IRB[1] FILE FOR CALCULATING THE MINIMUM CAPITAL REQUIREMENTS FOR CREDIT RISK

Banking groups that wish to use IRB approaches in their calculation of the minimum capital requirements for credit risk under the new Capital Framework (Basel II), must participate in the validation processes established by the Banco de España. To participate in the said processes, the group's parent entity will have to forward the information[2] included in this file to the Directorate General Banking Supervision together with a letter stating their intention to use the advanced approaches for regulatory purposes (Annex 1)[3].

The information contained herein aims to make known the level of compliance with the minimum requirements established by Basel II for the use of IRB approaches and to determine if institutions will be able to meet these requirements.

Institutions must prepare their systems to use the standardised approach, in case the Banco de España does not accept the submitted IRB approach proposal.

Furthermore, institutions will also have to be prepared to make the capital requirement calculations in accordance with the new standardised approach for those exposures not initially included in the IRB approach (either because the roll-out plan provides for their inclusion at a later stage or for reasons of immateriality[4]).

The following considerations should be taken into account when filling in the information detailed below with respect to the IRB approach:

1. One IRB File should be completed for each institution subject to consolidation that intends to use advanced approaches[5]. However, in the event that the rating systems are the same for various institutions and are used without distinction in each of them, then the completion of only one IRB File for those institutions would be acceptable, although this circumstance should be clearly indicated.

   If more than one internal credit risk model[6] has been developed for a specific institution and segment (asset class and sub-class according to the Basel II definition)[7], the corresponding section should be duplicated for the purpose of filling in the required information for each of the models.

2. Furthermore, for each of the models that institutions intend to use for regulatory purposes, a specific internal audit report and an additional report from an external auditor (the scope of which are detailed in Annex 3 and 4 respectively) should also be included. When necessary, these reports should be updated biannually and forwarded to the Banco de España until the approval of the proposed approach.

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[1] *The Internal Ratings-Based Approach*. Discussed in Section III of Part 2 of the June 2004 document "International Convergence of Capital Measurement and Capital Standards: A Revised Framework" (paragraphs 211 to 537) and in Section IV on the Securitisation Framework (paragraphs 538 to 643).

[2] If necessary, the information forwarded by the institutions will comply with whatever is established by future European and Spanish regulations.

[3] For institutions which are subsidiaries of foreign banking groups, the subsidiaries themselves or, if applicable, the Spanish institution responsible for the consolidation in Spain will forward this information to the Banco de España.

[4] These will have to be substantiated before the Banco de España.

[5] In the case of institutions which are subsidiaries of foreign banking groups, one IRB File should be completed for each Spanish institution that wishes to use the IRB approach when the new Capital Framework comes into force.

[6] In this case, this decision must be justified to the Banco de España.

[7] Paragraph 215.

3. For those exposures initially treated using the standardised approach, and which in the future will be treated using advanced approaches in accordance with the roll-out plan, a first version of the IRB File and the first internal and external auditors´ reports will be sent to the Banco de España together with the letter stating the intention to use IRB approaches. One year before the planned date of implementation of the advanced approaches, an updated version of the IRB File will be delivered to the Banco de España and the frequency of the auditors´ reports will become biannual, until the proposed approach has been approved by the Banco de España.

4. The purpose of this file is not to replicate the minimum requirements pursuant to the new Framework, rather it is understood that all submitted documentation must comply with these requirements.

5. Any additional information to that mentioned in this document which the institution considers relevant for assessing compliance with the minimum requirements for the application of the IRB approach should also be provided.

6. Institutions that intend to use the FIRB approach should disregard Sections IV.B.8.5, IV.C.13, V.C.8, V.C.9 and V.C.10, which clearly state that they refer solely to the AIRB approach.

7. Institutions should be prepared to provide the Banco de España at any time with the calibration[8] and current exposures databases[9] used as the basis for the calculations referred to in this file.

[8] The calibration databases are those that serve to calibrate the model, i.e. to obtain estimates of PDs, LGDs and, if applicable, EADs (CCFs).

[9] Minimum requirements that these databases must comply with are detailed in Annex 2.

CONTENTS:

I. Classification of exposures 4
II. Implementation of the IRB approach for different types of assets (roll-out) 4
III. Estimation of the minimum regulatory capital requirements 5
IV. Credit risk mitigation techniques (CRMTs) 5
A. General information 5
B. Collateral 5
C. Guarantees. 7
D. Credit derivatives 7
E. Netting agreements. 8
F. CRM pools 8
G. Leasing 8
V. Corporate, sovereign, and bank exposures. 8
A. Portfolio definition 8
B. Rating system 9
C. IRB inputs 9
D. Model outputs 11
E. Internal validation 11
F. Technological environment, information systems and maintenance 12
G. Qualitative aspects 12
H. Internal controls 13
I. Independent reviews 13
J. Weaknesses and future developments 13
VI. Retail exposures 13
A. Portfolio definition 13
B. Rating system: 13
C. IRB inputs. 14
D. Model outputs 16
E. Internal validation 16
F. Technological environment, information systems and maintenance 16
G. Qualitative aspects 17
H. Internal controls 17
I. Independent reviews 17
J. Weaknesses and future developments 17
VII. Equity exposures 18
A. Portfolio definition 18
B. Information on PD/LGD approaches 18
C. Information on internal models 18
VIII. Treatment of purchased receivables 20
A. Overview 20
B. Default and dilution risk. 20
IX. Treatment of securitisation exposures 21
A. Scope of application. 21
B. Recognition of risk transference 21
C. Deductions and implicit support. 22
D. Ratings-based approach (RBA) 22
E. Internal assessment approach (IAA) 22
ANNEX 1 Letter stating the intention to use IRB approaches 23
ANNEX 2 Minimum requirements for calibration and current exposures databases 25
ANNEX 3 Specific internal audit report 28
ANNEX 4 Specific report of an external auditor 30
ANNEX 5 Classification of exposures 32
ANNEX 6 Approaches intended to be used 34
ANNEX 7 Roll-out plan 35

I. Classification of exposures

1 Describe the segmentation used in the framework of the internal management of the institution and the mapping process for assigning exposures to the regulatory segments (asset classes and sub-classes) established in Basel II.

The asset classes are:

- Corporate exposures
- Sovereign exposures
- Bank exposures
- Retail exposures
- Equity exposures

Within corporates, there are five sub-classes for specialised lending:

- project finance
- object finance
- commodities finance
- income-producing real estate
- high-volatility commercial real estate

and three for retail:

- residential mortgage exposures
- qualifying revolving retail exposures.
- other retail exposures.

It is also necessary to identify which exposures to SMEs are treated as corporate and which as retail.

Exposures corresponding to securitisation positions and exposures treated as eligible purchased receivables should also be identified.

In Annex 5, there is a table that must be completed in order to comply with the information requirements of this section.

2 With regard to securitisation exposures, it is necessary to define the portfolios to which the underlying assets belong and, where the institution acts as an originator bank, the exposure that corresponds to the securitised assets should be indicated, distinguishing between traditional and synthetic securitisations.

Describe the institution's securitisation policy and future plans.

3 Furthermore, the different rating systems that will be applicable to each segment must be detailed.

II. Implementation of the IRB approach for different types of assets (roll-out)

1 Specify the approach adopted for the different classes and sub-classes of assets established by Basel II, according to the table in Annex 6.

2 For material exposures to which the IRB approach will not initially be applied, an implementation plan, clearly specifying the anticipated timetable, should be provided, using the table in Annex 7.

III. Estimation of the minimum regulatory capital requirements

1 For each of the segments, provide a table with all the average risk parameter estimates, expected losses, related accounting provisions, and the regulatory capital requirements resulting from these estimates.

IV. Credit risk mitigation techniques (CRMTs)

A. General information

1 Describe the procedures used to assign credit risk mitigation techniques (CRMTs) to the exposures.

2 It is essential for the institution to have and provide:

2.1 The pertinent tests to ensure that it is possible to legally enforce guarantees at any time.

2.2 The documentation used in collateralised transactions.

2.3 The risk manual describing the calculation methodologies developed and the guarantee monitoring and control system.

2.4 Information on where the financial collateral may be found, ensuring that the institution where these assets are deposited is cognizant of them and considers them to be effective CRM for the loans granted.

3 If shares in UCITs are provided as CRMT, it is necessary to demonstrate that the underlying securities are liquid and listed.

4 The analyses performed on the correlation existing between the risk mitigation technique and the quality of the counterparty.

5 Definition of maturity. Description of the methods used to calculate the maturity of the underlying and the risk mitigation technique as well as its application in capital calculations.

6 Description of the procedures and processes established to control residual risks that may increase with the application of risk mitigation techniques.

B. Collateral

7 Collateral in the comprehensive approach.

7.1 General considerations.

7.1.1 Specify the procedures established to apply haircuts (H)[10].

[10] If own models are used, it is necessary to apply them to all exposures, unless the excluded amount is immaterial.

7.1.2 Description of the procedure established to identify collateral with haircuts equal to zero (H equals 0).

7.2 Supervisory haircuts. Description of the procedure established to:

7.2.1 Identify the haircut corresponding to each collateral and its exposures.

7.2.2 Apply adjustments for different maintenance periods and the revaluation or readjustment of margins.

7.2.3 Adjust the exposures for maturity mismatches.

7.3 Own estimates of haircuts.

7.3.1 Details of the haircuts applied by the institution, which should take into account, at least, the type of instrument, the type of transaction, the frequency of revaluation, and the frequency of remargining.

7.3.2 Description of all processes used for the haircut calculations. It is necessary to describe the controls and procedures used in the risk measurement system.

7.3.3 Description of the procedures established to:

a. Identify the haircut corresponding to each collateral and its exposures.

b. Apply the adjustments for different maintenance periods and the revaluation or readjustment of margins.

c. Adjust the exposures for maturity mismatches.

7.3.4 A report prepared by internal audit[11] on the review of the risk measurement system covering at least the following:

- its integration in daily risk management;

- the validation of any significant change in the risk measurement process;

- the accuracy and completeness of data;

- verification of the consistency, punctuality, and reliability of the sources of data used in the functioning of internal models, as well as their independence;

- the accuracy and adequacy of volatility assumptions.

7.3.5 Description of the procedure used to apply netting agreements in repo style transactions. In this section, it is necessary to include those that have been executed, detailing all related documentation and substantiating its fulfilment of the necessary conditions.

7.3.6 The institution's policies with respect to collateralised OTC derivative transactions.

7.4 VaR methodology (for repos only):

7.4.1 Indicate if the institution has an approved internal model for calculating the minimum regulatory capital for market risk or if it has submitted an application for its approval to the Banco de España.

7.4.2 Indicate if the institution wants to apply an internal model for repo-style transactions, even though it has not been approved. In this case, it is necessary to make a separate approval request according to the procedures established by the Banco de España in this respect.

[11] This is not the specific internal audit report whose minimum scope is detailed in Annex 3.

7.5 Where collateral pools are used, a description of the procedures established for their application is required.

8 Eligible IRB collateral.

8.1 Details of the CRE/REE collateral used by the institution. It is also necessary to include the documentation justifying their application as a risk mitigation technique, particularly with respect to market price valuations and revaluations.

8.2 Description of the procedures set up for the management of eligible financial collateral pursuant to the IRB methodology.

8.3 If other eligible IRB collateral is used, the institution must substantiate that these comply with requirements.

8.4 Treatment of the risk mitigation techniques in purchased receivables, detailing the methodology used to make a distinction between the default risk /dilution risk secured.

8.5 (For the AIRB approach only)

8.5.1 Description of the methodology used for the recognition of collateral in loss estimates.

8.5.2 Segmentation by type of collateral of internal LGD estimates.

8.5.3 Detail of the treatment of netting agreements for repo transactions.

C. Guarantees

9 Procedures established to ensure the general and specific [12] requirements for the recognition of this type of risk mitigation technique (direct, explicit, irrevocable, and unconditional) are complied with.

10 Analyses developed to ensure there is no correlation between the guarantors and the counterparties for whom the guarantees are given.

11 Description of the treatment for partial coverage.

12 Describe the methodology used to ensure that the internal rating assigned to a counterparty is equal to or higher than A-.

13 *(For the AIRB approach only)* If the advanced models (AIRB) are applied, it is necessary to include a description of the methodology used to take into account these guarantees in the risk parameter calculation (PD or LGD).

D. Credit derivatives

14 Description of the credit derivatives contracted, describing their type (CDS, TRS, etc).

15 Controls established to ensure that the definition of credit events reflected in the derivative complies with the requirements established in the new Framework.

16 Detail of the treatment used for residual risk calculations as well as their management.

[12] These requirements depend on the methodology applied, FIRB or AIRB.

E. Netting agreements

17 Procedures ensuring compliance with the necessary requirements for netting transactions.

18 It is necessary to substantiate the ability to identify all on-balance and off-balance sheet positions of the institution with any counterparty. Consequently, the processes used must be described.

19 Details of the procedures established for the joint management of all positions with any given counterparty.

F. CRM pools

20 Description of the processes established for CRM technique pools.

G. Leasing

21 Details of all leasing transactions treated as collateralised exposures and those in which the institution is exposed to residual value risks.

V. Corporate, sovereign, and bank exposures

The following information must be provided for each of these segments:

A. Portfolio definition

1 A definition of the portfolio distinguishing in the case of corporates, the five types of specialised lending (SL) and exposures to SMEs.

It is necessary to classify in detail the portfolio subject to analysis, describing (by including the number of transactions and the risk volume) its origin and how it has reached its current composition. Among other aspects, it is necessary to detail:

- original applications,
- migration to new applications (if any),
- channels used to capture transactions,
- the breakdown (current and historical) of the portfolio by maturity, product, etc.

2 With respect to specialised lending, the institution must specify the approach applied to each asset sub-class.

If it has been decided to apply supervisory slotting criteria to any of the SL sub-classes, the following sections B, C, and D should be disregarded for these exposures. In this case, the institution will provide:

- A description of the transaction granting process (specifying the functions of analysts and risk managers) and the implications of the internal risk ratings with respect to said granting process.

- The internal rating system manuals as well as the people responsible for their maintenance and approval.

- A detailed description of the mapping of exposures to the supervisory categories established by the supervisory slotting criteria method.

B. Rating system

3 Design of the rating system:

3.1 Structure of the rating system: breakdown of current obligors according to two dimensions (the borrower's default risk and specific transaction related factors) showing the distribution (current and historical) of risks among the different classes.

3.2 Model description:

- type of model (expert-based rating, replicas of external ratings, etc.).
- variables used (specifying the frequency with which they are obtained).
- methodology used in its construction (multi-variate analysis, LOGIT/PROBIT, neural networks, expert opinions…) indicating the time horizon considered.
- Indicate the role of the analyst's judgement in determining the rating.

3.3 If there are any unrated exposures[13], quantify them and describe in detail the reasons for this circumstance, as well as the treatment planned for them.

3.4 Modifications in the method used to classify transactions, for example, changes in weighting of ratings, indicating the dates of relevant events. If there have been any modifications, describe the procedures established to reassess old obligors.

3.5 Document the warning systems in place and their integration with the rating system.

3.6 Measurements of the discriminatory power of the rating system and their historical evolution. In general, it is possible to make a judgement with respect to the discriminatory power of the rating/scoring system using various indices (accuracy ratio/area under the ROC curve, the Kolmogorov-Smirnov statistic, chi-square tests, etc.).

4 Use of the rating system:

4.1 Description of the transaction approval process (differentiating the analysts' and risk managers' functions), including the use of the rating in such approval process.

4.2 Period of application and functioning of the model, attaching a table summarising the rating system's historical activity, indicating the customers rated each year.

4.3 Frequency of assignment and rating reviews.

4.4 Treatment of exceptions, and a summary, by type of transaction, of transactions approved without following regular procedures.

5 Rating system documentation. A manual detailing the functioning of the rating system should be attached as an annex.

C. IRB inputs

6 A summary table with the average risk parameters (PD, LGD, EAD and M) by rating grade, as well as the on-balance sheet exposure and the number of transactions corresponding to each grade.

7 Estimation of the probability of default (PD).

[13] This situation should be temporary and exceptional.

7.1 The definition of default used to estimate the PDs, specifying those situations that the institution considers subjective defaults[14], describing the adjustment (if necessary) made to align this definition with the regulatory one.

Identify any modifications to the time frame considered in the default definition used.

7.2 Technical defaults: The definition of what is considered a "material credit obligation to the banking group" in the definition set forth in paragraph 452 should be properly documented.

7.3 Calculation method used to estimate the parameter.

7.4 The latest PD estimates and their historical values.

7.5 Detailed description of the database used to calculate PD estimates (periods covered, variables...)[15], specifying the external sources used.

8 (*For the AIRB approach only*) Estimation of the loss given default (LGD).

8.1 The definition of default used to estimate the LGDs and the adjustments made (if necessary) to align this definition with the regulatory one.

8.2 Detailed description of the concept of loss used, identifying any changes in the definition over time that could have an impact on data comparability and/or the model's predictive power.

8.3 Calculation method used to estimate the parameter.

8.4 The latest LGD estimates and their historical values.

8.5 Detailed description of the database[16] used to estimate the parameter (periods covered, variables, etc.), specifying the external sources used.

9 (F*or the AIRB approach only*) Credit Conversion Factor (CCFs).

9.1 The definition of default used to estimate CCFs and the adjustments made (if necessary) to align this definition with the regulatory one.

9.2 Calculation method used to estimate the parameter.

9.3 The latest CCF estimates and their historical values.

9.4 Detailed description of the database[17] used to estimate the CCFs (periods covered, variables, etc.) specifying the external sources used.

10 (*For the AIRB approach only*) Details of the procedures established to calculate the effective maturity (M).

11 Risk mitigation techniques. In addition to what is set forth in Section IV:

[14] Paragraph 452: "The bank considers that the obligor is unlikely to pay its credit obligations to the banking group in full, without recourse by the bank to actions such as realising security (if held)".

[15] Minimum database requirements are detailed in Annex 2.

[16] Minimum database requirements are detailed in Annex 2.

[17] Minimum database requirements are detailed in Annex 2.

11.1 Define and explain the methodologies used, quantifying the volume of exposures affected.

11.2 Guarantees and credit derivatives: describe the guarantees and the adjustments made, indicating if these were to the PD or the LGD, quantifying the exposures affected and evidencing compliance with the requirements established in the new Framework[18].

11.3 The institution must quantify, in terms of the number and amount of exposures, the transactions subject to netting and justify this treatment.

12 Exposures.

12.1 Detailed description of the rating process used to classify current exposures[19] into homogeneous grades, for applying the CCFs and obtaining the EADs.

12.2 Analysis of the current breakdown of the portfolio by internal risk classes and types of instrument, before and after applying the CCFs and, where applicable, the CRMTs[20].

D. Model outputs

13 A table including, for each rating grade:

- the expected loss,
- related accounting provisions, and
- the regulatory capital requirements resulting from these estimates.

14 Identification and description of the processes that use the model outputs; including at least:

- transaction approval,
- pricing,
- limits, and
- economic capital

15 In those situations in which the risk parameters used internally are not the same as those applied in the regulatory capital calculations[21], it will be necessary to document and explain the rationale behind the criteria used.

E. Internal validation

16 List the studies carried out and the units responsible for them.

16.1 Comparisons with other similar portfolios (internal and external) and benchmarking.

16.2 Stress-tests performed (type, description of data and results).

16.3 Backtesting.

[18] Paragraphs 109 et seq. for the standard approach and 289, 293, 294, 298, 302, 307, 316 and 480 to 490 for the IRB approach.

[19] These exposures should be reconciled with the accounts.

[20] In those cases in which the CRMTs are applied to the value of the exposure.

[21] For example, for pricing, establishing limits and other internal uses of the model, it is possible to use an estimation time horizon that differs from the regulatory one.

16.4 Analysis of the stability of the outputs (confidence intervals, bootstrapping, etc.). It is necessary to include *out-of-sample*[22] and *out-of-time*[23] tests for the statistical validation of the model.

16.5 Sensitivity analysis of final outputs (regulatory capital, expected loss, etc.) carried out to quantify the impact on the minimum capital requirements of changes in the parameters or in the model hypotheses.

16.6 Analysis of the transition matrix by type of rating and its values in recent years.

F. Technological environment, information systems and maintenance

17 Description of the technological environment, information systems, and applications that enable the model to be used effectively.

18 Explain the processes used to obtain the information required by the model from the institution's applications and databases, attaching existing technical documentation.

19 Identification and description of the external sources used by the model.

20 Define the processes established to periodically obtain the regulatory capital requirements.

21 Description of the applications used to store information relating to the rating system, the estimated parameters and any other relevant aspect, indicating the units responsible.

G. Qualitative aspects

22 Summary of the bank's credit policies (for approving and renewing transactions and for pricing) and the delegation of responsibilities.

Describe those situations in which the bank is trying to enter new market segments.

23 The involvement of the board and senior management, providing documents that reflect the approval of the model at the appropriate hierarchical level.

24 Organisational structure describing the responsibilities and functions of the various areas involved in the management and control of this risk, as well as the committees that have been established.

25 Details and qualifications of human resources in all the areas involved in risk control and measurement.

26 A list and brief description of the reports based on data generated by the model, in particular the reports submitted to the board and senior management and management reports.

27 A list of existing manuals on methodological aspects, information systems, policies, and procedures.

[22] *Out-of–sample tests*: these involve the use of a sub-group of available data to adjust the model and observe what happens to the different risk parameter (stability) estimates and the predictive power.

[23] *Out-of-time tests*: these aim to verify that the model continues to have predictive power in the analysed time interval (the one excluded from the sample) and analyse the stability of the estimates over time.

H. Internal controls

28 Description of the internal controls applied to ensure consistency in the approval of transactions, the reliability of the data used in the analysis of transactions, etc. It is necessary to indicate the responsible units and their functions.

I. Independent reviews

29 In addition to attaching the specific reports mentioned in Annex 3 and 4, it is also necessary to detail any other action performed by the bank's internal audit department or by external auditors.

30 Other independent reviews (external auditors, consultants), including studies carried out.

J. Weaknesses and future developments

31 Description of the known weak points of the model and the timetable for addressing them.

32 Details of anticipated changes in or future plans for the models and systems used to measure and control the risks arising from this portfolio.

VI. Retail exposures

A. Portfolio definition

1 Portfolio definition, distinguishing the three segments established in Basel II:

- residential mortgage exposures
- qualifying revolving retail exposures, and
- other retail exposures.

The institution should make a detailed description of the portfolio analysed, specifying (with data on the number of transactions and volume of risk) its origin and how it has reached its current composition. Among other aspects, the following should be detailed:

- original applications
- migration to new applications (where applicable)
- channels to capture transactions
- breakdown of exposures (current and historical) by LTV[24], maturity, product, etc.

B. Rating system

2 Design of the rating system:

2.1 Structure of the rating system: definition of the different exposure pools, indicating the distribution (current and historical) of risks among the different pools, both in terms of the number of customers and amount of exposures.

2.2 Model description:

- type of model (socio-demographic scoring, behaviour scoring, etc.),
- variables used (specifying the frequency with which they are obtained).

[24] Loan to value ratio: ratio of the amount lent to the initial valuation of the property.

- methodology used in its construction (multivariate analysis, LOGIT/PROBIT, neural networks, expert opinion, etc.) indicating the time horizon considered.

2.3 Describe how changes in the risk are taken into account when the rating system considered is a credit scoring system.

2.4 If there are any unrated exposures[25], quantify them and describe in detail the reasons for this circumstance, as well as the treatment planned for them.

2.5 Modifications in the method used to classify transactions, for example, changes in weighting of variables, indicating the dates of relevant events. If there have been any modifications, describe the procedures established to reassess old obligors/transactions.

2.6 Document the warning systems in place.

If the rating system is a behaviour scoring system, describe how the two systems are integrated.

2.7 Measurements of the discriminatory power of the rating system and their historical evolution. In general, it is possible to make a judgement with respect to the discriminatory power of the rating/scoring system using various indices (accuracy ratio/area under the ROC curve, the Kolmogorov-Smirnov statistic, chi-square tests, etc.).

3 Use of the rating system:

3.1 Description of the transaction approval process (differentiating the analysts' and risk managers' functions), including the use of the rating in such approval process.

If the rating system is a behaviour scoring system, describe the process for monitoring the transactions.

3.2 Period of application and functioning of the model, attaching a table summarising the historical activity of the rating system, indicating the transactions requested and approved each year.

3.3 Treatment of exceptions, and a summary, by type of transaction, of transactions approved without following regular procedures.

4 Documentation of rating system. A manual detailing the functioning of the rating system should be attached as an annex.

C. IRB inputs

5 A summary table with the average risk parameters (PD, LGD, EAD) by pool of transactions, as well as the on-balance-sheet exposure and the number of transactions corresponding to each pool.

6 Probability of default (PD).

6.1 The definition of default used to estimate the PDs, specifying those situations that the institution considers subjective defaults[26] and describing the adjustment (if necessary) made to align this definition with the regulatory one.

[25] This situation should be temporary and exceptional.

[26] Paragraph 452: "The bank considers that the obligor is unlikely to pay its credit obligations to the banking group in full, without recourse by the bank to actions such as realising security (if held)"

Identify any modifications to the time frame considered in the default definition used.

6.2 Technical defaults: the definition of what is considered a "material credit obligation to the banking group" in the definition set forth in paragraph 452, should be properly documented.

6.3 Calculation method used to estimate the parameter.

6.4 The latest PD estimates made and their historical values.

6.5 Detailed description of the database used to estimate the PDs (periods covered, variables, etc.)[27], specifying the external sources used.

7 Estimation of loss given default (LGD).

7.1 The definition of default used to estimate LGDs and the adjustments made (if necessary) to align this definition with the regulatory one.

7.2 Detailed description of the concept of loss used, identifying any changes in its definition over time that could have an impact on data comparability and/or the model's predictive power.

7.3 Calculation method used to estimate this parameter.

7.4 The latest LGD estimates and their historical values.

7.5 Detailed description of the database[22] used to estimate LGDs (periods covered, variables, etc.), specifying the external sources used.

8 Estimation of credit conversion factors (CCFs).

8.1 The definition of default used to estimate CCFs, and the adjustments made (if necessary) to align this definition with the regulatory one.

8.2 Calculation method used to estimate this parameter.

8.3 The latest CCF estimates and their historical values.

8.4 Detailed description of the database[22] used to estimate CCFs (periods covered, variables, etc.), specifying the external sources that were used.

9 Risk mitigation techniques. In addition to what is set forth in Section IV:

9.1 Define and explain the methodologies used, quantifying the volume of exposures affected.

9.2 Guarantees and credit derivatives: describe the guarantees and adjustments made, indicating if these were to the PD or the LGD, quantifying the exposures affected and evidencing compliance with the requirements established in the new Framework [28].

9.3 The institution must quantify, in terms of the number and amount of exposures, the transactions subject to netting and justify this treatment.

10 Exposures.

[27] Minimum database requirements are detailed in Annex 2.

[28] Section III.H of Part 2 and paragraphs 188, 474 to 477 and 479.

10.1 Detailed description of the rating process used to classify current exposures into homogeneous grades, for applying the CCFs and obtaining the EADs.

10.2 Analysis of the current breakdown of the portfolio by internal risk classes[29] and type of instruments, before[30] and after applying the CCFs and, if applicable, CRMTs [31].

D. Model outputs

11 A table including, for each pool of transactions:

- the expected loss
- related accounting provisions, and
- the regulatory capital requirements resulting from these estimates.

12 Identification and description of the processes that use the model outputs; at least:

- transaction approval,
- pricing,
- limits, and
- economic capital

13 In those situations in which the risk parameters used internally are not the same as those applied in the regulatory capital calculation [32], it will be necessary to document and explain the rationale behind the criteria used.

E. Internal validation

14 List the studies carried out and the units responsible for them.

14.1 Comparisons with other similar portfolios (internal and external) and benchmarking.

14.2 Stress-tests performed (type, description of data and results).

14.3 Backtesting.

14.4 Analysis of the stability of outputs (confidence intervals, bootstrapping, etc.). It is necessary to include *out-of-sample* [33] and out-of-time[34] tests for the statistical validation of the model.

14.5 Sensitivity analysis of final outputs (regulatory capital, expected loss, etc.) to quantify the impact on the minimum capital requirements of changes in the parameters or in the model hypotheses.

F. Technological environment, information systems and maintenance

15 Description of the technological environment, information systems, and applications that enable the model to be used effectively.

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[29] A risk class is understood to be a pool of transactions to which a single PD is assigned.

[30] These exposures should be reconciled with the accounts.

[31] In cases in which CRMTs are applied to the value of the exposure.

[32] For example, for pricing, establishing limits, and other internal uses of the model, it is possible to use a time horizon for the estimate different from the regulatory one.

[33] See note 21.

[34] See note 22.

16 Explain the processes used to obtain the information required by the model from the institution's applications and databases, attaching existing technical documentation.

17 Identification and description of the external sources used by the model.

18 Define the processes established to obtain periodically the regulatory capital requirements.

19 Description of the applications used to store information relating to the rating system, the estimated parameters and any other relevant aspect, indicating the units responsible.

G. Qualitative aspects

20 Summary of the bank's credit policies (for approving and renewing transactions and for pricing) and the delegation of responsibilities.

Describe those situations in which the bank is trying to enter new market segments.

21 The involvement of the board and senior management, providing documents that reflect the approval of the model at the appropriate hierarchical level.

22 Organisational structure describing the responsibilities and functions of the various areas involved in the management and control of this risk, as well as the committees that have been established.

23 Details and qualifications of human resources in all the areas involved in risk control and measurement.

24 A list and brief description of the reports based on data generated by the model, in particular the reports submitted to the board and senior management and management reports.

25 A list of existing manuals on methodological aspects, information systems, policies, and procedures.

H. Internal controls

26 Description of the internal controls applied to ensure consistency in the approval of transactions, the reliability of the data used in the analysis of transactions, etc. It is necessary to indicate the responsible units and their functions.

I. Independent reviews

27 In addition to attaching the specific reports mentioned in Annex 3 and 4, it is also necessary to detail any other action performed by the bank's internal audit department or by external auditors.

28 Other independent reviews (external auditors, consultants), including the studiescarried out.

J. Weaknesses and future developments

29 Description of the known weak points of the model and the timetable for addressing them.

30 Details of anticipated changes in or future plans for the models and systems used to measure and control the risks arising from this portfolio.

VII. Equity exposures

A. Portfolio definition

1 Identity which equity exposures are included and which are not included in the trading book.

2 For the equity not included in the trading book, the institution must identify the portfolios to which each of the approaches is to be applied (market based approaches —internal models and the simple risk weight method— and the PD/LGD approach), distinguishing that part corresponding to equity traded on a recognised stock exchange. Explain the reasons for the choice of treatment, taking into account the limits established by the supervisor.

Detail the instruments which make up the equity portfolio to which each of the approaches is to be applied. In particular, investments in funds are to be identified and their treatment specified.

B. Information on PD/LGD approaches

3 The institution must provide similar Information to that referred to in the FIRB approach of the corporate portfolio[35], Section V.

4 Details shall be provided of those cases in which the institution does not have enough information to calculate the PD and it is necessary to apply the 1.5 scaling factor.

5 Detailed information shall be provided on the portfolio with a 100% risk weight.

C. Information on internal models

6 Methodology of calculation:

6.1 Describe in the greatest possible detail the methodology or methodologies used, including the price series used, an explanation for the observation period and any adjustments made.

6.2 Indicate expressly how the model reflects the overall and specific risk, detailing its measurement methodology.

6.3 Justify the suitability of the internal models for the institution's activity and identify the assumptions and limitations of the measurement systems.

6.4 If proxies are used, the institution should provide detailed information about them as well as the mapping procedures established, documenting the analyses that demonstrate that the risks of the corresponding positions are adequately taken into account.

7 Model outputs:

7.1 Estimation of the minimum regulatory capital requirements.

7.2 Identification and description of the processes that use the model outputs, including their use in:

- The establishment of the critical rate of return on the investment and the consideration of alternative investments.

[35] Equity of companies that are included in the retail asset class is also subject to the minimum requirements of the FIRB approach for corporate exposures, assuming an LGD of 90%.

- The calculation and evaluation of the equity portfolio yield (including the risk-adjusted yield).
- The assignment of economic capital to equity positions.
- The limit structure.

7.3 In those situations in which the risk parameters used internally are different from those applied in the calculation of regulatory capital, the institution should explain and document the reasonableness of the criteria used.

8 Internal validation:

8.1 Studies performed and the departments responsible for said studies.

8.2 Stress-tests performed (type, description of data and results).

8.3 Backtesting.

8.4 Historical results of backtesting and stress-testing.

9 Technological environment, information systems and maintenance:

9.1 Description of the technological environment, information systems, and applications that enable the model to be used effectively.

9.2 Explain the processes used to obtain the information required by the model from the institution's applications and databases, attaching existing technical documentation.

9.3 Identification and description of the external sources used.

9.4 Define the processes established to obtain periodically the regulatory capital requirements.

9.5 Description of the applications used to store information.

10 Qualitative aspects.

10.1 The involvement of the board and senior management, providing documents that reflect the approval of the model at the appropriate hierarchical level.

10.2 Risk management policies for non-traded equity and the organisational structure, describing the responsibilities and tasks of the different departments involved in the management and control of this risk, as well as the committees established.

10.3 Details and qualifications of human resources in the departments concerned with this portfolio.

10.4 A list of authorised products and procedures in place for the use of new products.

10.5 A list and brief description of reports based on the data generated by the model, in particular the reports submitted to the board and senior management and management reports.

11 Internal controls:

11.1 Description of the internal controls that guarantee the portfolio mix, the reliability of data used to analyse transactions, etc. The institution must also identify the responsible departments and their duties.

11.2 Total risk assumed according to internal calculations performed.

12 Independent reviews:

12.1 Descriptive report and tests carried out by internal audit to review the risk control systems and, in particular, the measurement systems. Also a detailed description should be provided of the tests performed on the accuracy and rigour of the exposure data.

12.2 Other independent reviews (external auditors, consultants), including the studies carried out.

13 Weaknesses and future developments:

13.1 Description of the known weak points of the model and the timetable to address them.

13.2 Detail of anticipated changes in or future plans for the models and systems used to measure and control the risks arising from this portfolio.

VIII. Treatment of purchased receivables

A. Overview

1 Describe the products considered to be eligible purchased receivables. Determine the exposure corresponding to each of the categories of risk (retail, large corporations, etc.)

2 List the risk weight functions applied in each case. If hybrid purchased receivables (affected by different functions of risk) exist, it is necessary to specify which risk weight function is being applied.

3 Provide the minimum regulatory capital requirements for default risk and dilution risk for each of the pools considered.

4 If any credit risk mitigation techniques are used, describe the methodology used to determine the coverage of the default risk, the dilution risk or both. If guarantees are used, describe the procedures established to assign to each guarantor the corresponding risk function.

5 In order to use PD and LGD (or EL) estimates for eligible purchased receivables, compliance with the requirements imposed must be demonstrated[36].

B. Default and dilution risk

6 Retail:

6.1 For each homogeneous group, the estimates of the risk parameters must be included. In each case it should be specified whether internal data, external data or both are being used.

[36] Paragraphs 491 to 499.

6.2 Description of the methodology used to estimate expected loss due to dilution risk.

6.3 Quantify the minimum regulatory capital required for each homogeneous group for dilution risk.

7 Corporates:

7.1 Define the pools to which top-down methodology is applied.

7.2 Details must be given of the EL values estimated for each pool. If a size adjustment is being carried out, the details of this calculation must be included.

7.3 Description of the methodology used to estimate the expected loss due to dilution risk.

7.4 If the foundation approach is used, the institution must include details of the estimates of expected loss, PDs and the capital required for dilution risk that have been used, as well as the estimates of EAD and LGD.

7.5 When using the advanced approach, it is necessary to attach the calculation procedure used to estimate the risk parameters (PD, LGD and M), with details of the results obtained in each case, as well as the EAD calculations, with details of the amount of capital required for dilution risk..

IX. Treatment of securitisation exposures

A. Scope of application

1 Define, for each portfolio, the securitisations that affect it, indicating the date of each securitisation, the securitised volume and the outstanding risk corresponding to such securitisations as at the current date, as well as the percentage they represent of the total of each portfolio.

Also, the institution should indicate how the underlying assets (standardised approach, FIRB or AIRB) and securitisation exposures (standardised approach, IAA, SF, RBA, etc.) are treated.

2 The exposure amount and a description of all the "securitisation exposures" of the bank in each portfolio, both on the date of the securitisations and on the current date, indicating the type referred to (asset-backed securities, credit enhancements, liquidity facilities, etc.)

3 Procedures established to guarantee the correct classification of a structure as securitisation, in accordance with the requirements of the new Framework[37].

B. Recognition of risk transference. For each portfolio and securitisation:

4 Traditional securitisations.

4.1 Detail all relevant information about the securitisation that guarantees effective transference of the risk.

4.2 Attach the pertinent legal reports affirming that the assets have been isolated from the transferor, in such a way that the latter does not maintain effective or indirect control over the transferred positions.

[37] Paragraphs 553 to 559.

5 Synthetic securitisations.

5.1 Detail the structure used (collateral, guarantees, credit derivatives, etc.) that enables it to be recognised as a synthetic securitisation.

5.2 Legal opinions confirming the enforceability of the contracts in all pertinent jurisdictions.

6 Clean-up calls:

Procedures established to catalogue relevant clean-up calls in the group that do not require regulatory capital.

C. Deductions and implicit support

7 Description of all the deductions from capital due to securitisation transactions, detailing which ones they relate to and the amount deducted.

8 In the case of securitisation in which the institution provides implicit support, as defined in the Accord, it is necessary to describe the procedure to calculate the minimum regulatory capital.

D. Ratings-based approach (RBA)

9 If external credit assessments are used:

9.1 Attach a classification of exposures according to the different external assessments.

9.2 Specify the ECAI being applied.

9.3 If the securitisation contains any of the accepted CRMTs, the institution must indicate whether or not the rating of the ECAI already takes into account the CRMT.

10 If inferred ratings are used in the RBA method, the institution should detail the procedure used.

E. Internal assessment approach (IAA)

11 Detail the methodology used to assign the internal rating and justify compliance with the requirements of the new Framework.

ANNEX 1

Letter stating the intention to use IRB approaches

PLACE, _____, *200_*

Banco de España
Dirección General de Supervisión
Alcalá, 48
28014 Madrid

[*Name of the institution/banking group*], hereby states its intention to use the IRB approach to calculate the minimum capital requirements for credit risk on a consolidated basis, as well as to participate in such validation processes as may be established.

For each group institution[38] that plans to use advanced approaches,, we attach the initial information required in the IRB File, including the reports of internal audit and of the external auditor for every model, which, when necessary, will be updated biannually until the approach selected has been approved for regulatory use[39]. We attach as an annex hereto a description of the scope of application of the new Framework in the group.

For those group institutions that will initially use the standardised approach[40] for any segment that will in future be treated with advanced approaches according to the roll-out plan submitted, a first version of the part of the IRB File referring to such segments and the first internal and external auditors´ reports relating to them are also attached hereto. One year before the date of implementation of the advanced approaches according to the roll-out plan, an updated version of the IRB File will be delivered to the Banco de España and the frequency of the auditors´ reports will be biannual until the approach presented for regulatory use has been approved.

As requested by you, we reiterate the firm commitment of [*Name of the institution/banking group*] to dedicate all the human and material resources necessary for successful completion of the implementation plan presented, as well as to correct any deficiency detected and carry out such improvements as may be indicated by the Banco de España with respect to the implementation of Basel II in [*Name of the institution/banking group*].

We also inform you that the board of directors of [*Name of the institution/banking group*] approved the content of this letter on _____ 200-.

We are at your disposal to complete any aspect you consider necessary, and to provide any appropriate verification.

[*SIGNATURE OF CEO OR SIMILAR*]

ANNEX ON THE APPLICATION OF THE NEW FRAMEWORK IN [*Name of the institution/banking group*]

[38] For institutions which are subsidiaries of foreign banking groups, the reference to group shall be understood to refer to the group in Spain and the letter shall be sent by the institution responsible for the consolidation in Spain.

[39] In the case of institutions which are subsidiaries of foreign banking groups, this information should be completed for each Spanish institution that wishes to use the IRB approach.

[40] This paragraph shall only be included when the group has institutions in the situation to which it refers.

Further to our letter of _____ *200_*, we attach the following information[41]:

1 Identification of the significant minority investments in banking, securities and other financial entities over which control is not exercised, defining and justifying the treatment to be applied.

2 Identification of investments in insurance entities.

3 Identification of significant investments in commercial entities.

4 For each institution of the banking group:

1. Approaches the institution initially intends to use for the different asset classes and subclasses.

2. The roll-out plan is specified for those portfolios that will be treated in the future with a different approach from the initial one.

3. For every asset class and subclass, the percentage of the total assets of the group to which IRB approaches will be applied.

[41] For institutions which are subsidiaries of foreign banking groups, this information will refer to the banking group in Spain.

ANNEX 2

Minimum requirements for calibration and current exposures databases

- A detailed description of the fields and formats that appear in the databases must be attached. The definition, the range of possible values and the source of the data must be provided for each field.

- Apart from the tests performed by internal audit to assess the integrity and consistency of the model data, the department responsible for the definition and content of the databases supplied must carry out various specific checks before sending them[42]:

  - Variables should not have values outside a reasonable range
  - Special attention should be given to dates to ensure that there are no inconsistencies (i.e. default dates prior to origination dates or after maturity dates).
  - It must be ensured that there are no duplicated records.
  - The formats of each record should comply with the formats defined for each variable (for example, a date variable should have the same format in all records).
  - There should be no blank records for a variable, in those records that should contain information.

- If the original data have been filtered in order to achieve the required data consistency, the institution should describe the procedure used. Additionally, the deleted records should be detailed, including the reasons for their deletion.

The calibration databases of the model must contain at least the following data[43]:

  - An identifier for each record, containing at least:
    - a mandatory field that identifies the transaction (contract number, file number or similar),
    - a mandatory field with the obligor's NIF/CIF (Spanish tax ID number) , and
    - a field with the internal obligor identification used by the institution, in the event that this is different to the NIF/CIF.
  - Banco de España code of the institution which records the transaction in its accounts.
  - Scoring and rating grade and the rating date..
  - Product type (loan, credit line, technical guarantee, financial guarantee, etc.).
  - Origination date.
  - Original maturity.
  - Maturity date.
  - Total amount approved.
  - Settlement date.
  - Date of default (in the event of having defaulted on various occasions, the date of each default and the date on which the loan returned to “normal” status).
  - Where the institution uses internally a definition of default that differs from the supervisory one, the dates when defaults occurred according to this internal definition.

[42] This is not an exhaustive list of all the checks that could be made, but a guide to the analyses that must be performed on the databases.

[43] The calibration databases are those that contain all the information required to estimate the risk parameters (PD, LGD and CCF).

- Restructuring date.
- Novation date.
- Adjustment date due to cash payment.
- Securitisation date.
- Securitisation identifier code.
- Guarantee type.

- In order to analyse the severity of defaulted transactions, the following fields are also necessary:
  - Outstanding capital at the date of default.
  - Outstanding interest at the date of default: unpaid accrued interest on the default date.
  - Exposure at the date of default: this will be equal to the capital plus outstanding interest in the case of loans, although not for guarantees or credit lines.
  - Exposure at the date of default according to the institution's internal definition (if there is one).
  - Dates and (undiscounted) amount of every revenue or expense flow derived from the recovery process, as well as a code indicating the type of flow (interest charge, payment to lawyers, etc.). Estimated flows should be marked as such.
  - Discount rate used to discount each flow.
  - Date of completion of recovery process (in economic, not accounting terms).
  - In the case of mortgage loans:
    - Initial appraised value of the collateral.
    - LTV (ratio of the amount lent to initial appraised value).
    - Value and date of subsequent appraisals, if any.
    - If the institution forecloses on a mortgage:
      - the agreement date, when the property is sold to a third party at an auction.
      - In the case of repossession by the institution:
        - Date of repossession.
        - Date property sold and sale proceeds.
        - Expense flows arising between foreclosure and sale of the property.
  - For personal loans associated with a mortgage, the same information is required.

- CCFs should be calculated for guarantees and credit lines in order to estimate the exposure at the time of default. The fields used in this estimation should be included for these product types.

In addition, the data on the current portfolio that produce the expected loss and regulatory capital values should be incorporated. The following data should be provided for this purpose:

- An identifier for each record, containing at least:
  - a mandatory field that identifies the transaction (contract number, file number or similar),
  - a mandatory field with the obligor's NIF/CIF (Spanish tax ID number) and
  - a field with the internal obligor identification used by the institution, in the event that it is different to the NIF.

- Banco de España code of the institution which records the transaction in its accounts.
- Asset class to which the transaction belongs according to the New Capital Accord (BIS II).
- Rating used to classify the transaction or obligor by credit quality and that, in general, is used to assign a probability of default to the transaction.
- Probability of default (PD) assigned to the transaction/obligor.
- Guarantees, collateral or any credit risk mitigation technique (CRMT) assigned to the transaction and their amount. This variable should contain the code used to identify what type of CRMT is applied to the transaction.
- Severity (LGD) that the institution assigns to the transaction concerned.
- Any other variable that the institution uses to assign values to risk parameters: for example, if the PD varies according to the age of the loan, this variable should be provided. If the LGD is calculated as a function of the LTV, the LTV should appear in the database of the transactions currently belonging to the portfolio.
- On-balance-sheet exposure[44].
- Off-balance-sheet exposure.
- Credit conversion factor (CCF) applied to the transaction.
- Exposure at the time of default (EAD), which reflects the effective exposure of the institution in this transaction.
- Estimated maturity (M).
- Expected loss.
- Minimum regulatory capital requirements for the transaction.

Dates should indicate at least the quarter and the year, although it is preferable to indicate the month and the year or the specific day.

It is not necessary to present all the information in a single file, but the integrity of the data should be checked if they are treated separately.

As the information the institution needs to estimate the severity only appears in the event of a default, then the separation of data in relation to PD and LGD could facilitate its treatment. When calculating the LGD, other data may also be taken into account in addition to those used as the basis of the PD calculation[45]. In this case the consistency of the common data that appear in both databases should be checked and any differences explained.

In any event, when multiple databases are used, they should include a reference field that is identical in all of them in order to identify the transactions.

[44] These exposures should be reconciled with the accounting statements.

[45] There may be transactions with information regarding recoveries that cannot be used to estimate default probabilities (for example, unrated transactions due to a technical problem, but that are considered in other respects the same as the rest of the portfolio).

ANNEX 3

Specific internal audit report on internal ratings based approaches (IRB) for calculating the minimum capital requirements for credit risk

Internal audit should, independently of other requirements under prevailing regulations, issue a specific report for each internal credit risk model, detailing explicitly at least the following aspects and documenting its conclusions:

A. ***Integration*** *of the rating/scoring systems into the* ***management*** *process, and in particular:*
   1. *Compliance with internal rules* and the procedures for assigning and reviewing ratings.
   2. The information generated by the model and its use in the institution's essential management processes (allocation of economic capital, pricing, approval policies, etc.).
   3. The adequacy of the established *controls* relating to the internal credit risk model and the identification of weaknesses that require new controls, if appropriate.
   4. The *documentation* that contains the rating procedures[46], the institution's credit policies and the delegated responsibilities.

B. *The* ***databases used*** *and the procedures to construct the calibration*[47] *and current exposures databases*, especially with reference to:
   1. The *integrity and consistency* of the calibration databases, and in particular:
      a. Inclusion of all transactions that meet the specifications of the scope of application of the model.
      b. Internal coherence of the data that constitutes the calibration database.
      c. External coherence: linking of the data with other relevant elements of the institution's IT systems (accounting, regulatory and management statements, etc.).
   2. The suitability of the source databases used[48] to construct the calibration databases, identifying all the relevant fields, including among other aspects:
      a. The *construction procedures* of the calibration databases: uploading of data from the various source applications or databases, data selection criteria (especially for obligors and transactions), …
      b. The different *definitions of default* that have been used in the calibration databases, their consistency over time and their homogeneity for regulatory purposes[49].
      c. The possibility of replicating the ratings calculated by the rating system, as well as the quality of the information used as input for this system.
      d. The *possibility of reassessing old transactions*[50] *using the rating systems in use on the date of revision, and if applicable, the quality of the latest reassessment made*.

[46] These manuals must be sufficiently clear and detailed to allow a third party to understand and replicate the ratings.

[47] The calibration databases are those used to obtain estimates of PDs, LGDs and, if applicable, EADs.

[48] Source databases that feed the calibration databases.

[49] In the event that the definitions implicit in the various database tables are different: having changed over time, differences between risk parameters or uniformity problems for a single risk parameter.

3. The current exposures database, for regulatory calculation purposes:
    a. procedures established to obtain the current exposures
    b. reconciliation of these exposures with the accounts
    c. processes followed to assign the correct risk parameters to each transaction.
4. *Details of the weaknesses detected*, distinguishing between those attributable to past circumstances and those arising from current causes, together with the measures and timetables to resolve them.
5. *Details of the audit tests carried out* to support each of the opinions issued, as well as their results. These include:
    a. *Checking,* for a significant sample of transactions, all the relevant fields of the model, and the supporting documentation. In particular, specific tests should be used to assess the reasonability of the assumptions made in the absence of information, and the algorithms used to obtain certain essential fields (transaction origination date, default date, date of settlement and reassessed ratings).
    b. *Verification of the definitions of default* used, their consistency over time and their homogeneity.
    c. *Consistency among the databases* used to estimate PDs, LGDs and EADs, explaining the discrepancies.
6. *Documentation*, essentially for the fields and structure of the calibration databases, the procedures used to construct them and the definitions of default and loss.

C. The ***technological environment and the applications*** that allow the model to be used effectively, in particular:
1. The degree of *internal integration* (between the model's components) and *external integration* (with other IT systems of the institution), identifying manual procedures and technological weaknesses.
2. In relation to the *applications*:
    a. The *availability* of data and the *possibility of replicating* the calibration databases over time.
    b. The degree of *automation* of the periodic processes for the proposed regulatory use.
    c. The appropriate programming of the calculation *methodologies* used in the model.
    d. The ability to *replicate* the model outputs.
3. *Regarding the model as an information system*:
    a. *Maintenance* processes.
    b. Management of historical database files (PDs, LGDs, CCFs, classified exposures)
    c. *Contingency* plans.
    d. Adequacy of resources.
4. The *technical documentation* existing.

[50] Any transaction approved in accordance with a rating system that is no longer used.

ANNEX 4

Specific report of an external auditor on internal ratings based approaches (IRB) for calculating the minimum capital requirements for credit risk

An external auditor should, independently of other requirements under prevailing regulations, issue a specific report for each internal credit risk model, detailing explicitly at least the following aspects and documenting all the conclusions:

A. *The **databases used** and the procedures to construct the model calibration[51] and current exposures databases*, especially with reference to:

   1. The *integrity and consistency* of the calibration databases, and in particular:

      a. Inclusion of all transactions that meet the specifications of the scope of application of the model.

      b. Internal coherence of the data that constitutes the calibration database.

      c. External coherence: linking of the data with other relevant elements of the institution's IT systems (accounting, regulatory and management statements, etc.).

   2. The suitability of the databases used[52] to construct the model calibration databases, identifying all the relevant fields, including among other aspects:

      a. The *construction procedures* of the calibration databases: uploading of data from the various source applications or databases, data selection criteria (especially for customers and transactions), …

      b. The different *definitions of default* that have been used in the calibration databases, their consistency over time and their homogeneity for regulatory purposes[53].

      c. The possibility of replicating the ratings allocated by the rating system, as well as the quality of the information used as input for this system.

      d. The *possibility of reassessing old transactions[54] using the rating systems in use on the date of revision, and if applicable, the latest reassessment mde to calibrate the model*.

   3. The current exposures database, for regulatory calculation purposes:

      a. procedures established to obtain the current exposures

      b. reconciliation of these exposures with the accounts

      c. processes followed to assign the correct risk parameters to each transaction.

   4. *Details of the weaknesses detected*, distinguishing between those attributable to past circumstances and those arising from current causes, together with the measures and timetables to resolve them.

   5. *Details of the audit tests carried out* to support each of the opinions issued, as well as their results. These include:

      a. *Checking,* for a significant sample of transactions, all the relevant fields of the model, and the supporting documentation. In particular, specific tests should be used to assess the reasonability of the assumptions made in the absence

[51] The calibration databases are those used to obtain estimates of PDs, LGDs and, if applicable, EADs.

[52] Source databases that feed the calibration databases.

[53] In the event that the definitions implicit in the various database tables are different: having changed over time, differences between risk parameters or uniformity problems for a single risk parameter.

[54] Any transaction approved in accordance with a rating system that is no longer used.

of information, and the algorithms used to obtain certain essential fields (transaction origination date, default date, date of settlement and reassessed ratings).

b. *Verification of the definitions of default* used, their consistency over time and their homogeneity.

c. *Consistency among the databases* used to estimate PDs, LGDs and EADs, explaining the discrepancies.

6. *Documentation*, essentially for the fields and structure of the calibration databases, the procedures used to construct them and the definitions of default and loss.

B. The ***technological environment and the applications*** that allow the model to be used effectively, in particular:

1. The degree of *internal integration* (between the model's components) and *external integration* (with other IT systems of the institution), identifying manual procedures and technological weaknesses.

2. In relation to the *applications*:

a. The *availability* of data and the *possibility of replicating* the calibration databases over time.

b. The degree of *automation* of the periodic processes for the proposed regulatory use.

c. The appropriate programming of the calculation *methodologies* used in the model.

d. The ability to *replicate* the model outputs.

3. *Regarding the model as an information system*:

a. *Maintenance* processes.

b. Management of historical database files (PDs, LGDs, CCFs, classified exposures)

c. *Contingency* plans.

d. Adequacy of resources.

4. The *technical documentation* existing.

ANNEX 5

Classification of exposures

Asset classes according to Basel II and internal models treating them

Credit risk current exposures: figures in millions of euro

Date: / /20

Asset classes and sub-classes	Internal segment 1	Internal segment 2	Internal segment 3	[...]	Pending assignment to an internal segment
1a) Drawn exposures					
Total corporate; of which:					
Corporate (not including SMEs, specialised lending and eligible receivables)					
HVCRE specialised lending					
Specialised lending not including HVCRE					
Sovereign					
Bank					
Retail (not including SMEs); of which:					
Residential mortgages					
Other retail					
Qualifying revolving retail exposures					
SMEs; of which:					
Treated as corporate					
Treated as retail					
Equity; of which:					
Non material					
Excluded (grandfathered, legislative programmes (0% RW in Standardised))					
Market based approach					
PD/LGD approach					
Eligible purchased receivables					
Securitised assets (including liquidity facilities and early amortisation provisions)					
Pending assignment to a Basel II asset class or subclass					
1b) Undrawn lines – committed and uncommitted *[Disponibles...]*					
Total corporate; of which:					
Corporate (not including SMEs, specialised lending and eligible receivables)					
HVCRE specialised lending					
Specialised lending not including HVCRE					
Sovereign					
Bank					
Retail (not including SMEs); of which:					
Residential mortgages					
Other retail					
Qualifying revolving retail exposures					
SMEs; of which:					
Treated as corporate					
Treated as retail					
Pending assignment to a Basel II asset class or subclass					

1c) Repo-style transactions (counterparty exposures)

Corporate (not including SMEs, specialised lending and eligible receivables)					
Sovereign					
Bank					
Other retail (not including SME)					
SMEs; of which:					
Treated as corporate					
Treated as retail					
Pending assignment to a Basel II asset class or subclass					

1d) OTC derivative exposures (counterparty exposures)

Total corporate; of which:					
Corporate (not including SMEs, specialised lending and eligible receivables)					
HVCRE specialised lending					
Specialised lending not including HVCRE					
Sovereign					
Bank					
Other retail (not including SME)					
SMEs; of which:					
Treated as corporate					
Treated as retail					
Pending assignment to a Basel II asset class or subclass					

1e) Other off-balance sheet exposures *[Avales...]*

Total corporate; of which:					
Corporate (not including SMEs, specialised lending and eligible receivables)					
HVCRE specialised lending					
Specialised lending not including HVCRE					
Sovereign					
Bank					
Retail (not including SMEs); of which:					
Residential mortgages					
Other retail					
Qualifying revolving retail exposures					
SMEs; of which:					
Treated as corporate					
Treated as retail					
Pending assignment to a Basel II asset class or subclass					

ANNEX 6

Approaches intended to be used

Asset classes according to Basel II and internal models treating them

Asset classes and sub-classes	Internal segment 1	Internal segment 2	Internal segment 3	[...]	Pending assignment to an internal segment
Total corporate; of which:					
Corporate (not including SMEs, specialised lending and eligible receivables)					
HVCRE specialised lending					
Specialised lending not including HVCRE					
Sovereign					
Bank					
Retail (not including SMEs); of which:					
Residential mortgages					
Other retail					
Qualifying revolving retail exposures					
SMEs; of which:					
Treated as corporate					
Treated as retail					
Equity; of which:					
Non material					
Excluded (grandfathered, legislative programmes (0% RW in Standardised))					
Market based approach					
PD/LGD approach					
Eligible purchased receivables					
Securitised assets (including liquidity facilities and early amortisation provisions)					
Pending assignment to a Basel II asset class or subclass					

ANNEX 7

Roll-out plan

Asset classes according to Basel II and internal models treating them

ROLL-OUT: Approaches that will be adopted in the future and date of adoption

Asset classes and sub-classes	Internal segment 1		Internal segment 2		Internal segment 3		[...]	Pending assignment to an internal segment	
	FIRB adoption date	AIRB adoption date	FIRB adoption date	AIRB adoption date	FIRB adoption date	AIRB adoption date		FIRB adoption date	AIRB adoption date
Total corporate; of which:									
Corporate (not including SMEs, specialised lending and eligible receivables)									
HVCRE specialised lending									
Specialised lending not including HVCRE									
Sovereign									
Bank									
Retail (not including SMEs); of which:									
Residential mortgages									
Other retail									
Qualifying revolving retail exposures									
SMEs; of which:									
Treated as corporate									
Treated as retail									
Equity; of which:									
Non material									
Excluded (grandfathered, legislative programmes (0% RW in Standardised))									
Market based approach									
PD/LGD approach									
Eligible purchased receivables									
Securitised assets (including liquidity facilities and early amortisation)									
Pending assignment to a Basel II asset class or subclass									