Internal Credit Risk Modelling Policy

This chapter outlines the Bank's internal policy for the development, validation, implementation, and ongoing management of Internal Ratings-Based (IRB) models specifically for residential mortgage portfolios within the European Union, in compliance with Regulation (EU) No 575/2013 (CRR), as amended, and guidance from the European Central Bank (ECB) and European Banking Authority (EBA).

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## Chapter X: IRB Model Development and Management for Residential Mortgage Portfolios

### 1. Introduction and Scope

This policy document establishes the framework for the development, validation, implementation, and ongoing management of Internal Ratings-Based (IRB) models applied to the Bank's residential mortgage portfolios. Its objective is to ensure compliance with prudential regulations, enhance risk management capabilities, and promote consistency, accuracy, and comprehensiveness in credit risk measurement. The policy is aligned with the latest supervisory expectations outlined in the `ECB Guide to Internal Models (July 2025)` (hereinafter, "ECB Guide") and the `EBA Guidelines on PD Estimation, LGD Estimation and Treatment of Defaulted Exposures (EBA/GL/2017/16)` (hereinafter, "EBA GL on PD and LGD").

The scope of this policy encompasses all residential mortgage exposures for which the Bank uses or intends to use the IRB Approach for the calculation of own funds requirements, including exposures in foreign branches and different product groups, subject to approval by the Competent Authority.

### 2. Governance and Oversight

Effective governance is paramount for the integrity and reliability of IRB models. The Bank maintains a robust model risk management framework, as required by Section 4 of the `ECB Guide` (Overarching Principles), ensuring clear roles, responsibilities, and accountability across the model lifecycle.

#### 2.1. Management Body and Senior Management Responsibilities  
The Management Body and Senior Management, as defined in Article 3(1) of the CRD, are responsible for approving all material aspects of the rating and estimation processes, including the roll-out plan for the IRB approach (ECB Guide, Credit Risk, Section 2.3, para 8-10). Their responsibilities include:  
\* \*\*Approval:\*\* Review and approve the overall model development policy, significant model changes, and the framework for data governance, model validation, and audit.  
\* \*\*Oversight:\*\* Possess a general understanding of the residential mortgage rating systems and a good understanding of their design and operations, actively challenging model outcomes and assumptions (ECB Guide, Credit Risk, Section 3.5, para 37-40).  
\* \*\*Reporting:\*\* Receive regular reports on model performance, identified deficiencies, and remediation actions, including specific metrics relevant to residential mortgages (e.g., LTV distribution, property market trends) (ECB Guide, Credit Risk, Section 3.4, para 34-36).

#### 2.2. Credit Risk Control Unit (CRCU)  
The CRCU is independent from functions responsible for originating and renewing exposures and reports directly to Senior Management (ECB Guide, Credit Risk, Section 3.6, para 41). Its responsibilities include:  
\* \*\*Model Design & Development:\*\* Ensuring satisfactory performance and ongoing maintenance of residential mortgage rating systems.  
\* \*\*Monitoring:\*\* Continuous monitoring of model performance, data quality, and compliance with internal policies and regulatory requirements.  
\* \*\*Remediation:\*\* Addressing deficiencies identified by the validation function and overseeing approved remediation activities.

### 3. Data Management and Governance

Sound data governance practices are fundamental for the accuracy and reliability of IRB models (ECB Guide, Overarching Principles, Section 3, para 9).

#### 3.1. Data Quality and Standards  
The Bank ensures that all data used in the estimation of risk parameters for residential mortgages, including internal, external, and pooled data, is accurate, complete, and appropriate (EBA GL on PD and LGD, Section 4.2.1, para 15-16).  
\* \*\*Accuracy:\*\* Data must be sufficiently precise to avoid material distortions in rating assignments.  
\* \*\*Completeness:\*\* All necessary data for model development, calibration, and application must be available.  
\* \*\*Appropriateness:\*\* Data must be fit for its intended purpose, reflecting the characteristics of the residential mortgage portfolio.  
\* \*\*Specifics for Residential Mortgages:\*\* This includes, but is not limited to, loan characteristics (e.g., LTV, original LTV, payment history, interest rate type, loan term), borrower characteristics (e.g., income, employment status, credit history), and collateral characteristics (e.g., property type, location, valuation method, valuation date, environmental risks).

#### 3.2. Data Representativeness  
The Bank maintains sound policies and methods for assessing the representativeness of data, differentiating between data used for model development (risk differentiation) and data used for calibration (risk quantification) (EBA GL on PD and LGD, Section 4.2.2, para 17).  
\* \*\*Dimensions of Representativeness:\*\* Analysis covers the scope of application, definition of default, distribution of relevant risk characteristics (e.g., LTV distribution, property price trends), current and foreseeable economic/market conditions, and lending/recovery policies (EBA GL on PD and LGD, Section 4.2.3, para 21, and Section 4.2.4, para 28).  
\* \*\*Remediation:\*\* Insufficient data representativeness leading to bias or increased uncertainty in risk quantification requires appropriate adjustments and the application of a Margin of Conservatism (MoC) (EBA GL on PD and LGD, Section 4.2.4, para 34).

#### 3.3. IT Systems and Infrastructure  
Robust IT infrastructure supports the entire model lifecycle, from data input to reporting (ECB Guide, Credit Risk, Section 8.2.1, para 118-120).  
\* \*\*Data Flow:\*\* Documented data flow from entry to reporting, including extraction, collection, storage, and transformation processes.  
\* \*\*System Specifications:\*\* Detailed functional and technical specifications of all IT systems and databases involved in the IRB approach.  
\* \*\*Audit Trail:\*\* An audit trail for critical IT systems and databases is maintained to ensure transparency and replicability.

### 4. Model Development - General Principles

Model development aims to achieve appropriate risk differentiation, which is crucial for residential mortgage portfolios due to their specific risk characteristics.

#### 4.1. Risk Differentiation and Segmentation  
Rating systems for residential mortgages are designed to provide a meaningful assessment of obligor and transaction characteristics, allowing for accurate and consistent quantitative estimates of risk (ECB Guide, Credit Risk, Section 16.1.1, para 204).  
\* \*\*Segmentation Drivers:\*\* The residential mortgage portfolio is segmented based on relevant risk drivers such as:  
 \* \*\*Loan-to-Value (LTV):\*\* LTV ratios are a critical risk driver for residential mortgages, influencing both PD and LGD. The Bank specifically monitors and incorporates LTV ratios, especially those exceeding 80%, reflecting industry-specific reporting considerations (e.g., `2021\_5830 Reporting of residential mortgage loans on C80.00`).  
 \* \*\*Geographical Location:\*\* Property location (e.g., NUTS 1, 2 or 3 as defined by Eurostat) due to varying local market dynamics and environmental risks.  
 \* \*\*Property Type:\*\* (e.g., single-family, multi-family, apartment) reflecting differences in marketability and value stability.  
 \* \*\*Loan Characteristics:\*\* (e.g., fixed vs. variable rate, payment holidays, interest-only periods, maturity).  
 \* \*\*Borrower Characteristics:\*\* (e.g., income stability, self-employed vs. salaried, credit score).  
\* \*\*Homogeneity:\*\* Grades or pools within residential mortgage models are defined to ensure obligors/facilities have reasonably similar default/loss risk characteristics (EBA GL on PD and LGD, Section 5.2.5, para 69, and Section 6.2.4, para 130).

#### 4.2. Risk Drivers Selection  
A broad set of information relevant to residential mortgage exposures is considered, including obligor, transaction, institution-related, and external factors (EBA GL on PD and LGD, Section 5.2.2, para 57, and Section 6.2.1, para 121).  
\* \*\*Economic Rationale:\*\* Selection of risk drivers is based on statistical analysis and consultation with relevant business experts to ensure business rationale and risk contribution (EBA GL on PD and LGD, Section 5.2.2, para 58).  
\* \*\*Climate-related and Environmental Risks:\*\* Where climate-related and environmental risk drivers are identified as relevant and material for residential mortgages (e.g., flood risk for properties), they are integrated into the internal models (ECB Guide, Overarching Principles, Section 8, para 29).  
\* \*\*Information Ageing:\*\* The decreasing reliability of information over time (e.g., outdated property valuations, borrower income statements) is reflected in the model design, with adequate adjustments and MoC applied where high uncertainty exists (EBA GL on PD and LGD, Section 5.2.2, para 59).  
\* \*\*Consistency:\*\* Risk drivers are used consistently across model development, calibration, and application with respect to the relevant time horizon (EBA GL on PD and LGD, Section 5.2.2, para 60).

#### 4.3. Use of Human Judgement  
Human judgement complements statistical models, particularly for verifying assumptions, model design, and risk driver selection. All instances of human judgement are appropriately documented, justified, and subject to challenge by the validation function and Competent Authorities (EBA GL on PD and LGD, Section 4.3, para 35).

### 5. Probability of Default (PD) Model Development and Quantification

#### 5.1. PD Model Structure and Risk Differentiation  
\* \*\*Obligor-level Rating:\*\* Each natural person (residential mortgage borrower) with an IRB exposure is rated by the Bank's approved model (EBA GL on PD and LGD, Section 5.1, para 53).  
\* \*\*Grade Assignment Dynamics:\*\* The PD model's sensitivity to economic conditions (Point-in-Time (PIT) vs. Through-the-Cycle (TTC) philosophy) is clearly defined and consistently applied. The model adequately anticipates and reflects risk over a longer time horizon, typically two to three years, considering plausible changes in economic conditions (ECB Guide, Credit Risk, Section 16.1.3, para 213-214).

#### 5.2. PD Quantification  
\* \*\*One-Year Default Rates:\*\* Calculated for each rating grade or pool, including all non-defaulted obligors with any credit obligation at the beginning of the one-year observation period (EBA GL on PD and LGD, Section 5.3.2, para 73).  
 \* \*\*Inclusion Criteria:\*\* All obligors, including those who migrated, sold their obligations, or had their credit repaid/closed during the observation period, are included in the denominator and, if applicable, numerator (EBA GL on PD and LGD, Section 5.3.2, para 76).  
\* \*\*Observed Average Default Rates:\*\* Calculated as the arithmetic average of all one-year default rates for each rating grade or pool, and for the overall residential mortgage portfolio (EBA GL on PD and LGD, Section 5.3.3, para 79, 81).  
\* \*\*Long-Run Average (LRA) Default Rate:\*\*  
 \* \*\*Historical Observation Period:\*\* As broad as possible, covering at least the most recent five years and additional years if necessary to reflect the likely range of variability of default rates, including a representative mix of good and bad years (ECB Guide, Credit Risk, Section 16.2.3, para 236; EBA GL on PD and LGD, Section 5.3.4, para 82-83).  
 \* \*\*Adjustments:\*\* Where the historical observation period is not representative, appropriate adjustments are made to the observed average default rates to estimate the LRA default rate, with upward adjustments for under-represented bad years (ECB Guide, Credit Risk, Section 16.2.3, para 235-236; EBA GL on PD and LGD, Section 5.3.4, para 85).  
 \* \*\*Reference LRA DR:\*\* The Bank compares its LRA DR with a reference LRA DR (e.g., January 2008-December 2018 timeframe) to assess the appropriateness of its historical observation period and LRA DR quantification (ECB Guide, Credit Risk, Section 16.2.3, para 237-238).  
\* \*\*Calibration to LRA Default Rate:\*\*  
 \* The PD estimates are calibrated to the LRA default rate, considering overrides and before applying MoC or regulatory floors (EBA GL on PD and LGD, Section 5.3.5, para 89).  
 \* Calibration tests are performed at both grade/pool level and calibration segment level to ensure consistency (ECB Guide, Credit Risk, Section 16.2.3, para 240, 242).

### 6. Loss Given Default (LGD) Model Development and Quantification

#### 6.1. LGD Estimation Methodologies  
\* \*\*Workout LGD:\*\* LGD estimates are primarily based on the Bank's own loss and recovery experience from residential mortgage defaults, consistent with its collection and recovery policies (EBA GL on PD and LGD, Section 6.1.1, para 102, 105).  
\* \*\*Multiple Defaults:\*\* For a single residential mortgage facility, if the time between return to non-defaulted status and subsequent default is less than nine months, it is treated as a continuously defaulted exposure (EBA GL on PD and LGD, Section 6.1.1, para 101).  
\* \*\*Data Requirements:\*\* The Reference Data Set (RDS) includes comprehensive information on all residential mortgage defaults, including cash flows, costs, collateral details (valuation, type, realization process), and relevant risk drivers (EBA GL on PD and LGD, Section 6.1.2, para 107-109).

#### 6.2. Risk Drivers for LGD  
\* \*\*Transaction-related:\*\* Type of residential property, geographical location of the property, LTV ratio, exposure size, seasoning, and recovery procedures specific to residential mortgages (EBA GL on PD and LGD, Section 6.2.1, para 121).  
\* \*\*Collateral Valuation:\*\* The value of the collateral at the reference date does not reflect the impact of the decrease in credit quality shortly before default (EBA GL on PD and LGD, Section 6.2.1, para 122).  
\* \*\*Climate-related and Environmental Risks:\*\* Where relevant and material, these are included as risk drivers (ECB Guide, Credit Risk, Section 17.2.1, para 281).

#### 6.3. Eligibility and Inclusion of Collaterals  
\* \*\*Eligible Collateral:\*\* All types of collateral, including immovable property, are recognized in LGD estimations if internal requirements for collateral management, legal certainty, and regular valuation are met (EBA GL on PD and LGD, Section 6.2.2, para 124).  
\* \*\*Inclusion in Estimation:\*\* The impact of collaterals is reflected in LGD estimates, avoiding bias from inappropriate treatment of cash flows or valuation. Separate recovery rates may be estimated for specific collateral types (EBA GL on PD and LGD, Section 6.2.3, para 129).  
\* \*\*Repossession:\*\* Repossession of collateral (e.g., residential property) is treated as a recovery. An appropriate haircut is applied to the repossession value to reflect potential sales prices, costs, and market liquidity, under the assumption of immediate sale (EBA GL on PD and LGD, Section 6.1.3, para 116-117).

#### 6.4. LGD Quantification  
\* \*\*Economic Loss and Realised LGD:\*\* Calculated for each defaulted residential mortgage exposure as the ratio of economic loss to the outstanding amount at default. Economic loss includes principal, interest, fees, and material direct/indirect costs, discounted to the moment of default (EBA GL on PD and LGD, Section 6.3.1.1, para 131-132).  
 \* \*\*Treatment of Fees, Interest, and Additional Drawings:\*\* Fees and interest capitalized before default are included. Additional drawings after default are included in the economic loss and, if reflected in CCFs, in the denominator of realised LGD (EBA GL on PD and LGD, Section 6.3.1.2, para 137-142).  
 \* \*\*Discounting Rate:\*\* A fixed annual discounting rate (3-month EURIBOR or comparable liquid interest rate + 5%-points add-on) is applied to all recoveries, costs, and additional drawings after default (EBA GL on PD and LGD, Section 6.3.1.3, para 143).  
 \* \*\*Costs:\*\* All material direct and indirect costs related to the recovery process, including those incurred before default, are included (EBA GL on PD and LGD, Section 6.3.1.4, para 144-146).  
\* \*\*Long-Run Average LGD:\*\* Calculated as an arithmetic average of realised LGDs, weighted by the number of defaults, over a broad historical observation period (EBA GL on PD and LGD, Section 6.3.2.2, para 149-150).  
\* \*\*Treatment of Incomplete Recovery Processes:\*\* Relevant information from incomplete recovery processes is conservatively taken into account. Future recoveries are estimated based on observed recovery patterns within a defined maximum recovery period for residential mortgages, reflecting expected timelines for property sales or other recovery actions (EBA GL on PD and LGD, Section 6.3.2.3, para 153, 156, 158-159).  
\* \*\*Treatment of Cases with No Loss or Positive Outcome:\*\* Realised LGDs are floored at zero at the individual observation level for the purpose of calculating observed average LGD and LRA LGD (EBA GL on PD and LGD, Section 6.3.2.4, para 160).  
\* \*\*Downturn LGD:\*\* LGD estimates are appropriate for an economic downturn, reflecting elevated loss rates during periods of significant financial stress, particularly in residential property markets. The identification of downturn periods and calibration of downturn LGD follows regulatory technical standards (ECB Guide, Credit Risk, Section 17.3.6, para 298-308).

### 7. Margin of Conservatism (MoC) and Appropriate Adjustment (AA)

The Bank incorporates a MoC into its risk parameter estimates for residential mortgages to account for expected estimation errors and uncertainties (ECB Guide, Credit Risk, Section 19, para 325; EBA GL on PD and LGD, Section 4.4.3, para 41).

#### 7.1. Identification of Deficiencies  
All deficiencies related to data, methodology, changes in underwriting standards, recovery policies, or external environment that lead to bias or increased uncertainty in residential mortgage risk quantification are identified and classified into three categories:  
\* \*\*Category A:\*\* Data and methodological deficiencies (e.g., missing or inaccurate LTV data, outdated property valuations) (EBA GL on PD and LGD, Section 4.4.1, para 36(a), 37(a)).  
\* \*\*Category B:\*\* Changes in processes or external environment (e.g., changes in mortgage lending standards, new foreclosure laws, unforeseen property market shifts, material climate-related events affecting property values) (EBA GL on PD and LGD, Section 4.4.1, para 36(b), 37(b)).  
\* \*\*Category C:\*\* General estimation error (EBA GL on PD and LGD, Section 4.4.3, para 42).

#### 7.2. Appropriate Adjustment (AA)  
Adequate methodologies are applied to correct identified deficiencies and overcome biases in risk parameter estimates, resulting in the "best estimate" of the parameter. AAs can be positive or negative and are thoroughly documented and monitored (EBA GL on PD and LGD, Section 4.4.2, para 38-40).

#### 7.3. Quantification and Aggregation of MoC  
\* \*\*Quantification:\*\* MoC is quantified for each category (A, B, C) at the calibration segment level. Category A and B MoCs account for uncertainty not covered by AAs. Category C MoC reflects the dispersion of the statistical estimator (ECB Guide, Credit Risk, Section 19, para 327; EBA GL on PD and LGD, Section 4.4.3, para 43).  
\* \*\*Aggregation:\*\* The final MoC is the sum of MoCs from categories A, B, and C. It is added to the best estimate of the risk parameter and must be greater than or equal to zero for categories A and B, and strictly greater than zero for category C (EBA GL on PD and LGD, Section 4.4.3, para 45-47).  
\* \*\*Documentation and Monitoring:\*\* The MoC framework is fully documented, and MoC levels are regularly monitored. A plan is in place to rectify deficiencies and reduce estimation errors (EBA GL on PD and LGD, Section 4.4.3, para 49-51).

### 8. Model Performance Assessment and Validation

The Bank maintains a robust internal validation framework, independent of model development, to assess the accuracy, robustness, and stability of its residential mortgage IRB models (ECB Guide, Overarching Principles, Section 6, para 18-24; EBA GL on PD and LGD, Section 9, para 217).

#### 8.1. Scope and Frequency of Validation  
\* \*\*Annual Validation:\*\* All internal models and estimates for residential mortgages are subject to annual internal validation. For material rating systems, a "full validation" is performed at least once every three years (ECB Guide, Overarching Principles, Section 6, para 18; ECB Guide, Credit Risk, Section 4.3, para 52(g); EBA GL on PD and LGD, Section 9, para 218).  
\* \*\*Initial Validation:\*\* Validation of new models or material changes/extensions to approved models.  
\* \*\*Independence:\*\* The validation function is organizationally separate from the model development process, with adequate resources and qualified personnel (ECB Guide, Overarching Principles, Section 6, para 19-24).

#### 8.2. Validation Process and Content  
The validation process assesses the performance of residential mortgage rating systems using qualitative and quantitative methods, including:  
\* \*\*Back-testing:\*\* Comparison of risk estimates with realized default and loss rates (ECB Guide, Credit Risk, Section 4.3, para 52(i); EBA GL on PD and LGD, Section 9, para 218(c)(ii)).  
\* \*\*Discriminatory Power:\*\* Analysis to ensure the model appropriately separates riskier and less risky obligors/facilities, at both overall model and segmented levels (e.g., by LTV band, property location) (ECB Guide, Credit Risk, Section 4.3, para 52(ii); EBA GL on PD and LGD, Section 9, para 218(b)(i)).  
\* \*\*Representativeness Analysis:\*\* Checks on data representativeness, including the impact of changes in lending standards, property market conditions, and regulatory definitions (ECB Guide, Credit Risk, Section 4.3, para 52(iii); EBA GL on PD and LGD, Section 9, para 218(a)).  
\* \*\*Stability Analysis:\*\* Assessment of the stability of internal ratings and risk parameters over time, including obligor/facility migrations and concentration in rating grades (ECB Guide, Credit Risk, Section 4.3, para 52(v); EBA GL on PD and LGD, Section 9, para 218(b)(i)).  
\* \*\*Model Specifications and Design Stability:\*\* Challenge of model assumptions, methodology, and the homogeneity of rating grades (ECB Guide, Credit Risk, Section 4.3, para 52(vi)).  
\* \*\*Input Data Evaluation:\*\* Ensuring reliability and timeliness of input data, including property valuations and default identification (ECB Guide, Credit Risk, Section 4.3, para 52(vii)).  
\* \*\*Benchmarking Analysis:\*\* Comparison with up-to-date external data from representative and comparable sources, especially for low-default segments of residential mortgages (ECB Guide, Credit Risk, Section 4.3, para 52(viii)).  
\* \*\*Overrides Analysis:\*\* Monitoring and assessment of human overrides on rating assignments, evaluating their impact on model performance (ECB Guide, Credit Risk, Section 4.3, para 52(iv), Section 6.6.3, para 92; EBA GL on PD and LGD, Section 8.2, para 206).

#### 8.3. Reporting and Follow-up  
Validation results, including conclusions, recommendations, and identified deficiencies, are reported to Senior Management and the Management Body. A process is in place to decide on remediation measures, assign responsibilities, define timelines, and track implementation (ECB Guide, Credit Risk, Section 4.4, para 56-59).

### 9. Model Implementation and Change Management

#### 9.1. IT Systems and Implementation Testing  
The Bank ensures that its IT infrastructure supports the residential mortgage IRB models, including timely and accurate calculation of risk parameters and RWEAs. Comprehensive testing (unit, integration, system, user acceptance, regression) is performed upon initial implementation and ongoing basis for model changes (ECB Guide, Credit Risk, Section 8.2.2, para 121-122, and Section 8.2.3, para 123-126).

#### 9.2. Management of Changes to the IRB Approach  
All changes to the residential mortgage rating systems (range of application, methodology, data) are subject to a robust change policy, aligning with `Commission Delegated Regulation (EU) No 529/2014` (ECB Guide, Credit Risk, Section 7, para 97).  
\* \*\*Materiality Assessment:\*\* Changes are assessed and classified as material, ex-ante non-material, or ex-post non-material, based on quantitative and qualitative criteria defined in the change policy. The policy specifies metrics and significance levels for impact assessment (ECB Guide, Credit Risk, Section 7.2, para 98).  
\* \*\*Notification/Application:\*\* The Bank uses standardized templates for notifying or applying for supervisory permission for changes.  
\* \*\*Re-rating Process:\*\* For material changes, an immediate re-rating process is implemented. If not possible (e.g., for non-retail segments requiring manual input), a re-rating plan (maximum 12 months) is established, with RWEA impact adjustments applied if the change leads to a material increase (ECB Guide, Credit Risk, Section 7.6, para 113-114).

#### 9.3. Use Test  
Internal ratings and default/loss estimates for residential mortgages play an essential role in the Bank's risk management, credit approval, internal capital allocation, and corporate governance functions (ECB Guide, Credit Risk, Section 6.2, para 69-70).  
\* \*\*Integration:\*\* Internal ratings are incorporated into credit granting, restructuring, renewal processes, and lending policies (ECB Guide, Credit Risk, Section 6.3, para 74).  
\* \*\*Consistency:\*\* While parameters for internal purposes may deviate from regulatory parameters (e.g., no MoC, no regulatory floors, no downturn adjustment), rank ordering of obligors/exposures must remain consistent (EBA GL on PD and LGD, Section 8.3, para 208).

### 10. Outsourcing and Third-Party Involvement

The Bank ensures that any third-party involvement in residential mortgage IRB model-related tasks (e.g., data provision, model development, validation) complies with all regulatory requirements and internal policies (ECB Guide, Overarching Principles, Section 11, para 80).  
\* \*\*Contractual Requirements:\*\* Outsourcing agreements include provisions for supervisory access to information, support for the Bank, and maintenance of in-house knowledge (ECB Guide, Overarching Principles, Section 11.2, para 81).  
\* \*\*In-house Knowledge:\*\* The Bank maintains adequate in-house knowledge and core competence to identify, manage, and monitor risks associated with outsourced tasks, especially for complex residential mortgage models (ECB Guide, Overarching Principles, Section 11.3.3, para 87-89).  
\* \*\*Monitoring:\*\* Independent monitoring of third-party performance, including data quality checks and adherence to SLAs, is conducted (ECB Guide, Overarching Principles, Section 11.3.4, para 91-92).

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\*\*References to User Provided Regulatory Documents:\*\*

\* `ECB Guide to Internal Models (July 2025)`: Referenced throughout as "ECB Guide".  
\* `EBA Guidelines on PD Estimation, LGD Estimation and Treatment of Defaulted Exposures (EBA/GL/2017/16)`: Referenced throughout as "EBA GL on PD and LGD".  
\* `2021\_5830 Reporting of residential mortgage loans on C80.00`: Specifically integrated into Section 4.1 "Risk Differentiation and Segmentation" to highlight the importance of LTV ratios.