

Creditreform Rating AG Rating Sub-Methodology

# Commercial Real Estate Financings and Securitizations



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## 1 Introduction

In order to enable involved parties, investors and the interested public to understand a rating opinion of Creditreform Rating AG (hereinafter also "CRA"), this rating sub-methodology concerning commercial real estate financings and securitizations is disclosed. This document will be updated periodically to reflect changes in the methodology. CRA's rating methodologies and code of conduct are freely available on the website [www.creditreform-rating.de](http://www.creditreform-rating.de).

## 2 Scope

This methodology describes CRA's approach to rating debt financing instruments used for the (re)financing of single real estate investments or portfolios. This includes financing for existing properties, value-add properties, and development projects with financing matching the completion timeline of the properties. The instruments or rating objects analyzed using this methodology are typically (promissory) notes or securitized loans including standard net lease arrangements.

This methodology does not apply to equity investments in real estate and has no geographical limitations; it is globally applicable. This document is a sub-methodology of the overarching "Rating of Financial Instruments (Issue Ratings)" and supplements the publicly accessible rating methodology in the Institutional Investor Debt area. This sub-methodology primarily addresses analysis components related to the underlying assets of real estate (project) financings. Components dealing exclusively with structural, operational, and credit risks at the rated entity level are covered under the main methodology.<sup>1</sup>

The qualitative and quantitative analysis components of this sub-methodology are considered in CRA's rating process and are subject to ongoing content and method review.

## 3 Rating Statement and Requirements

### 3.1 Rating Statement

This methodology addresses whether the debtor in a real estate transaction can meet their financial obligations from issuing a financial instrument - considering expected capital returns - in full and on

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<sup>1</sup> In the subsequent risk analysis, the boundaries may occasionally be less clearly defined, such that both rating-relevant topics at the level of specific property financing and elements affecting the overall financing structure up to the rating object are explicitly covered in this sub-methodology.

time. CRA uses the rating scale published in the CRA document "Rating Criteria and Definitions" for real estate ratings.

### **3.2 Data Requirements and Sources**

CRA prepares and reviews ratings using robust and systematically compiled data sets. During the due diligence of real estate transactions, CRA utilizes various data sources to identify, derive, and validate rating-relevant qualitative and quantitative parameters. Key external data sources include arranger or servicer interviews as part of the rating analysis.<sup>2</sup> Credit proposal templates from financiers and sponsors as well as specific external property appraisals are examined, and regular market and macroeconomic research is conducted.

For new rating assignments, CRA typically considers various current external valuation reports for each property or project, directly or indirectly obtained via the client. For details on the typical documents and information required for a CRA real estate rating, refer to Appendix I.

## **4 Rating Methodology**

### **4.1 Methodological Key Aspects**

#### *Levels of Analysis*

During the rating process, CRA integrates both quantitative and qualitative elements of analysis. The inclusion of qualitative assessment criteria allows CRA to consider rating-relevant factors that cannot be fully quantified or incorporated into the CRA cash flow modeling, e.g. due to complex interdependencies or measurement-specific limitations. Generally, the (stressed) property value, a cornerstone of asset-based lending, plays a central role in this sub-methodology.

#### *Rating-Level Specific Stress Factors*

CRA assesses the resilience to stress of analyzed real estate transactions and associated default risks by subjecting modeled cash flows and relevant property values to rating-level-specific stress intensities. As the rating level increases (e.g., from 'BB+' to 'BBB-'), the intensity of stress applied to individual model parameters by CRA incrementally increases.

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<sup>2</sup> Specifically, due diligence involves the review and analysis of all information and documents requested by the client through CRA's data request form for a specific real estate rating.

### *Property Analysis*

CRA, utilizing relevant information sources and a systematic analysis framework, assesses the quality of properties underlying specific financings. By addressing property type-specific criteria and questions, including areas like Collateral Quality, Market Strength, and Tenancy, Management and Regulation, properties serving as collateral are assigned CRA Property Grades (CRA PG). These grades reflect the quality of properties relevant to financing as evaluated by CRA's analysis teams and influence the rating-level specific stress factors that CRA applies when determining individual property value discounts.

### *Property Value Discounts (Haircuts) and CRA Property Values*

Utilizing appropriate stress factors and insights from property analysis, CRA derives rating-level-specific property value discounts. These discounts are applied to the externally determined values of properties as part of the rating analysis. The stress factors typically target the appraiser's Net Operating Income (NOI) or Net Cash Flow calculations, as well as the Capitalization Rate. The result is rating-level-specific (stressed) CRA Property Values. These values, in conjunction with relevant financing information (repayment amounts, amortization characteristics, payment seniorities, etc.), are used to calculate rating-level-specific expected loss rates (Loss Given Default) for a given financing.

### *Default Modeling*

CRA employs a deterministic approach to the analysis and modeling of real estate-related debt instruments such as loans and bonds. A default event for a real estate financing during its term is modeled by CRA for a specific CRA rating level if the derived rating-level-specific loss rate of the financing is strictly positive (i.e., LGD > 0). The modeled default amount in proportion to the outstanding nominal amount of the financing, corresponds to that rating-level-specific expected loss rate in the event of a default.

## **4.2 Structural Risks**

### **4.2.1 Portfolio Structure**

In analyzing a real estate transaction, CRA uses insights from the rating analysis and provided transaction documents to assess the structural features and nuances of the transaction in terms of inherent risks.

Typically, the real estate market distinguishes between single and portfolio investments. Based on the contract documentation and the number of financed properties or projects derived from the financing structure, an initial determination is made at the start of the rating process as to whether it involves a single loan risk or a portfolio of real estate financings. This includes checking for any agreements on cross-collateralization and cross-default provisions in the collateral arrangement.

#### 4.2.2 Financing Structure

The analysis of the financing structure of a real estate transaction involves identifying, classifying, and assessing relevant sources and risk drivers.

CRA evaluates distinct and interdependent contract risks in individual loan agreements, credit facilities, or creditor agreements, and partial assignments based on the risk profile of the relevant financing components. Key determinants of these contract risks include existing interest and repayment terms, agreed durations and deadlines, deadline congruencies, cost and fee structures, scope and quality of collateral and insurance, as well as ordinary and extraordinary termination rights. Additionally, interest and currency risks are assessed, and the extent of hedging instruments in place is examined. Significant risk drivers are identified both in terms of sources and uses of funds.

In the source of funds analysis, each component of a specific real estate (project) financing is evaluated. The risk analysis primarily focuses on the ratio of equity to debt (or the level of indebtedness) which comes into play in financing a property, considering specific cost and fee structures. Moreover, the capital structure plays a crucial role for the priority and amount of servicing obligations, as well as the loan to value (LTV) ratio in the context of securing the debt. Debt capital may be provided through individual and syndicated financings, both in the form of senior loans and junior or mezzanine financings (or a combination thereof).

In the use of funds or coverage potential analysis, the expected returns from investments along the financing path, including from the realization of securities, are analyzed. Payment priorities, alternative repayment conditions (such as partial prepayments), and any installed control mechanisms and trigger events are also examined. Trigger events, for example, may occur due to deterioration in the creditworthiness of relevant contract or financing parties, breaches of agreed (financial) covenants, or other forms of performance disruption, potentially leading to an enhancement or addition of existing collateral. This often involves the use of guarantees or reserve accounts, typically provided by the equity holders of the transaction.

#### 4.2.3 Eligibility and Investment Criteria

For dynamic portfolio investments, where there is a specific blind pool risk during the investment phase, CRA analyzes whether there are suitability or mandatory investment criteria in place, which may ensure that all investments are made within a comparable structure while adhering to a specific risk profile during the portfolio development and expansion.

#### 4.2.4 Collateral

CRA isolates relevant debt obligations within the financing structure to assess the existence, extent, and enforceability of collateral. The primary goal is to determine the amount of proceeds from the liquidation of collateral available to meet contractual payment obligations in the event of a default along the relevant financing path and at the rated entity level.

To this end, CRA first checks whether substantial, particularly secured collateral (such as land charges and mortgages) exists or whether creditors of the rated entity have only contractual claims on cash flows. Since the contractual provisions or structure-relevant characteristics related to collateral can vary across different levels of a total financing, it is crucial to analyze whether cash flows from the liquidation of collateral are explicitly and sufficiently available to timely service the claims at the rated entity level.

The commercial analysis includes reviewing existing security and trust agreements, documents related to land charges, and insurance policies. Existing cross-default clauses and cross-collateralization arrangements are identified, as well as contractually agreed recourses, covenants, and payment guarantees. Furthermore, CRA analyzes whether and to what extent pledges or assignments of claims along the relevant financing path are agreed upon, such as income for maintenance and repair reserves, or from rental and insurance contracts as well as from construction services.

The examination of specific collateral characteristics in connection with the financing structure allows CRA to draw conclusions about the type and extent of existing credit enhancement structures, for example, in the form of over-collateralization, subordinated liabilities, credit lines, or reserve accounts. The insights from the analysis of the collateral structure of a real estate transaction provide CRA with crucial input for subsequent cash flow and default analyses. If certain collateral characteristics cannot be adequately or sufficiently represented in the quantitative model, they may additionally be considered qualitatively in the overall assessment.

#### 4.2.5 Counterparty Risks

CRA evaluates dependencies that may exist vis-à-vis parties involved in the transaction. Counterparty risks, such as those arising from the provision of derivatives (currency/interest rate hedging instruments), credit lines, or financial guarantees, extend beyond the credit risk of the loan pool. Key participants, such as managing banks or trustees, insurance companies, and swap counterparties, are therefore examined in the rating process. These risks are incorporated into the assessment.

#### 4.2.6 Interest and Currency Risks

CRA analyzes risks associated with specific real estate transactions that could arise from global interest rate trends, affecting real estate (project) financing and the servicing of financial instruments. For variable-rate financings at the property company level, particularly during periods of rising interest rates, there is an increased repayment risk. CRA's interest risk analysis examines if variable-rate real estate (project) financings, based on indices like SONIA, have associated interest risks along the financing path, particularly regarding the available spreads at the rated entity level.

In a broader context, and using CRA's Look-Through approach, which involves a methodical and analytical review through to the cash flow-generating entities (tenants or potential guarantors) within the overall financing structure of a specific real estate (project) financing, currency risks are explicitly considered by CRA. Currency risks are particularly relevant when rated entities or financial instruments must be serviced in currencies different from the currency of the underlying asset, which can negatively impact the timely and value-appropriate servicing of credit claims and is therefore considered in CRA's analysis. The examination of currency risks focuses on whether and to what extent suitable hedging instruments have been installed to secure the cash flows needed to meet payment obligations at the rated entity level in a timely and term-congruent manner.

#### 4.2.7 Legal, Regulatory, and Tax Risks

CRA assesses potential structural flaws or risks in specific real estate transactions, taking into account the complexity and the multiplicity of relevant jurisdictions. This assessment is based on the analysis of provided contracts and legal opinions.<sup>3</sup> If construction flaws or risks are identified from the results, analysts provide their assessment of these risks. CRA notes that particularly for investments with complex overall financing structures involving various contractual parties across technical, legal, supervisory, tax, and economic dimensions, there are contractual construction risks in international legal transactions that can only be commercially assessed.

For financings based on tax-optimized conditions, CRA assumes that the tax conditions will remain unchanged for the duration of these specific financial instruments, so that, all things being equal, the servicing of the financial instruments should generally be ensured. Any discontinuation or potential adjustment of tax conditions is considered by CRA as a contingent risk in the qualitative analysis. CRA points

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<sup>3</sup> CRA would like to emphasize that a plausibility check of the contract documents can only be conducted on an ad hoc basis and that no contract law analyses are carried out.



out that subsequent tax effects, especially those affecting the creditors of the financial instruments or investors, are not part of the analysis.

The discussion of legal, regulatory, and tax aspects does not constitute a legal opinion by CRA, nor does CRA internally create legal reviews as second opinions. CRA forms a commercial opinion on these documents; neither a legal review nor a due diligence review in the traditional sense takes place.

### **4.3 Operational Risks**

#### **4.3.1 Real Estate Market Cycles**

During periods of economic upswing (downturn), the demand for commercial real estate can significantly increase (decrease) depending on the cyclical sensitivity of the specific property type. This, *ceteris paribus*, can lead to higher (lower) rental income and property values. Furthermore, during an economic downturn, market liquidity can decline, making it generally more difficult for borrowers to sell properties or refinance debt.

In addition to the overarching real estate market cycle, sector- (or use-type-) specific market cycles exist, influencing the supply and demand for particular real estate investments and leasable spaces. For real estate investments, this can directly impact property values. Conversely, fluctuations in supply and demand for leasable spaces are reflected in rental prices, thereby indirectly affecting property values.

#### **4.3.2 General Interest Levels and Cost of Capital**

CRA continuously monitors interest rate trends and analyzes their impact on general supply and demand in relevant markets. Interest rates can significantly affect a borrower's financial performance: higher rates increase borrowing costs, potentially leading to financial strain and reduced profitability. This can make it harder for borrowers to service their debts, increasing the risk of default. Conversely, lower interest rates reduce borrowing costs, enhancing the borrower's financial capacity and reducing default risk.

Additionally, the impact on the value of financed commercial properties must be considered: property values may decline due to reduced demand and the diminished attractiveness of real estate investments compared to potentially more competitive investment options. Discounted Cash Flow (DCF) and direct capitalization valuation approaches imply that the present value of future cash flows may decrease if the appropriate risk-adjusted discount or capitalization rate increases. This can affect the borrower's ability to refinance the loan or sell the property, which in turn can impact debt repayment capabilities.

#### 4.3.3 Inflation

CRA's analyses consider the level and trend of inflation rates. Inflation can significantly affect property owners and borrowers' ability to repay debts. On one hand, the operating expenses (OPEX) of a property, such as maintenance costs, may increase. On the other hand, the purchasing power of the borrower's income may decrease. Rising inflation may indirectly lead to higher interest rates (as previously discussed). It is also important to consider potential impacts on the value of financed commercial properties. An inflation-induced increase in OPEX can, all else being equal, put pressure on the current and expected Net Operating Income (NOI) of a property, thereby impacting its valuation. Conversely, an inflation-related increase in rental income can, all else being equal, lead to an increase in the current and expected NOI, thus enhancing the property's valuation.

Furthermore, particularly in project developments, a rise in material and labor costs can affect the overall budget and profitability of a project. Consequently, the likelihood may increase that certain transaction agreements and covenants cannot be met, reducing the valuation of the property (especially the residual value). Rising inflation can also affect the market demand for a property, as potential tenants and buyers may not be willing to pay higher prices. Moreover, purchase prices might already be contractually agreed upon before construction is completed, and buyers may not be willing to renegotiate. Both factors can negatively impact the (expected) Net Cash Flow of the property and thus decrease the property's value (residual value).

#### 4.3.4 Asset Manager

A critical component of CRA's analysis of operational risk involves assessing the relevant management entity. Depending on the transaction, this could include managers of existing properties or project developers. Occasionally, the analysis of management-side operational risks may extend to multiple actors beyond the asset manager, particularly when consultants, sub-fund managers, AIFMs, and other relevant entities are involved. To ensure the currency and reliability of the management assessment, CRA incorporates new and rating-relevant information about the relevant management entities into the analysis during the monitoring process.

### 4.4 Credit and Portfolio Risks

The credit quality of a real estate transaction is determined primarily by the debtor's (or multiple debtors in the case of portfolio investments) ability to service interest and principal claims at the rating entity level. On one hand, the cash flows used to meet these payment obligations are generated at the asset level through operational business. Additionally, cash flows arise from recoveries following performance

disruptions or defaults, primarily from the liquidation of collateral or the execution of guarantees. CRA thus assesses credit and portfolio risks across various transaction-specific levels. CRA's multi-tiered analysis program integrates both quantitative and qualitative steps to identify, operationalize, and evaluate risk-relevant elements of the underlying transaction concerning portfolio and credit risk, aiming for an integrative assessment of the credit quality of the rated entity. Key elements of this program are:

- (1) Credit Analysis: CRA initially examines the specific characteristics of the relevant real estate financing(s), focusing particularly on the structuring of risk-relevant financing details such as covenants, debt yield, representations & warranties, etc. (see details in 3.4.1). The goal of the credit analysis is to derive a CRA quality judgment on the features of a given financing or its credit quality.
- (2) Property Analysis: The next step involves assessing the collateral of a real estate financing for its value (see details in 3.4.2). The main objective of the property analysis is to derive long-term stabilized and rating-level-specific property values. In project developments, the different stages of construction are evaluated and the degree of completion is compared against the drawn loan volume.
- (3) Recovery Analysis: Subsequently, a recovery analysis compares previously derived rating-level-specific property values against the relevant financing amounts (see details in 3.4.3). The main goal of the recovery analysis is to calculate rating-level-specific loss or recovery rates for a given financing.
- (4) Integration with Structural Elements: Recovery analysis data from real estate financing(s) are then integrated with other structurally relevant transaction elements within a cash flow model (see 3.4.4 and 3.5). Data concerning portfolio structure, credit enhancement or impairment, payment waterfalls, and relevant cost or reserve accounts are incorporated into the quantitative analysis. The primary objective of this step is to supplement CRA's loss assumptions from (3) with potentially further rating-relevant structural elements, thereby preparing for subsequent default analyses.
- (5) Final Default Analyses: Using insights from (3) and (4), rating-level-specific default analyses are conducted to identify the best CRA rating level, at which the rated entity, especially considering the rating-level-specific loss assumptions, does not experience an interest or repayment default (see 3.5.1).

#### 4.4.1 Credit Analysis (*Loan Level*)

In its credit analysis of real estate financings, CRA utilizes a set of comparable evaluation factors. These factors are deemed crucial for assessing the risk profile of a given financing<sup>4</sup>.

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<sup>4</sup> CRA reserves the right to perform sample reviews of evaluation factors in extensive portfolios with a large number of financings to derive an overall quality assessment of the portfolio financings.

Table 1. Loan Scoring Based on Selected Evaluation Factors (Exemplary).

Factor (sel.)	Characteristics	Scoring Category	Score <sup>5</sup>
All-in LTV	90% at maturity	All-in LTV at maturity: [85%; 100%]	1 (max. 3)
Amortization	50% at maturity	Expected amortization of initial principal amount: (30%; 100%)	2 (3)
Jurisdiction	3.25	CRAS <sup>6</sup> < 4.0	3 (3)
Collateral Diversity	4.3	CDT <sup>7</sup> : (2, 10]	1 (3)
Debt Yield	11.5%	Debt Yield improved from initial rating <sup>8</sup>	2 (2)
Sponsor Quality	Track Record: 20 years	Company Track Record >= 10 years	1 (1)
Collateralization	Fully secured entire interest, principal, and repayment claims; reserve accounts installed; "bank standard" includes various assignments (claims, insurance claims, construction services, company shares, reserve account balances, etc.)	Category: Best	3 (3)
Representations & Warranties (R&W)	Comprehensive and sensible R&W set to stabilize the entity and secure the asset-based status quo; "bank standard" (includes sales prohibition, encumbrance prohibition, financing prohibition, collateral change prohibition, Change of Control (CoC), distribution prohibition/cash trap, etc.) consistently with termination rights for breaches and prohibitions; Cure rights established	Category: Best	3 (3)
Covenants	Comprehensive and sensible covenant set; "bank standard": DSCR, ICR, LTV, LTC etc. at adequate levels; consistently with termination rights for breaches	Category: Best	3 (3)

The above table provides an example list of selected evaluation factors and guidance on scoring for a hypothetical real estate financing.

The point values of individual evaluation factors are weighted and consolidated into an overall score (Loan Score). Depending on its value, the Loan Score is assigned a quality number (1 to 5), known as the

<sup>5</sup> Higher scores reflect a relatively better performance of the criterion in CRA's assessment. The minimum score is 0.

<sup>6</sup> The Country Risk Assessment Score (CRAS) is internally determined by CRA.

<sup>7</sup> The Collateral Diversity Triplet (CDT) factor measures the diversification level of the collateral (in rem) in a real estate financing, considering multiple inputs such as the number of different property locations and sectors involved.

<sup>8</sup> For the example, a follow-up rating is assumed.

CRA Loan Grade, which reflects the credit quality of a given financing according to CRA analysts. The CRA Loan Grade then serves as an input factor in the qualitative analysis (see section 3.6) and thus influences any potential up-notching or down-notching of the quantitative rating result.

#### 4.4.2 Property Analysis (Property Level)

As the foundation for assessing each portfolio asset, CRA determines the long-term stabilized market value (CRA Property Value) of properties using the Direct Capitalization method and typically based on external property valuation reports. CRA explicitly states that it does not produce its own property valuation reports. The Direct Capitalization approach, a common income approach used by specialized property appraisers, evaluates properties generating regular periodic revenues. Accordingly, the CRA Property Value is calculated as follows:

$$CRA\ Property\ Value = \frac{CRA\ Net\ Cash\ Flow}{CRA\ Cap\ Rate}$$

The CRA Net Cash Flow used in the calculation derives from the (stressed) long-term stabilized gross annual income, adjusted for structural vacancy and non-recoverable operating, administrative, and investment costs. The CRA Cap Rate represents the (stressed) long-term stabilized capitalization rate. This CRA property value serves as a basis for deriving assumptions for rating level-specific loss rates (Loss Given Default or LGDs) in later analyses.

Initially, CRA adopts the pre-validated valuation assumptions of externally provided property valuation reports as the basis for subsequent stress application to derive rating level-specific CRA Property Values. Thus, providing CRA-compatible external valuation reports for all transaction-relevant properties or collaterals is crucial for the feasibility and execution of the rating analyses. External valuation reports are compatible with CRA's analysis approach particularly when the provided external valuation report:

- i. uses an income approach to derive the value of the property,
- ii. does so in a transparent, plausible and consistent manner,
- iii. describes essential assumptions about sustainable or long-term stabilized values and metrics used in the property value calculation,
- iv. is current in CRA's opinion depending on the property life cycle and maturity of the underlying properties.<sup>9</sup>

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<sup>9</sup>Requirement iii mandates the inclusion of clear quantitative assumptions about long-term stabilized values in the valuation report, covering the following metrics: Lettable Area, Potential Rental Income, Net Rental Income, Vacancy Rate, Credit Loss, Other Income, Effective Gross Income, Operating Expenses (OPEX), Periodic Capital Expenditures

Consequently, Discounted Cash Flow (DCF) approaches (and possibly relevant components of the residual value method in project developments) can also meet CRA compatibility requirements, provided they simultaneously satisfy criteria (i), (ii), and (iii).

In the property analysis, CRA stresses both the capitalization rate assumed by the appraiser and various items along the Net Cash Flow calculation of the external valuation report to derive rating level-specific CRA Property Values and loss rates for a given financing.

Furthermore, CRA derives its quality judgments for transaction-relevant properties in the form of CRA Property Grades. The CRA Property Grade also influences the stress intensity applied in calculating the rating level-specific CRA Property Values: the applied stress factors increase, all else being equal, with decreasing property quality.

#### 4.4.2.1 *Property Grade*

The CRA Property Grade provides insights into the property quality as assessed by CRA analysts. It results from a scoring process that evaluates sector-specific criteria within three areas: (1) Collateral Quality, (2) Market Strength, and (3) Tenancy, Management and Regulations (TMR). The assessment of sector-specific criteria utilizes a mix of CRA-internal and external information sources, including relevant appraiser data, and may be further supported by analysts' observations and impressions from property inspections.

Depending on how the various evaluation criteria are addressed, a weighted CRA Property Score is determined for the relevant property. The calculated Property Score for a property is assigned a quality number (1 to 4), known as the CRA Property Grade, depending on its level. This grade reflects the quality judgment of CRA analysts for the property serving as collateral. While the CRA Property Grade for stabilized (existing) properties generally remains constant over the financing period, it can vary for development projects depending on construction progress and the extent of existing project risks.

It should be noted that while CRA uses the derivation of property-specific Property Grades as a useful tool for general judgment formation and (partial) stress configuration in deriving the CRA Property Values of the properties, it does not perform or intend to perform extensive property appraisals.

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(CAPEX), Net Operating Income (NOI), and Capitalization Rate. For properties in the hotel and hospitality sector, this includes the Number of Rooms, Occupancy Rate, Average Daily Rate (ADR), Revenue per Available Room (RevPAR), Revenue Rooms, Food and Beverage, Rooms Expense, Departmental Income, Income Before Fixed Charges, and Total Fixed Charges.

#### 4.4.2.2 Rating Level-Specific Net Cash Flows and Cap Rates

To calculate rating level-specific Net Cash Flows, CRA initially adopts the assumptions from the external appraiser's Net Operating Income (NOI) or Net Cash Flow calculation as the reference scenario, assigning these assumptions to CRA rating level B. An exemplary Net Operating Income calculation for a hypothetical office property is outlined in the following table:

Table 2. Net Operating Income (NOI) or Net Cash Flow Calculation for a Hypothetical Office Property (Exemplary).

Parameter	Percentage	Per SF	Total
Lettable Area [SF]			111,341
Pot. Rental Income per SF p.a.			57
Pot. Rental Income per SF p. month			4.7
<b>Potential Rental Income</b>	<b>100%</b>	<b>56.6</b>	<b>6,297,634</b>
Vacancy	2.8%	1.6	175,168
Credit Loss	2.8%	1.6	175,168
Other	0.0%	-	
<b>Net Rental Income</b>	<b>94.4%</b>	<b>53.4</b>	<b>5,947,298</b>
Parking Income	2.9%	1.6	180,633
Expense Reimbursements	11.2%	6.4	709,080
Other Income	0.4%	0.2	23,942
<b>Adjustments Net Rental Income</b>	<b>14.5%</b>	<b>8.2</b>	<b>913,655</b>
<b>Effective Gross Income</b>	<b>108.9%</b>	<b>61.6</b>	<b>6,860,953</b>
Real Estate Taxes	20.7%	11.7	1,301,762
Property Insurance	0.3%	0.2	18,249
Utilities	5.7%	3.3	365,110
Administrative & General	1.0%	0.5	60,830
Repairs and Maintenance	4.8%	2.7	304,150
Landscaping and Security	2.7%	1.5	170,324
Management Fee	3.3%	1.8	205,829
General Operating	1.8%	1.0	115,577
Janitorial	3.8%	2.2	239,416
Advertising and Marketing	0.0%	-	
Other OPEX	0.3%	0.2	18,249
<b>Operating Expenses</b>	<b>44.4%</b>	<b>25.1</b>	<b>2,799,496</b>
<b>Net Operating Income (NOI) = Net Cash Flow</b>	<b>64.5%</b>	<b>36.5</b>	<b>4,061,457</b>

The unstressed Net Operating Income (NOI) or Net Cash Flow calculation presented in the above table reflects the set of stabilized assumptions provided by the external appraiser. This set of assumptions corresponds to the following configuration of CRA Property Grade and CRA Rating Level used by CRA to derive the CRA Net Cash Flow: (CRA Property Grade, CRA Rating Level) = (1, B). In other words, the CRA Net Cash Flow for the exemplary office property at CRA Rating Level B with a CRA Property Grade of 1 matches the Net Cash Flow of the appraiser's scenario, which is EUR 4,061,457. Similarly, the CRA Cap

Rate for the exemplary office property at CRA Rating Level B with a CRA Property Grade of 1 matches the Cap Rate of the appraiser's scenario. Using *Direct Capitalization*, this directly results in the CRA Property Value of the exemplary office property for CRA Rating Level B, which corresponds to the property value determined by the external appraiser.

Building on the reference scenario (i.e., CRA Rating Level B), CRA derives individual (stressed) CRA Net Cash Flows and (stressed) Cap Rates for the other CRA Rating Levels. Specifically, CRA stresses two positions along the Net Cash Flow calculation of the reference scenario: (i) Potential Rental Income (or Average Daily Rate for properties in the hotel and hospitality sector) and (ii) Vacancy Rate (or Occupancy Rate for properties in the hotel and hospitality sector). An exemplary compilation of the Rating Level- and parameter-specific stress factor assumptions for an office property for different CRA Property Grades (PG) can be found in the following table:

Table 3. CRA Assumptions on Standard Stress Factors (Exemplary).

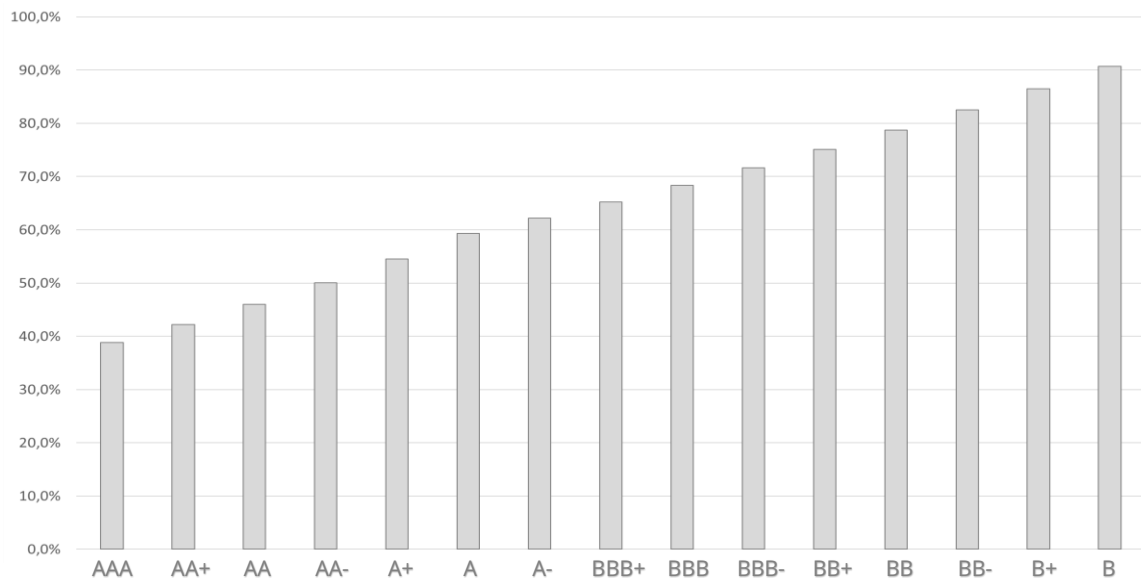
Parameter	Rating level	PG1	PG2	PG3	PG4
Rental Income	A	0.90	0.81	0.72	0.63
Rental Income	B	1.00	1.00	1.00	1.00
Vacancy Rate	A	1.05	1.16	1.21	1.31
Vacancy Rate	B	1.00	1.10	1.15	1.25
Cap Rate	A	1.10	1.16	1.21	1.27
Cap Rate	B	1.00	1.05	1.10	1.15

The above table reveals that CRA's stress assumptions for the mentioned parameters in the context of property value derivation primarily apply along two dimensions: (1) CRA Rating Level and (2) CRA Property Grade. More specifically: (1) the higher the CRA Rating Level, the more stress is applied, *ceteris paribus*, to the parameters, and (2) the higher (i.e., worse) the CRA Property Grade, the more stress is applied, *ceteris paribus*, to the parameters. The stress factors applied by CRA to the reference scenario primarily stem from statistical analyses of historical data on cross-sector and cross-location property price developments, covering several economic cycles. CRA reserves the right to also make stress-relevant assumptions that are more plausible on a case-specific basis.



#### 4.4.2.3 Rating-level specific Property Values

Figure 1. CRA Property Values Relative to the Reference Scenario (Exemplary, Property Grade 3).



Based on the results of previous analysis steps, CRA finalizes the property analysis stage by deriving long-term stabilized and rating level-specific property values.<sup>10</sup> These values are used in the recovery analysis (see details in 3.4.3) to calculate rating level-specific loss or recovery rates for a given financing in the theoretical event of a default. In justified cases, and depending on transaction parameters, the partial inclusion of additional liquidity, such as from potentially existing dedicated trust accounts, is possible in the collateral valuation.

Additionally, the inclusion of additional potential costs, for example, those arising during foreclosure, is possible in justified individual cases to derive the effective value of the relevant collateral. Figure 1 illustrates exemplary rating level-specific CRA Property Values, expressed in relation to the reference or unstressed appraiser scenario (100%), for a hypothetical stabilized office property with a CRA Property Grade 3, without relevant additional liquidity or additional disposal cost deductions. The figure highlights the incremental increase in stress intensity applied by CRA depending on the rating level.

<sup>10</sup> When discrepancies arise between the current value and the stabilized value ('Value as is' and 'Value as stabilized') of a property—for instance, in project developments or value-add initiatives—CRA utilizes the value differential, as assessed by external valuations, to derive additional rating-level-specific as-is property values. This approach may involve averaging the values if deemed appropriate.

Figure 2. CRA Property Values - Variation Property Grade (PG) (Exemplary, c.p.).

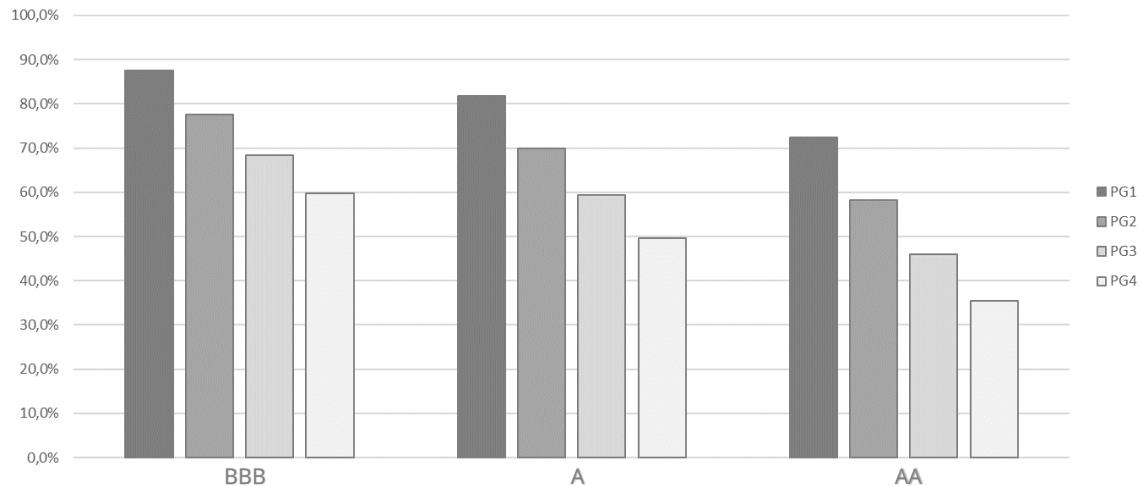


Figure 2 exemplarily demonstrates how variations in the CRA Property Grade, ceteris paribus, affect the CRA Property Values of a hypothetical property. By deriving rating level-specific property values during the property analysis, CRA achieves a close-to-asset and risk-adjusted valuation of the relevant collateral for a given real estate financing, thus laying the foundation for the subsequent recovery analysis.

#### 4.4.3 Recovery Analysis

In the recovery analysis, previously derived rating level-specific property values are compared against the relevant financing amounts. The goal of the recovery analysis is to calculate rating level-specific loss or recovery rates for a given financing in the theoretical event of a default.

CRA isolates, for a given financing, the relevant data for the development of the outstanding financing volume during the financing term, based on transaction documentation in conjunction with repayment schedules or provided cash flow models. It is crucial to accurately capture the exposure of the financing both in terms of amount and in terms of timing. This includes considering components such as early partial repayments as well as potential phased capital calls over time (e.g., milestone-dependent draw-downs in project developments).

A key aspect in the accurate determination of loss or recovery rates is the correct recording of existing or anticipated subordination relationships within the overall financing, particularly in the context of the prioritized use of liquidation proceeds in a theoretical default scenario based on the contractual and legal financing structure (repayment claims according to capital type, such as senior/subordinated loans, equity) and the underlying collateral structure (e.g., according to ranking in the land register).

CRA calculates averaged loss or recovery rates over the course of the financing, taking into account particularly the initial and (expected) final balances of the financing. The table below exemplarily lists rating level-specific loss given default (LGD) rates in the event of a theoretical default, using a fictitious senior loan without prepayment – with an outstanding nominal amount (initial and at maturity) of EUR 20 million.

Table 4. Expected Loss Rates for a Hypothetical Senior Loan (Exemplary).

Ratinglevel	CRA Property Value [EUR]	LGD [%] (Recovery [%])
AAA	10,590,940	47.05 (52.95)
AA+	11,529,899	42.35 (57.65)
AA	12,552,081	37.24 (62.76)
AA-	13,664,861	31.68 (68.32)
A+	14,876,265	25.62 (74.38)
A	16,195,033	19.02 (80.98)
A-	16,977,542	15.11 (84.89)
BBB+	17,797,850	11.01 (88.99)
BBB	18,657,784	6.71 (93.29)
BBB-	19,559,257	2.20 (97.80)
BB+	20,504,275	0 (100)
BB	21,494,941	0 (100)
BB-	22,533,459	0 (100)
B+	23,622,140	0 (100)
B	24,763,408	0 (100)

The loss rates thus calculated serve as key input for further rating analysis to determine the quantitative rating outcome (see section 3.5).<sup>11</sup>

#### 4.4.4 Portfolio Structure Analysis

CRA conducts an integrated portfolio structure analysis to determine whether investments in a real estate transaction constitute static or dynamic portfolios with blind pool risks. Additionally, CRA identifies potential concentration risks that affect the structure of the financed real estate portfolio. Concentration risks are primarily assessed qualitatively by CRA and can occur with respect to the sector, type, location,

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<sup>11</sup> Particularly for portfolio financings where the underlying external property valuation approaches are not compatible with the CRA analysis approach (refer to the compatibility criteria, Section 3.4.2), CRA evaluates the suitability of appropriate surrogate assumptions when determining expected loss rates.

and sponsors of properties. These risks can counteract a positive diversification effect and increase the credit risk of a transaction.

## 4.5 Cash Flow Modeling

Based on insights from the structural analysis, specific and quantitatively measurable characteristics of the current real estate transaction, such as operational cash flows, interest and amortization terms, costs and fees (at the level of the issuance and investment vehicle), as well as trigger mechanisms and payment priorities, are incorporated into cash flow modeling.<sup>12</sup> Additionally, risk buffers provided by collateral elements, liquidity and cost reserves, and other sources for credit enhancement or impairment are considered in the quantitative analysis. Modeling these mechanisms enables the examination of cash flows generated from the assets in relation to the debtor's payment obligations. In various rating scenarios, specific stress factors are applied to assess the stability and adequacy of the cash flows and to evaluate the risk of incomplete or untimely fulfillment of investor claims for a specific financial instrument, particularly in crisis situations. The CRA cash flow model also processes and analyzes various scenarios regarding the timing of expected defaults and losses and the impact of early repayments.

### 4.5.1 Default Modeling

CRA determines the quantitative rating result by conducting default tests (see 3.5.1.2). This quantitative rating result is then supplemented by a qualitative rating analysis (see 3.6) to derive the final rating for the rated entity. Below, the specifics of CRA's default modeling approach are outlined.

#### 4.5.1.1 *Default Approach and Timing*

CRA models cash flows strictly based on the rating level being assessed. The different rating levels, conceptually aligned with the CRA rating classification (e.g., rating level 'A+'), are associated with distinct asset-side stress assumptions and, consequently, rating-level-specific Loss Given Default (LGD) values, which are derived within the framework of the recovery analysis. Depending on the relevant transaction structure, either a single LGD vector (in the case of an individual investment) or an LGD matrix (in the case of a financing portfolio within a securitization transaction) is processed. For a portfolio of hypothetical real estate financings, the below table describes an exemplary LGD matrix:

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<sup>12</sup> CRA explicitly reserves the right to make simplifications, particularly in the case of waterfall structures with multiple payment tiers and reference metrics.

Table 5. LGD Matrix for a Portfolio of Hypothetical Real Estate Financings (Exemplary).

Rating Level-Specific LGD Values															
Loan	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B
<i>1 Main Street</i>	0.47	0.42	0.37	0.32	0.26	0.19	0.15	0.11	0.07	0.02	-	-	-	-	-
<i>2B 1st Street</i>	0.45	0.39	0.33	0.27	0.20	0.12	0.07	0.03	-	-	-	-	-	-	-
<i>3C 2nd Street</i>	0.64	0.59	0.54	0.48	0.41	0.34	0.29	0.25	0.20	0.15	0.10	0.05	-	-	-
<i>44 Church Street</i>	0.55	0.51	0.46	0.41	0.36	0.30	0.27	0.23	0.19	0.15	0.11	0.07	0.02	-	-
<i>50 Station Road</i>	0.73	0.67	0.60	0.52	0.43	0.33	0.27	0.21	0.15	0.08	0.02	-	-	-	-
<i>66B Grand Street</i>	0.54	0.46	0.36	0.26	0.14	0.02	-	-	-	-	-	-	-	-	-
<i>007 James Street</i>	0.69	0.65	0.59	0.53	0.47	0.40	0.32	0.23	0.14	0.05	-	-	-	-	-
<i>8B High Street</i>	0.54	0.48	0.42	0.36	0.29	0.22	0.17	0.13	0.08	0.04	0.02	-	-	-	-

The Loss Given Default (LGD) values of a given financing serve as model assumptions for rating-level-specific loss amounts and as an information base for whether a default event is modeled for the financing during its term. If the recovery analysis determines an LGD > 0 for the respective rating level, CRA models a default of the corresponding amount for this asset. Analogously, an LGD of 0 results in no default of the modeled real estate financing for the respective rating level. Consequently, this constitutes a deterministic default mechanism. For instance, when running the BB rating level according to the LGD matrix in the above table, the two hypothetical real estate loans, *3C 2nd Street* (with LGD = 5%) and *44 Church Street* (with LGD = 7%), are assumed to default in the cash flow model. In contrast, the remaining assets within the portfolio for the BB scenario do not default in the cash flow model and will generate cash flows over the financing term.

Additionally, the modeled asset defaults are also staged at different times to analyze the implicit influence of time-dependent transaction characteristics on the credit quality of the rated entity. Depending on the timing of the default, aspects such as the portfolio granularity or specific concentration risks modeled at that time can vary, thus influencing the impact of an asset default on the credit quality of the rated entity. Forms of credit enhancement might also vary in strength depending on the time, such as the accumulated amortization performance with regular (partial) early repayment of the rated entity.

In this context, CRA examines Front-, Mid-, and Back-Default scenarios characterized by asset defaults at the beginning, middle, and end of the respective financing term during the cash flow or default analysis. Furthermore, CRA examines the impact of repayment delays. Depending on various parameters such as jurisdiction, track record, and observed evidence, CRA integrates case-specific assumptions about recovery delay periods into the cash flow modeling.

#### 4.5.1.2 Default Test

In the final step of quantitative rating analysis, the borrower's ability to meet contractual interest and principal payments in a timely manner is tested. This assessment incorporates insights gleaned from modeled transactional, portfolio, and credit risk-relevant information. In essence, the objective is to determine whether the cash flow model predicts any payment defaults (interest and/or principal) at the level of the rated entity throughout the duration of the loan. Given that the modeled cash flows typically exhibit variations due to the principle of rating-level-specific stress factors, each CRA rating level corresponds to a distinct cash flow model with its own inherent default implications. The process of determining the quantitative rating result can be summarized as follows:

1. Start the default test with the AAA rating level.
2. For a given rating level (e.g., AAA), test whether a payment default occurs at the level of the rated entity, considering the rating level-specific parameter manifestations (particularly: AAA stress factors, AAA CRA Property Values, AAA LGD values).
3. If the test is not passed (i.e., a payment default occurs): Repeat step 2 for the next lower rating level according to CRA rating classification (e.g., AA+).
4. If the test is passed (i.e., a payment default does not occur): Conclude the result-finding process and assign the quantitative rating result corresponding to the passed rating level (e.g., AAA) to the rated entity.

The quantitative rating result then serves as the basis for deriving the final CRA rating. It is complemented by the qualitative analysis (see section 3.6) and any potential notching that may occur.

#### 4.5.2 Sensitivity Analysis

The information gathered during the rating process is used to construct Best-, Base-, and Worst-Case assumptions regarding the parameters of the cash flow model. Additionally, sensitivity analyses are conducted to examine how the quantitative Base-Case result changes with variations in individual parameters. This allows for an assessment of the impact of uncertainty and risk concerning the input parameters and the resulting changes in the evaluation of the rated entity.

## 4.6 Qualitative Analysis

In the rating process, CRA combines both quantitative and qualitative elements to arrive at a final rating result. The incorporation of qualitatively captured evaluation criteria allows CRA to consider rating-relevant aspects that, due to complex interrelationships or measurement-specific limitations, cannot be fully or only partially operationalized in the CRA cash flow modeling. Qualitative parameters relevant to the rating are captured and processed through a scoring approach during the analysis. The qualitative assessments of the scoring model are summarized in such a way that, based on the results of the quantitative analysis, a systematic upgrading or downgrading by several notches can be applied to determine the final rating result for a financial instrument. Key evaluation criteria included in the CRA scoring approach are listed in Appendix II, though this list is not exhaustive.

## **Appendix I: CRA Documentation Requirements (Exemplary)**

### Initial Rating

1. Foundation Documents: Commercial registry excerpts, bylaws, meeting minutes, etc.
2. Term Sheet / Issuance Conditions
3. Audited Annual Financial Statements of the debtor or relevant compartment
4. Subscription/Purchase Contracts, fund/sub-fund conditions, prospectuses, memoranda
5. Cash Flow Model / Fund Model: Fully integrated with premise structure
6. Detailed Information on Issuance-Related Cost and Fee Structures
7. External Valuation Reports
8. Final Credit Decisions/Waivers
9. Interest and Amortization Schedules: Linked by formula for total financing and derived for acquisition tranches (including interest and amortization components, acquisition rates)
10. Bible Documentation at the level of senior loan financings
11. The Last Three Annual or Consolidated Financial Statements of the cash flow-generating entities (Lessee/Sub-Lessee; borrower if ≠ SPV; full-recourse units or guarantors)
12. Track Record: Asset Manager/Service Provider
13. Summary Documents regarding risk management and investment process
14. Transaction Documents (Pricing Letter, Transfer Certificate, Proceeds Agreement, etc.)
15. Summary Legal Due Diligence of individual transactions (Review Memos)
16. Deal Pipeline

### Monitoring

1. Current Fund/Investor Reporting (at least quarterly)
2. Audited Annual Financial Statements of the debtor or relevant compartment
3. Updated Cash Flow Model / Fund Model
4. Updated External Valuation Reports
5. Ongoing Documentation of source of funds (emissions) / use of funds (acquisition of loan tranches)
6. Ongoing Drawdown and Distribution Notices
7. Updated Interest and Amortization Plans (linked by formula)
8. Updated Annual or Consolidated Financial Statements of the cash flow-generating entities
9. Current Quarterly or Semi-Annual Figures, especially of lessees
10. Updated Track Record: Asset Manager/Service Provider
11. Updated Deal Pipeline



## **Appendix II: Notching-Relevant Criteria (Excerpt)**

A prerequisite for considering any of the criteria listed below in CRA's qualitative rating analysis (Notching) is always to verify the relevance of the specific criterion for the pertinent transaction, and to confirm that this criterion has not been or could not be adequately considered in the quantitative rating analysis.

### Structural Risks (among others):

1. Collateral Structure Configuration
2. Availability of Relevant Additional Collaterals
3. Complexity and Transparency of the Overall Transaction
4. Possibility of Leveraged Financing at the Investment Vehicle Level
5. Mismatch of Deadlines within the Transaction Structure
6. Professionalism of Transaction Contracts
7. Presence of Conflicts of Interest within the Transaction Structure
8. Counterparty Risks (at all transaction levels)
9. Ongoing Legal or Tax Risks
10. Placement Risks
11. Etc.

### Operational Risks, Portfolio, and Credit Risks (among others):

1. Relevant Market or Industry Developments
2. Track Record of the Asset Manager
3. Blind-Pool Risks Combined with the Degree of Restriction of Investment Criteria
4. Frequency and Robustness of Provided External Valuation Reports
5. Project Risks
6. Country Risks
7. Regulation Level of the Underlyings
8. Tail-Period Risks
9. Etc.