

Creditreform Rating AG

Rating Sub-Methodology

Corporate Issue Ratings

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## 1 Introduction

### 1.1 General background

In order to ensure the transparency and clarity of Creditreform Rating AG (CRA) ratings for companies, investors and the public, this Sub-Methodology "Corporate Issue Ratings" for the assessment of corporate and project financing is disclosed. The methodology will be updated in the event of changes to the underlying procedures. The basis for applying the methodology presented here is the availability of a rating for the relevant issuer. We refer to the respective methods in this regard. Each CRA rating is based on defined principles and guidelines (e.g. rating process, basic procedures, defined rating scales and add-ons). These methodologies, the principles and guidelines applicable to them for rating preparation, and the CRA Code of Conduct are publicly available on our website [www.creditreform-rating.de](http://www.creditreform-rating.de).

### 1.2 Changes to the methodology paper Corporate Issue Ratings v.2.0

This methodology "Corporate Issue Ratings" version 3.0 represents a revised version of the previous version from March 2024. The key changes are outlined below:

- Extension of the methodology to include issuances by project companies
- Substantive changes and additions to structural sections, including partially revised chapter headings and the introduction of new sections
- Reorganization of content, such as the classification of notching criteria
- Various supplementary explanations and clarifications (e.g. regarding the nature of notching)
- Amendments to the table "Notching Ranges" (guideline) for the (super-) senior unsecured ranks of the A/BBB and BB rating categories; clarification of the possible notching and the associated criteria
- Editorial and linguistic revisions

## 2 Scope of application

This methodology defines the general analytical framework for issue ratings. A CRA rating of non-financial corporate or project finance instruments (hereinafter also referred to as issue ratings) refers to a specific issue by an economically active company or project company (hereinafter also referred to as the issuer), considering any existing group structure. The credit quality of such issues is analysed according

to this methodology, and the result is translated into a rating score. The assessment of equity and equity instruments is not included in this methodology.

Within the scope of this methodology, issues are understood to be securitised debt or hybrid capital instruments or debt securities such as bonds and participation certificates that serve to finance an issuer. In addition, financing instruments such as loans and promissory note loans can be assessed using this method. Credit institutions and their issues are not covered by this method. Please refer to the CRA's separate methodology papers for more information. Rental and leasing liabilities are also not included in this methodology.

Without applying this methodology, no conclusions can be drawn from the issuer rating to the issue rating.

### **3 Rating Methodology**

#### **3.1 Methodological approach**

CRA makes its statements based on this rating methodology in which company- and issue-specific (risk) factors are analysed with the aid of qualitative and quantitative approaches.

CRA focuses in particular on the following areas of analysis:

- Seniority
- Collateral
- Guarantees
- Covenants, representations and warranties, including cash flow protection mechanisms
- Structural subordination
- Other instrument-specific risks and issue characteristics

The starting point for the rating of a financial instrument is usually the rating of the issuer. For issuer ratings in the AAA and AA classes, notching is not usually applied to determine the issue rating. In this range, the ratings of the issuer and the issue are usually the same. From rating level A+ (down to and including BB-), notching is based on the individual risk profile of the issue. For ratings from B+ and below, due to the higher risk of default, an internal recovery rating is determined in six quality levels based on the expected recovery rate in a simulated default scenario. The recovery rating is determined by the

realisation proceeds (recovery) in relation to the outstanding creditor claims from the issue being assessed, from which the recovery rate is calculated. Based on this rate (subject to certain conditions), the Recovery Rating is determined, which in turn forms the basis for the notching

Notching refers to the targeted adjustment of a rating from a reference rating. In the case of a debt instrument (e.g. a bond), the term is used when the issue rating (e.g. BBB+) differs from the issuer rating (e.g. BBB), for example, due to the contractual structure of the financial instrument, which in the case of positive notching generally puts the creditors specific to the financial instrument in a better position. This serves to take appropriate account of risk-related differences between different levels of claims (e.g. senior secured, senior unsecured, subordinated, contractual features (e.g. collateral, covenants) or structural subordination.

Table 1: Overview of the basic methodological approaches in issue rating

Issuer/guarantor rating:	Approach:
AAA to AA-	Generally no notching
A+ to BB-	Notching approach
B+ to C	Recovery rating approach

### 3.2 Issuer ratings of BB- and better (notching approach)

Based on the issuer rating, the notching criteria described below are applied to derive the issue rating. Depending on the effects of the factors described and the structure of the issue, the issue rating may correspond to the issuer rating or be above or below it.

Notching within the framework of this method serves to price in additional credit quality-related factors that are not (fully) covered by the issuer rating. However, such risks only become increasingly relevant in the middle and lower rating categories. Issuers with a rating in the AAA to AA- range demonstrate high financial stability. The marginal benefit of systematic notching in relation to the issuance of this credit quality is very low and sometimes lead creditors to overestimate the difference in risk. This is particularly true given that the expected loss is effectively negligible due to the low probability of default (PD). In this respect, differentiation based on other notching factors such as seniority, guarantees, collateral and structural risks is no longer decisive. CRA places greater emphasis on differentiation where notching is not marginal but instead provides greater value in terms of informational gain for creditors and has the greatest impact on loss distribution and loss severity—namely in the middle and lower rating scale categories (A+ to BB-).

The following table sets out the maximum applicable positive or negative notching for issuances, starting from an issuer rating of BB- or higher, applying the notching criteria described in the subsequent chapters (such as seniority, collateral, guarantees, etc.). Not all theoretically possible notching across the individual criteria is necessarily aggregated.

Table 2: Overview of notching ranges

Rating class Issuer	(Super) senior secured	(Super) senior unsecured <sup>1</sup>	Subordinated
AAA/AA	Usually no notching	Usually no notching	Usually no notching
A / BBB	0 to 2 notches (hard cap at AA-)	-1 to 2 notches (hard cap at AA-)	-2 to 0 notches
BB	0 to 3 notches	-1 to 2 notches	-2 to 0 notches

### 3.2.1 Seniority

The contractual or statutory seniority of creditor claims governs the distribution of assets and cash flows, particularly in the event of default. CRA uses a priority of claims logic (waterfall model) that ranges from the highest-ranking claims (e.g. social security contributions, taxes) to equity. The seniority of liabilities determines the priority or subordination of creditors and is illustrated below:

1. All costs necessary to maintain business operations or insolvency proceedings, including personnel costs and social security contributions, pension obligations, taxes and other statutory or contractual senior claims, except borrowed capital
2. Senior or non-subordinated debt with participation in collateral<sup>2</sup> (first lien)
3. Senior or non-subordinated debt with subordinated participation in collateral (second lien)
4. Senior unsecured debt (super senior)

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<sup>1</sup> In the rating categories A/BBB and BB, notching of +2 is only possible in the combination of Super Senior Unsecured (+1 notch) together with an additional, valuable guarantee (+1 notch), in accordance with Chapter 3.2.3. Senior unsecured debt, by contrast, is limited to a notching range of -1 to +1.

<sup>2</sup> Collateral refers to specific tangible assets or rights to which a lender can have recourse (typically in the event of a borrower's default) to satisfy its claims. Collateral should be distinguished from guarantees (personal security), which are discussed in section 3.2.3.

5. Non-subordinated, unsecured debt (senior debt)
6. Subordinated, unsecured debt (subordinated debt)
7. Mezzanine or hybrid capital
8. Equity

If the recovery proceeds from collateral are not sufficient to fully service the secured claim, the potential remaining amount of the claim takes its contractually fixed (or legally prescribed) position in the waterfall.

Therefore, in addition to the collateral (see section 3.2.1.2), the analysis process must particularly assess the priority of the liabilities, which results in positive notching for super senior liabilities or negative notching for subordinated liabilities.

Considering the above-mentioned considerations, an assessment is made for a specific issue as to what proportion of the recovery proceeds is available to service the contractual payment obligations of the financial instrument. Regarding a possible structural priority, we refer to section 3.2.5.

### 3.2.2 Collateral

Collateral directly strengthens the recovery rate of the beneficiary creditors in the event of default, regardless of the contractual or legal ranking.

Collateral can take various forms and vary in quality, for example in the form of real estate liens, pledged receivables, security assignments or project accounts managed in trust. Collateral is analysed both in terms of its legal enforceability and its economic realisability in a default scenario.

CRA may consider positive notching if claims are backed by collateral. In this case, the recovery proceeds assumed by CRA from the collateral is set in relation to the creditor claims (in particular outstanding nominal value), from which the repayment ratio is calculated. Shares in the issuer itself are not considered collateral by CRA, as CRA does not assume sufficient value for these in the event of default. The collateral is valued on the basis of an individual stress scenario. The higher the value of the collateral as estimated by the analysts, the lower the discount on its market value. CRA uses its own assumptions and calculations and, where available, relies on valuation reports. The limitation of up-notching even in the case of "full collateralisation" (expected recovery rate of 100%) has the following reasons:

- A high repayment rate from the collateral reduces the risk of loss for creditors in the event of default, but not the probability of default, which CRA believes should remain a parameter in the issue rating.

- Creditors generally lend capital with the intention of generating interest income without disruption and receiving the lent capital back in full and on time when the claim matures. The realisation of collateral is not the original business purpose and is usually associated with considerable effort and time delays. Collateral serves only to reduce losses. In the best-case scenario, creditors receive their outstanding capital back, but do not generate any profit/surplus from the realisation of collateral.
- In practice, experience shows that it is rare for creditors to recover their claims in full and on time in times of stress – especially when adjusted for present value/fair value (e.g. due to the duration of proceedings or market cycles in real estate realisation). A 100% repayment rate in the event of default is usually rare. Creditors often also incur significant opportunity costs (e.g. loss of interest) as a result of early or late repayment.

CRA assesses the value of collateral depending on its type using various qualitative and quantitative criteria and on the basis of stress test scenarios. Depending on their structure or recovery process (Recovery), collateral can result in positive notching (up to +3 notches in total) in the issue rating.

As part of the rating process, the following aspects must always be taken into account for secured financial instruments:

- Whether the collateral provider is the issuer itself or a third party; collateral provided by the issuer is sometimes more vulnerable in the event of insolvency. Third-party collateral can reduce the default risk, provided it is resilient. It should be legally enforceable regardless of the issuer's insolvency.
- Value of collateral in a stress test scenario; the value of collateral often decreases in a stress scenario. An individual valuation below market value is therefore advisable in the rating. CRA therefore assesses collateral with consideration of specific value adjustments.
- Exclusivity and stability of collateral; is the collateral exclusive or encumbered multiple times and is it subject to, for example, value fluctuations, substitution, or avoidance (clawback) risks.
- Independence of cash flow generation from collateral; whether the cash flows from the collateral can be collected independently of the issuer, which improves the value of the collateral.
- Possibility of realising the collateral separately from other assets; can the collateral be separated individually and is it not dependent on other assets that are not included in the scope of the collateral?

- Timing and legal framework for realisation by the creditor; any expected complications in accessing the collateral and slow realisation in case of need are to be viewed negatively.

Collateralisation generally leads to better credit quality compared to unsecured issues, depending on the extent of the collateralisation and its value ratio to creditor claims. Nevertheless, even with existing collateral, positive notching is not mandatory. CRA notch in relation to the recovery rate resulting from the assumed realisation of collateral according to the following guideline:

Table 3: Overview of notching ranges for assumed realisation of collateral according to recovery rate

Issuer rating <b>Notching</b>	Non-subordinated			Subordinated
	A	A to BBB-	BB+ to BB-	A+ to BB-
Notching +1	70% to 100%	70% to <100%	50% to <75%	70% to <100%
Notching +2	--	100	75% to <100%	100
Notching +3	--	--	100	--

Based on the issuer's A+ rating with a secured, unsubordinated financial instrument, notching is limited to +1 for a recovery rate of 70% and above (hard cap at AA-; see also Table 2). This is because CRA generally refrains from notching in the AA- to AAA range (even if collateral is available). The reason for this is that issuers with an A+ rating should not be better off than issuers with an AA- rating due to collateralisation.

Based on an issuer rating in the A to BBB- range, Creditreform limits notching for a non-subordinated financial instrument to +2 notches in relation to the valuation of collateral, as no significant improvement in terms of overall risk can be expected/achieved through collateral due to the already comparatively low probability of default (PD) in this rating range.

Based on an issuer rating in the BB+ to BB- range, Creditreform limits the notching for a non-subordinated financial instrument to +3 notches with regard to the valuation of collateral. The reason for the wider notching range is that the issuer's default risk (PD) is significantly higher than that of companies with an investment-grade rating. As a result, the importance of collateral for servicing the outstanding debt and for differentiating risk within the rating increases (i.e. higher relevance of recovery). This also explains the positive notching (+1) even at a recovery rate of 50%.

CRA sees an inherently higher structural risk in subordinated financing, which is reflected in a notching of -2 notches due to the priority of payment. CRA assumes that collateral can (and should) only compensate for this, which is why positive notching is limited to a maximum of +2 notches when collateral is present, meaning that the rating of the issue cannot exceed the issuer's rating.

In general, unlimited notching could lead to situations where emissions are rated at unrealistically high levels above the issuer rating. The limitation of notching applied by CRA reflects the fact that structural and operational risks cannot be fully eliminated, even with collateral. If financial instruments are unsecured and no third-party or substitute default protection is provided, contractual payment obligations are serviced exclusively on the basis of cash flows in the above-mentioned order (see 3.2.1.1. Seniority).

### 3.2.3 Guarantees

Guarantors can be government agencies, affiliated companies (e.g. parent companies), banks or other third parties. Of central importance for the assessment are the creditworthiness of the guarantor, the scope of the guarantee obligation (e.g. joint and several, subordinated or limited), the group of beneficiary creditors, the legal enforceability and thus the recoverability of the guarantee in the event of issuer default.

Guarantees can lead to an up-notching in the rating if the guarantor has an investment grade rating. In the case of a valuable guarantee, the guarantor's rating can be used as the starting point for the issue rating instead of the issuer's rating.

Guarantees should have the following characteristics:

- Legally valid and set out in writing
- Irrevocable and unconditional
- Full payment of principal and accrued interest, as well as any other agreed payments, such as default interest
- Punctual payment
- Valid for the entire term of the financial instrument or until the creditor's claims have been settled in full

If the guarantee has already been included in the issuer rating, it is not considered again in the issue rating. This applies, for example, to financing companies established within a group with their own rating. These companies usually receive the same rating as the respective parent company (guarantor), based on internal group links (corporate, strategic, financial, operational) and, in particular, on liability commitments.

The assessment is usually based on the guarantee documents, contractual provisions and, where applicable, external ratings or credit analyses of the guarantor.

### 3.2.4 Covenants, representations and warranties

If covenants, representations and warranties have been agreed as part of the contractual terms of the financial instrument, CRA analyses as part of the issue rating whether these are relevant to the assessment of the issue and to what extent they strengthen the position of the issue's creditors. Covenants can influence both the issue rating and the corporate rating. The rights of creditors in the event of a covenant breach are decisive for assessing the impact of covenants on the issue rating. Often, certain events are defined as part of the transaction that can trigger an increase in collateralisation or early repayment (in particular through early termination) of the securities issued (trigger events). Trigger events serve to protect creditors from a deterioration in the company's creditworthiness. Scenarios can be derived from the defined trigger events, which in turn can be included in the quantitative analyses of the issuer. CRAs generally use (financial) covenants in the issue rating mainly as a stabilizing, adjusting factor for the rating. Notching in the issue rating due to covenants is rare and, when it does occur, tends to be in the lower rating classes (<BB+).

### 3.2.5 Structural subordination

If structural subordination is identified during the analysis, CRA will indicate this in the rating report. Structural subordination increases risk and can therefore lead to a notching of -1. Structural subordination can arise in the case of unsubordinated, unsecured financial instruments if these are issued at the level of the holding company of a group of companies, while the significant cash flows are generated at the level of the subsidiary or subsidiaries, where, in addition to the main assets, there are also unsubordinated, unsecured financial liabilities of a considerable amount. A high proportion of secured financial instruments within the group can also lead to structural subordination.

Upstream guarantees from subsidiaries can prevent structural subordination. In this case, care must be taken to ensure that the upstream guarantee does not (unjustifiably) disadvantage creditors at the subsidiary level to the advantage of creditors of the holding company, as this could render the guarantee contestable. In addition, a high number of subsidiaries with their own cash flow capabilities can mitigate structural subordination due to higher granularity. In this case, the otherwise customary downgrade by one notch to indicate structural subordination can be waived on reasonable grounds. For rating objects (holding companies) with a rating of A- or better, structural subordination may also be considered immaterial due to the good financial risk profile.

In the case of assumed structural subordination, CRA performs the following key assessment steps, whereby a question answered with "yes" excludes the assumption of structural subordination or makes it appear unlikely, or other assessment aspects – such as collateralisation – must be given priority:

Table 4: Key assessment steps in the case of assumed structural subordination

Test question	Assessment criterion	Significance
1. Are there no significant financial liabilities at upstream group levels (subsidiaries)?	Group structure	Exclusion criterion; potential subordination can be ruled out
2. Is the financial instrument being assessed subordinated?	Ranking	Subordination relativises structural subordination
3. Is the financial instrument secured?	Collateralisation	Collateralisation takes precedence in the ranking
4. Is the issuer rating A- or better?	Credit risk	Low risk, structural subordination is negligible
5. Do secured and upstream liabilities (subsidiaries) account for < 50% of total debt within the group?	Capital structure	No dominant risk; subordination is relative or negligible
6. Are there upstream guarantees that ensure pari passu servicing?	Contract structure	Equality eliminated Subordination
7. Are the liabilities distributed granularly among upstream subsidiaries?	Risk diversification	Higher granularity, lower risk of blockage relativises structural subordination

### 3.2.6 Other instrument-specific risks and issue characteristics

Additional instrument-specific risks and issue characteristics are examined when assessing a financial instrument. These include, among others:

- Economic, regulatory and political peculiarities
- Liquidity-supporting elements
- Structural features of the issue
- Granted option rights
- Cash flow hedging mechanisms for project-based issues

These elements can, as far as can be assessed, be analysed in addition to the issuer risk assessment and considered in the issue rating on a case-by-case basis. As a rule, these come into play in project financing or have an effect (positive or negative) when the overall rating decision has to be made between two rating levels.

### 3.2.6.1 *Economic, regulatory and political characteristics*

The analysis includes the following factors, among others:

- Economic specifics: These include, for example, market-specific volatilities, existing price fixing and dependencies on subsidies that may influence the repayment capacity of the issue.
- Regulatory and political framework conditions: These are taken into account insofar as they have an impact on the structure of the issue, the enforceability of creditor claims or restructuring options. Relevant aspects include, for example:
  - o Legal framework and creditor protection in the respective country
  - o The existence or efficiency of insolvency proceedings,
  - o capital controls,
  - o The prevalence of debt cuts, moratoriums or creditor rights.

### 3.2.6.2 *Liquidity-supporting elements*

Instruments such as callable liquidity lines or contractually guaranteed minimum liquidity buffers can support the ongoing servicing of interest obligations. Their existence has a stabilising effect on the issue rating, provided they are substantial and reliably documented.

### 3.2.6.3 *Structural features of the issue*

The assessment takes into account structural characteristics such as:

- Partial repayments (e.g. sinking funds or early amortisation)
- Payment intervals for interest and principal
- Transaction complexity and potential structuring risks

The analysis of these features is based on an examination of relevant contractual documents (e.g. issue terms, downstream contracts, legal opinions). CRA does not conduct its own legal review but forms a rating-specific opinion based on the documents. Legal advice or legal opinions are expressly not provided.

If the analysis reveals any indications of structural deficiencies – for example, particularly complex or non-transparent structures – these may have a negative impact on the issue rating.

#### 3.2.6.4 *Granted options*

Option rights included in the issue are assessed on a case-by-case basis:

- Standard market options such as call, put or conversion rights are generally classified as investment risk and do not directly influence the rating decision for the financial instrument. However, effects on the capital structure (e.g. in the case of convertible bonds) may be included in the issuer rating.
- Creditor protection options, e.g. put options in the event of covenant breaches or trigger events, may be taken into account in the issue rating, provided they represent effective protection for the creditor position.

#### 3.2.6.5 *Cash flow hedging mechanisms for project-based issues*

Mechanisms for securing and controlling cash flows are often implemented, especially for project-related issues. Relevant mechanisms include:

- Structured account models (cash flow waterfalls)
- Debt service reserve accounts (DSRA)
- Distribution restrictions if certain thresholds are not met
- External fund monitoring obligations

Additional stability against a possible default by an issuer is provided by deferral rights, which allow for a temporary suspension of payment obligations in the event of extraordinary circumstances without this being considered a default.

CRA assesses the effectiveness of these mechanisms based on the following criteria:

- Clarity and legal enforceability of the regulations
- Operational anchoring and functionality of the measures
- Existence of automated escalation mechanisms in the event of negative developments

If such safeguards are lacking or insufficient, this can lead to a deterioration in the risk profile of the issue (the project company). Conversely, robust cash flow protection with reliable provisions can have a stabilizing or positive effect on the rating.

### 3.3 Issuers with ratings of B+ and below (recovery rating approach)

#### 3.3.1 Foundation and objective

For issuers in rating classes B and C, default is more likely or the issuer is closer to insolvency, which means that the expected recovery rate for creditors becomes more important. From a rating of B+ or lower, a differentiated assessment of the recovery rate plays a more important role in the rating. CRA determines a recovery rating based on the estimated recovery rate and other framework factors. The recovery rating reflects CRA's assessment of the repayment rate in six quality levels and forms the basis for the notching spectrum in the issue rating, starting from the issuer rating.

#### 3.3.2 Approach

The recovery rating approach assumes a hypothetical default scenario for the issuer, as there is an increased risk of such a scenario occurring in the lower rating categories. The approach chosen by CRA takes the following aspects into account when assessing an issue rating:

- The default risk is represented by the issuer rating.
- The recovery rating estimates the repayment of principal and accrued interest in the hypothetical default scenario (recovery rate).
- The final issue rating thus combines two risk dimensions.

This methodology provides creditors with a realistic and differentiated picture of the credit quality of an issue by an issuer with an increased default risk (B+ and below).

The process for the recovery approach involves five stages:

1. Determination of the default scenario
2. Assessment of the issuer (based on enterprise value and liquidation value)
3. Determination of creditor claims
4. Distribution of assets and cash flows to creditors according to collateral and ranking based on the company or liquidation value
5. Derivation of the recovery rating for the issue to be assessed and notching, based on the issuer rating

### 3.3.2.1 *Determination of the default scenario*

The first step is to define a default scenario. For this default scenario, the company's income statement is stressed or adjusted. The stress scenario is based on assumptions that are individually tailored to the respective company and industry-specific characteristics.

### 3.3.2.2 *Valuation of the issuer*

CRA distinguishes between two cases when determining the enterprise value in the default scenario, going concern and liquidation. The amount of the values determined in both cases usually determines which calculation result is used for the further recovery rating process. CRA generally uses the higher of the two values determined. However, CRA's assessment of the appropriateness of the going concern assumption may also be decisive.

#### *Enterprise value*

If CRA assumes that the company as a whole will be sold and continued, the enterprise value is usually determined using an EBITDA multiple.

If an EBITDA multiple cannot be determined despite the going concern assumption, CRA uses appropriate other valuation methods, e.g. discounted cash flow or residual income methods. If the available information is insufficient, e.g. because it is not sufficiently up-to-date or reliable, CRA will apply stricter risk-oriented assumptions in the valuation process or refrain from determining the enterprise value.

Specifically for project companies in the construction phase, CRA assumes an enterprise value of EUR 0 due to the lack of operating activities. Consequently, only the liquidation value is to be used in the assessment.

#### *Liquidation value*

The second approach in the default scenario is a liquidation of the issuer or the group. Liquidation ratios for the assets are determined based on market-consistent assumptions. The determination of these ratios can be supported by expert opinions and valuations from external service providers, provided that CRA has the relevant information at its disposal.

The valuations of the asset positions can vary considerably depending on the type, industry, economic situation, market cycle and individual situation. The following summary overview provides a rough estimate. If the data (annual financial statements) do not correspond to the expected current status, CRA will take care to make rather conservative assumptions when determining the realisation rates.

Table 5: Range of assumed recovery rates for determining liquidation value

Balance sheet item	Realisation rate in %
Intangible assets	0-50
Goodwill	0
Property, plant and equipment	25-75
Financial assets	0-100
Inventories	0-75
Receivables from third parties	60-80
Receivables from affiliated companies	0-80
Receivables from shareholders	0
Cash	0

In liquidation proceedings, CRA generally assumes that any goodwill recognised in the balance sheet is worthless and that receivables from shareholders cannot be recovered. CRA also assumes that no cash and cash equivalents will be available in the default scenario.

### 3.3.2.3 *Determination of creditor claims*

The following assumptions are made to determine creditor claims in the default scenario:

- Overdraft facilities, factoring and other variable financing are fully utilised.
- No new debt financing will be raised
- All liabilities due prior to the evaluated issue will be refinanced with the same or a similar structure
- Cash and cash equivalents are zero

Additional assumptions such as increased trade payables or higher advance payments received may also be included in the scenario.

In addition, CRA incorporates possible insolvency and restructuring costs as well as potentially arising senior claims that do not constitute debt, e.g. personnel and social costs, unfunded pension obligations and pending litigation. The assessment of these claims depends on the individual circumstances of the company, the legal framework and the regulatory environment.

### 3.3.2.4 *Distribution of assets and cash flows*

The assets and cash flows determined on the basis of the enterprise value or liquidation value are distributed among the creditor groups, taking into account the legal framework. The result is a so-called "waterfall" of creditor claims, in which individual creditor groups are serviced according to their ranking

and any collateral. This procedure determines the percentage repayment rate for the individual creditor groups and financial instruments, including that of the financial instrument being assessed in the rating.

### 3.3.2.5 Assignment of the recovery rating and notching

The percentage repayment rate (Recovery Rate) determined for the rated issue results in an internal recovery rating. The recovery rating is divided into six quality levels, or recovery rating classes, with corresponding notching effects on the issuer rating. The recovery rate is the relevant factor, but it is considered with certain limitations, taking into account the minimum requirement and the maximum claim, as shown in the following table:

Table 6: Overview of recovery rating classes

Recovery Rating Class	Recovery rate (%)	Valuation	Notching	Minimum requirement / maximum claim
RR1	100	Excellent	+3	<ul style="list-style-type: none"> <li>• Senior or non-subordinated liabilities that participate primarily in collateral (first lien)</li> </ul>
RR2	80 – <100	Good	+2	<ul style="list-style-type: none"> <li>• Senior or non-subordinated liabilities that participate subordinatedly in collateral (second lien)</li> <li>• Senior unsecured liabilities (super senior)</li> </ul>
RR3	60 – <80	Above average	+1	<ul style="list-style-type: none"> <li>• Non-subordinated unsecured liabilities (senior unsecured)</li> </ul>
RR4	30 – <60	Average	0	--
RR5	10–<30	Below average	-1	<ul style="list-style-type: none"> <li>• Subordinated unsecured liabilities (subordinated)</li> <li>• Mezzanine/hybrid capital</li> </ul>
RR6	0 – <10	Weak	-2	--

Upper limits therefore apply to the assignment of recovery ratings for various financial instruments. For example, a recovery rate of 100% results in an RR1 rating and the associated notching adjustment of +3 notches being assigned exclusively to senior or unsubordinated debt that participates primarily in collateral (first lien). A subordinated, unsecured creditor claim, on the other hand, is assigned a recovery rating of RR5 instead of RR3 when the recovery rate calculated in the default scenario is 65%. Non-subordinated, unsecured debt (senior unsecured) can achieve a maximum of RR3 and thus a notching of +1 notch.

The final issue rating reflects the issuer rating, adjusted for issue-specific factors. This results in the assignment of the recovery rating to the respective issuer rating.

If collateral has been provided that is not recognised in the issuer's balance sheet but is provided by third parties, such as the private assets of a shareholder, CRA will include this where appropriate and adjust the calculations described above.

The minimum requirement and maximum claim ensure that issue ratings under the recovery approach are not assigned a higher rating if an issuer is downgraded from BB- (notching approach) to B+ (recovery approach). Conversely, if the issuer is upgraded from B+ to BB-, any potential lowering of the issue rating due to the change from the recovery approach to the notching approach is also prevented.

Table 7: Recovery rating mapping

Corporate rating	B	B	B-	CCC	CC	C	SD	D
Recovery								
RR1	BB+	BB	BB-	B	B	B-	CCC	D
RR2	BB	BB-	B+	B	B-	CCC	CC	D
RR3	BB-	B+	B	B-	CCC	CC	C	D
RR4	B	B	B-	CCC	CC	C	C	D
RR5	B	B-	CCC	CC	C	C	C	D
RR6	B-	CCC	CC	C	C	C	C	D

If the issuer's financing is in default (rating = D), the issuer is rated SD, unless the issuer is also in default (insolvency; rating = D). In the event of an issuer rating of SD (e.g. if another debt instrument has not been serviced in full or on time) where the financial instrument in question is not yet (formally) in default, CRA will assess the situation on a case-by-case basis. As a rule, the issue in question will then be assigned a rating of CCC to C.

## 4 Additional information

CRA may deviate from the criteria, and calculation methods set out in Sections 3.2 and 3.3 above or apply other and/or additional criteria in the assessment of corporate issues, if it is convinced that such deviation will result in a more plausible rating assessment. Any such deviation would be disclosed and justified by CRA in its published documents.