool requirement

max 15% exposures to institutions

max 15% exposures to institutions

public exposure located in the EU and (guaranteed) residential loans only; all cover assets qualify for 35% RW

max 15% exposures to institutions, no aircraft/SME loans

LCR Level

1
2A (EEA)
2B*
2A (third countries)

not LCR eligible

Haircut / Limit

7% / 70%
15% / 40%
30% / 15%
15% / 40%

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Management Board: Dr. Georg Reutter (Chairman of the Management Board), Manfred Salber

Authors:
Responsible: Stefan Bielmeier, Head of Research and Volkswirtschaft
Author: Jörg Homey, Analyst

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Competent supervisory authority
Bundesanstalt für Finanzdienstleistungsaufsicht (German Federal Financial Supervisory Authority), Lurgiallee 12, 60439 Frankfurt am Main, Germany
DG HYP OFFICES

Deutsche Genossenschafts-Hypothekenbank AG

20095 Hamburg, Germany
Rosenstrasse 2
PO Box 10 14 46
20009 Hamburg
Phone +49 40 33 34-0
Fax +49 40 33 34-11 11
www.dghyp.de

Real Estate Centres

DG HYP
Real Estate Centre Berlin
Pariser Platz 3
10117 Berlin, Germany
Phone +49 30 31993-5101
Fax +49 30 31993-5036

DG HYP
Real Estate Centre Hamburg
Rosenstrasse 2
20095 Hamburg, Germany
Phone +49 40 3334-3778
Fax +49 40 3334-1102

DG HYP
Real Estate Centre Dusseldorf
Steinstrasse 13
40212 Dusseldorf, Germany
Phone +49 211 220499-10
Fax +49 211 220499-40

DG HYP
Real Estate Centre Munich
Türkenstrasse 16
80333 Munich, Germany
Phone +49 89 512676-10
Fax +49 89 512676-30

DG HYP
Real Estate Centre Frankfurt
CITY-HAUS I, Platz der Republik 6
60325 Frankfurt/Main, Germany
Phone +49 69 750676-21
Fax +49 69 750676-99

DG HYP
Real Estate Centre Stuttgart
Heilbronner Strasse 41
70191 Stuttgart, Germany
Phone +49 711 120938-0
Fax +49 711 120938-30

Regional Offices

DG HYP
Regional Office Hanover
Berliner Allee 5
30175 Hanover, Germany
Phone +49 511 86643808
Fax +49 40 3334-782-3775

DG HYP
Regional Office Mannheim
Augustaanlage 61
68165 Mannheim, Germany
Phone +49 621 728727-20
Fax +49 621 728727-21

DG HYP
Regional Office Kassel
Rudolf-Schwaner-Strasse 1
34117 Kassel, Germany
Phone +49 561 602935-23
Fax +49 561 602935-24

DG HYP
Regional Office Nuremberg
Am Tullnaupark 4
90402 Nuremberg, Germany
Phone +49 911 94009816
Fax +49 40 3334782-47 11

DG HYP
Regional Office Leipzig
Schillerstrasse 3
04109 Leipzig, Germany
Phone +49 341 962822-92
Fax +49 341 962822-93

Institutional Clients

Hamburg
Rosenstrasse 2
20095 Hamburg, Germany
Phone +49 40 33 34-21 59
Fax +49 40 33 34-12 60