

# Comments

## Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach (EBA/CP/2022/08)

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## **Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach**

### **General comments**

We welcome the EBA's intention to establish transparency on supervisory expectations by developing a general handbook on the validation of IRB rating procedures and thus to provide banks with a consistent and reliable validation framework.

In our view, the organisational setup of the validation function should be independent of the size of the bank and should be evaluated on the basis of criteria geared towards objective validation decisions rather than formal organisational structures. We believe it would make good sense to take greater account of the principle of proportionality. The scale and intensity of validation activities should always be based on the expected data situation, the importance of the rating process and the scale and complexity of the changes made. In our view, the EBA validation handbook should be based on the requirements set out in the General topics chapter of the EGIM (ECB guide to internal models). These have proven their worth. Instead of detailed organisational requirements, such as separate units for the operation of development and validation activities, we would recommend using organisational measures (including institutionalised monitoring procedures) to ensure that there are no conflicts of interest between development and validation activities.

Care should also be taken to ensure that the validation handbook does not conflict with existing supervisory requirements. Detailed expectations of validation are already set out, in particular, in para 65 of the General topics chapter of the EGIM. These include the requirement that certain in-depth analyses should be carried out every three years, while an initial validation should be carried out after every material model change. In addition, EBA GL 2017/16 regulates the approach of developers and is supplemented by the EGIM (section 8.1 of the chapter on credit risk). A validation manual should avoid imposing more far-reaching requirements, especially on developers, such as the requirement for a full review of material models every three years in context box 7 (the EGIM requires a triennial review of the model development process incorporating the most recent data, whereas there are much more extensive requirements for the full review by developers). In addition, good practices are defined with respect to the internal audit function which have no basis in existing mandates of the CRR or documents previously published by the EBA (e.g. EBA/RTS/2016/03).

### **Specific comments**

In addition to the specific questions posed in the consultation paper and the general issues mentioned above, we would also like to raise the following important points:

- Context box 1: It would not be practicable to estimate the impact on RWAs based on the model version including the last material change (second paragraph, sentence 2). The last material change may have been made years ago and a number of non-material changes may have been made since that time. As a result, it may only be possible to reproduce the last version of the model "without taking into account non-material model changes" with the help of extensive assumptions.
- [9]: Institutions carry out an initial validation in the event of a material model change. In accordance with the requirements of para 65(g) of the EGIM, they pay particular attention to those aspects that are directly or indirectly affected by the change. In addition, a separate regular validation has to be carried out for the model in place. The consultation paper expects aspects directly or indirectly affected by the model change to be validated by the validation function in accordance with the requirements of the "first validation", while all other aspects may instead be performed in accordance

## Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach

with “subsequent validation” requirements. In our opinion, this mixing of initial and regular validation does not meet the requirements of the EGIM and will tend to confuse addressees if different model statuses are considered in one and the same validation report.

- [22b]: According to the consultation paper, the internal audit (IA) should make an annual review of the performance of each rating system. Is this annual review identical with the “general risk assessment” described in the EGIM? If so, we would recommend streamlining the wording. If not, why is an additional review required? This would be particularly burdensome in cases where the general risk assessment requires no further investigation (deep dive) while the mandatory annual review does. Additionally, the IA must form an opinion on the institution’s rating systems. It is not clear, in our view, whether this “opinion” is expected to be a documented result of the combined assessment of the internal validation and IA after validation and audit. If so, how can this be achieved on an annual basis when validation tasks are performed annually while certain aspects may be audited less frequently as a result of the general risk assessment?

Finally, the IA should be responsible for the completeness of the tasks. With the “multiple layers of defence” approach in mind, we deem it inappropriate for the IA to be responsible for completeness. We would recommend that IA should instead be responsible for “assessing the completeness” of the tasks.

- [26b]: For all aspects that are not directly or indirectly affected by a model change, the validation activities should be performed by the validation function in accordance with the description provided in section 5 (Subsequent validation of unchanged aspects of a rating system). Does that mean that all those analyses always have to be performed in an initial validation and can the results of the regular validation be used for this? According to the EGIM, only specific pre-defined analyses and all aspects that are directly affected by the model change have to be performed in an initial validation. Does consideration of further analyses based on the model in place (and probably another reference date) make sense when evaluating the model change and its results?
- [31]: The EBA requires institutions to ensure sufficient capitalisation at all relevant levels. This seems straightforward, if not to say obvious. However, we suggest deleting the reference to the IA in brackets. Due to its nature and third-line tasks, the IA could never be responsible for ensuring sufficient capitalisation. In our view, the IA can only be responsible assessing whether capitalisation is sufficient.
- [33]: The handbook expects the validation policy to include a description of the data collection and selection process for all data sets used for validation purposes. At the same time, focus box 1 expects all kinds of data preparation steps to be well documented in the validation report. It should be made clear that it is sufficient if the relevant documentation is available in one place and if the relevant references allow a clear picture to be formed of how data are collected and prepared.
- [34a]: The relevant tests performed to challenge the rating system must be described in the rating report. In our opinion, the description of the validation tests and general derivation of the data basis should be made in the validation policy and not in the validation report. A detailed description of the validation tests in each individual validation report would lead to unnecessary duplication.
- [47e]: We find it problematic that “the comparison with external ratings should not be used as an objective benchmark”. In portfolios with very little default data, external ratings are one of the few benchmarks available.

## Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach

- [49d]: The independent validation unit is expected to develop tests and metrics to review representativeness. The EGIM does not currently require quantitative tests in validation to analyse representativeness (cf. EGIM, para 67). We would therefore ask the EBA to clarify that quantitative thresholds are not necessarily required but that the EBA, like the EGIM, expects institutions to at least perform and document a consistent qualitative assessment of the analysis results (cf. EGIM, para 68). In addition, it should remain possible, at least in the annual validation of rating systems, for the validation function to also take account of the representativeness analyses carried out by the CRCU (cf. EGIM, para 65).
- [55]: The validation function is expected to compare the realised DR with the estimated PD for each grade or pool, including over time. This comparison should be used to challenge the level of the final risk parameters for the RWEA calculation. At the same time, para 56 requires virtually the same analysis to test PD best estimates. In the event of anomalies, para 55 expects more urgent measures to be taken than those specified in para 56 in the event of anomalies in the best estimate comparison ("appropriate actions are expected in the context of the review of estimates, considering a high severity in terms of deficiency (i.e. in the short term)" versus "appropriate actions are expected in the context of the review of estimates framework"). It is presumably assumed here that the original PDs will tend to be higher than the best-estimate PDs (because of the conservatism in dealing with missing information in the final rating grade). This assumption is incorrect, however, because original ratings usually reflect different model versions over time, while best-estimate PDs are adjusted for the model version under analysis. In addition, the anomalies that emerge in the analysis of the original ratings may have already been dealt with and no longer be relevant for the current model. We would ask the EBA to take this point into account and possibly also to question the usefulness of the back-testing analysis of original rating grades. The possibility cannot be ruled out that we have failed to correctly interpret the differences in data preparation in accordance with paras 55 and 56 and that para 55 is referring not to the final risk parameters (original ratings) used for the RWEA calculation but to the parameters adjusted to the model version in question, though based on the original conservative treatment of missing information. In this case, we would ask the EBA spell out this point in more detail in order to avoid further misunderstandings.
- [85]: According to para 65(h)(xi) of the EGIM, IT implementation should primarily be analysed within the framework of the initial validation. According to our understanding of the consultation paper, the adequacy of the IT implementation should also be analysed in the context of the regular validation. In our view, this will not add any value if no material model change has been made.
- [86]: The scope of the chapter on initial (first) validation is intended to cover newly introduced and changed models. In our opinion, initial validation should be limited to cases of material model changes, as in paragraph 65(g) of the EGIM.
- [102]: When information about a substantial model change is submitted, the validation function is expected to receive and analyse sufficient technical documentation as early as during the validation process. Deferring this requirement until the model is reviewed by supervisors, for example, would facilitate and accelerate the model change process without compromising quality.
- [110]: While it would appear reasonable to require a statistical test of models for the period(s) since the last validation, the sample of data "since the last model approval" will not per se contain any meaningful information. Nor will the test be practicable, especially since several years may pass between the start of the development process and approval by supervisors. We believe that,

## Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach

depending on the purpose of the analysis, it would make more sense to test a sample “since the development of the model” or “since the last model optimisation”.

- [112], [113] envisage, among other things, that the validation function may use previous assessments for certain analyses or even rely on them entirely. The requirements do not make it clear, however, whether references to previous documents are sufficient or whether it is possible to dispense altogether with mentioning previous analyses which do not need to be repeated. This can be inferred from the EGIM, which, unlike the EBA’s consultation paper, only describes a positive list of the required analyses (cf. section 4.3 of the EGIM: Content and frequency of tasks of the validation function). Repeated submission of documentation will create no added value, in our view, when it comes to achieving the objectives of validation, but will require significantly more time and effort and make validation reports more complicated, not just for those engaged in validation but also for those performing subsequent monitoring activities.
- [133]: The EBA expects that, for the purposes of subsequent validation, para 85b will be applied with respect to the production environment in which the model used is implemented (to ensure that the IT implementation of the rating system is consistent with, and accurately reflects, the documented model). It should be made clear that no re-assessment of IT implementation is required in the course of subsequent validation if there have been no changes to the model.
- [138]: When assessing its methodological choices, the validation function is expected to assess whether any bias has been introduced due to the duplication of observations on the same obligors or facilities used in the risk quantification. In our opinion, these analyses of duplication should be limited to case 2a in para 134. In case 2b, there is no duplication at institution but only at pool level. In case 2b, therefore, these analyses will not provide any added value at institution level.
- [143] envisages that all changes to validation methodologies and/or validation processes and validation reports should be understood and approved by senior management and members of the management body (or the designated committee thereof). In our view, this goes beyond the requirements of the “RTS on assessment methodology for IRB approach under CRR” of October 2021, where Article 14, as we understand it, only refers to “material” changes in the sense of “all material aspects”. We would appreciate clarification of this point.
- [144]: The “good practice” envisaged with regard to pool models is much too restrictive, in our view, and does not reflect current control practices. Instead of detailed organisational requirements such as separate units for the operational implementation of development and validation activities, organisational measures (including institutionalised control processes) should be used to ensure that development and validation activities are performed free of conflicts of interest.
- [152]: The EBA does not consider the use of wide confidence intervals best practice in the context of data scarcity. In our view, however, wide confidence intervals should not be automatically rejected in the context of a small database. The wide intervals reflect the increased uncertainty associated with point estimates and must be appropriately taken into account when interpreting the results.

## Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach

*The handbook introduces expectations with respect to the split of the first and subsequent validation activities and institutions are specifically invited to provide feedback on these expectations.*

### Question 1:

#### 1a) How is the split between the first and the subsequent validation implemented in your institution?

Regular and ad hoc activities take place to validate both the model in place and changes to the model.

#### **Regular validation** of the model in place:

- Annual validation of the issues to be audited annually in accordance with the requirements of the CRR, Delegated Regulation 2022/439 and the ECB Guide to internal models (EGIM).
- More intensive (extended) validation of the model in place at least every three years to cover further issues that do not have to be tested annually; testing these issues annually would not make sense since there will be no relevant new findings from year to year; there is also a test every three years by developers of their approach to data preparation (including data quality and the calculation of default rates) and the handling of deficiencies including MoC.
- In addition, ad hoc validations may be initiated at any time.
- Within this framework, non-material model changes are tested.

#### **In the event of model changes:**

- Material model changes: initial validation before notification of the change in accordance with Article 11(4) of Regulation 2022/439 and para 65 of the EGIM/General topics.
- Non-material model changes: review of the changes in relation to the materiality/risk potential of the change in question (review of the basic approach, background/causes, procedure including compared alternatives and analyses of over-adjustments, impact on rating grades, achievement of change targets, impact on central validation dimensions). This review is carried out, at the latest, at the time of the annual validation of the rating module concerned in addition to the validation of the model in place.

#### **Background to the selected approach:**

- Compliance with the supervisory requirements concerning the aspects to be audited.
- Approach is designed to be specific as possible and risk appropriate with the principle of proportionality in mind:
  - In-depth analyses concentrate on areas where the portfolio focus lies.
  - The frequency of analyses is selected in such a way that potential new findings can be expected from a new analysis; new findings could not be expected from some annual analyses (e.g. default backgrounds), especially of low default portfolios (LDPs).
  - In the event of model changes: some model changes only affect a specific aspect, such as calibration, and have no impact on the ranking of ratings. Extensive tests on model differentiation are not necessary in this case. If major model modifications are carried out or the change will have a major impact and has corresponding risk potential with regard to the performance of the model, more extensive analysis and in-depth critical scrutiny are conducted. In the event of minor adjustments, however, an adjusted risk-appropriate, less

## Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach

extensive approach to testing by validation is taken in line with the principle of proportionality.

- The differentiation between the annual validation of the model in place on the one hand and the review of model changes on the other ensures that the model in productive use is always regularly tested even in the event of lengthy review and approval processes for model changes by supervisors.
- If it takes a long time to obtain approval of a model change, it may also be useful to monitor the model performance for the "model after change" and selected aspects.

### Question 1:

#### 1b) Do you see any constraints in implementing the proposed expectations

##### (i) as described in section 4 for the first validation for

- a) newly developed models; and
- b) model changes; and

##### (ii) as described in section 5 for the subsequent validation of unchanged models?

- As we understand it, the EBA basically wishes validation activities to focus on changed circumstances in order to analyse them intensively. For aspects which remain unchanged, on the other hand, an approach based on standard analysis is aimed at. In principle, we welcome this approach.
- However, the EBA's proposed approach takes little account of the proportionality principle and makes little distinction between differences in the materiality of models/portfolios and model changes. We do not consider it risk appropriate to take a basically identical approach to the validation of all unchanged models and all types of model changes. In other words, risk-appropriate differentiation is needed:
  - More extensive model modifications and significant model changes should be analysed more intensively than smaller adjustments.
  - Even if the range of application of a model is materially changed, a complete reassessment of the entire model (cf. para 9c) is not necessarily appropriate, especially with regard to portfolios already covered by the model's scope (a significant extension of the range of application may sometimes be triggered by just a few additional individual cases). A risk-appropriate validation approach should be selected with the specific application in mind.
  - Material models and portfolio areas with large numbers of cases should be tested more intensively than non-material models and peripheral areas of portfolios with few cases.
  - Some analyses do not make sense on an annual basis because the results cannot be expected to change qualitatively from year to year, especially in the case of LDPs (due, for example, to homogeneity, representativeness of the period for the long-term default rate). A validation every few years is therefore appropriate and risk-adequate (see, for example, the ECB's views in this regard in para 65 of the EGIM/General topics).
  - A full review by developers every three years (see context box 7) does not make good sense even for material models, at least for LDPs, since no fundamental new findings can be expected to emerge about the model design or the basic structure of the model (nevertheless, factor weights are tested every three years on the basis of the most recent data in the course of the extended review/extended validation). Material model changes frequently take several

## **Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach**

years in practice (with project implementation, supervisory approval process, IT implementation, etc.), so that virtually no data will be collected with the new model until the next full review. Such a frequency should therefore not be presented as best practice. (Irrespective of this point, we believe a supervisory handbook on validation should refrain from commenting on the review of estimates to avoid conflating supervisory expectations of different individual issues.)

- As we understand it, para 88 formulates the expectation that the documentation of any notifiable change will be tested by validation before notification. We do not consider this appropriate as this task is not related to the other tasks of validation, especially where non-material changes are concerned. If an independent formal review of notification documents is considered necessary prior to notification, this should be specified in general terms and in any event without assigning the task to the validation function. Regarding a review of content by the validation function, it should be made clear in the last sentence that the validation function should perform a technical review of the CRCU documentation but should not conduct a compliance assessment for the application package. Furthermore, it should be clarified that this review only needs to cover material changes before notification to the competent authority and that a review of non-material changes can be performed as part of the annual validation.

### **Question 2:**

**For rating systems that are used and validated across different entities, do you have a particular process in place to share the findings of all relevant validation functions? Do you apply a singular set of remedial action across all the entities or are there cases where remedial actions are tailor-made to each level of application?**

Uniform specifications and processes exist for all IRB rating models. All models are validated internally with respect to the entire portfolio.

*The definition of default goes beyond the mere development of an IRB rating system: for example, it also applies to exposures risk weighted according to the Standardised approach, and has some wider implications in terms of the risk management and provisioning (e.g. link with Stage 3 exposures and provisioning under IFRS 9). Therefore, it appears reasonable to expect a function other than the validation function to review those non-modelling aspects related to the definition of default.*

### **Question 3:**

**3a) Do you deem it preferential to split the review of the definition of default between IRB-related topics and other topics?**

**3b) If you do prefer a split in question 3a, which topics of the definition of default would you consider to be IRB-related, and hence should be covered by the internal validation function?**

## Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach

- We do not consider it feasible to give a generally applicable answer to these questions. Whether it makes sense to split the review of the definition of default (DoD) between IRB-related and other topics depends on the specific IRB methods used by the individual institution, the affected portfolios and other affected processes (such as accounting, depending on the accounting standards used).
- The decision as to what role the validation function should possibly play in the review of the DoD and what tasks should possibly be assumed by other organisational units in an institution should therefore be made on a case-by-case basis.
- No general rule should therefore be issued on this point, in our view.

*The backtesting of PD is expected to take into account the rating philosophy, among other things. However, the regulation is not specific on how such integration into the back-testing analyses could be designed.*

### Question 4: Which approach factoring in the rating philosophy of a model into the back-testing analyses should be considered as best practices?

- Article 12(f) of Regulation 2022/439 specifies in general terms that the rating philosophy should be taken into account in back-testing analyses, among other things. Para 66(c) conjunction with para 67 of EBA GL 2017/16 sets out how to do this in more specific terms: the expected responsiveness of PDs in relation to changes in macroeconomic conditions based on the respective rating philosophy is to be analysed to determine whether the actual behaviour of PDs in relation to default rates over time corresponds to these expectations.
- In our view, this requirement is as specific and concrete as is reasonably possible in a generally applicable form.
- The appropriate approach to the validation of each concrete procedure must be specifically geared to the chosen rating philosophy, the characteristics of the model in question and the underlying segment and must be designed accordingly (e.g. taking into account the cyclicity of the segment and the calibration method in the individual model).
- In our view, therefore, there is no generally applicable best practice approach to the precise procedure for taking account of the rating philosophy in back-testing analyses. In consequence, the EBA should refrain from defining or recommending a specific best practice approach.
- We believe it will generally make good sense to analyse the development of one-year default rates and average PDs over time and to make significant deviations a reason for more in-depth analysis of the rating philosophy.

### Question 5:

**What analyses do you consider to be best practice to empirically assess the modelling choices in paragraph [76] [aggregation of relevant information for slotting] and, more generally, the performance of the slotting approach used (i.e. the discriminatory power and homogeneity)?**

- We believe that, from a methodological point of view, the validation procedure for supervisory slotting approaches should also be designed in a risk-appropriate way with the proportionality principle in

## Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach

mind. In particular, the materiality of the portfolio covered by the slotting approach should be taken into account.

- In cases where the slotting approach only affects peripheral areas of an institution's specialised lending (SL) portfolio because the core SL portfolio is covered by IRB methods, the corresponding review of the modelling may be less complex and intensive than in cases where the slotting approach is applied to core areas of the SL portfolio. In the simpler case, it would be conceivable, for example, to carry out validation activities only with respect to default risk as a first step.

*When it comes to the assessment on OOT and OOS samples, in the context of data scarcity, it may become more challenging to dismiss some data for the model development (to leave it for the validation).*

*Nevertheless, the validation function is expected to conduct sufficient analyses in order to have sufficient confidence that the developed model does not suffer from overfitting and that its performance is preserved over different economic conditions. Several second-best approaches may be used:*

- 1. Conduct the validation solely based on either OOT or an OOS sample, using data not used at all by the CRCU for the model development;*
- 2. Leverage on the analyses performed by the CRCU, where the CRCU has assessed the performance of the model via OOT and OOS samples only during intermediate steps, but has used the whole sample to train the final model.*
- 3. Complement the tests performed by the CRCU with in sample tests and qualitative analysis (such as with the one mentioned above);*

### Question 6:

**6a) Which of the above mentioned approaches do you consider as best practices to assess the performance of the model in the context of data scarcity?**

- For LDPs/portfolios with scarce data, option 2 can generally be ruled out as the available data basis is necessarily exhausted in the development phase so that a model can be developed that is as accurate and stable as possible.
- If a certain amount of time has elapsed between the time of development and validation, it may make good sense to carry out OOT tests on more up-to-date data from the validation function (option 1). However, this usually requires the availability of at least one more time slice of more recent data at the time of validation compared to the data status used by the developers. This will not always be possible.
- Irrespective of this, it should generally be ensured through further qualitative analysis in the validation (option 3) that the development has not given rise to any over-adjustment to the data basis. To this end, the results of quantitative analyses should be supplemented, in particular, by economic plausibility checks of the model design and individual model components. In addition, it may make good sense to also use quantitative means to identify potential over-adjustments with respect to the development data basis with the help of certain analytical tools such as cross-validation tests based on the development data basis.

Conclusion: all three options make sense in principle and should be applied or permitted depending on the individual (data) situation.

## Comments on the Supervisory handbook on the validation of rating systems under the Internal Ratings Based approach

### Question 6

#### 6b) More in general, which validation approaches do you consider as best practices to assess the performance of the model in the context of data scarcity?

- The validation approach should always be specifically geared to the framework conditions of the individual model, which include, in addition to the characteristics of the model and the underlying economic segment, the quantity of available data, in particular.
- For the quantitative analysis used, metrics and statistical tests should be designed in such a way that appropriate account is taken of the utilised data basis, especially if a small amount of data is involved.
- The smaller the amount of data, the more other analytical tools should be used in addition to quantitative analyses based on model results and internal default experience, such as:
  - comparisons with external benchmarks such as external ratings, studies (if available), etc.
  - expert assessments of the economic plausibility of the model design, model components and model results
  - analysis of individual cases, e.g. of the background to overridden ratings and the economic background to defaults that have occurred
  - if necessary, impulse response tests to gain additional insight into the stability/responsiveness of the model

In our view, the IRB approach methods developed jointly on the basis of pooled data (so-called pool models), which are widely used in Germany, are a first-best solution for dealing with data scarcity at institution level. The handbook gives virtually no consideration to this approach, which does not even appear among the second-best approaches mentioned above. We would therefore urge the EBA to give appropriate consideration to the pool model approach.