

## **Internal rating-based (IRB) approaches (Foundation and Advanced)**

The present annex indicates the information an institution is required to submit to ensure completeness of the application to use an IRB approach to calculate the own funds requirement for the credit risk.

In order to expedite the transfer of information to the supervisory authority of the host country (the host supervisory authority), the institution is required, within the context of its application to use an IRB approach, to indicate clearly what information is relevant to what supervisory authority.

### **1 Letter with formal request for approval**

The application dossier is introduced by a letter with a formal request from the institution for approval to commence using, from a specific date, an IRB approach for the calculation of the own funds requirement for the credit risk. As the case may be, it will be made clear at what level the institution is submitting the application and that the application is being submitted on behalf of all the institutions – included within the scope of consolidation – named in it that are established in the EU and that, pursuant to their legal status, are likewise, at their level, subject to the CRD.

The institution declares that all relevant information is being submitted (or, as the case may be, is available) and that this information provides an accurate picture of the state of affairs in regard to the institution's readiness for an IRB approach for calculation of the own funds requirement for the credit risk. At the same time, with reference to the self-assessment conducted, the institution confirms that it is 'broadly compliant' with the qualitative and quantitative minimum requirements of the approach selected.

The letter is signed by at least one member of the Management Committee.

### **2 General information and implementation plan (including roll-out plan and the partial use of an IRB approach)**

Besides general information, this section includes information that is required to demonstrate that the necessary structures and processes are in place within the institution, in order to ensure a prompt and correct implementation of an IRB approach. To this end, the institution is required to submit at least the following information:

- 2.1 The details of a contact person in respect of the application dossier.
- 2.2 The legal structure of the institution, with mention of the host supervisory authority concerned.
- 2.3 A detailed overview of the organizational structure of the institution. In respect of the credit risk, this document presents, among other things:
  - the corporate governance aspects, the organization of risk management, the internal reporting circuits, the organization of internal documentation, the organization of the development, validation, implementation and follow-up of risk-measurement and risk-management systems, etc.;
  - how, as the case may be, the management structure transects the legal structure and the geographic structure;
  - description of the procedures/policy to ensure that the use of various approaches does not lead to regulatory arbitrage.

- 2.4 A detailed overview of the approaches that will be used per business line and per portfolio (exposure category) (including temporary and permanent exceptions):
- an overview per legal entity of what exposure categories there are and what approach will be followed (standard, foundation or advanced), with a more detailed specification of approach for specialized lending, purchased receivables, equity and securitization;
  - for portfolios with non-advanced approaches: indication of the temporary or permanent character, with the rationale and the qualitative and quantitative criteria applied;
  - the moment of commencement of the use of an IRB approach per business line and per exposure category;
  - statement of the size of the exposures (expressed in terms of both the number of major counter-parties and the unweighted exposure, whereby off-balance-sheet exposures are converted by means of the conversion factors to be used by the institution) and indication of the risk profile at the level of the exposure categories.
- 2.5 A description of the plan concerning implementation, from commencement of the preparations for introduction of the new own funds requirement to the completion of the roll-out plan. In respect of both the past and the future, given the relevance for the present state of affairs, the implementation plan is required to give a clear indication of the timing and content of, among other things, the following aspects:
- organization of the implementation (distribution of responsibilities, etc.);
  - development of the rating methodology (including a plan of approach for development of models and the methods to be used);
  - preparation of the technical concept for ICT implementation of the rating methodology (models);
  - description of ICT implementation within a broader framework;
  - training and availability of staff, including management;
  - where relevant, transition from the existing rating system to a new system;
  - formal internal acceptance (including validation) of the new rating system and implementation as *the* rating system of the institution;
  - criteria for determining the sequence of the roll-out per business line or exposure category;
  - important milestones regarding the implementation process set out above.

The institution is required to append a documentation list to the application dossier. That documentation list provides a review of all available internal documents, together with a brief description of them; if necessary, the BFIC may subsequently request them to be submitted.

### **3 Documentation for the rating models employed**

An initial section contains a description of the general principles underlying the internal models and systems. Specific information about the individual models is given in a second section. Where relevant, the general principles of the first section can be adapted for specific models in the detailed overview of models.

### **3.1 General information concerning rating models**

- 3.1.1 General overview of the rating system used within the group. This indicates, among other things, what exposure categories at what legal entities – given the geographical location – are covered by what rating models for the use of an IRB approach. Planned rating models, including those already set out in the overview, are to be clearly differentiated from those already in use.
- 3.1.2 Overview of the definition of exposure categories (including exposure sub-categories, such as SMEs treated as corporates, SMEs treated as retail, mortgage versus other retail, etc.) on the basis of, on the one hand, product, counter-party or other criteria and, on the other, comparison with the definition as set out in the CRD. Where differing definitions for one and the same exposure category (exposure sub-category) are applied within the institution, state the definitions, with identification of the business lines using them, together with the rationale.
- 3.1.3 Description of the general framework regarding the development of the rating system (including the decision to develop and the rationale for developing a model for a specific section of the portfolio; and indication of what function/service is developing the model, the process of development, the tests carried out, what function/service conducts the follow-up, what the follow-up consists of, the organization of documentation).
- 3.1.4 Statement of the methodology for the institution's own estimates of *probability of default* (PD), *loss given default* (LGD) and *exposure at default* (EAD) (including the most important risk drivers, group-level rating versus individual rating, rating philosophy (point-in-time versus through-the-cycle), determination of 'down-turn' LGD, comparison of 'down-turn' LGD and long-term average LGD, treatment of additional drawings after default, etc.).
- 3.1.5 Description of how uncertainty is taken into account regarding:
- data (both development and production data);
  - model risk.
- 3.1.6 Description of the process regarding model validation approval, whereby at least the following elements are addressed:
- parties involved and their responsibilities, with an indication of their relationship with the model development process (in respect of ensuring independence);
  - procedures followed and techniques employed;
  - scope of validation;
  - organization of documentation regarding validation.
- 3.1.7 Description of the process regarding model approval, whereby at least the following elements are addressed:
- parties involved and their responsibilities, with an indication of their relationship with the model development and the model validation processes;
  - scope of the approval process;
  - procedures followed and decision documentation.
- 3.1.8 Description of the rating process, whereby at least the following elements are addressed:
- procedure and person responsible (function/service) for deciding on assigning a rating;
  - effect of the down-grading of a rating on the follow-up process;
  - effect of intensification of the follow-up process on the rating;

- procedure for assigning ratings for defaulted assets (including a new rating following a return to non-default);
  - process of reviewing ratings;
  - control by an independent party.
- 3.1.9 Description of the override process for the outcome of the rating model, including investigation and monitoring of overrides.
- 3.1.10 Description of the default definition employed in the rating models and its comparison (including expected quantitative impact) with the default definition as given in the CRD.
- 3.1.11 Description of the definition of loss and the costs taken into account.
- 3.1.12 Description of the treatment of guarantees in the IRB approach and rationale for the choice between substitution and processing via LGD.
- 3.1.13 Description of the techniques/procedures/models applied to the residual segments (by which is to be understood the parts of the portfolio that cannot be covered by the models developed).

### **3.2 Detailed information per rating model**

The dossier is required to contain the following information per rating model for which approval has been requested:

- 3.2.1 Name of the rating model.
- 3.2.2 Type of parameter to be evaluated (PD, LGD or EAD).
- 3.2.3 Indication of the regulatory type of exposure category for which the model can be used.
- 3.2.4 Description of products/customers treated in the rating model (including a precise delineation of the ratings model's scope of application).
- 3.2.5 Overview of business lines (including the country where they are established) that employ the rating model, with a brief description of any contacts there have already been with the local supervisory authority concerning this rating model.
- 3.2.6 Number of counter-parties or transactions that this rating model can/will provide a rating for (including an indication of the number of guarantors) (present number of counter-parties/transactions, expected number at implementation date and maximum number).
- 3.2.7 Development of the rating model (internal or external) and indication of person responsible (function/service).
- 3.2.8 Type of rating model (e.g., statistical, experts, etc.).

- 3.2.9 Number of rating categories and description of the risk profile of those categories (where relevant, verbal definitions, these can apply to several categories at the same time), with a break-down of the portfolio over the rating categories and average rating (for the PD breakdown: in conformity with COREP (CP04) table “*IRB approach capital requirements*” with a minimum of columns 2 to 5 inclusive and columns 7 to 10 inclusive) For retail exposures: number of pools (description of the risk profile of the pools and the assignment criteria employed).
- 3.2.10 Description of the development data for the model:
- source (internal versus external);
  - starting date;
  - content (composition in structured form, homogeneous portfolios, adjustments made);
  - quantitative characteristics;
  - qualitative characteristics;
  - representativeness;
  - extent of development data;
  - extent of defaults/recuperations/exposures in development data (statement of both the number of defaults and the year in which they occurred).
- 3.2.11 Date when the rating model was/will be first adopted for use.
- 3.2.12 Extent of the exposure (prior to application of the conversion factor, with the exception of derivatives for which a market value is given) that this rating can/will provide a rating for.
- 3.2.13 Description of the quality of the basic data used by the model (input), of possible manual interventions, of how the integrity of the use of the model is supported by ICT.
- 3.2.14 Description of specific action to ensure the quality of the data output of the rating model (by way of supplement to the general principles as in 4.4.2.).
- 3.2.15 Description of the most recent validation (back-testing) of the model:
- date of the most recent formal validation (or performance check) of the rating model;
  - person (function/service) ultimately responsible for the validation;
  - benchmarks (internal or external) with which the rating model is compared and the results of comparison, statistical techniques/tests that verify the power of the rating model and its results (including overruns of internal thresholds);
  - qualitative techniques applied to verify the suitability of the model, as well as the integrity and consistency of the application;
  - overview of any deficiencies identified, together with their materiality and the plan of action to remedy them;
  - follow-up activities recommended for the rating model.
- 3.2.16 Description of the action taken in respect of an externally developed model or a model developed internally by non-institution staff, in order to ensure that there is sufficient in-house know-how and expertise regarding that model.
- 3.2.17 Explicit reference to the general principles as set out in 3.1. that are overridden by that model, with a description of the principles applying to that model and a rationale for the deviation from the general principles. No reference is required where the model does not deviate from the general principles.
- 3.2.18 References to the documentation list relevant to the model in question.

The documentation for the rating models falling within the scope of the application are required to be annexed to the application dossier.

### **3.3 Application for specific models**

The information requested in this section is required to be given only where the institution explicitly requests authorization of one of the models mentioned.

For general framework agreements in respect of retrocession agreements and/or security and/or commodity loans granted or taken up and/or other capital-market-related transactions (internal models approach)

- 3.3.1 Overview of significant portfolios for which the use of an internal models approach is previewed (including geographical spread), with additional statement of non-significant portfolios (including the criteria employed).
- 3.3.2 General description of the internal model, given the structure as in the circular for market risk models (D1/2002/4).
- 3.3.3 Description of how qualitative and quantitative requirements are met, including:
  - Internal use of the results from the internal model, with – among other things – attention to integration in the day-to-day risk management process;
  - reporting of risk positions;
  - results of back-testing;
  - results of independent evaluation;
  - relevant risk factors.

For own estimates of volatility adjustments for the value of collateral

- 3.3.4 Statement of categories of security (including extent) regarding the desired use of own estimates of volatility adjustments.
- 3.3.5 Description of how qualitative and quantitative requirements are met, including:
  - the historic observation period;
  - treatment of asset illiquidity;
  - internal use of volatility adjustments;
  - results of independent evaluation.

For the equity risk (internal model)

- 3.3.6 General description of the internal model, given the structure as in the circular for market risk models (D1/2002/4).
- 3.3.7 Where the model has already been submitted to the supervisory authority, description of the procedure, including indication of the supervisory authority, of when submission took place and of the opinion given by the supervisory authority.
- 3.3.8 Description of the procedure for evaluating the floor (PD/LGD approach).
- 3.3.9 The most recent validation report is required to added in annex.

For securitization (internal assessment approach for ABCP programmes)

- 3.3.10 Description of the rating method and comparison with that of external rating agencies.
- 3.3.11 Description of the internal rating scale and comparison with that of external rating agencies.
- 3.3.12 Description of the internal use of the results of the rating models.

For the counter-party risk (calculation of expected positive exposure)

- 3.3.13 Review of the roll-out plan for the internal model.
- 3.3.14 Description of the internal model and a overview of a validation (assessment of the minimum requirements). Overview of any deficiencies identified, together with their materiality and the plan of action to remedy them.
- 3.3.15 Description of stress test and their results.
- 3.3.16 Description of the internal use of the internal model and its results.
- 3.3.17 Overview (with brief summary) of the documentation concerning internal guidelines, processes and systems concerning the counter-party risk.

## **4 Control environment of the rating systems, implementation procedures and ICT infrastructure**

In submitting the information in this section, kindly give a clear description of the procedures and practices of local entities, where they differ from the general procedures applicable within the institution.

### **4.1 Corporate governance regarding credit risks**

The information must give attention to:

- 4.1.1 Description of senior management's involvement in credit risk management, including representation in the relevant risk committees, the task, the responsibilities and the competences
- 4.1.2 Description of the task and responsibilities of the institution's service(s) charged with credit risk management, and its (their) place within the institution's structure and how this has an implication on the independence of the service(s) concerned.
- 4.1.3 Overview and organization of the reporting of information to the institution's senior management, including on the basis of the information generated by internal models.
- 4.1.4 Overview and organization of the reporting of information to the institution's senior management, concerning the situation regarding implementation of the IRB approach.
- 4.1.5 Description of the activities of internal audit regarding the IRB approach. An overview (*ex post*) of the investigations carried out and the audit plan (*ex ante* approach) concerning the credit risk are required to be provided in annex.

## **4.2 Use test**

Description of the use of the IRB approach in:

- 4.2.1 the credit decision process and the delegation of authority;
- 4.2.2 the management and monitoring of the credit risk (including the follow-up process);
- 4.2.3 the operational implementation of the default definition in the credit systems;
- 4.2.4 the setting of prices and the determination of return;
- 4.2.5 the use of individual limits and limits at portfolio level;
- 4.2.6 the reporting of credit risk information (internal versus external);
- 4.2.7 the setting-aside of provisions;
- 4.2.8 the internal capital allocation.
- 4.2.9 Description of the expectations regarding the evolution of the use of the IRB parameters in the future.
- 4.2.10 Description of the present infrastructure underpinning the use of the IRB framework (among other things, regarding the organizational structure, IT, etc.).

## **4.3 Stress tests**

- 4.3.1 Description of the stress tests conducted (including the frequency, the portfolios subject to them, the conclusions, etc.).

## **4.4 Data management and ICT systems (regarding historical data and rating information, as well as information necessary to make capital calculations)**

- 4.4.1 Description (diagram) of the data architecture (gathering of data, storage, assembling of relevant data for the calculations) for both the rating production and capital calculation, with an overview of the data flows between the various systems, and an indication of any manual interventions.
- 4.4.2 Overview of the data controls (in respect of completeness, accuracy, integrity, etc.) and back-up facilities for both the rating production and capital calculation.
- 4.4.3 Overview of the most important items of the implementation of the calculation tool for the own funds requirement for the credit risk, with indication of any manual interventions in the calculations and their impact. Description of the action taken to ensure that the know-how and expertise regarding the calculation tool is present in-house.
- 4.4.4 Overview of the reconciliation activities as between the accounting and the risk data, indicating the most important findings and action taken (and their impact); indication of the magnitude of irreconcilable items.



## **5 Self-assessment**

For the institution to be able to declare that it is 'broadly compliant' with the qualitative and quantitative requirements of an advanced measurement approach for the credit risk, it conducts – on the basis of, among other things, the validation of the models and the internal audit investigation – a full self-assessment and adds the following information to the application dossier:

- 5.1 Confirmation that there has been a full self-assessment of the minimum requirements as specified in the CRD (including procedures, courses of action, revaluation, use of credit-risk-reduction techniques and their linkage to the relevant exposures).
- 5.2 Description of the self-assessment process, as it took place within the institution (description of approach, the independent unit that carried out the investigation – supported or not by an internal/external audit consultant – content, information-gathering, controls, etc.).
- 5.3 Overview of the minimum requirements not met, with an indication of their materiality; overview of the steps (with assumed time scale) that will be taken to ensure that the institution meets the minimum requirements.
- 5.4 Internal plan for repetition of the self-assessment, to ensure that the institution continues to meet the requirements.

## **6 Impact calculation**

The results of an impact study of the own funds requirement for the credit risk according to an IRB approach, including:

- own funds requirement for the credit risk (including per exposure category);
- comparison of the calculated expected loss with the provisions (including per exposure category).

Where foreign host supervisory authorities are involved in the decision regarding the application dossier, the impact study is also required to be conducted at the relevant (as the case may be, sub-consolidated) level of the subsidiaries involved.

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