# Covered Bonds Rating Criteria

## Master Criteria

Inside this Report



This report updates and replaces *Covered Bonds Rating Criteria*, dated 22 November 2022.

## Scope

This criteria report describes Fitch Ratings' global methodology for assigning and monitoring credit ratings for covered bond obligations. A covered bond is a debt instrument with dual recourse to the issuing financial institution and to a pool of assets that can change over time. The rating addresses their probability of default and recoveries given default.

These criteria, or elements of them, may be applied to the ratings, assigned on the international or national rating scale, of any dual-recourse instrument where considered appropriate by Fitch. The criteria are applied in conjunction with relevant master and cross-sector criteria and are supplemented by sector-specific criteria (see *Appendix 15*).

## Key Rating Drivers

**Issuer Linkage:** The covered bond rating is primarily driven by the credit risk of the issuing entity as measured by its Long-Term Issuer Default Rating (IDR), because covered bondholders have full recourse against the issuer. The link to the issuer's rating also reflects its influence over the programme as it takes decisions on cover pool composition, asset and liability mismatches and overcollateralisation (OC). Unless otherwise stated, the use of the term "IDR" in this report refers to the institution's Long-Term IDR.

**Rating Above the Issuer:** Covered bonds have a privileged position over an issuer's senior liabilities. As a first step, Fitch assesses the available uplift above the institution's IDR, based on the three structural features listed below. As a second step, Fitch assesses the quantitative enhancement protecting the bonds. Covered bond ratings are constrained by the total achievable uplift above the institution's IDR and by credit enhancement.

**Relative Position in Resolution:** The resolution uplift reflects covered bonds' exemption from bail-in in jurisdictions where there is an advance resolution framework in place while senior liabilities are subject to it. The IDR plus the resolution uplift determines the Resolution Reference Point (RRP).

**Payment Continuity Assessment:** Fitch assesses whether a programme has the capacity to meet bond payments on a timely basis from cover assets once recourse against the cover pool has been enforced, with a focus on the protection against liquidity gaps. The degree of protection against the risk of payment interruption is expressed via the payment continuity uplift (PCU). A higher PCU means a lower risk to payment continuity, in Fitch's view.

**Credit for Recoveries Given Default:** Bonds that default may still benefit from above-average recoveries stemming from the cover pool. This is expressed through the recovery uplift.

**Overcollateralisation:** The main source of credit enhancement for covered bonds is OC of the bonds by cover assets, which can also be expressed as an asset percentage (AP). Fitch determines a level of OC that can be relied upon on a stable basis. It compares this with the rating-level break-even OC that results from asset and cash flow analysis. The break-even OC considers a combination of timely payment and credit for recoveries given default.

**Asset and Cash Flow Stresses:** The credit risk of cover pools is analysed and stressed in line with asset-specific covered bond and relevant structured finance criteria. Fitch's Covered Bonds Cash Flow Model, built on stressed net present value (NPV) calculations, determines the level of OC that supports ongoing payment from the cover pool (timely payment rating level). Stresses also apply to fees, prepayments, and changes in interest and currency rates. Spread assumptions are added to Fitch's stressed interest rates to simulate asset sales.

### Related Criteria

See Appendix 15

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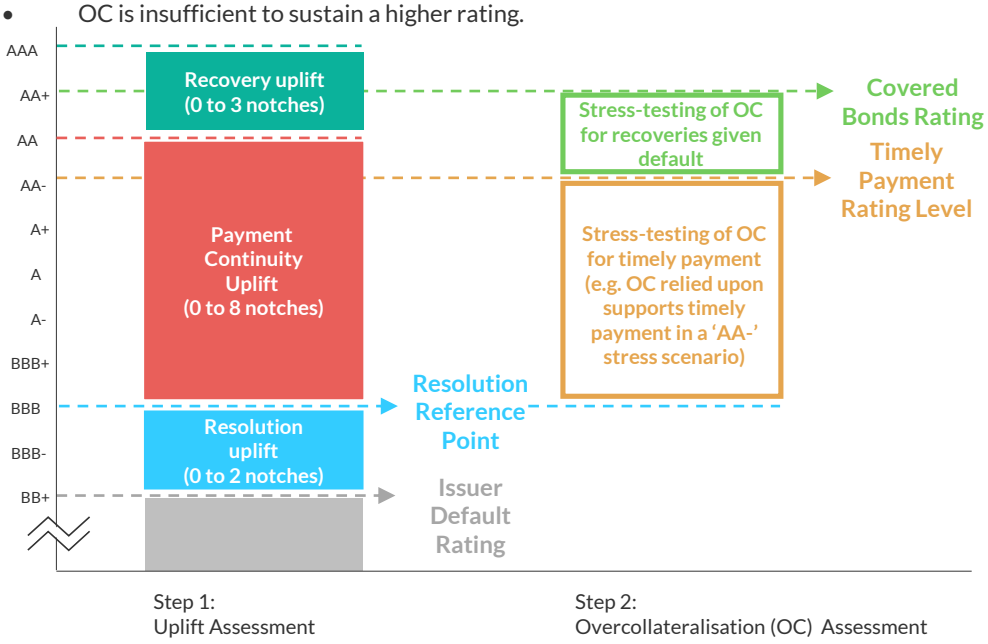
## Covered Bonds Rating Steps

The covered bond rating will typically exceed the IDR of an issuing financial institution as the following features enhance their credit quality:

- The bonds are exempt from bail-in in a resolution scenario in many jurisdictions, which leads to a lower vulnerability to default than senior liabilities. This is captured in the resolution uplift above the IDR to arrive at the RRP.
- Liquidity protection, expressed as a PCU.
- Upon the default of a covered bond, recoveries are expected from the cover pool. This is reflected in the recovery uplift.
- The bonds are overcollateralised by the cover pool segregated for the benefit of bondholders.

The number of notches available for the covered bonds' uplift above the IDR is the sum of the resolution uplift, the PCU and the recovery uplift. Often, not all notches of uplift are used to achieve a given rating (see *Appendix 13: Rating Steps Worked Examples*). The principal reasons are:

- The IDR is nearer to the maximum rating of 'AAA' on the Fitch rating scale or to the applicable rating cap (such as a Country Ceiling) than the available notches of uplift. This creates a buffer against an issuer downgrade. A lower IDR will not lead to a lower covered bond rating until all unused notches are exhausted.
- OC is insufficient to sustain a higher rating.




Source: Fitch Ratings

The uplifts described in Step 1 are granted regardless of if they are used to achieve the bond rating and irrespective of the OC stress-testing in Step 2. Exceptions to this could include covered bonds rated on a limited rating uplift basis (see section *Programmes with Limited Rating Uplift*) and guaranteed covered bonds (see Appendix 2: Starting Points Other than the IDR).

## Step 1 – Uplift Assessment

### Issuer Default Rating

The financial institution's IDR is the starting point for Fitch's covered bond rating analysis, because they are a full-recourse debt instrument. The issuer will pay its bond obligations when due irrespective of the performance of the cover assets as long as it is solvent. The credit link of the bonds to the issuer is also driven by its capacity to decide on cover pool composition, asset and liability mismatches, and maintenance of OC.

Fitch will generally only rate covered bonds for issuers for which it maintains an IDR or where a reference IDR can be determined based on expected support or guarantees. The definition of a reference IDR is included in *Appendix 2*. Mentions of the institution's IDR in this criteria report should be understood to include the programme's reference IDR if relevant instead.

If an institution has an IDR below 'B-', is subject to resolution or is in default (rated 'D' or 'RD'), Fitch will determine the likelihood of the cover pool becoming the source of covered bond payments. If this shift is deemed unlikely, Fitch will use a rating floor set at the highest of 'B-' and the RRP (See *Appendix 3*, for more details).

### Resolution Uplift

Fitch's resolution uplift reflects the favourable treatment of covered bonds over senior liabilities in a resolution scenario. The RRP for the programme is defined as the IDR increased by the resolution uplift. A resolution uplift of up to two notches applies to covered bonds issued from jurisdictions where the following conditions are met (otherwise, no resolution uplift applies):

- Jurisdictions with advanced bank resolution frameworks that include senior liability bail-in from which fully collateralised covered bonds and/or secured debt are exempt;
- Where Fitch believes that a resolution will not result in the direct enforcement of the recourse against the cover pool;
- In the presence of liquidity facilities from a lender of last resort, such as a central bank;
- If covered bond exemption from bail-in is restricted to the value of the cover pool, sufficiently low risk of undercollateralisation upon a resolution.

To assess the risk of undercollateralisation, Fitch analyses applicable legislative regimes and contractual documentation. Preventive provisions include mandatory OC; rules in place to limit low-quality assets; removal of delinquent loans from the cover pool or disregarding them in Asset Coverage Test (ACT); an independent asset monitor; maximum loan-to-value (LTV) guidelines; and periodic property revaluation.

The degree of resolution uplift depends on the following considerations.

## Level of Resolution Uplift

| Issuer characteristics | Notches |
|---|---|
| • No support: institutions with an IDR not driven by institutional or state support and their subsidiaries whose IDR is equalised with the parent's<br>• Support schemes: institutions with an IDR based on their participation/integration in a mutual support scheme and equalised with group IDR<br>• Temporary support: institutions and their subsidiaries with an IDR driven by support, when such support is deemed to be temporary | Two |
| • Support: institutions with an IDR driven by support and their subsidiaries | One |
| • Specialised mortgage or public-sector lenders that form part of a broader banking group and are not operationally integrated with the parent<br>• Institutions without debt buffers requirement such as Minimum Requirement for Own Funds and Liabilities and for which Fitch does not expect resolution to be applied in case of a failure or default | Zero |

Source: Fitch Ratings

### Payment Continuity Assessment

Covered bond payments may continue to be met without interruption once the source of interest and principal payments shifts from the issuer to the cover pool. Fitch views liquidity as the main driver of this payment continuity, unless other risks are a greater threat to it. Fitch's PCU describes the degree of protection against the risk of payment interruption. The higher the PCU, the lower is Fitch's payment continuity risk assessment (see table below). Fitch does not always use all available PCU notches (see *Appendix 13: Rating Steps Worked Examples*).

### *Principal Liquidity Risk Assessment*

The following maximum PCUs reflect the degree of liquidity protection for principal payments provided by legal requirement or contractual provisions.

## Level of Payment Continuity Uplift

| Programme types | Effective liquidity protection for principal payments | Maximum PCU in notches |
|---|---|---|
| Pass-through programmes | Maturity date extends beyond the longest maturing asset in the cover pool[a] | Eight |
| Mortgage and public sector programmes predominantly exposed to developed banking markets[b] | At least 12 months | Six |
| Public sector programmes predominantly exposed to developed banking markets[b] | At least six months | Five |
| Mortgage programmes predominantly exposed to developed banking markets[b] | At least nine months | Four |
| Mortgage programmes predominantly exposed to developed banking markets[b] | At least six months | Three |
| Any programme exposed to maturity mismatches | No protection | Zero |

[a] Or if an immaterial part of the cover pool matures after the last covered bonds
[b] For the purpose of the PCU, developed banking markets are defined as countries where banking plays a fundamental role in channelling funds to the domestic economy and where several non-foreign-owned lenders are active, facilitating potential portfolio transfers/sales.
Source: Fitch Ratings

PCUs for programmes with other liquidity protection will depend on the strength of the liquidity provision in a manner consistent with the table above. A programme with a grace period of six months within a 12-month liquidity protection for principal payments will be treated as a programme with six months' protection. The uplift could be lower if there are concerns that could undermine the effective protection for principal payments. For instance, a voluntary public liquidity commitment will attract a lower PCU than if the liquidity provision is a legal or contractual requirement for the same timeframe.

Fitch's assessment will generally correspond to the mechanism that provides the least protection if an issuer implements distinct mechanisms for different covered bonds in a single programme (such as if hard- and soft-bullet bonds co-exist) and if issuances with more than one feature cross-default. The agency will also consider mitigating factors, such as when covered bonds with weaker liquidity provisions are no longer issued and represent a small percentage of outstanding bonds, or they are matched by liquid assets or equivalent expected cash flows.

### *Interest Liquidity Risk to Payment Continuity*

Fitch expects some protection for timely interest payment to grant a PCU above zero notches. Fitch only grants a PCU above three notches if the protection is equivalent to at least three months' worth of senior expenses and scheduled interest payments (or payments to a counterparty, if swapped).

PCU may be lowered if there are concerns about the efficiency of the interest liquidity protection. For example, the PCU will be reduced if the liquidity amount is calculated over a given period as the maximum cumulative net liquidity outflow (payments due on the programme net of all payments received from the cover assets) and the calculation excludes principal payments that can be extended beyond the relevant period. The deduction will be one or two notches, depending on whether the otherwise- applicable PCU falls in the ranges of one to three notches or four to eight notches.

This deduction will be disregarded when a programme holds stable amount of liquid assets sufficient to meet senior expenses and scheduled interest payments for the relevant period.

To provide full credit to the liquidity mechanism, the funds may be held with an eligible counterparty (see below) or be in the form of eligible liquid assets as described in Appendix 5: Analysis of Liquid Assets in Cover Pool.

### *Counterparty Risk to Payment Continuity*

Counterparty risk is a potential constraint on the PCU. Exposure against counterparties can be mitigated in accordance with *Fitch's Structured Finance and Covered Bonds Counterparty Rating Criteria*. Otherwise, this risk is assessed based on materiality for the rating and may lead to a lower PCU than would have been achievable if criteria were fully met.

For example, a programme issuing hard-bullet bonds would have a zero-notch PCU if:

- the issuer or an intra-group entity acts as account bank holding the reserve or pre-maturity funds in cash; and
- the replacement period in the event of its downgrade is longer than stated in Fitch's counterparty criteria.

A longer remedial period constitutes less of a risk for timely payment on covered bonds if the programme is not issuing hard-bullet bonds or the account bank is not part of the issuer's banking group. A three-notch PCU would be granted in this case, assuming a PCU of six notches would otherwise be achievable.

### *Risks to Payment Continuity, Other than Liquidity Risks*

Payment continuity can be negatively affected by asset segregation and systemic or cover-pool-specific alternative management. If material, these risks could undermine a smooth transition from the issuer to the cover pool as a source of covered bond payments (see *Appendix 4: Other Payment Continuity Risk Considerations*). This could lead to a lower PCU, depending on the materiality of the deficiency compared with the otherwise achievable PCU.

Highly deficient asset segregation may lead to a PCU of zero notches. High risks in alternative management may result in a one- to two-notch reduction of the corresponding PCU, depending on whether it falls in the PCU ranges of one to three notches or four to eight notches.

## Recovery Uplift

Following a covered bond default the bondholder may still benefit from high recoveries from the cover pool. This is expressed through the recovery uplift as shown in the table below. Not all notches of recovery uplift are always used (see *Appendix 13: Rating Steps Worked Examples*).

## Level of Recovery Uplift (in Notches)

| | If rating level corresponding to expectation of timely payment is: | |
|---|---|---|
| **Recovery prospects** | **Investment grade** | **Non-investment grade** |
| Outstanding | Two | Three |
| Superior | One | Two |
| Good | One | One |
| Average | Zero | Zero |

Source: Fitch Ratings

Fitch expects covered bond programmes to experience outstanding recoveries and will grant two or three notches of recovery uplift in the absence of identified material downside risk to recoveries. The use of recovery uplift notches is dependent on OC, as described in OC for Recoveries Given Default in Step 2 – OC Assessment below. In the case of covered bonds secured by standard assets like mortgages and public sector exposures, Fitch expects at least a good level of recoveries (above half of the principal), making them eligible for a one-notch recovery uplift.

If Fitch identifies material downside risks to recovery expectations, for example, due to foreign-exchange (FX) risk, a one-notch recovery uplift limit will be applied. This could arise in hedged programmes where foreign-currency bonds are swapped until their maturity into the domestic currency of the cover assets. In this case, Fitch does not stress FX rates when testing cash flows for timely payment. But a devaluation of longer-dated, domestic currency asset cash flows would be detrimental to recoveries on the foreign currency-denominated bonds in a default scenario where the swap terminates.

In assessing downside risk to recoveries in a different currency, Fitch will consider whether mitigating factors apply or are expected to apply in the foreseeable future, such as:

- The affected bonds represent a minor proportion of total outstanding bonds;
- The weighted average life (WAL) of the cover assets is shorter or only marginally longer than the WAL of the bonds;
- The currency of the assets has a strong peg to the currency of the bonds; or
- There are residual post-swap open-currency positions that are stressed when the agency tests cash flows for timely payment (see *Appendix 10: Treatment of Residual FX Exposures*).

For foreign- currency- denominated covered bonds, in the absence of a dedicated transfer and convertibility (T&C) risk mitigation, Fitch may nevertheless grant a one-notch recovery uplift above the Country Ceiling if all of the conditions set out in the *Structured Finance and Covered Bonds Country Risk Rating Criteria* are met.

## Step 2 – OC Assessment

Fitch tests the timely payment of covered bonds up to the maximum level allowed by the RRP and the PCU, and tests for recoveries given default up to the granted recovery uplift. References to OC are translatable into AP if relevant instead.

When PCU notches are used in assigning a rating, Fitch runs its Covered Bonds Cash Flow Model to determine the level of OC that supports timely payment in a given stress scenario. These stress scenarios are run for rating levels above the RRP. Fitch discloses the rating scenario corresponding to the expectation of timely payment on covered bonds as the "timely payment rating level". The level of recovery uplift is subject to OC stress testing, without cash flow modelling, because recoveries from the cover pool are not tied to any time horizon upon a covered bond default.

### OC Supporting Timely Payment

The OC supporting timely payment up to the RRP will generally be 0%. This is in line with the covered bonds exemption from bail-in up to the value of the collateral in a resolution scenario.

Fitch analyses two major sources of risk when testing OC for timely payment above the RRP, the credit loss and the loss arising from assets and liabilities mismatches (ALM loss). The first is derived from the asset analysis and refers to the credit risk of cover assets inferred from default probabilities and recovery expectations (credit loss), while the second is derived from the cash flow analysis and represents the cost of bridging maturity, interest rate and FX mismatches between the cover assets and the covered bonds. More details on Fitch's cash flow modelling assumptions can be found in *Appendix 6*.

The OC supporting timely payment in a given rating scenario results from the sum of credit loss and ALM loss in the most stressful combination of assumptions for that rating level.

#### *Credit Loss – Asset Analysis*

Fitch's asset analysis focuses on the performance of the cover pool over its remaining life and is affected by the nature and geographical location of the underlying assets or obligors. Details about Fitch's static assets default and loss analysis for the asset types found in most cover pools can be found in the relevant rating criteria listed in *Appendix 15*.

Certain assumptions are tailored for the specific needs of the covered bond credit risk assessment and may differ from those used in structured finance. Fitch does not simulate a deterioration of the cover pool credit profile based on potential asset substitution, unless it foresees a shift in the asset composition such as if an issuer ceases to originate certain assets or if the life of the assets is very short. Instead, the agency considers the fact that the issuer retains the credit risk of the cover assets and can supply more OC to compensate for increased risks.

In assessing OC, Fitch converts the loss rate (Rating Loss Rate, or RLR), which is the product of the default rate (Rating Default Rate, or RDR) by one minus the recovery rate (Rating Recovery Rate, or RRR) in the same rating scenario, into Credit Loss. The latter is the percentage equalising the covered bonds with the cover pool net of the amount of stressed losses and starting from a theoretical OC of zero.

Cover pool outstanding with no OC x (1 – RLR) x (1 + Credit Loss) = covered bonds outstanding.

### *ALM Loss – Cash Flow Modelling*

Fitch's Covered Bonds Cash Flow Model compares stressed incoming cash flows with payments due on covered bonds. It assumes that the cover pool becomes static under the care of a third-party manager at a simulated date, following the hypothetical transition from the issuer to the cover pool as the source of payments of the bonds. Cash flowing after this date is modelled to be trapped in an account if it is not used to meet interest or principal payments on the covered bonds. Fitch Covered Bonds Cash Flow Model combines two main aspects:

- NPV Difference: addresses the impact of interest-rate and FX movements on the NPV of assets and liabilities.
- Loss on Cover Asset Sales and Reinvestment Loss: addresses the effect on timely bond payments of periods of cash shortfall and periods of excess of cash.

The ALM loss also incorporates the cash flows effect of programme features such as the Selected Assets Required Amount clause, pass-through redemption, and amortisation test (see *Appendix 6*). Fitch also incorporates into the ALM loss any cash flows assumed to be lost during the shift in payments to the cover pool if commingling risk is not mitigated

### *NPV Difference*

Fitch compares the NPV of assets' and liabilities' interest and principal payments for this calculation using prepayment assumptions (usually high and low prepayment assumptions) as detailed in the relevant asset analysis criteria report (See *Appendix 15*). Alternative prepayment assumptions may be applied, such as flat medium-term assumptions for seasoned pools.

Fitch also factors in servicing fees defined in applicable asset criteria that are related to the need to appoint a third-party manager following enforcement of the recourse against the cover pool. Credit risk relating to cover assets is not taken into account at this stage.

The level of OC corresponding to the NPV difference is the level that equalises the NPV of assets with the NPV of liabilities in the applied stress scenario and starting from a theoretical OC of zero.

NPV of cover assets with no OC x (1+ NPV difference) = NPV of covered bonds.

Asset and liability cash flows are modelled and discounted under stable, upwards and downwards interest-rate scenarios. Interest rate and FX stresses are not applied for the programmes of highly rated issuers as defined in Fitch's *Structured Finance and Covered Bonds Counterparty Rating Criteria*. Fitch relies in this case on the ability of the issuer to manage open positions and the low likelihood of an issuer jump-to-default. This considers financial institutions' regulation on capital and liquidity buffers to withstand periods of stress.

The stressed interest rates follow the general principles laid down in *Structured Finance and Covered Bonds Interest Rate Stresses Rating Criteria*. Applying the same interest rates to stress future cash flows and to build their present value preserves the par value of floating-rate assets or liabilities in any interest rate scenario, in the absence of a risk premium. They are sufficiently conservative to derive a stressed NPV of fixed-rate assets and liabilities, which is substantially below par in high-interest-rate scenarios and above par in low-interest-rate scenarios.

For a programme exposed to cash flows in foreign currencies, Fitch will apply stresses published in Fitch's *Foreign-Currency Stress Assumptions for Residual Foreign-Exchange Exposures in Covered Bonds and Structured Finance – Supplementary Data File*, or disclosed in programme-specific rating communication, provided the agency believes the open exposure is not one of the primary risk drivers for the covered bond programme. The definition of residual risk and the treatment of FX can be found in Appendix 10.

### Loss on Sales and Reinvestment Loss

This component is the sum of the cost of sales assumed to bridge cash shortfalls and the re-investment cost of temporary cash surpluses, divided by the covered bonds' notional amount.

The loss on sales is the difference between the shortfall of funds divided by the stressed NPV of assets after applying the RSL, the price cap and fire sale discount, and the shortfall of funds divided by the stressed NPV of assets before applying the RSL, the price cap and fire sale discount. The principles followed to determine RSLs are described in Appendix 8. Actual RSL

assumptions used in Fitch analysis are published in Fitch's *Covered Bonds Refinancing Spread Level Assumptions – Supplementary Data File*.

A price cap of 100% and a 3% absolute haircut is applied to all asset sales modelled during the first year after the assumed enforcement of recourse against the cover pool. Boundaries for asset sales have been established, at 5% for the minimum price and 250% for the maximum price over the life of the programme.

The re-investment loss is the NPV of losses resulting from negative carry. Fitch assumes excess cash is re-invested at a sub-market rate (typically 50bp below short-term rates). Liabilities are modelled with a shorter life if the issuer has the right to repay bonds earlier. Fitch assumed that an alternative manager would use excess cash flows to repay bonds at their call date, therefore reducing re-investment costs.

Fitch compares cumulative assets' cash flows with cash flows due on the liabilities at each period to determine cash shortfalls and periods of excess cash, factoring in the above-mentioned FX and interest-rate stresses. Assets taken into account include OC corresponding to the previously calculated NPV difference and credit loss. Liability cash flows include scheduled interest and principal due on covered bonds, considering maturity extension, if present.

Each stress scenario tested factors in prepayments, servicing/management fees, defaults and recoveries. Recoveries on defaulted loans are assumed to be received after a lag as defined in applicable asset criteria. Default timing assumptions can be based on asset models' output or applicable asset criteria, depending on the asset class.

More details on cash flow modelling assumptions used by Fitch can be found in *Appendix 6*.

### OC for Recoveries Given Default

Programmes are expected to experience outstanding recoveries where OC relied upon in Fitch's analysis is sufficient to roughly offset the stressed credit-loss obtained from the asset analysis (see *Credit Loss – Asset Analysis* above) in a rating scenario corresponding to the level of the assigned bond rating, i.e. after applying two or three notches of recovery uplift.

If the level of OC is sufficient for the covered bonds to have a good level of recoveries (at least half the principal), Fitch considers it in line with a one-notch recovery uplift. For example, covered bonds secured by standard assets such as mortgages and public- sector exposures are able to use a one notch recovery uplift with 0% OC in all rating scenarios.

The recovery uplift used for public sector programmes whose covered bond ratings are credit linked to the rating of a specific sovereign (see *Covered Bonds and CDOs Public Entities' Asset Analysis Rating Criteria*) will typically be zero notches in rating scenarios above that sovereign's rating. This is because the OC given credit to by Fitch is unlikely to sustain the high cover pool stresses applied by the agency in a scenario where the sovereign is assumed to be in default.

### Examples of Break-Even OC for the Rating, Depending on Uplift Used

The table below summarises how the break-even OC for the rating is derived, depending on the uplift used in rating the programme:

| Uplifts used: | Break-even OC for the rating: |
|---|---|
| Resolution uplift | 0% |
| Resolution uplift + 1 notch of recovery uplift | 0%[a] |
| Resolution uplift + 2 or 3 notches of recovery uplift | Credit loss in a stress scenario corresponding to the covered bonds rating |
| Resolution uplift + at least 1 notch of PCU + 1 notch of recovery uplift | Credit loss + ALM loss, both in a stress scenario corresponding to the covered bonds timely payment rating level[a] |
| Resolution uplift + at least 1 notch of PCU + 2 or 3 notches of recovery uplift | Higher of (i) credit loss + ALM loss, both in a stress cenario corresponding to the covered bonds timely payment rating level and (ii) credit loss in a stress scenario corresponding to the covered bonds rating |

[a] Assuming standard cover assets such as mortgages
Source: Fitch Ratings

## Model Application

Fitch does not always run models when assigning or monitoring covered bonds credit ratings. For example, if an institution has an IDR of 'AA-', Fitch can assign a covered bonds rating of 'AAA' without specific modelling if the programme's characteristics, including maintenance of minimum legal OC, support a resolution uplift of two notches and a recovery uplift of one notch. In this case, the agency will not test cash flows for timely payment nor establish an RDR and RLR for the cover pool.

Quantitative asset and/or cash flows analysis necessary to determine a rating will be performed and repeated when appropriate. Previous results of Fitch's asset and/or cash flows modelling will be carried forward at future rating reviews subject to all conditions listed in *Appendix 7* being met. These depend, among other things, on the cushion between the break-even OC for the rating and the OC relied on by Fitch in its analysis.

## Break-Even OC for the Rating

The break-even OC for the rating is the lowest protection supporting timely covered bond payments in a stress scenario commensurate with the timely payment rating level and also meets the threshold for the applied recovery uplift. If a given rating is achievable without using any of the granted PCU notches, the break-even OC for the rating will be set by the recovery given default analysis. As recoveries are not tied to a particular time horizon, this typically leads to less enhancement than when testing cash flows for timely payment (see *Appendix 13)*.

It should not be assumed that the break-even OC for a given rating will remain stable, as the relative profile of cover assets compared with covered bonds may evolve, even in the absence of new issuance. The published break-even OC for the rating is generally rounded to the nearest 0.5% as OC stress-testing is not intended to deliver greater precision. Fitch does not round its credit loss and ALM loss in the same way. Therefore, the break-even OC for the rating may not exactly match their sum nor exactly match the credit loss for programmes where this component is the sole driver of the break-even OC for the rating.

Fitch's break-even OC for a given covered bonds rating is floored at 0% and the break-even AP for a given covered bond rating is capped at 100%.

In programmes where the documentation includes an Asset Coverage Test (ACT) incorporating a negative carry factor, Fitch's break-even AP is adjusted upwards (i.e. OC downwards) to take into account the deduction to the cover pool made as part of the test calculation. As a result, Fitch's break-even AP for the rating is higher than in programmes without such a protection.

Fitch relies on model-implied-ratings (MIRs) when the break-even OC is determined by the agency's cash flow or asset models. The MIR is the highest rating level above the IDR within the total uplift granted to the programme, subject to any applicable rating cap, where the relied-upon OC is at least equal to the Fitch break-even OC for that rating.

## OC Protection

The break-even OC for a given rating is compared with the level of OC that Fitch relies upon. A given rating can only be achieved if the relied- upon OC is higher than or equal to the break-even OC for the rating. Fitch's relied- upon OC may be lower (or higher for AP) than the percentage available as of the last reporting date.

### *Level of OC that Can Be Relied Upon*

The agency will give credit to one of the following:

- Legal and contractual commitments legally binding and enforceable against the issuer;
- Non-contractual public statements and/or covenants – such as undertakings given in the programme's investor reports including AP used in the ACT, the financial institution's annual reports or published on the investor relations section of the issuer's website;
- The lowest level of OC (highest AP) recorded during the preceding 12 months, provided that the issuer's IDR is at least 'BBB-' or 'F3' and the programme is not in wind-down. Fitch deems programmes to be in wind-down when issuers no longer focus on eligible cover assets as part of their normal business activity.

For programmes of issuers with an IDR below 'BBB-' and 'F3', and those Fitch considers to be in wind-down, only the minimum level of OC required by the relevant covered bond legal framework (or maximum legal AP) will be credited in the absence of contractual or strong public statements.

For issuers in solvent wind-down, with IDRs below 'BBB-' and 'F3', or with programmes that are in wind-down, Fitch assesses the capacity of the issuer to provide OC over time before giving credit to a public statement of OC or the committed AP under the programme ACT. Fitch considers the strength of the wording, any consequences of a breach, the performance of similar statements, the level of unencumbered assets at the issuer level and, if applicable, the management strategy to ensure the orderly wind-down of the programme.

Fitch will assess the reliability and sustainability of OC. For example, for low-rated issuers and for programmes in wind-down, this will depend on the issuer's ability to replenish the cover pool, restrictions such as from asset encumbrance and the level of non-performing loans. Fitch may also take into account issuers' funding plans and the importance of covered bonds as a funding instrument, and may assume maturing covered bonds are rolled over. If available, resolution plans will also be considered.

Fitch may use another OC benchmark where OC levels over the past 12 months are not consistent with current levels or indicative of expected levels. This may be based on Fitch's projection and will be disclosed in our rating communications. Such a circumstance may occur in the event of a merger or if there are changes in the cover pool composition. The agency will give credit to the updated level of OC when the issuer increases or decreases available levels for example, due to a change in stated intentions. Fitch will then give credit to the lowest level of OC (highest AP) since that change if it is less than one year old.

For programmes where recourse has shifted to the cover pool as a source of payments, Fitch will consider the nominal OC available to bondholders in the long term.

## Rating Determination

Covered bond ratings are assigned by a Fitch rating committee that considers not only the MIR but also other quantitative and qualitative factors listed in this report. Asset and cash flow models produce the break-even OC for a given rating. The comparison of the break-even OC with the level of OC than can be relied upon allows to determine the MIR. When the covered bond rating is constrained by rating caps, the MIR will be the lower of the model output considering the relied-upon OC, or the rating cap.

A rating committee can decide to assign ratings one notch above or below the relevant MIR for different reasons, among others when:

- the combination of assumptions driving the model result is significantly more stressful than or does not sufficiently capture the considered rating scenario; or
- the programme asset and liability composition may be affected by forward-looking considerations that are not fully captured in our modelling; or
- the MIR in future model runs is expected to converge with the rating decided by the committee.

In this case, the break-even OC for the assigned rating will be equal to the break-even OC for the MIR.

Fitch may override the modelled break-even OC and its associated rating by more than one notch if it believes there are risk factors or programme features that are not fully accounted for in the model output. The nature and explanation of the override would be recorded as a variation from criteria.

## Programmes with Limited Rating Uplift

Fitch will rate covered bonds at or near the IDR if material limitations exist in analysing available cover pool assets, cash flows or market information. This will also apply when an issuer has a limited record in originating and servicing a certain class of cover assets or if there is limited visibility on its business model, raising concerns regarding asset generation to maintain OC.

In these cases, Fitch would focus its analysis on the legal or contractual framework, analysing whether assets are sufficiently ring-fenced from the rest of the issuer's balance sheet. The corresponding break-even OC for the rating would be the applicable minimum legal or contractual OC, with a floor set at 0% (or the maximum contractual AP, capped at 100%). The extent of recovery uplift applied where detailed information is limited will not exceed one notch.

Fitch expects to apply this approach in the following circumstances:

- Where the cover assets are located in new markets, for which detailed asset default and loss assumptions could not be derived;
- Cover asset class with volatile past performance or short history;
- Incomplete data but sufficient to perform a broad asset analysis and estimate recovery prospects;
- Covered bond issuers with a limited track record (less than three years);
- When there are uncertainties about the issuer's business model, particularly if it limits the potential to generate sufficient assets to replenish the cover pool.

In the case of issuers with a limited record or an uncertain business model, Fitch may revert to allowing for greater uplift if, in a three- to five-year time frame, it becomes clearer that its business model is sustainable and there is more clarity on the capacity to originate and replenish cover assets.
Fitch may decide that a recovery uplift of one notch cannot be granted in the existence of several cumulative risk factors, such as significant FX risk, deficiencies in the housing market, including the lack of a property register, and asset-quality concerns.

## National Rating Scale

Covered bonds ratings can be expressed in national rating scale. When ratings are assigned on the national scale, the different uplifts granted, per application of this criteria, will be expressed in the international rating scale. The covered bonds rating on the national scale will be determined using the correspondence between the international scale and the applicable national scale. For this reason, the number of notches of uplift may be greater in the national rating scale.

## Programme-Specific Disclosure

In its Rating Action Commentaries, Fitch will disclose the following:

- The rationale for the rating action;
- Relied-upon OC/AP, break-even OC/AP for the rating and its components, if applicable;
- Rating sensitivities.

In its Pre-Sale and New Issue reports, Fitch will also include the following:

- Description of the cover assets analysis;
- Description of the cash flow analysis;
- Analysis of structural and legal aspects of the programme;
- Details on counterparties;
- Description of the origination and servicing practices;
- Outstanding liabilities.

In addition to the above general disclosures, Fitch will disclose the following programme-specific analytical details in its rating communications, where relevant:

- Foreign exchange rate stresses when different from the ones published in Fitch's Foreign-Currency Stress Assumptions for Residual Foreign-Exchange Exposures in Covered Bonds and Structured Finance – Supplementary Data File.

- Relied- upon OC set by using Fitch's projections where OC levels over the past 12 months are not consistent with current levels or indicative of expected levels;
- The modelled timing of recourse against the cover pool if Fitch deems recourse against the cover pool is likely but an enforcement of recourse against the cover pool has not occurred yet;
- RSL adjustments applied when portfolios deviate significantly from a standard market portfolio;
- In the asset analysis of CH, a potential portfolio-level adjustment used to capture idiosyncratic cover pool features;
- Inflation rate assumption used to stress the amortisation profile of inflation-linked loans.

For programmes rated on a limited uplift basis, Fitch will generally not be able to perform a full asset or cash flow analysis and will explain this in the relevant description section of the report.

## Climate-Risk Assessment

In its analysis of new and existing covered bond ratings, Fitch may adjust key assumptions when the agency believes there is material exposure to direct or indirect climate-change risks.

Such considerations may reflect the demonstrable level of isolation or the exposure of the assets to longer-term physical climate-risk, or the potential materiality of climate-related transition risks affecting the performance drivers of covered bond programmes.

Fitch will provide disclosures detailing any adjustments to assumptions outside of those specified in Fitch's sector-specific criteria, cross-sector and bespoke criteria, at www.fitchratings.com, in its Rating Action Commentaries, together with how they were considered in rating decisions.

## Variations from Criteria

Fitch's criteria are designed to be used in conjunction with experienced analytical judgment exercised through a committee process. The combination of transparent criteria, analytical judgment applied on a transaction-by-transaction or issuer-by-issuer basis, and full disclosure via rating commentary strengthens Fitch's rating process while assisting market participants in understanding the analysis behind our ratings.

A rating committee may adjust the application of these criteria to reflect the risks of a specific transaction or entity. Such adjustments are called variations. All variations would be disclosed in the respective Rating Action Commentaries, including their impact on the rating where appropriate.

A variation can be approved by a ratings committee where the risk, feature, or other factor relevant to the assignment of a rating and the methodology applied are both included within the scope of the criteria, but where the analysis described in the criteria requires modification to address factors specific to the particular transaction or entity.

## Limitations

Ratings, including Rating Watches and Outlooks, assigned by Fitch are subject to the limitations specified in Fitch's Ratings Definitions and are available at https://www.fitchratings.com/site/definitions.

In addition, ratings within the scope of these criteria are subject to the following specific limitation. The base and stress scenarios defined within these criteria do not take into account the occurrence of event risk, such as a change in legislation for a covered bond framework or the merger of an issuer.

## Rating Assumption Sensitivity

Covered bond rating performance will depend on:

- Primarily, the stability of the financial institution's IDR (see Fitch's *Bank Rating Criteria*);
- The agency's judgement that the issuer will remain the source of payments at the point of resolution as reflected by the programme's RRP;

- An assessment of the strength of liquidity protection for the programme that would support payment continuity upon the enforcement of recourse against the cover pool, unless other elements are identified in Fitch's analysis as more detrimental to payment continuity, as reflected by the programme's PCU;
- The level of sustainable OC (or AP) that Fitch gives credit to compared to the break-even OC (or AP) for the rating.

Fitch will explain the covered bonds' rating sensitivity to the most relevant rating drivers in its rating publications. For programmes where the agency relies in its analysis on the lowest OC (or highest AP) of the past 12 months, or on an expected level of OC (or AP), Fitch will, in addition, give an indication of the covered bonds rating level if OC were to be equal to the legal minimum (or AP to the legal/contractual maximum).

# Appendix 1: Data Sources

## Criteria Application

### *Sources of Data*

Fitch's analysis rests on information provided by the issuer or the arranger (if any), and in the public domain. If available, Fitch may use periodic data provided in the Harmonised Transparency Template files published on the website of the Covered Bond Label Foundation. The rating process can also incorporate information provided by other third-party sources. If material to the rating, the agency will disclose other relevant sources.

The approach to analysing CRE loans securing covered bonds adopts assumptions from Fitch's *SME Balance Sheet Securitisation Rating Criteria* (data sources used to derive these assumptions are described in the respective criteria). It also incorporates empirical data from EMEA CMBS loans and investment property data from Cushman & Wakefield classified by market segment (combining geography and type).

### *Quality*

Information quality encompasses such factors as frequency and timeliness, reliability and level of detail. It may lead to a rating cap relative to the IDR, if insufficient.

### *Detailed Data Requests*

For its asset analysis, Fitch expects to receive loan level collateral information. For large and granular cover pools, such as for CH, where the entire financial institution's mortgage book serves as collateral, stratified information is considered adequate. In addition, Fitch expects to receive cohort-based arrears, default and recoveries data from the issuer annually.

A list of data requests for residential mortgages is available in applicable RMBS asset criteria or in Fitch's *Originator-Specific Residential Mortgage Analysis Rating Criteria*. For commercial real estate loans, Fitch expects to receive line-by-line information at the borrower, loan and property levels for the total asset portfolio at least annually, as listed in Appendix 11. More conservative assumptions will be applied in the absence of certain key items or delivery of aggregated data. Fitch may correspondingly adjust results to account for potential inaccuracies.

Cover pools with large obligor concentrations are potentially exposed to adverse performance of a relatively small number of loans. Fitch may request additional information (i.e. valuation reports or rent rolls) for large exposures accounting for more than 0.5% of the total cover pool.

Fitch will create a worst-case portfolio based on stratification tables provided by the issuer if no property- and loan-level information can be obtained, but only collateral data at the portfolio or aggregate level (e.g., if LTV bands are provided, the upper band is assumed, or the worst combination of property type and region if data are not stratified that way). If neither stratification tables nor historical default data (in particular, for portfolios secured by operating companies) are provided, the agency is likely to assume a 100% loss for loans in the cover pool.

For public sector assets this can be found in *Covered Bonds and CDOs Public Entities' Asset Analysis Rating Criteria*.

If adequate originator-specific information is not available, market-wide historical performance data may be used as proxy information.

For its cash flow analysis, Fitch expects to receive quarterly projections of asset and liability cash flows for the current cover pool and covered bonds. For large and granular cover pools, such as for CH, information about the residual WAL and interest rate is an adequate substitute for quarterly projections of asset cash flows. The list of outstanding covered bonds with their terms and conditions may be an adequate substitute for quarterly projections of liability cash flows. In addition, Fitch expects to receive swap cash flows (including counterparties' name and rating) and marked-to-market information for privileged derivatives, when relevant to the rating. Fitch also expects historical information on asset prepayments and details of call/put options on outstanding covered bonds.

If assets or liabilities cash flows projections are not provided, Fitch may extrapolate the assets redemption profile based on average interest rate and the residual maturity information, and the liabilities redemption profile based on terms and conditions of outstanding bonds.

For programmes rated based on a limited uplift, or based on a guarantee, no periodic assets and cash flows data is expected.

If data limitation is a rating constraint, it will be disclosed in the rating publications.

### Data for RSL Assumptions Used in Cash Flow Analysis

Fitch sources historical information on sovereign bonds' yield over swap rates and on covered bonds spreads from Bloomberg and Haver Analytics, respectively, and uses these data to derive public sector and mortgage RSLs. Key liquidity measures on sovereign bonds, such as reserve currency flexibility and sovereign debt outstanding, are extracted from publications by Fitch's sovereign ratings team and also consider sovereign bonds' bid-ask spreads derived from Bloomberg data.

The size of a mortgage market is primarily determined from the publication of European Mortgage Federation (see Appendix 8: Fitch's Mortgage and Public Sector Refinancing Spread Levels).

### Data for Foreign- Currency Stress Assumptions

Fitch sources historical information on US dollar exchange rates from the Bank of International Settlements and derives all other currency pairs from it. Fitch assumptions factor into its current global and country-specific macroeconomic expectations.

Fitch's current foreign currency stress assumptions for residual foreign currency exposures are published in Fitch's *Foreign-Currency Stress Assumptions for Residual Foreign-Exchange Exposures in Covered Bonds and Structured Finance – Supplementary Data File*.

# Appendix 2: Starting Points Other than the IDR

## Reference IDR

Covered bonds may be issued by specialised funding entities with no IDR. Fitch will instead use a reference IDR in its analysis, defined as follows:

| Situation | Reference IDR |
|---|---|
| Issuer is a subsidiary of another entity and Fitch considers there to be an ability and propensity of support should financial difficulty arise.<br><br>The assessment considers: degree of ownership and operational integration; unsecured funding dependence; common jurisdiction and regulator, branding; and statement of support by the parent. | Parent's IDR |
| Issuing entities whose assets largely consist of secured advances to another entity. | IDR of the entity to which the advance was made. |
| Covered bond-issuing entity owned by several financial institutions, subject to regulatory supervision and whose only assets consist of secured advances to its shareholders.<br><br>The approach applies where shareholders are mutually responsible for ensuring the issuer's solvency.<br><br>Reference IDRs defined under this approach classify as a criteria variation. | Reference IDR is the median (measured by the amount of exposure) of the Fitch IDR or a Fitch IDR credit opinion of these financial institutions.<br><br>In the absence of a Fitch IDR or credit opinion, Fitch will consider the lowest of Moody's Long-Term Issuer Rating and Standard & Poor's Issuer Credit Rating, if publicly available.<br><br>This is provided that Fitch maintains a rating on the majority of the shareholders as measured by the amount of exposure through the secured advances. |

Source: Fitch Ratings

Where the reference IDR is based on a median IDR for institutions participating in a programme, the resolution uplift for the programme will also be based on the median of the resolution uplift otherwise applicable to the underlying secured advances.

## Guaranteed Covered Bonds

Where the bonds are guaranteed by a rated third party, such as the state or an institutional owner, Fitch will base the programme's rating on the higher of the guarantor's IDR and the outcome of the analysis in line with these criteria, to the extent sufficient information is available to perform it, or else the financial institution's IDR.

The covered bond rating before assessing recovery prospects may be equalised with that of the guarantor depending on the strength of the guarantee, notably whether the guarantor's obligation ranks equally with its senior debt. Fitch will evaluate whether guarantees are unconditional, enforceable and timely.

## Appendix 3: Issuers with an IDR Below 'B-'

When the financial institution's IDR is below 'B-', or if the issuer is under resolution or in default (rated 'D' or 'RD'), Fitch will seek to determine the likelihood that a shift of recourse to the cover pool would occur upon a default on senior unsecured obligations. If it determines the shift to be unlikely, Fitch will use a rating floor set at the highest of 'B-' and the RRP.

On top of this floor, we would continue to apply the PCU and recovery uplift. The OC will be tested in line with the Step 2 – OC Assessment section in this report.

The rating floor will no longer be applicable if we expect an issuer default to lead to the enforcement of the recourse against the cover pool. Fitch will instead test timely payment on the covered bonds using its Covered Bonds Cash Flow Model, with the maximum rating based on the refinancing risk in the programme, in particular the amount of assets that would need to be sold, the time available for the sale and the number of potential buyers.

- Programmes with a PCU of zero notches will be capped at 'CCC' before the application of the recovery uplift.
- Programmes with a PCU of one to three notches will be capped at the 'B' category before the application of the recovery uplift.
- Those with a PCU of four to six notches will be capped in the 'BB' category before the application of the recovery uplift.
- Programmes with no refinancing risk could reach ratings in higher categories, depending on the level of OC given credit to. The notches of recovery uplift would still be considered.

When a covered bond default appears inevitable, the rating will be solely based on a recovery given default analysis. A 'CCC' rating corresponds with recovery expectations deemed to be outstanding, 'CCC-' with recovery expectations deemed superior and 'CC' with recovery expectations deemed good. Recovery expectations deemed average, below average or poor will lead to a 'C' rating.

# Appendix 4: Other Payment Continuity Risk Considerations

Fitch's PCU focuses on protection against liquidity gaps and also evaluates system-specific and issuer and/or cover pool-specific features. If they represent a high risk to timely payments when the payments switch to the cover pool, the programme's PCU is reduced. Asset segregation, systemic and cover pool-specific alternative management and privileged derivatives are assessed as part of the ratings process.

## Asset Segregation

The ring-fencing of the cover assets from the rest of an issuer's balance sheet is a prerequisite for any payment to be directed to covered bondholders and to rate a programme above the issuer's senior unsecured debt rating. The ring-fencing of cover assets from any claims from unsecured creditors of the defaulted financial institution is achieved through law – often in the form of an exemption to normal bankruptcy legislation, or through a transfer of the assets to a bankruptcy-remote special-purpose vehicle (SPV) acting as a guarantor of the issued covered bonds. In all cases, Fitch expects to receive legal opinions and memos addressing the validity of the asset segregation provisions.

Given the "all-or-nothing" nature of the risk, granting a PCU above zero notches is only possible if Fitch expects ring-fencing to be broadly effective. High uncertainty on the effectiveness of asset segregation results in a zero-notch PCU and impedes any resolution and recovery uplifts, and the rating could be at the same level as the issuer's senior liabilities. For example, for Chilean bonos hipotecarios, Fitch does not view bondholders' recourse to the cover assets as sufficiently strong despite their isolation in a special register. Cash flows from the cover assets cannot be directly used to pay bondholders once an issuer fails to do so.

### Key Questions – Asset Segregation

| |
|---|
| • Are cover assets effectively segregated from the claims of other creditors of the issuer? |
| • Is excess OC immune from the claims of other creditors of the issuer? |
| • Are cover assets or covered bonds subject to claw-back risk upon an issuer insolvency? |
| • Are there provisions against the risk that the pool's cash flows could be commingled with other revenues of an insolvent issuer? |
| • Is there protection against borrowers' attempts to set off their debt against any receivables they have against the issuer? |

Source: Fitch Ratings

## Alternative Management

Covered bondholders' claims against the cover assets would be handled by a third-party manager if recourse against the cover pool is enforced. Fitch takes into consideration the framework or contractual clauses governing the appointment of a substitute manager, any potential conflict of interest (where an administrator in a bankruptcy takes care of both secured and unsecured creditors), the manager's responsibilities in the servicing and liquidation of the cover assets to meet payments, and any further protection due to oversight or potential support for regulated covered bonds. Fitch also considers the availability of suitable alternative management parties in a given market.

### *Systemic Alternative Management*

If Fitch assesses systemic alternative management as a high risk to payment continuity, the PCU will be reduced by one notch if it would otherwise fall in the one-to-three-notch range and by two notches if it would otherwise fall in the four-to-eight-notch range. For example, weaknesses identified in a conditional pass-through programme's alternative management, such as a longer cure period of five months instead of the usual one month for events leading to the enforcement of the guarantee against the cover pool, could result in a stronger reliance on the issuer's ability to make timely payment. Fitch would grant a PCU of six notches instead of the standard eight notches.

Fitch believes frameworks giving the regulator a responsibility and active say in appointing an alternative manager with wide-ranging powers and duties are beneficial for continuity of payment. Programmes involving an SPV with efficient provisions for the replacement of the manager and the appointment of back-up servicer are also considered supportive of payment continuity in the event recourse against the cover pool is enforced.

Risks to payment continuity are likely to come from regimes lacking a dedicated administrator to prioritise decisions related to covered bonds' timely payment. The decision-making process may also be delayed by underlying provisions if the appointment of an alternative manager and its powers and duties are governed only by contractual agreements.

Systemic alternative management aspects are less important to payment continuity for pass-through programmes where the alternative manager's role is facilitated by the fact that cover assets do not need to be sold to meet timely payment.

### *Cover-Pool-Specific Alternative Management*

If Fitch assesses cover-pool-specific alternative management to represent a high risk, the programme's PCU will be lowered by one or two notches to reflect a greater link to the IDR of the issuing institution. The reduction is one notch if the otherwise achievable PCU is in the one-to-three-notch range, and two notches if it is in the four-to-eight-notch range.

The assessment focuses on the likely ease of the transferability of relevant data and IT systems to an alternative manager and buyer, also judging by the quality and the quantity of the data provided to Fitch. The agency expects public sector programmes to be less complex to manage if the cover pool is dominated by tradable bonds and standardised loans.

Fitch expects the transition to an alternative manager to be smooth for standard mortgage programmes with market-based systems for cover pool management and data extraction, and purely residential pools where issuers have experience in selling assets or simulating cover pool transfers. These transitions could be more challenging for programmes where there is limited or low-quality data provision, split loans, internally developed IT systems and/or a high number of originators.

Fitch is more likely to consider wind-down programmes as high risk in terms of cover-pool-specific alternative management given that issuers may devote fewer resources and provide less support for them. Programmes in wind-down present a greater risk for cover pool deterioration in the run-up to an issuer insolvency than others where the business line and investor base continue to be important. Fitch may still assume that the programme remains in line with current characteristics in its asset and cash flows analysis.

## Key Questions – Systemic Alternative Management

- Is an administrator appointed sufficiently ahead of insolvency for the exclusive care of covered bondholders?
- How important is timeliness of payments in the legal provisions?
- Does the substitute manager have the authority to sell cover assets or to borrow to make timely payment on covered bonds?

## Key Questions – Cover Pool-Specific Alternative Management

- Are cover assets, debtors' accounts and privileged swaps clearly identified in IT systems?
- Are standardised, rather than custom-made IT systems used?
- How automated in the cover pool reporting and how rapid is it?
- Is filling of loan documentation, certificate of ownership and evidence of security adequate?

Source: Fitch Ratings

### Privileged Derivatives

Fitch does not expect privileged derivatives to represent a high risk for the payment continuity of covered bonds programmes upon a resolution. If the agency came to this conclusion for a specific programme, this would be considered as a variation to criteria and disclosed in Fitch's Rating Action Commentaries.

## Appendix 5: Analysis of Liquid Assets in Cover Pools

This section explains Fitch's liquid asset eligibility framework in determining which assets provide protection against covered bond payment interruption risk commensurate with the programme's PCU assessment. As an example, eligible liquid assets covering three months of interest payments, or swap payments and senior expenses, as applicable, and 12 months of principal payments, is in line with a PCU of six notches for programmes secured by mortgages exposed to developed banking markets.

Qualified investment assets as per Fitch's Structured Finance and Covered Bonds Counterparty Rating Criteria provide adequate liquidity protection in a rating scenario where Fitch tests for timely payment on covered bonds above the RRP.

Certain assets that qualify as high-quality liquid assets (HQLAs) for the purpose of the liquidity coverage ratio (LCR) are eligible as protection against liquidity risks in programmes when eligible for repo operations with central banks. LCR rules define the type of assets that can be held by financial institutions to cover their stressed outflows on a 30-day horizon. HQLAs should be liquid during a time of stress and have been selected by regulators based on different measures of liquidity applied on historical market data. In most jurisdictions, these are central bank-eligible assets. Such other eligible liquid assets that relate to the criteria are listed below.

- LCR-eligible public sector bonds rated 'AA-' or above;
- Cash held at domestic central banks in countries rated in line with the minimum primary risk ratings to support the timely payment rating level according to the Credit Risk Rating Table (figure 4) of Fitch's *Structured Finance and Covered Bonds Counterparty Rating Criteria*;
- LCR-eligible public sector bonds rated in line with the minimum primary risk ratings to support the timely payment rating level according to the Credit Risk Rating Table (figure 4) of Fitch's *Structured Finance and Covered Bonds Counterparty Rating Criteria*;
- Schuldscheindarlehen (promissory notes) where the rating is based on support from the German sovereign or German Laender;
- Covered bonds eligible for the LCR as level 1B (issued with a minimum size of EUR500 million with a minimum rating of 'AA-', and not from the issuer banking group).

Liquidity protection will not be given full credit if it is solely in the form of covered bonds as Fitch believes these are not adequately protecting programmes against short-term payment interruption risk on interest due immediately after recourse has shifted to the cover pool.

Fitch will give credit to liquid assets if sufficient eligible liquid assets are held in the cover pool to provide continuing protection. This is the case if the issuer maintains a diversified pool of eligible assets in the cover pool to match upcoming maturities. However, if the liquid assets are concentrated in one exposure other than cash held at a eurozone central bank, Fitch would cap the timely payment rating level at the rating of the exposure, unless it is subject to a 30-calendar-day replacement provision when becoming non-eligible.

Liquid assets are deemed eligible even if they mature beyond 30 days and after the next bond payment date. This makes them subject to market value risk, unlike the qualified investments defined in the counterparty criteria. Fitch therefore considers them incompatible with the maximum PCU of eight notches granted to programmes without maturity mismatches. Instead, a PCU of up to six notches would be granted. The market value risk associated with these assets is captured in Fitch's Covered Bonds Cash Flow Model via Fitch's stressed interest rates and the refinancing spread assumptions defined in Appendix 8. In relation to RSLs, Fitch uses a weighted-average spread assumption corresponding to the mix of asset types in the cover pool.

Assets that meet the eligibility criteria above and are subject to a 30-day replacement provision are not assumed to default in a scenario where Fitch tests cash flows for timely payment on the covered bonds. Assets that do not meet the criteria will be analysed as part of the credit risk of the cover pool but will be given no or limited credit in the PCU assessment, depending on their materiality to the rating.

# Appendix 6: Further Cash Flow Modelling Assumptions

Asset and liability cash flows are considered after swaps, provided the derivatives are privileged obligations and contracted with eligible counterparties as defined in *Structured Finance and Covered Bonds Counterparty Rating Criteria: Derivative Addendum*.

## Timing of Assumed Recourse against the Cover Pool

Fitch generally models the point at which recourse against the cover pool is enforced up to six quarters after the pool cut-off date. Fitch's Covered Bonds Cash Flow Model output corresponds to the most stressful alternatives, considering all quarters where the shift to the cover pool is modelled.

If no principal redemption is scheduled in the six quarters after the pool cut-off date, Fitch will also test a transition to the cover pool upon the next major upcoming maturity and no later than the WAL of the assets. The agency will only run this additional test for issuers rated below 'BBB-' and 'F3' or if Fitch does not expect any further issuance under the programme. In this later-dated enforcement scenario, the agency models the same maturity mismatches as at the cut-off date.

The sale of a large asset portfolio may overstretch buyers' capacity. Fitch will also simulate a shift to the cover pool as a source of payment upon a sudden increase in the amount of payments to be made within four consecutive quarters. For example, if there is a sudden increase in payments during quarters 15-18, Fitch will simulate a shift to the cover pool at quarter 15 after the cut-off date. This is in addition to the first six quarters tested and consumes more OC through the fire-sale discount applied during the first year after an assumed enforcement of recourse against the cover pool. When modelling enforcement of the cover pool beyond the first six quarters due to maturity concentration, Fitch typically models constant maturity mismatches compared with the cut-off date.

For programmes where Fitch determines that the shift of recourse to the cover pool is likely but enforcement has not yet occurred, the modelled timing will be adjusted to consider the agency expectations. Actual scheduled cash flows will be tested once recourse has shifted.

## Assets and Liabilities Redemption Profile

On the asset side, the agency assumes that the issuer replenishes the cover pool with new assets between the cut-off date and the simulated time of a shift to the cover pool as a source of payments, in a way that maintains the assets' amortisation profile as at the cut-off date. This creates mismatches as assets will have an unchanged long residual life while liabilities have a shorter residual life than at the cut-off date. When modelling the replenishment of the cover pool, and to ensure a forward-looking view, Fitch considers the expected development in asset composition, in line with the issuer's strategy.

The agency may also assume that replenishment of the cover pool will take place in a way that maintains the same maturity mismatch as at the cut-off date. This applies when Fitch expects the existing asset and liability maturity mismatches to be constant. This would apply, for example, if the cover pool is made up mostly of bonds, or if the activity funded through the issuance of covered bonds has been discontinued. If the latter, Fitch assumes replenishment would be made from the existing stock of loans or other assets, which are more seasoned, leading to a shorter cover assets' residual life than at the cut-off date.

Liabilities cash flows are modelled to be due at their expected date, or, in the event of a cash shortfall, at their legal maturity date. Fitch may consider an upcoming covered bond principal payment as already repaid if it is matched by corresponding liquid assets or cash.

Fitch's Covered Bonds Cash Flow Model assumes that no additional issuance takes place. Fitch may model one additional issuance for new programmes or programmes with a single bond outstanding if the agency expects further issuances to take place in the short to medium term. The additional issue would be modelled to be of the same size with a term shorter or longer than the initial or outstanding bond depending on Fitch's expectation and the issuer's plan. Other conditions would correspond to prevailing market conditions at the time of the analysis.

### Inflation-Linked Loans Amortisation

When the cover pool includes inflation-linked loans, Fitch will stress the amortisation of the loans based on the specific loan characteristics and using an inflation rate assumption defined as a percentage of Fitch's stressed interest rate. The inflation rate assumption used will be disclosed in our Rating Action Commentaries.

### Interest Rate Due on Assets

Cover pools may include loans subject to product switches. These switches include: loans paying a fixed interest rate until an agreed reset date; loans initially paying a fixed interest rate, later converting to floating; loans initially paying a floating interest rate, later converting to fixed; and loans paying a floating interest rate subject to a set cap. Fitch aims to model the loans' cash flows under its stressed interest-rate scenarios to stress available excess spread. For loans with an agreed interest reset date, Fitch assumes that after the interest-rate reset date, interest is paid according to its interest-rate stresses (unless otherwise specified in the loan contract). Capped floaters are modelled as fixed-rate loans in high-interest-rate scenarios, generally using the weighted-average cap rate. The portion of switching loans to which Fitch applies the interest-rate stresses may be subject to asset-specific criteria assumptions.

A programme may be vulnerable to negative interest rates, if the sum of a bond's floating interest reference rate (e.g. Euribor) and its margin turns negative (e.g. -0.3% Euribor +0.1% margin = -0.2% interest rate). Fitch assumes interest due to covered bonds holders is floored at zero in line with the agency's *Structured Finance and Covered Bonds Interest Rate Stresses Rating Criteria* (November 2020). This floor is applied on an aggregate rather than on a bond by bond basis.

Fitch views as a minor risk the hedged scenario in which negative interest rates (in the absence of a documented floor) would cause a programme to owe payments to the counterparty under both legs of an interest-rate swap (i.e. a positive fixed-rate earned on the assets plus a positive payment because of the negative rate owed on the bond). This is because the current level and tenor of Fitch's negative interest-rate stresses leads to an immaterial effect on the break-even OC for a given rating.

As a result, Fitch's cash flow modelling does not size for the shortfall resulting from such hedging agreements or from negative interest that may affect individual bonds in a programme with several bonds outstanding. If Fitch deems this exposure to be material, such as in the case of currency swaps with no documented floor leading to an additional exposure to adverse FX movements, Fitch will size this shortfall in the break-even OC for the programme's rating.

### Timing of Defaults and Recoveries

Fitch's analysis of residential mortgage cover pools uses a single set of portfolio weighted average recovery rate (WARR) assumptions rather than a time-dependent recovery vector in accordance with the *European RMBS Rating Criteria*. It is calculated by applying the notch-level WARR vector to the middle-loaded default distribution assumption. Fitch assumes evenly spread annual default timing when modelling cover pools' cash flows. The monthly default timings specified in the *APAC Residential Mortgage Rating Criteria* are therefore transformed into an annual assumption.

### Selected Assets Required Amount Clause

Some programme documentation contains a Selected Assets Required Amount (SARA) clause that limits the amount available for sale to the pro rata share of the maturing bonds out of the total bonds outstanding. This aims to keep OC constant before and after sale. In this calculation, the nominal value of the bonds is sometimes increased by a negative carry factor, as defined in the programme documents. The Supplemental Liquidity Reserve Amount (generally named X-Factor in asset coverage tests), which allows part of the assets to be sold without the constraints of the SARA clause, is also taken into account in Fitch cash flow modelling.

### Pass-Through Redemption

When covered bonds are assumed to be repaid on a pass-through basis from asset cash flows, the model sets OC so that stressed principal and interest revenue on assets can cover interest payments and repay principal.

### Amortisation Test

Some covered bond programmes include an amortisation test that is breached if the value of the cover pool is below the nominal value of outstanding covered bonds when considering only the portion of mortgage loans below 80% of the property value (or a different cut-off percentage). This amount is often adjusted by the performance status of the loans. This breach may trigger an early amortisation, causing all bonds to become immediately due and payable.

Fitch applies its property-price decline assumptions in the relevant stress scenario (as per the relevant RMBS or residential mortgage asset analysis rating criteria) when testing OC for timely payment, if a substantial portion of mortgage loans in the cover pool show high LTVs above the cut-off percentage.

### ALM Loss for T&C Risk

For foreign- currency- denominated covered bonds, in the absence of a dedicated T&C risk mitigation and to achieve one notch of recovery uplift above the Country Ceiling, the ALM loss component will be increased to account for (i) the credit loss at the stress scenario equivalent to one notch above the Country Ceiling and (ii) 12 months interest payments on the outstanding bonds. The amount calculated in (ii) mitigates the potential risk to recovery expectations in a scenario where capital controls are imposed. When interest payments on the bonds are floating, they will be calculated using the equilibrium rate plus the applicable weighted average margin.

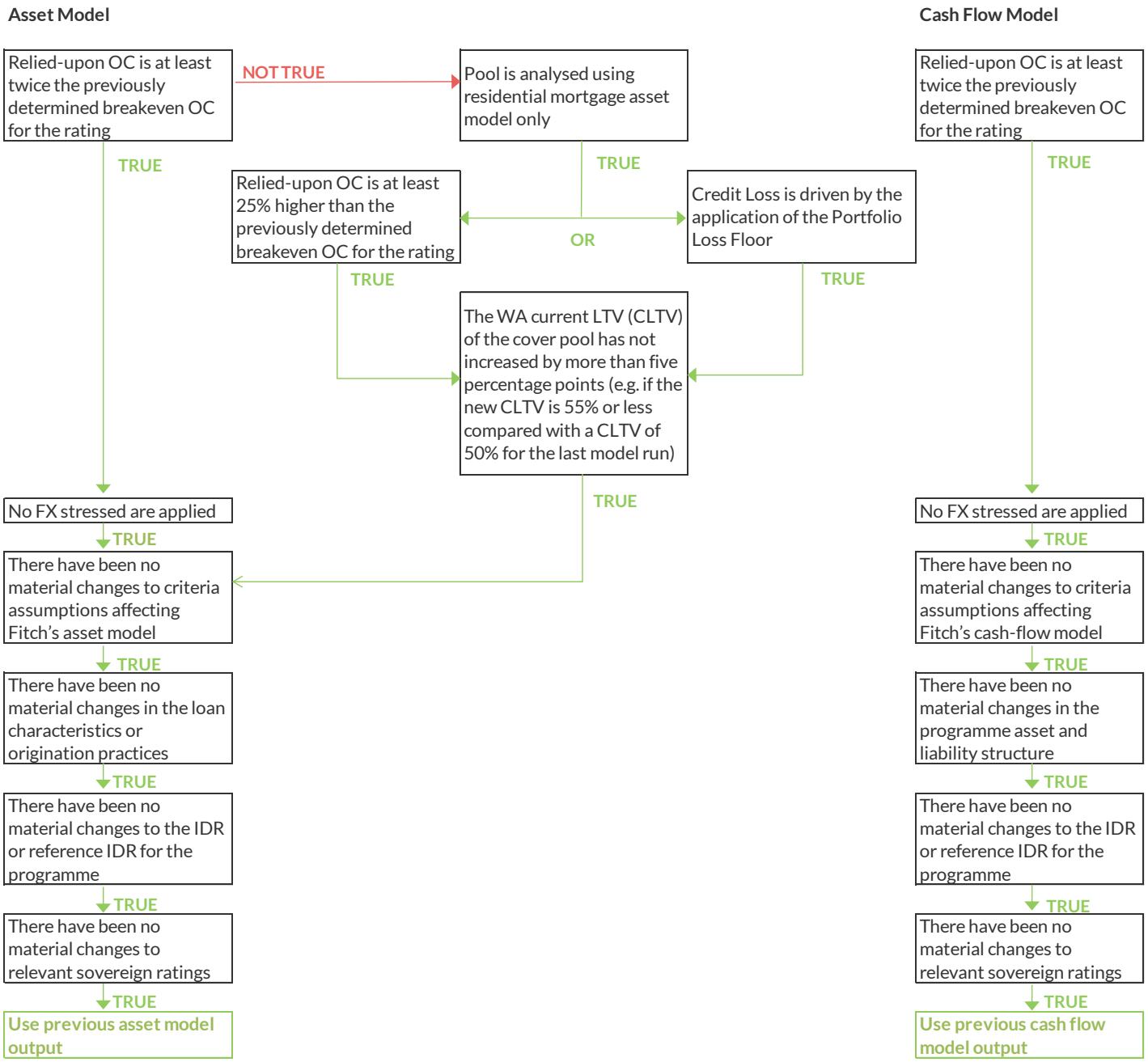
### Servicing Costs

Cash outflows relating to servicing fee assumptions are modelled based on projected asset balances. The servicing costs modelled are not additionally floored at fixed amounts, as covered bond programmes are typically of sufficiently large issuance size so that proportional cost assumptions yield reasonable expense amounts over the lifetime of the programme.

## Appendix 7: Conditions for Using Previous Model Outputs

Under certain conditions, Fitch may carry forward past asset and cash flow model results as described in the flow chart below. Distinct conditions apply for the asset modelling of pools for which Fitch uses its residential mortgage criteria assumptions only.

**Conditions for Using Previous Model Outputs**




Source: Fitch Ratings

Fitch considers an IDR change to be material for the purpose of repeating the asset or cash flow modelling if the IDR is three notches lower when the next rating review occurs than when the model was last run. An IDR change is also material if it leads to a different maximum achievable covered bonds rating. However, Fitch may carry forward asset model results if the model was run less than 12 months prior to the date of the analysis, the pool characteristics have been stable and there have been no material changes to criteria assumptions.

The applicable credit loss and/or ALM loss will be re-assessed upon such an event. An existing cash flow model output would also be updated if the issuer is upgraded to 'AA-' or 'F1+' or downgraded below 'AA-' and 'F1+', as it changes the application of Fitch interest rate stresses.

Examples of material changes to sovereign ratings include a change in the applicable Country Ceiling or, for a public sector pool, a change in the rating of the largest represented country.

Should a new asset model run be required, for instance following a material change to criteria assumptions affecting the asset model only, cash flows may not necessarily be re-modelled. If the other conditions listed are met, the updated credit loss will directly replace the former credit loss component of the updated break-even OC for the rating.

Fitch will re-model assets or cash flows when it deems it warranted by individual programme circumstances.

# Appendix 8: Mortgage and Public Sector Refinancing Spread Levels

## Purpose of RSLs

Maturity mismatches arising between cover pool cash flows and covered bond payments are a key feature of covered bond programmes. Fitch expects asset sales to be a source of liquidity to bridge a cash shortfall.

To determine a stressed asset sales price, Fitch discounts asset cash flows with an interest rate equal to its stressed interest rate (as defined in *Fitch's Structured Finance and Covered Bonds Interest Rate Stresses Rating Criteria*) increased by the RSL. The objective of this is to cover the liquidity risk of the assets to be sold and a profit margin demanded by buyers. It does not address the cover pool's credit risk, as this is addressed separately in the cash flow model output as the credit loss component of Fitch's break-even OC for the rating level. The credit committee may decide to take a different approach in determining RSL if there are changes in the current policy stance.

## Determining RSLs

Fitch establishes RSLs based on the analysis of through-the-cycle observed spreads on sovereign bonds (defined as sovereign bonds' yields over swap rates). Sovereign bond RSLs are derived from the long-term historical spread of five-year sovereign bonds since January 1999 or since the earliest available date after that. The 'B' RSL is typically based on the average spread and is floored at 0bp. The 'AAA' RSL is derived based on observed periods of financial stress so as to include a buffer to mitigate RSL volatility.

Because the market generally prices other assets relative to the sovereign bonds, their RSLs are a starting point to determine RSLs for other assets. RSLs for public sector pools are derived from the applicable sovereign RSL plus an add-on that depends on the type of entity and the type of debt, as described below.

In determining residential mortgage assets RSLs, Fitch also considers the average spread of covered bonds and RMBS, with a buffer at 'B'. The 'AAA' RSLs for residential mortgage assets converge with the 'AAA' RSLs for sovereign debt for low-rated sovereigns falling in the high and very high groups. RSLs for commercial real estate loans and loans to SMEs secured by real estate are derived from the residential mortgage RSLs in the same country plus an add-on reflecting an asset margin differential as described below.

## Capturing Severe Liquidity Squeeze (SLS) Effect

For the purpose of setting RSLs, the agency assumes that a covered bond issuer default in countries rated in the 'AAA' and 'AA' categories does not necessarily coincide with a SLS in the banking sector. In countries rated below the 'AA' category, the agency considers that a severe liquidity squeeze is more likely at or above the maximum achievable rating in line with Fitch's *Structured Finance and Covered Bonds Country Risk Rating Criteria*.

For countries rated below 'AA' (medium and high stress levels as indicated in the table below), the SLS risk is captured in two ways. First, as sovereign and covered bonds from these countries tend to have a more volatile spread history, higher RSLs are applied. Second, the highest calculated stressed RSL – referred to as the SLS level – in these countries is set at the maximum achievable category rating for covered bonds issued in that jurisdiction. The lower market liquidity in rating scenarios above the SLS translates into a 800bp RSL. At the very high stress level Fitch applies a flat 800bp stress at all rating levels.

## RSL Grouping

Fitch ranks RSLs into four stress groups based on the sovereign rating categories and spread volatility. For sovereign RSLs, it considers key liquidity measures of sovereign bonds, such as bid-ask spreads. There are low, medium, high and very high RSL stresses, with a three-point RSL scale for each. The following table summarises the principles and assumptions covered in the text on this page.

## Summary of Principles and Assumptions RSLs

| Stress level | Sovereign debt category | | Sovereign debt (bp) Low-end | Sovereign debt (bp) Mid-point | Sovereign debt (bp) High-end | Residential mortgages (bp) Low-end | Residential mortgages (bp) Mid-point | Residential mortgages (bp) High-end |
|---|---|---|---|---|---|---|---|---|
| **Low** | • 'AAA' and 'AA' category sovereign IDR (both sovereign debt and residential mortgages)<br>• 'A' category-rated sovereigns with exceptionally high liquidity in the government bond market (this applies only to sovereign debt) | **'B' RSL** | 0 | 15 | 30 | 60 | 80 | 100 |
| | | **'AAA' RSL** | 50 | 75 | 100 | 120 | 160 | 200 |
| **Medium** | 'A' and 'BBB' category sovereign IDR | **'B' RSL** | 50 | 100 | 150 | 100 | 125 | 150 |
| | | **SLS[a]** | 200 | 250 | 300 | 250 | 300 | 350 |
| **High** | 'BB' category sovereign IDR | **'B' RSL** | 200 | 250 | 300 | 250 | 300 | 350 |
| | | **SLS[a]** | 450 | 500 | 550 | 450 | 500 | 550 |
| **Very High** | 'B' category and below sovereign IDR | **'B' RSL** | | | 800 | | | 800 |
| | | **SLS[a]** | | | 800 | | | 800 |

[a] SLS = Severe Liquidity Squeeze
RSLs for Rating scenarios above SLS are 800bp
Source: Fitch Ratings

### Selection of RSLs Within the Three-Point Scale

By default, the midpoint of the scale is used, but the applicable RSL can move within the range depending on drivers described in the following tables. Positive and negative drivers may counterbalance each other within a given range.

## Sovereign Debt RSL Range Drivers

| Mid-point | |
|---|---|
| **Low end** | **High end** |
| • Reserve currency flexibility. | |
| • Deep government bond market. | • Shallow government bond market. |
| • Five-year government bond spread over swap rate consistently below peers in the same group. | • Five-year government bond spread over swap rate is consistently above peers in the same group. |
| • Sovereign IDR at the cusp of upgrade into the next RSL group (e.g. rated 'A+'/Rating Watch Positive) or has recently been downgraded to its current RSL group. | • Sovereign IDR is at the cusp of downgrade into the next RSL group (e.g. rated 'BBB-'/Rating Watch Negative) or has recently been upgraded to its current RSL group. |

Source: Fitch Ratings

## Residential Mortgage RSL Range Drivers

| Mid-point | |
|---|---|
| **Low end** | **High end** |
| • Highly developed covered bond or RMBS market, in absolute terms or relative to the size of the economy or peers. | • Less established covered bond or RMBS market, in absolute terms or relative to the size of the economy or peers. |
| • Sovereign IDR is at the cusp of upgrade into the next RSL group (e.g. rated 'A+'/Rating Watch Positive) or has recently been downgraded to its current RSL group. | • Sovereign IDR is at the cusp of downgrade into the next RSL group (e.g. rated 'BBB-'/Rating Watch Negative) or has recently been upgraded to its current RSL group. |

Source: Fitch Ratings

**Example:**
**Spanish Sovereign RSL:**
Classified in the "Medium stress level" based on the sovereign rating;
Low end applies in range (50bp in a 'B' stress scenario; 200 bp at the severe liquidity squeeze scenario) due to a deep government debt market.

### Qualitative Overlay

Fitch may incorporate a qualitative overlay into its RSLs in periods of extraordinary market volatility to provide a margin of safety in assumptions and address unprecedented events. Qualitative overlays can be applied at 'B', leading to a recalibration of stressed RSLs in higher rating scenarios up to an unchanged 'AAA'/severe liquidity squeeze level. They can be applied in a flat way both at 'B' and the 'AAA'/severe liquidity squeeze levels if the shock is likely to have a wider magnitude. They can be applied to weaker countries or asset types under threat, or to all countries and asset types.

Qualitative overlays are sized at half the applicable range between the high end and low end of each group and may lead to an RSL outside the three-point scale if higher RSL drivers were already applicable. No qualitative overlay is applicable to the very high RSL group.

### Interpolation of RSL between 'B' and 'AAA' or SLS Level

The RSL for each category of rating scenario is calibrated based on a scaling factor, which is equal to ('AAA' RSL divided by 'B' RSL) ^ (1 over the number of rating category from 'B' rating scenario to the 'AAA' rating scenario).

For countries in the Medium and High stress level groups, the 'AAA' RSL is replaced with the RSL corresponding to the SLS level, which is the maximum achievable rating at a category level for covered bonds issued in that jurisdiction. If the 'B' RSL is at zero, the agency will apply a calibration 5bp floor for calculation purposes. The RSL of notch-specific ratings is derived based on a linear interpolation between the nearest lowest and highest rating category relative to that specific rating scenario.

### RSL for each Asset Class

#### *Public-Sector Assets*

The RSLs for sub-sovereign public sector assets is set by adding a spread to the sovereign bond's RSL of the respective country across all rating scenarios. The adjustments depend on both the instrument types, such as loans or bonds, and debtor types, such as regional governments or public sector entities. The calibration is based on an examination of the assets' margins and the agency's view on the respective liquidity differentials against sovereign bonds.

Fitch does not make further adjustment for public sector assets with a weighted average remaining term to maturity of over five years as a higher default rate and discount factor penalises longer-term public sector assets in Fitch's asset and cash flow analysis.

### Public Sector Asset RSL Add-On

| By instrument types | | By debtor type | |
|---|---|---|---|
| Schuldscheindarlehen | +15bp | Regional governments; export credit agencies, covered bonds.[a] | +15bp |
| Loan; amortising Schuldscheindarlehen | +30bp | Municipalities; departments; public sector companies; others.[b] | +30bp |
| | | Supranational entities: no add-on. RSL assumptions in line with the RSL set for Belgium sovereign bonds. | |

[a] Covered bond: additional spread add-on may apply if the proportion of covered bonds in the cover pool is above the proportion of liquid assets across cover pools in that jurisdiction
[b] Others: additional spread add-on may apply if exposure represented by others is more than 1% of the cover pool
Source: Fitch Ratings

#### *Non-Standard Mortgage Loans*

These assets are less liquid than standard residential mortgages and additional spreads above residential mortgages' RSLs described above are applied across all stress scenarios. This is based on the typical asset margin differential for non-residential and residential mortgages in a given country.

## Other Mortgages RSL Add-On

| | |
|---|---|
| CRE; SME secured by real estate | +200bp (+100bp if the assets are common in most cover pools in a relevant jurisdiction[a]). |
| Real-estate developer loans | +250bp |
| Residential mortgages with lower demand[b] | +100bp (applies to the whole portion of the residential mortgages with lower demand if that type of mortgage exposure is above the market range and is not common in most cover pools in that jurisdiction). |
| Loans linked to Singapore Central Provident Fund (CPF) | +25bp (applies to CPF linked amounts attached to residential mortgages that require legal consent for the sale of loans). |
| RMBS | Mortgage-backed securities originated by the same banking group as the covered bonds issuer will be treated as mortgage loans in the relevant jurisdiction. |

[a] This includes CRE/secured SME exposure in Denmark, Germany, Spain and Sweden. The list can expand as the covered bond market evolves
[b] This includes buy-to-let mortgages and mortgages with a subordinated line of credit
CRE: Commercial Real Estate; SME: Small and Medium-Sized Enterprises
Source: Fitch Ratings

### Fire-Sale Discount and Price Cap

RSLs representing the highest possible rating in each rating scenario of investment grade countries do not always cover the worst sovereign spread reached during extreme spikes due to their short-term nature, whereas sales of assets could occur in different periods after recourse against the cover pool has been enforced.

The typical liquidity gap protection mechanism in covered bond programmes enables the sales to occur within 12 months of an enforcement of the recourse against the cover pool. Therefore, the price of assets modelled to be sold in the first year is further reduced by a fire-sale discount of 3% on an absolute basis. Fitch also does not model asset prices over par even in a lower rating scenario.

## Fire-Sale Discount and Price Cap

| Fire-sale discount (%) | Price cap (%) | Application period |
|---|---|---|
| 3 | 100 | First-year post assumed enforcement of recourse against the cover pool. |

Source: Fitch Ratings

### Multi-Jurisdictional and Multi-Asset Type Exposures

Fitch expects the alternative manager to select the most liquid asset class for cover pools consisting of either multi-jurisdictional exposures or multi-asset type exposures, and where the programme manager is not contractually obliged to sell assets representative of the entire cover pool. Therefore, exposures from higher-rated countries and carrying lower refinancing costs are simulated to be sold first.

This is assumed if the amount and maturity of such selected assets exceed cash shortfalls in the tested rating scenario over the lifetime of the programme. The applied RSL may accordingly be lower than implied by the weighted average of published RSLs.

### RSL Disclosure and Reviews

Actual RSLs for sovereign debt and residential mortgage loans used in each country are published in Fitch's Covered Bonds Refinancing Spread Level Assumptions – Supplementary Data File.

Fitch reviews the RSLs once a year barring exceptional circumstances. Changes in RSLs for a given asset type and country will occur under the following circumstances:

- upon the upgrade or downgrade of the respective sovereign into a rating category corresponding to a different RSL group, or leading to a different severe liquidity squeeze;
- upon the activation or de-activation of lower or higher RSL drivers;
- upon the application or removal of qualitative overlay.

RSL for other countries may be added following the principles detailed in this appendix.

Changes will be publicly communicated and lead to re-publication of the Excel file.

Portfolios that deviate significantly from a standard market portfolio may result in RSL adjustment. The adjustment will be disclosed in Fitch's Rating Action Commentaries.

# Appendix 9: Multi-Issuer Cedulas Hipotecarias (MICH) Transactions Rating Analysis

## Scope

This appendix describes our methodology for analysing MICH transactions, which are repackaged Cédulas Hipotecarias (CH, Spanish mortgage covered bonds) issued by banks. It is relevant for the surveillance of existing MICH and CH, and for new CH ratings.

## Key Rating Drivers

**Obligor Concentration / Weakest CH Profile**: MICH ratings reflect the risk profile of the weakest CH within the CH portfolio, as determined by Fitch's *Covered Bonds Rating Criteria*. This approach considers the significant obligor concentration risks in MICH transactions.

**Issuer Linkage:** The creditworthiness of a CH in a MICH is primarily driven by the credit risk of the issuing entity, as measured by its Long-Term IDR. For unrated CH issuers with a rated parent bank, Fitch will perform a case-by-case analysis to establish whether the parent's IDR can be used for the analysis.

**Rating Uplifts**: The resolution uplift, PCU and recovery uplift of each CH included in MICH series are determined based on the principles described in this criteria report.

**Overcollateralisation Assessment**: Fitch assesses the OC for each CH included in a MICH based on the principles described in this criteria report, modelling credit loss and ALM loss in a given rating scenario. The OC that mitigates such losses combined is compared to the OC level that Fitch gives credit to for each CH issuer.

**Cover Pool Credit Losses**: Fitch uses its MICH Model to perform the asset analysis when stratified data is received instead of loan-by-loan data, and when a maximum of 15% of the cover pool balance is linked to SME mortgages and maximum 5% is linked to real- estate developer loans. If the share of either of these sub-pools exceeds those thresholds, the relevant sub-pool will be analysed with the agency's Portfolio Credit Model (PCM). Fitch applies some assumptions sourced from the rating criteria that correspond to the loan types within the cover pool: *European RMBS Rating Criteria* for residential mortgages, and *SME Balance Sheet Securitisation Rating Criteria* for SME mortgages and developer loans). See "Cover Pool Credit Risk" section below.

## Cover Pool Credit Risk

### *Residential Mortgages*

The lifetime loss rate for a residential cover pool is defined as the weighted-average foreclosure frequency (WAFF) multiplied by one minus the WA recovery rate (WARR), subject to a portfolio loss floor. WAFF rates come from the base FF matrix for Spain as presented within the ResiGlobal model for each loan-to-value (LTV) bucket, assuming that all loans are linked to class four debt-to-income category.

The following FF adjustments are applied to the base FF to recognise the presence of risky attributes. The share of the portfolio exposed to each attribute is established with specific data presented by the CH issuer or assumed to be comparable to a national average[1].

- Borrower employment status: Self-employed, government servant or unemployed.
- Borrower nationality: Foreign national.
- Origination channel: Broker.
- Occupancy type: Holiday/second home.
- Loan purpose: Re-mortgage, debt consolidation or other different than home acquisition.

[1] The base FF matrix, the magnitude of FF adjustments, the FF floor rates for loans in arrears and other key analytical assumptions are all displayed within the ResiGlobal model Spanish assumptions Excel worksheet, available for download at https://www.fitchratings.com/structured-finance/rmbs/resiglobal.

- Loan payment type: Increasing instalments.
- Loan original term: More than 366 months.
- Regional concentration: The share of the portfolio located within a given region that exceeds 2.5x the population distribution of such region relative to the total in Spain is subject to a higher set of default multiples[2].
- Arrears: Doubtful loans are subject to the FF floor rates assumption for loans in arrears by more than 90 days.

The resulting WAFF after FF adjustments is then increased by 10% to account for the absence of loan-by-loan information, inclusive of adverse credit history. Moreover, a portfolio-level adjustment can be introduced to capture other idiosyncratic cover pool features if any, that will be disclosed in rating reports.

The portfolio WARR is a function of the estimated stressed value of the underlying properties in a foreclosure scenario given their location and the outstanding balance of the loans, net of foreclosure costs. The following key assumptions are captured within the WARR analysis:

- House Price Indexation: LTV ratios are indexed to capture the net effect of market price movements (upwards and downwards) between the estimated appraisal date and the most recent house price index observation. House price index data is coming directly from ResiGlobal model Spanish assumptions.
- An average current loan balance of EUR100,000 is assumed when estimating the number of residential properties, which influence the fixed portion of foreclosure costs.
- All defaults are assumed to take place on day zero, meaning that no credit is given to the future amortisation of the loans.
- Foreclosure sale adjustment and house price decline assumptions (current-to-trough), as presented in the ResiGlobal model Spanish assumptions.
- Foreclosure costs are as presented within the ResiGlobal model Spanish assumptions.

***SME Mortgages and Real-Estate Developer Loans***

The lifetime loss rate of SME or real estate developer sub-pools is defined as the corresponding rating default rate (RDR) multiplied by one minus the rating recovery rate (RRR).

One RDR curve is defined for SME loans from multiple industrial activities except construction and real estate (the SME sub-pool), and another that captures the default risk of SMEs only in construction and real estate (the real estate sub-pool). These two RDR curves are representative of the Spanish economy and are not calibrated for each CH issuer individually.

The SME and real estate sub-pools' RDR curves are calculated in PCM using a one-year default probability assumption of 3.5% and 6%, respectively. Moreover, Fitch assumes a cure rate of 40%[3] under a 'Bsf' rating scenario.

The real estate sub-pool RDR curve is higher than the SME sub-pool because of the higher performance volatility of real-estate borrowers particularly in scenarios of economic contraction. SME mortgages and real-estate loans classified as doubtful are assumed to be defaulted, subject to the cure rate assumption.

Recoveries of the SME sub-pool are estimated after applying the stressed commercial property collateral haircuts as indicated within the *SME Balance Sheet Securitisation Rating Criteria*, are subject to a 10% foreclosure cost deduction, and influenced by a recovery lag expectation as presented in the *European RMBS Rating Criteria* With respect to the real estate sub-pool, recovery expectations are linked to the unsecured recovery cap assumption (e.g. 20% in a 'BBBsf' stress scenario) indicated within the *SME Balance Sheet Securitisation Rating Criteria*, considering the business complexities of a real-estate development and the greater value volatility of unfinished constructions or bare land.

[2] Regional distribution percentages of the total cover pool are used.
[3] Tiering of cure rate is applied at a rating category level only (no interpolation for intra-category rating stresses), as defined in the *SME Balance Sheet Securitisation Rating Criteria*.

### *MICH Model*

The MICH Model is used to perform the cover pool asset analysis of Spanish CH if stratified data is received instead of loan-by-loan data, and when a maximum 15% of the cover pool balance is linked to SME mortgages and a maximum of 5% is linked to real estate developer loans. If the share of either of these sub-pools exceeds those thresholds, the relevant sub-pool will be analysed with the agency's PCM. The MICH model is not publicly available.

The main inputs of the MICH model are RMBS and SME key analytical parameters, and cover pool stratification tables for each CH issuer. The main outputs of the MICH model are lifetime default rates and recovery rates on the cover pool under different rating scenarios.

## Appendix 10: Treatment of Residual FX Exposures

This section outlines Fitch's methodology for analysing unhedged residual FX exposures in covered bonds and describes how currency stress assumptions are derived for this analysis and for certain structured finance transactions. Fitch will apply these currency stresses, which can be found in Fitch's Foreign-Currency Stress Assumptions for Residual Foreign-Exchange Exposures in Covered Bonds and Structured Finance – Supplementary Data File for its asset analysis of cover pools and when testing OC for timely payment in its cash flow analysis of covered bonds if FX exposure is considered a residual risk.

Because FX rates can vary wildly, the risk associated with large FX exposures is not consistent with a stable rating. Fitch will not apply FX stresses if the issuer demonstrates a record of managing FX positions tightly in accordance with currency matching standards and the agency expects this to continue, as is the case for Danish legislative covered bond programmes subject to the balance principle.

The agency considers two 10% limits when determining whether FX exposures are a residual risk for the programme rating. The first limit considers if the sum of the absolute values of the open positions between the cover assets and covered bonds of the same foreign currency is not above 10%. The second considers if the proportion of cover assets backed by a security based in a country with a different currency than the loan is not greater than 10%.

For the first limit, Fitch determines the foreign-currency proportions of the cover assets and the covered bonds by first converting the foreign-currency balances to the base currency at the spot rate of the data cut-off date. The base currency should have the largest position of cover assets and covered bonds. Fitch stresses other currencies relative to this base.

The agency then divides the amount of cover assets and of covered bonds denominated in that currency by the balance of all cover assets and nets the respective foreign-currency buckets excluding single foreign-currency assets or liabilities outliers with very long WAL (see chart below).

### Example: FX Open Position Calculation

| | Cover assets balance (EUR equivalent)[a] | (A) % of cover assets | Cover assets WAL (years) | Covered bonds balance (EUR equivalent)[a] | (B) % of cover assets | Covered bonds WAL (years) | IA–BI FX open position (%) |
|---|---|---|---|---|---|---|---|
| EUR | 113 | 94 | 10 | 91 | 76 | 12 | n.a. |
| GBP (excluding outliers) | 7 | 6 | 3 | 12 | 10 | 4 | 4 |
| GBP (outliers) | | | | 6 | 5 | 14 | 5 |
| **Total open position (%)** | | | | | | | **9** |

[a] Converted at the spot rate as of the data on the cut-off date
Source: Fitch Ratings

The second limit applies if the property's/borrower's income is in a currency different from the currency of the loan. If so, the exposure will be measured as the proportion of the respective loans to the total cover pool. If the property's/borrower's income is in the same currency as loan, the exposure will be measured as the 'B' default rate, multiplied by the 'B' recovery rate ('B' recoveries upon default) for the respective loans, calculated before applying any FX stresses. The agency expects reliable evidence of the property's/borrower's income currency from the issuer and will otherwise not measure the exposure by the 'B' recoveries upon default. Fitch will monitor these elements.

Fitch considers FX exposures as more than a residual risk if either of the 10% limits is exceeded. However, there are individual cases where exposures below this level can still be assessed as not residual (and vice versa). If the risk is not viewed as residual and the open exposure is at the asset side, Fitch expects to not give any credit in its analysis to assets that form the excess exposure above the first 10% limit. If the second 10% limit is exceeded, Fitch will apply a

stressed recovery rate of 0% to all concerned assets. Assets disregarded by applying the first limit will not be taken into account for the purpose of the second limit.

If the excess exposure is at the liability level, Fitch expects to limit the covered bond rating to one notch above the RRP and apply its approach for limited rating uplift.

Fitch considers the relative impact of different FX stresses within both its asset and cash flow analysis. The break-even OC for the rating is based on the scenario that leads to the most conservative result across both sets of analysis, rather than the most conservative scenario for each. This could lead to inconsistent stresses being run in the asset versus the cash flows analysis.

Fitch will not test stresses for individual currencies in opposite directions from the same base. For the example above, the agency assumes there are both cover assets and covered bonds denominated in US dollars, British pounds and Swiss francs, with the open position being on the cover asset side for francs and on the covered bond side for pounds and US dollars.

With no limits on opposing scenarios, the worst case would be the appreciation of the pound and the US dollar against the euro, in which case the covered bonds would become more expensive, and the depreciation of the franc against the euro, in which case these cover assets would become less valuable. This combination would imply very extreme FX movements between the pound and the dollar on one side and the franc on the other, which Fitch views as unlikely even under a large stress.

Therefore, Fitch would assume in its analysis that the worst-case single movement occurs, i.e. the appreciation stress for the pound and the dollar against the euro and that the euro/franc exchange rate would remain at current levels.

Variations in FX spot rates between key currency pairs, or maturities of cover assets or covered bonds, may lead programmes previously below the 10% limits to suddenly breach those limits. If this occurs, Fitch would contact any affected issuers to understand their strategy for the increased FX exposure relative to the prior position. Fitch could then maintain ratings, place them on Rating Watch Negative or downgrade ratings. This action would be based on the feedback received, the agency's forward-looking view on the development of the open FX position – in particular regarding the timing of any planned remedial actions – and any OC cushion in place to cover additional stresses and scenarios.

### Currency Stress Assumptions

Fitch groups all currency pairs not fully hedged and currently seen in the cover pools, covered bonds of programmes and certain structured finance transactions into four categories. The stresses for each currency are split into high investment grade ('AAA'-'AA'), low investment grade ('A'-'BBB') and below investment grade ('BB'- B').

Fitch determined stresses within these categories based on global and country-specific macroeconomic expectations and an analysis of past FX movements, conducted in light of the relative likelihood of a reoccurrence of the conditions that prevailed. The agency also considered as guidelines that the high-investment-grade stress should cover the largest observed move, with a cushion; the low-investment-grade stress should cover the largest observed move; and the below-investment-grade stress should be set to be the same or below the largest observed move. Fitch considered the largest absolute movement in any given rolling period, from one year to 10 years (i.e. one year, two years, three years, up to 10 years), to identify periods of particular stress. The stresses are symmetric for appreciation and depreciation, given that both upward and downward FX volatility is equally possible.

Fitch then categorises the level of stress into four currency pairs, with category one reflecting the lowest stresses and category four the highest stresses. Category one is likely to apply to currency pairs for which limited FX volatility is likely based on macroeconomic expectations and for which limited FX volatility has occurred in the past 20 to 40 years. Increasing FX volatility is likely to push currency pairs into higher categories, but other qualitative factors, like Fitch's future expectations for FX volatility, could also be drivers of the categorisation.

The FX stresses and the currency pair categorisation are published separately in the above-referenced Excel file. The definition of the stresses and the assignment of currency pairs to categories are reviewed regularly.

# Appendix 11: Analysing Commercial Real Estate Loans Securing Covered Bonds

This appendix outlines Fitch Ratings' methodology for analysing the credit risk of commercial real estate (CRE) loans securing covered bonds. To provide a complete analysis, this appendix is applied in conjunction - where applicable - with the *SME Balance Sheet Securitisation Rating Criteria*.

Assumptions in this appendix only apply to commercial loans secured by assets located in EMEA. For commercial loans secured by assets located in the US, Fitch will apply assumptions from the *U.S. and Canadian Multiborrower CMBS Rating Criteria*. This appendix does not apply to the cover pool asset analysis described in Appendix 9: Multi-Issuer Cedulas Hipotecarias (MICH) Transactions Rating Analysis.

## Definition of Commercial Real Estate Exposure

Fitch classifies loans as CRE exposures if they are secured by properties such as offices, retail or industrial, multifamily housing and specialised property types like hotels, restaurants or self-storage facilities. CRE portfolios may be composed of two types of borrowers, each requiring a dedicated analytical approach due to specific features and risks.

- Loans to operating companies
- Loans to real estate investment companies (financing income-generating properties).

## Loan to Operating Companies

Loans to operating companies are analysed using components of Fitch's *SME Balance Sheet Securitisation Rating Criteria.*

Fitch generally expects CRE loans to operating companies to be secured by owner-occupied properties. Loans to non-owner-occupied properties can also be classified as loans to operating companies if the borrower's revenues are not limited to this rental income or if recourse is also possible towards the borrower.

The agency may analyse portfolios or sub-portfolios of loans to real estate investment companies based on its approach for operating companies. This could occur if loans to real estate investment companies comprise a small share or the portfolio is highly granular with small individual exposures, indicating that the security does not reflect the sole income source due to limited size.

Fitch may not apply its approach for operating companies if such a sub-portfolio accounts for only a few financings, a scenario that does not allow running the agency's Portfolio Credit Model (PCM). In that case, the agency assumes those to be financings granted to real estate investment companies.

### *Loans to Real Estate Investment Companies*

CRE loans to real estate investment companies are generally expected to be investment properties and not owner-occupied.

## Key Analytical Concepts

**Default Assumptions:** The assessment of default risk is driven by the borrower's risk profile, which in Fitch's view differs for real estate investment and operating companies.

- The default risk of loans to real estate investment companies is assessed by comparing the loan amount with the stressed property value.
- For unrated operating companies, the default risk depends on the default probability of SMEs, the originating financial institution's loan book performance, and the programme-specific default expectation in light of the portfolio selection.

**Recovery Assumptions:** For both types of borrowers, recovery assumptions are driven by loan characteristics, such as the LTV ratio. Loan recovery rates are determined by market value decline (MVD) assumptions.

**Obligor Concentration:** Fitch assesses increased credit risk in pools with large obligor concentrations. For the analysis of loans granted to real estate investment companies with borrower concentrations of more than 50bp of the total cover pool, Fitch may ask for additional loan and property information relating, for example, to property location information, leases or market values and apply its standard CMBS analysis. For loans granted to operating companies, default probability, correlation and recovery assumptions are stressed in line with Fitch's *SME Balance Sheet Securitisation Rating Criteria*.

### Analytical Framework

Fitch's asset analysis for all CRE loans examines the default risk and recovery prospects of the mortgage loans included in cover pools. The analysis is conducted in six steps described below:

### Step 1: Data Plausibility and Aggregation

- Data Reasonableness: Fitch's analytical process begins with a review of the commercial mortgage portfolio data and the lender's historical mortgage performance. Such reviews include periodic file checks to verify data's consistency.
- Aggregation: Fitch aggregates loans collateralised by the same properties to "financings". A financing may consist of multi-connections between several loans, properties and borrowers. These connections vary greatly. To consider a financing in its entirety, Fitch connects all existing links between the borrowers, loans and securing properties. The agency aggregates the loans and properties for the purpose of calculating the default and recovery rate, which implies full cross-collateralisation. The largest loan/largest property within the financing determines the characteristics of a financing, such as currency and property location.

### Step 2: Determination of Stressed Property Values

Stressed property values are calculated applying rating category-specific market value decline assumptions. The rating category specific stressed property values are interpolated to derive the intermediate rating stressed property values[4].

### Step 3: Default Risk Estimation

The default risk of loans to real estate investment companies is determined based on the stressed property value and the outstanding loan amount. If the stressed LTV of the loan is at or below 100%, the loan is expected to repay in a given rating scenario. Loans with a stressed LTV of over 100% are expected to default in a given rating scenario.

The portfolio default risk of loans to real estate investment companies is calculated in Fitch's Covered Bonds Commercial Real Estate Model.

The assessment of default risk for operating companies depends on the default probability for a given country's SME market, the originating financial institution's respective loan book performance and the programme-specific expectation in light of the portfolio selection.

An operating company's default risk is linked to the income generated from the borrower's business and contrasts with real estate investment companies. Operating companies are likely to be engaged in a range of activities in addition to those related to the commercial properties serving as collateral for the respective financing. Fitch views the creditworthiness of this type of borrower as mainly influenced by other risk factors that can also be of a more idiosyncratic nature. Fitch uses PCM to derive the portfolio default risk for these borrowers.

### Step 4: Recovery Estimation

Recoveries from loans to real estate investment companies are driven by stressed property values, which are calculated by applying MVD assumptions and potential FX stresses, and a cash sweep benefit of 5% of the defaulted amount. The standard 5% assumption will be adjusted by FX stresses depending on the open FX exposures in the portfolio. Recoveries for syndicated loans are shared pro rata based on the respective syndication share. If syndication share data are lacking, but equal ranking liens exist, Fitch calculates a syndication share based on the equal ranking amount relative to the total loan balance, including all equal ranking loan amounts. The

[4] The 'AA+' stressed property value is equal to the 'AA' stressed property value plus a third of the difference between 'AA' and 'AAA' stressed property values.

portfolio recovery rate of loans to real estate investment companies is calculated in Fitch's Covered Bonds Commercial Real Estate Model.

Recovery calculations of loans to operating companies are calculated in PCM by applying generic MVD assumptions based on the *SME Balance Sheet Securitisation Rating Criteria* and may include recoveries on additional unsecured claims. In addition, the German Large-Scale Multifamily Market Value Declines listed in Fitch's Covered Bonds CRE MVD Assumptions – Supplementary Data File are used to calculate the recoveries for this type of assets.

### Step 5: Diversity Credit for Real Estate Investment Companies

A diversity credit for loans to real estate investment companies is assigned based on the distribution of the scheduled repayments within the portfolio using the Herfindahl index. For the purpose of the index calculation, instalment and annuity loans are treated as amortising linearly. The rating default rate of the portfolio is adjusted down by the index value. The index value is floored at 0.5 in all rating scenarios, limiting the benefit to a 50% reduction in the rating default rate. Loans with FX mismatches do not benefit from diversity credit.

This adjustment does not apply for loans to operating companies as the PCM analysis already takes diversity of the portfolio into account.

### Step 6: Estimation of Portfolio Loss

Fitch will calculate a distinct weighted-average default and recovery rate for real estate investment companies and operating companies. The expected default and recovery rates are calculated for each sub-pool to derive the total portfolio weighted-average default (weighted using the pool size), recovery (weighted using the defaulted loans), and loss expectation. These are used as an input to Fitch's Covered Bonds Cash Flow model (see Cash Flows Modelling). If pools include loans secured by properties located in countries with a sovereign IDR or Country Ceiling lower than the covered bond rating, Fitch will consider increasing loss expectations for the relevant loans or applying a rating cap to the covered bond rating as outlined in the *Structured Finance and Covered Bonds Country Risk Rating Criteria*. The level of the increase will depend on the materiality of the exposure.

### Determination of Stressed Property Values

The following section outlines Fitch's methodology to obtain stressed CRE property values for properties securing loans to real estate investment companies.

#### *Approach to Market Value Decline*

The stressed property market value is calculated by applying a rating category-specific market value decline assumption to the market value of the property as provided by the issuer. Prior liens are deducted from the stressed property value.

#### *Market Value Declines (MVD)*

Fitch's European MVD assumptions use investment property data from Cushman & Wakefield classified by market segment (combining geography and type). Rental and yield time series for certain market segments within the UK date back to 1980, although available historical data for much of continental Europe are more limited.

If Fitch does not hold guidance assumptions for a specific market or asset type, the agency will apply rating category-specific generic MVD assumptions or apply lower MVDs depending on comparable markets. If specific issuer data, such as historical foreclosure data, are available, the agency may derive issuer- or market-specific MVD assumptions.

Fitch applies its German Large-Scale Multi-family MVDs assumptions for German multifamily properties (used for operating and real estate investment companies).

The European MVD assumptions, generic MVD assumptions as well as the German Large-Scale Multifamily MVD Assumptions are published in Fitch's Covered Bonds European CRE MVD Assumptions – Supplementary Data File. Fitch reviews these assumptions once a year barring exceptional circumstances. MVD's for other countries may be added following the principles detailed in this appendix. Changes will be publicly communicated and lead to re-publication of the excel file.

Market value decline assumptions for assets located in the US and Canada are set on a case by case basis as described in the *US and Canadian Multiborrower CMBS Rating Criteria*.

### Real Estate Development

CRE loans securing covered bonds generally are not heavily exposed to development financings. In the absence of different applicable methodology, and if the portion of unbuilt or partially built land included in the portfolio is limited, Fitch will apply a 100% MVD on land values in all rating scenarios.

### Foreign-Exchange Risk

Currency mismatches may drive a financing's loss expectation if cover assets are denominated in a different currency than that of the properties' market value. Fitch will assume that recoveries from the cover assets will be received in the local currency of the property's location for rating scenarios exceeding the sovereign's local currency IDR. Consequently, Fitch's foreign-currency stress assumptions for residual FX exposures will be applied when calculating the recovery amounts[5], and are not applied in the default risk estimation. Applicable FX stresses are published separately in Fitch's *Foreign-Currency Stress Assumptions for Residual Foreign-Exchange Exposures in Covered Bonds and Structured Finance – Supplementary Data File*. In assessing loans to real estate investment companies, Fitch applies the year one stresses as not all recoveries are to be received at the peak of the stress.

### Cash Flow Analysis Assumptions

Rating-dependent default and recovery estimates influence the default timing and the recovery timing. Prepayment assumptions and servicing costs are used as an input in Fitch's Covered Bonds Cash Flow Model.

### Recovery Timing

Fitch assumes the recovery for properties securing loans to real estate investment companies to occur simultaneously with the default of the loan. For loans to operating companies, Fitch applies the approach described in the *SME Balance Sheet Securitisation Rating Criteria*.

### Default Timing Distribution

The respective models provide a default timing distribution when modelling the default probability expectation for real estate investment companies and operating companies. This distribution is an aggregation of the individual loan's default timing. For real estate investment companies, the default vector is based on the 'AAA' stress scenario default distribution and is used for all rating categories.

For mixed pools, overall default and recovery timing assumptions are the ones applicable to each sub-pool weighted by their respective size.

### Prepayment Rates

Fitch makes assumptions on prepayment rates for the purpose of cash flow modelling. Prepayment assumptions are applied as constant annualised rates on the performing portfolio. Therefore, the total amount of the prepaid portfolio declines with increasing defaults and over time. Fitch tests for high and low prepayment rate scenarios.

For loans to real estate investment companies, a low prepayment assumption of 0% is applied. A high prepayment assumption of up to 50% is applied to the performing balance in the respective rating scenarios. Factors affecting the high prepayment assumption include:

Prepayments are generally assumed to be lower in fixed-rate markets as prepayment penalties may occur. In addition, real estate investment companies tend to prepay loans more frequently than operating companies. Fitch may adjust its prepayment assumptions for issuer or product-specific factors based on historical data, such as specific products displaying a lower or higher prepayment propensity. Fitch also analyses if an alternative manager can influence repayment. Prepayment assumptions for operating companies are laid out in the SME Balance Sheet

[5] In Fitch's Covered Bonds Commercial Real Estate Model, no FX stresses will be applied to insignificant FX mismatches between non-euro currencies. If such FX mismatches are significant, a case-by-case assessment will be applied, recorded as a variation from criteria, and disclosed in Fitch's rating communications.

Securitisation Rating Criteria. Overall prepayment assumptions are the ones applicable to each sub-pool weighted by their respective size.

### Servicing Costs

Fitch applies servicing costs expected in a high default and delinquency scenario as part of its cash flow analysis. The assumptions must be sufficient to cover increased costs of a servicer replacement. For real estate investment companies, Fitch distinguishes between servicing costs for performing loans and for defaulted loans requiring special servicing. Annual servicing fees are 20bp for performing loans and 45bp for defaulted loans in all rating scenarios. For operating companies, servicing costs assumptions are in the *SME Balance Sheet Securitisation Rating Criteria*.

In the case of mixed pools, the overall servicing costs are the ones applicable to each sub-pool weighted by their respective size.

## Data Fields for Commercial Real Estate Analysis

| **Borrower-level data** | |
|---|---|
| Borrower group ID | Unique identifier for borrower group |
| Legal form | Legal form of borrower (private individual, plc, LLC) |
| Country | Country of registered residence of borrower |
| SPV | Is borrower a special-purpose vehicle (SPV)? |
| Industry | Industry classification of borrower |
| Grade | Bank internal rating/credit score |
| PD | Expected one-year default probability |
| Rating model | Name of rating model used to derive the probability of default assumption for the borrower |
| Loan amount | Outstanding loan amount included in cover pool |
| MV property | Market value of property serving as collateral |
| MLV property | Mortgage lending value of the property serving as collateral |
| Cross collateralisation | Cross-collateralised and/or cross-defaulting within borrower group |

| **Loan-level data** | |
|---|---|
| ID | Loan ID |
| Currency | Currency of the loan |
| FX hedge | For loans denominated in a currency different to that of rent typically earned from the property financed, does a hedge exist and is it registered with the cover pool? |
| FX hedge rate | Swap or cap rate in the loan's currency |
| FX hedge expiry | Expiry date of hedging contract |
| FX hedge notional | Outstanding notional amount of hedging contract as of the cut-off date in loan's currency |
| Balance in cover pool | Current outstanding loan amount in loan's currency (in cover pool) |
| Balance at maturity in cover pool | Outstanding loan amount at loan expiry in loan's currency registered in cover pool, if amortisation as scheduled |
| Balance original all | Loan amount at time of loan initiation |
| Balance all | Currently outstanding loan amount (whole loan amount, i.e. not only part registered with cover pool) |
| Balance at maturity all | Outstanding loan amount at loan expiry, if amortisation as scheduled (whole loan amount, i.e. not only part registered with cover pool) |
| Further advance all | Currently not drawn – but agreed upon – loan amount (whole loan amount, i.e. not only part registered with cover pool) |
| Origination | Date of loan initiation (first disbursement) |
| Maturity | Date of loan maturity |
| IR reset | Date of interest reset/renegotiation of conditions |

## Data Fields for Commercial Real Estate Analysis

| | |
|---|---|
| Amortisation | Amortisation type (instalment = constant amortisation, annuity = constant instalment, bullet = interest only loan) |
| **Continued in the next page** | |
| Syndication | Has the loan been syndicated? |
| Syndication lender proportion | Issuer's percentage involvement in syndicated total loan |
| IR type | Fixed or floating interest payments |
| IR base rate | Reference interest rate |
| IR margin | Margin on loan |
| IR hedge rate | Swap or cap rate |
| IR all-in | Total current interest rate |
| IR hedge expiry | Maturity of interest-rate hedging contract |
| IR hedge notional | Current notional amount of interest rate hedging contract in loan's currency |
| CLTV | Cut-off current loan-to-value (CLTV) of cover pool loan part |
| CLTV all | Current LTV of whole loan (not only cover pool portion) |
| Arrears months | Number of months loan is in arrears |
| Arrears amount | Total amount in arrears in loan's currency |
| Arrears past | How often has the loan been in arrears in the past |
| Provisioning | Amount of provisioning in loan's currency |
| Cover pool addition | Date of loan's inclusion into cover pool |
| | |
| **Property-level data** | |
| ID | Property ID |
| Use lender | Use of the property as classified by the lender's categorisation |
| Use Fitch | Use of the property as classified by Fitch's categorisation |
| Country | Country of property location |
| City | City of property location |
| Postcode | Postcode of property location |
| Address | Address of property location |
| Region Fitch | Region or federal state (Fitch categories) |
| Micro location | City centre/outskirts |
| Owner occupied | Is the property occupied by the owner? |
| Currency | Currency of passing rent |
| FX hedge | If the rental income's currency deviates from the loan: is there an FX hedge registered in the cover pool linked to the rental income? |
| FX hedge rate | Currency hedge rate in rental income's currency |
| FX hedge expiry | Expiry date of the hedge |
| MV | Market value (in rental income's currency) |
| Valuation date MV | Date of last valuation by an appraiser |
| MLV | Mortgage lending value based on existing statutory provision (in rental income's currency) |
| Valuation date MLV | Date of last valuation for MLV |
| Prior or equal liens | Do prior or equal ranking liens exist? |
| Prior lien amount | Amount of prior ranking liens |
| Equal lien amount | Amount of equal ranking liens |

Source: Fitch Ratings

# Appendix 12: Distressed Debt Exchange and Payment Shortfalls

## Distressed-Debt Exchange

When considering whether a debt restructuring or exchange should be classified as a distressed debt exchange, Fitch expects both of the following to apply:

- the restructuring imposes a material reduction in terms compared with original contractual terms; and
- the restructuring or exchange is conducted to avoid bankruptcy, similar insolvency or intervention (including bank resolution) proceedings or a traditional payment default.

In the event of a transfer from the issuer to the cover pool as a source of payment, a typical protection against payment interruption risk consists of extending the maturity of the bonds. This can be by one year (soft bullets), or up to a later date depending on the cash flow profile from the cover assets (pass-through). Fitch will not treat bonds that are extended as DDE, provided the extension and its conditions are part of the original documentation at bond issuance. Fitch may treat cases that lack clarity on the final maturity date or discretionary use of the extension clause by issuers as a DDE.

## Principal and Interest Payment Shortfall

Fitch generally uses 'RD' and 'D' to qualify a default at an entity level for a corporate or a financial institution. These ratings would apply to an IDR, but typically not to the defaulted obligations of the entity. Instead, defaulted corporate obligations are rated in the 'CCC' to 'C' categories, depending on their recovery prospects and other relevant characteristics. This approach better aligns obligations that have comparable overall expected loss but varying vulnerability to default and loss.

Fitch may rate a covered bond itself as 'RD' or 'D' to reflect that there has been a payment interruption in the event of an extended or permanent interest payment shortfall or a material principal shortfall after expiry of the applicable extension even though covered bonds are usually corporate obligations.

The use of 'RD' for a covered bond reflects the fact that a (partial) default on a covered bond could not trigger a cross-default of all other covered bonds.

Upon default, Fitch would temporarily assign an 'RD' or 'D' to covered bonds and then re-rate them on the agency's corporate finance obligations rating scale between 'CCC' and 'C'. At this stage, we would also assign recovery ratings.

# Appendix 13: Rating Steps Worked Examples

Depending on the level of the IDR, the covered bonds rating may not use all notches of uplift (resolution uplift, PCU, recovery uplift). This creates a buffer for the covered bond rating against an issuer downgrade (see the first two charts below). The covered bonds rating composition also influences the composition of the break-even OC for the rating, as shown in the last chart's case studies.

## Composition of a Covered Bonds Rating

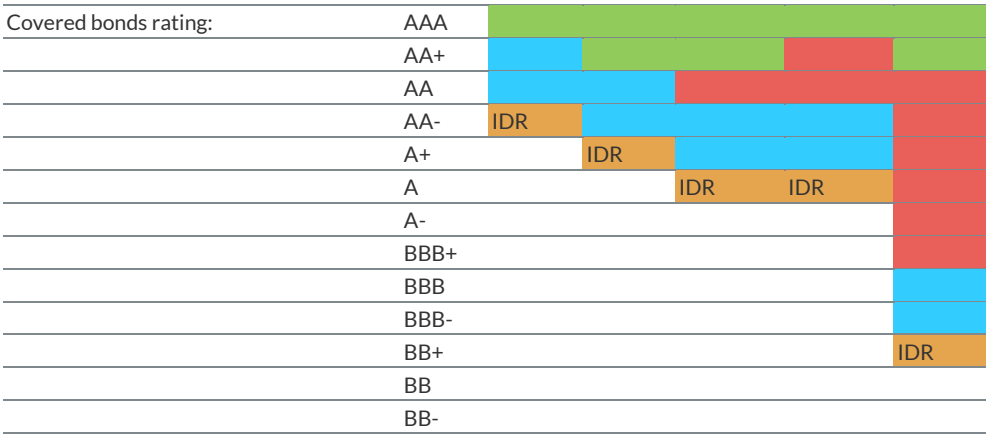
Assuming a covered bonds programme has a resolution uplift of two notches, a PCU of six notches and a recovery given of two notches, the bonds can be rated 'AAA' as long as the IDR is at least 'BB+'.

The cases shown in the chart below differ in the buffer against an issuer downgrade. The 'AAA' bonds benefit from a seven-notch buffer against an issuer downgrade if the issuer is rated 'AA-'.

Where the IDR is 'BB+', all 10 notches of uplift are used in achieving the 'AAA' covered bonds rating. The 'AAA' rating does not benefit from any buffer against an issuer downgrade.

## Use of Uplifts Above IDR

| | Case 1 | Case 2 | Case 3a | Case 3b | Case 4 |
|---|---|---|---|---|---|
| Issuer Default Rating (IDR) | AA- | A+ | A | A | BB+ |
| Resolution uplift (notches ) | 2 | 2 | 2 | 2 | 2 |
| PCU (notches) | 6 | 6 | 6 | 6 | 6 |
| Recovery uplift (notches) | 2 | 2 | 2 | 2 | 2 |
| Covered bonds (CVB) rating | AAA | AAA | AAA | AAA | AAA |
| | | | | | |
| **Notches of** | | | | | |
| Total uplift above IDR | 10 | 10 | 10 | 10 | 10 |
| Difference between IDR and CVB rating | 3 | 4 | 5 | 5 | 10 |
| Buffer against issuer downgrade | 7 | 6 | 5 | 5 | 0 |
| Unused resolution uplift | 0 | 0 | 0 | 0 | 0 |
| Unused PCU | 6 | 6 | 5 | 4 | 0 |
| Unused recovery uplift | 1 | 0 | 0 | 1 | 0 |

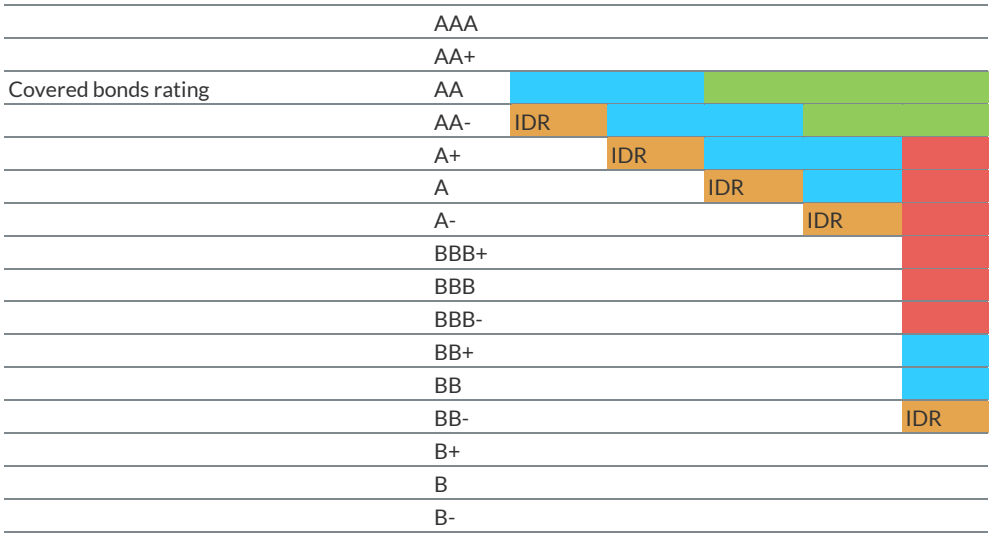



Source: Fitch Ratings

The chart above describes cases where no rating cap applies. If there is a non 'AAA' rating cap, such as an applicable Country Ceiling, the unused notches of uplift for the covered bonds rating are counted based on the difference between the IDR and the rating cap, as shown in the chart below.

## Use of Uplifts Above IDR Under Rating Cap

| | Case 5 | Case 6 | Case 7 | Case 8 | Case 9 |
|---|---|---|---|---|---|
| Issuer Default Rating (IDR) | AA- | A+ | A | A- | BB- |
| Resolution uplift (notches) | 2 | 2 | 2 | 2 | 2 |
| PCU (notches) | 6 | 6 | 6 | 6 | 6 |
| Recovery uplift (notches) | 2 | 2 | 2 | 2 | 2 |
| **Applicable rating cap** | **AA** | **AA** | **AA** | **AA** | **AA** |
| Covered bonds (CVB) rating | AA | AA | AA | AA | AA |
| | | | | | |
| **Notches of:** | | | | | |
| Total uplift above IDR | 10 | 10 | 10 | 10 | 10 |
| Difference between IDR and CVB rating | 1 | 2 | 3 | 4 | 10 |
| Buffer against issuer downgrade | 9 | 8 | 7 | 6 | 0 |
| Unused resolution uplift | 1 | 0 | 0 | 0 | 0 |
| Unused PCU | 6 | 6 | 6 | 6 | 0 |
| Unused recovery uplift | 2 | 2 | 1 | 0 | 0 |




Source: Fitch Ratings

### Composition of Break-Even OC for the Rating

Assuming the same programme with a resolution uplift of two notches, PCU of six notches and recovery uplift of two notches, the break-even OC for the covered bonds rating will be determined as follows and shown in the chart below:

- Case 1: The 'AAA' covered bonds rating is based on the IDR of 'AA-'. It uses two notches of resolution uplift and one notch of the available two-notch recovery uplift. This is achievable for fully collateralised programmes secured by standard assets. Fitch's 'AAA' break-even OC for the bonds would be 0%.
- Case 2: The 'AAA' covered bonds rating is based on the IDR of 'A+'. It uses two notches of resolution uplift and two notches of recovery uplift. This is achievable if the OC that Fitch gives credit to in its analysis offsets the cover pool's credit loss stressed in a scenario equal to the covered bonds rating. Fitch's 'AAA' break-even OC for the bonds would be 5%.
- Case 3a: The 'AAA' covered bonds rating is based on the IDR of 'A'. It uses two notches of resolution uplift, one notch of PCU and two notches of recovery uplift. This is achievable if the OC that Fitch gives credit to in its analysis supports timely payments on

the bonds in a 'AA' stress scenario and also offsets credit losses in a 'AAA' stress scenario. Fitch's 'AAA' break-even OC for the bonds would be 12%, equal to the higher of: the 'AAA' credit loss (5%); and the sum of the 'AA' credit loss (3%) and the 'AA' ALM loss (9%).

- Case 3b: In this example the 'AAA' credit loss (17%) is higher than the OC supporting timely payments on the covered bonds in a 'AA' stress scenario, which is equal to the sum of the 'AA' credit loss (10%) and the 'AA' ALM loss (2%). Fitch's 'AAA' break-even OC corresponds with the OC supporting timely payment on the bonds in a 'AA+' stress scenario. It also makes use of a one-notch recovery uplift, assuming that the programme is secured by standard assets. Fitch's 'AAA' break-even OC for the bonds would be 15%, equal to the sum of the 'AA+' credit loss (12%) and the 'AA+' ALM loss (3%).
- Case 3c: The 'AAA' covered bonds rating makes use of all notches of uplift above the IDR of 'BB+'. This is achievable if the OC that Fitch gives credit to in its analysis supports timely payment on the bonds in a 'AA' stress scenario and also offsets credit losses in a 'AAA' stress scenario. Fitch's 'AAA' break-even OC for the covered bonds would be 17%, equal to the higher of: the 'AAA' credit loss (17%); and the sum of the 'AA' credit loss (10%) and the 'AA' ALM loss (2%).
- Case 4: The 'AAA' covered bonds rating makes use of all notches of uplift above the IDR of 'BB+'. This is achievable if the OC that Fitch gives credit to in its analysis supports timely payment on the bonds in a 'AA' stress scenario and also offsets credit losses in a 'AAA' stress scenario. Fitch's 'AAA' break-even OC for the bonds would be 12%, equal to the higher of: the 'AAA' credit loss (5%); and the sum of the 'AA' credit loss and the 'AA' ALM loss (9%).

## Components of Break-Even OC for the Rating

| | | Case 1 | Case 2 | Case 3a | Case 3b | Case 3c | Case 4 |
|---|---|---|---|---|---|---|---|
| Issuer Default Rating (IDR) | | AA- | A+ | A | A | BB+ | BB+ |
| Resolution uplift (notches) | | 2 | 2 | 2 | 2 | 2 | 2 |
| PCU (notches) | | 6 | 6 | 6 | 6 | 6 | 6 |
| Recovery uplift (notches) | | 2 | 2 | 2 | 2 | 2 | 2 |
| Covered bonds (CVB) rating | | AAA | AAA | AAA | AAA | AAA | AAA |
| | | | | | | | |
| Components of the break-even OC for the rating | | | | | | | |
| AAA credit loss (%) | | | 5 | **5** | 17 | **17** | 5 |
| AAA ALM loss (%) | | | | 15 | 4 | 4 | 15 |
| AA+ credit loss (%) | | | | 4 | **12** | | 4 |
| AA+ ALM loss (%) | | | | 12 | **3** | | 12 |
| AA credit loss (%) | | | | **3** | 10 | 10 | **3** |
| AA ALM loss (%) | | | | **9** | 2 | 2 | **9** |
| **AAA break-even OC (%)** | | **0** | **5** | **12** | **15** | **17** | **12** |
| Covered bonds rating | AAA | | | | | | |
| | AA+ | | | | | | |
| | AA | | | | | | |
| | AA- | IDR | | | | | |
| | A+ | | IDR | | | | |
| | A | | | IDR | IDR | | |
| | A- | | | | | | |
| | BBB+ | | | | | | |
| | BBB | | | | | | |
| | BBB- | | | | | | |
| | BB+ | | | | | IDR | IDR |
| | BB | | | | | | |
| | BB- | | | | | | |

Source: Fitch Ratings

# Appendix 14: Glossary of Terms

## Terminology Used in the Report

| | |
|---|---|
| **Resolution uplift** | Number of notches between zero and two above a financial institution's Long-Term IDR or the programme's reference IDR. |
| **Resolution Reference Point (RRP)** | The IDR or reference IDR for the programme, increased by the resolution uplift. |
| **Payment Continuity Uplift (PCU)** | Number of notches, between zero and eight, reflecting Fitch's assessment of the likelihood of a covered bond defaulting immediately after enforcement of recourse to the cover pool. |
| **Issuer** | The financial institution that issues the covered bonds or ultimately benefits from the funding. In practice, the credit exposure to this financial institution may be indirect, through an intercompany loan or a guarantee rather than through direct issuance. |
| **Asset segregation** | The extent to which the cover pool assets and the overcollateralisation are effectively ring-fenced from the claims of other creditors in the event of issuer insolvency. |
| **Systemic alternative management** | Evaluation of the speed with which an administrator is appointed and of the powers granted to this manager, notably to pay covered bonds when due. |
| **Cover pool-specific alternative management** | Measure of the transferability of relevant data and IT systems to an alternative manager, considering the quality and quantity of data provided to Fitch. |
| **Privileged derivatives** | Hedging arrangements intended to continue protecting covered bondholders against interest rate and cross currency risk between the cover assets and the covered bonds, even after an issuer defaults on its senior unsecured obligations. Payments owed to counterparties of privileged derivatives typically rank pari passu with covered bondholders. |
| **Maximum Achievable Rating** | Rating level equal to the RRP increased by the PCU and the recovery uplift. |
| **Timely payment rating level** | Stress scenario applied to the cover assets and covered bonds as part of the calculation of the break-even OC for the rating, under which timely payment on the covered bonds can be met assuming the source of payment for the covered bonds has shifted from the issuer to the cover pool. |
| **Recovery uplift** | Number of notches between zero and three above the covered bonds' timely payment rating level. |
| **Overcollateralisation (OC)** | The amount of cover assets exceeding covered bonds outstanding and expressed as a percentage of the covered bonds outstanding. |
| **Asset Percentage (AP)** | The amount of covered bonds outstanding expressed in proportion of the amount of cover assets; equal to the inverse of one plus the OC. |
| **Relied upon OC** | The amount of OC Fitch expects to be available to covered bondholders following issuer default. Generally based on the contractually committed amount, public statements, the minimum OC maintained over the preceding 12 months or the minimum imposed by the applicable legislative framework. |
| **Break-even OC (AP) for a given rating** | The minimum (maximum) OC (AP) that corresponds with the covered bonds rating. The lowest protection that supports timely payment of covered bonds in a stress scenario associated with the timely payment rating level and that meets the threshold compatible with the recovery uplift used. |
| **ALM loss** | Impact on the break-even OC for the rating of maturity, interest rate and FX mismatches. |
| **Credit loss** | Impact on the break-even OC for the rating of the cover pool's expected loss in a given stress scenario. |

## Terminology Used in the Report (Cont.)

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| **Rating Default Rate (RDR)** | Weighted average cumulative default rate of the cover pool over its life in a given rating scenario. |
| **Rating Recovery Rate (RRR)** | Weighted average recovery rate for defaulted assets in the cover pool in a given rating scenario. |
| **Rating Loss Rate (RLR)** | The expected loss for the cover pool in a given rating scenario; equals RDR x (1 - RRR). |
| **Refinancing Spread Level (RSL)** | The margin above the stressed interest rate at which projected future cash flows on the cover assets are discounted to derive a present value at which they could be sold once recourse against the cover pool has been enforced. |
| **Price cap** | The limit on the maximum realisable value of the cover assets upon liquidation, applicable to the first sales occurring once recourse against the cover pool has been enforced. |
| **Asset Coverage Test (ACT)** | An ongoing test, typically calculated monthly, to determine whether the amount of assets in the cover pool, including cash and other substitute assets, is sufficient to support redemption of outstanding covered bonds after accounting for certain collateral value adjustments such as movements in house price indices and non-performing loans, among others. The ACT formula stipulates that the ratio of all outstanding covered bonds to total adjusted cover assets may not exceed a predefined AP. |
| **Amortisation test** | A test that verifies, after an issuer default, whether the nominal balance of the cover assets, including excess cash and substitution assets, is at least equal to the notional amount of the covered bonds outstanding (often adjusted by the performance status of the loans). |

Source: Fitch Ratings

# Appendix 15: Related Criteria for Covered Bond Ratings

## Related Criteria

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| Fitch's Foreign-Currency Stress Assumptions for Residual Foreign-Exchange Exposures in Covered Bonds and Structured Finance (Supplementary Data File) (June 2021) |
| Fitch's Covered Bonds Refinancing Spread Level Assumptions – Supplementary Data File (June 2023) |
| Fitch's Covered Bonds European CRE MVD Assumptions – Supplementary Data File (June 2023) |
| Bank Rating Criteria (September 2022) |

| **Criteria Used in the Asset Analysis of Cover Pools** |
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| European RMBS Rating Criteria (March 2023) |
| APAC Residential Mortgage Rating Criteria (March 2023) |
| Latin America RMBS Rating Criteria (April 2022) |
| UK RMBS Rating Criteria (February 2023) |
| Canada Residential Mortgage Rating Criteria (February 2023) |
| RMBS Lenders' Mortgage Insurance Rating Criteria (March 2021) |
| Originator-Specific Residential Mortgage Analysis Rating Criteria (October 2022) |
| CLOs and Corporate CDOs Rating Criteria (March 2023) |
| SME Balance Sheet Securitisation Rating Criteria (October 2021) |
| Covered Bonds and CDOs Public Entities' Asset Analysis Rating Criteria (September 2022) |
| U.S. and Canadian Multiborrower CMBS Rating Criteria (May 2023) |
| China Residential Mortgage Rating Criteria (March 2023) |

| **Global Structured Finance & Covered Bonds – Cross-Sector Rating Criteria** |
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| Structured Finance and Covered Bonds Counterparty Rating Criteria (March 2023) |
| Structured Finance and Covered Bonds Counterparty Rating Criteria: Derivative Addendum (August 2022) |
| Structured Finance and Covered Bonds Interest Rate Stresses Rating Criteria (December 2022) |
| Structured Finance and Covered Bonds Country Risk Rating Criteria (May 2023) |

Source: Fitch Ratings

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