



# THE EBA'S REGULATORY REVIEW OF THE IRB APPROACH

CONCLUSIONS FROM THE CONSULTATION ON  
THE DISCUSSION PAPER ON THE 'FUTURE OF  
THE IRB APPROACH'

**EBA**

EUROPEAN  
BANKING  
AUTHORITY

# Contents

---

<b>Executive Summary</b>	<b>2</b>
<b>1. Introduction</b>	<b>4</b>
<b>2. Summary of Consultation Responses</b>	<b>6</b>
2.1 Prioritisation and timelines	7
2.2 Technical adjustments	8
2.2.1 Definition of default	8
2.2.2 Risk estimates	9
2.2.3 Treatment of defaulted assets	10
2.2.4 Scope of application of the IRB Approach	10
2.2.5 Internal risk management processes	10
2.2.6 Credit risk mitigation	11
2.2.7 Other areas of discrepancy	12
2.3 Transparency and supervisory consistency	12
2.4 Possible future regulatory developments	13
2.4.1 Low default portfolios	13
2.4.2 Other aspects	14
<b>3. The EBA's Considerations About the Received Responses</b>	<b>16</b>
3.1 Prioritisation of the regulatory products	16
3.2 Technical adjustments	17
3.3 Transparency and supervisory consistency	18
3.4 Possible future regulatory developments	19
<b>4. Finalisation of the Regulatory Review of IRB Models in the EU</b>	<b>22</b>

# Executive Summary

---

The European Banking Authority (EBA) outlined its considerations about the regulatory review of the IRB approach in its Discussion Paper on 'The Future of the IRB Approach' published on 4 March 2015. This report contains a summary of responses received from the industry to this Discussion Paper and outlines EBA intentions and timelines relating to the regulatory review in the area of the IRB approach and implementation of the changes in IRB models.

The EBA considers it relevant to complete the regulatory review in four phases, with the last phase to be finalised by the end of 2017, whereas the implementation of the changes in the institutions' models and processes should be finalised by the end of 2020 at the latest as outlined in a separate EBA Opinion. In setting the expected timeline for the implementation the EBA took into account the industry's concerns regarding the operational burden related to the wide range of changes in the rating systems and supervisory approval processes. The EBA Opinion that is published separately alongside this report details the principles of the implementation.

The respondents to the Discussion Paper supported the sequencing of the regulatory review proposed by the EBA. In addition, the purpose of the Discussion Paper was to ensure that the scope of the regulatory review is adequate and that it can be implemented in an operationally efficient manner. The respondents in addition indicated a number of areas where clarification of the requirements is necessary in order to enhance comparability of capital requirements. These aspects will be taken into account while developing the technical standards and guidelines in accordance with the plan outlined in the Report.

Furthermore, the EBA is mindful of the international regulatory developments in the area of the IRB Approach. As the EBA work will have to be coordinated with the possible changes stemming from international agreements, the Report provides also preliminary EBA view on possible upcoming changes in the Basel framework and clarifies the planned scope of the EBA work in this broader context. While the Basel work is focused predominantly on the scope of application of the IRB approach, especially in the context of Low Default Portfolios, and overall boundaries for internal modelling, the EBA work will provide clarifications on technical aspects of IRB models including in particular main definitions and modelling techniques.

While working on the regulatory review of the IRB approach the EBA will continue its efforts to increase supervisory consistency, in particular in the assessment of IRB models. A higher degree of comparability of capital requirements can only be obtained by consistent implementation and supervisory authorities will play an essentially role in this process. This increased consistency will in part rely on the EBA benchmarking exercises that will be carried out on a regular basis. Similarly, the need for a harmonised disclosure framework will be necessary in order to facilitate comparison across institutions and a better understanding by markets of the capital requirements calculated under the IRB approach.



Finally, this report reiterates the previously expressed EBA stance in favour of the continued use of the IRB approach. While the changes implemented in the EBA regulatory review, which aims at harmonising definitions and supervisory practices, will be crucial, this must be supplemented by changes to the underlying framework – beyond what is currently allowed in European legislation – in order to reduce undue variability. This in particular relates to low-default portfolios, where modelling choices should be restricted, just as increased clarity on in particular Loss Given Default (LGD) modelling is necessary. The EBA also believes that the Basel Committee should avoid that the new proposals lead to significant increase in overall capital requirements and preserve the core strength of the IRB approach, namely a high degree of risk-sensitivity.

# 1. Introduction

---

1. The EBA outlined its considerations regarding the regulatory review of the IRB Approach in its Discussion Paper on the 'Future of the IRB Approach', published on 4 March 2015. The purpose of the Discussion Paper was predominantly to ensure that the scope of the regulatory review was adequate and that it could be implemented in an operationally efficient manner. The consultation closed on 5 May and the EBA received 22 public responses, which were published on the EBA website, and six confidential responses. The respondents cover a mix of broad and specialised industry bodies representing both larger and medium-sized institutions, and in some cases even smaller institutions, in addition to responses from a number of individual institutions. The EBA therefore considers the responses representative of the banks that currently use the IRB Approach.
2. The background to the regulatory review was given in the Discussion Paper, but, for completeness, elements of it are nonetheless relevant to understanding the context of the proposed changes. In particular, Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR) introduced a number of mandates for the EBA to develop technical standards and Guidelines to supplement the primary legislation in order to ensure a more harmonised application of the IRB requirements. In addition to this, the EBA conducted a study on the comparability of the risk estimates and capital requirements, including an analysis of the factors that contribute to discrepancies among institutions. The results of this study have been presented in the report on the comparability and procyclicality of capital requirements, which was issued by the EBA in December 2013 in accordance with Article 502 of the CRR. Since the results of this study, as well as benchmarking exercises carried out by the EBA, revealed significant discrepancies in the risk estimates and capital requirements that do not stem from the differences in the underlying risk profiles, the EBA is planning to specify a number of Guidelines in addition to the mandates included in the CRR. Based on mandates given in the CRR and the areas identified in the December 2013 report, the EBA proposed in its Discussion Paper an overall work plan for the regulatory review.
3. This review provides a general overview of the responses received, but, like the Discussion Paper, the main purpose of the review is of a more practical nature. **First and foremost, the review provides transparency and clarity on the EBA's intentions and the timelines for its regulatory review and implementation**, i.e. a plan of the regulatory deliverables. It should be noted that the EBA will initiate, or, in many cases, already has initiated, work to complete the regulatory review in time, but there are still elements of uncertainty, such as a possible review of the scope of the planned revisions to the overall IRB framework by the Basel Committee on Banking Supervision (BCBS). The EBA will continuously reflect on the appropriateness of the planned work with the aim of ensuring an orderly implementation of the European Union (EU) regulatory review.

4. The main part of this report consists of a summary of the responses received. Overall, the responses were appreciative of the approach taken by the EBA, and provided valuable input into the EBA's considerations. The responses seem to indicate agreement on the concerns regarding the wide variability in capital requirements, and usefully propose a number of possible areas that the EBA can consider in its regulatory review. It is, however, also clear that the industry is concerned about the implementation of the proposed changes and in general seeks a high degree of certainty about the future review. Section 2 provides more detail on the considerations and responses received during the consultation period. In addition, the EBA's conclusions on the timeline and specific regulatory deliverables are presented in section 4, together with some concluding remarks.
5. Secondly, in addition to ensuring transparency with respondents about the EBA regulatory deliverables, **the responses also noted that the implementation of the many regulatory deliverables, which may also include changes stemming from international agreements, will require an overall level of coordination.** The planned EBA regulatory deliverables will affect nearly all aspects of the design of the IRB Approach as it is applied across various asset classes, focusing on the definition of default, Probability of Default (PD) and LGD estimation, and the treatment of defaulted assets. In general, the planned EBA regulatory developments will be focused on the aspects of the IRB Approach that require more harmonised application within the CRR requirements, typically harmonising the inputs to the models, such as the definitions and methods for parameter estimation across asset classes in order to ensure a common approach in the EU.
6. Taking into account the above, the desired timelines for the review and its implementation will be implemented in a manner that is realistic in practical terms and ensures consistency with the changes in the Basel framework. This broader context, which is related to the regulatory developments at the global level, is nonetheless crucial to comprehending the scope of the work that the EBA is planning to undertake. Hence, an overview of such a context and the preliminary EBA view on the possible upcoming reforms is provided in section 3.
7. In addition, section 3 provides more generally the EBA's considerations about the consultation responses. It should, however, be noted that the response given by the EBA does not cover all of the areas raised during the consultation. In particular, many of the more technical proposals will be considered in the context of separate RTS and Guideline consultations, as the aim of this report is not to replace consultations on the specific regulatory changes, but rather to provide an overview of the overall regulatory review. Nonetheless, some aspects deserve particular attention, especially the prioritisation of the work and some of the wide-ranging changes that will require a review of the CRR.
8. Finally, it should be noted that this report is supplemented by an EBA opinion. The Opinion summarises the EBA work plan, as also detailed in this report, but in addition addresses the practical concerns raised by respondents about implementation of the proposed changes. While the opinion is not covered by this report, the report and the opinion should be read jointly. The opinion notes that the implementation should be complete by end-2020.

## 2. Summary of Consultation Responses

---

9. In total, the EBA received 28 consultation responses, in addition to a response from the EBA Banking Stakeholder Group, during its consultation; six of the respondents requested that their responses be kept confidential, while the remaining 22 responses were published on the EBA website. The Discussion Paper included 25 specific questions; a brief summary of the answers given to these can be found below.
10. The responses generally provide support for the IRB Approach and agreement with the EBA's stance of maintaining the IRB Approach, as respondents consider the risk sensitivity of the IRB model especially important. This ensures efficient internal capital allocation and the respondents note that other less risk-sensitive frameworks are also prone to regulatory arbitrage, just as it may encourage banks to invest in riskier assets. In general, the responses seem to indicate strong support for the continued use of IRB models, just as a high degree of commitment and willingness to engage in continued debate are signalled.
11. At the same time, respondents also recognise the need to ensure comparability across institutions and jurisdictions, and therefore to also provide broad support for the regulatory reviews undertaken by the EBA and at the international level. Most respondents, however, also express concerns that, in order to achieve comparability, substantial efforts have to be devoted to this by regulators, supervisors and institutions. It will hence be important to strike an appropriate balance between comparability and risk sensitivity, and the EBA must consider the operational aspects in its implementation plan, as well as ensuring that institutions are given sufficient time to implement the revised IRB framework.
12. Overall, the responses appear to express general agreement with the objectives expressed by the EBA in its Discussion Paper. There are, however, concerns about the operational aspects, given that the changes envisaged will, most probably, be in many cases substantial and require considerable time and resources to implement. For instance, concerns about the number of models to be approved by national supervisory authorities may make it difficult to implement the revisions in the envisaged timeframe outlined in the Discussion Paper.
13. The following sections provide more details on the concrete answers given by the respondents to the Discussion Paper. It is, however, important to keep in mind that the issues that appear to be of the highest relevance among the concerns expressed by the respondents are the operational ones, both in terms of timelines and the interaction with possible revisions to the Basel framework. Many of the more technical aspects, while useful for the EBA in the context of its regulatory review and the forthcoming proposals, will therefore not be addressed in detail.

## 2.1 Prioritisation and timelines

14. One of the main purposes of the Discussion Paper was to consult on the prioritisation of the EBA deliverables and the proposal for the implementation timeline. The respondents expressed broad support for the prioritisation, and many respondents emphasised the need to focus on the work on the definition of default, as it forms the basis of all subsequent deliverables.
15. There were, however, some respondents that stressed the need for coordination with any work being undertaken by the BCBS. This was also noted in the Discussion Paper, and the respondents considered such an alignment very important, given that different implementation timelines and overlapping requirements would prove counterproductive for the implementation of changes in internal models. Hence, any support for the prioritisation would appear to be conditional on its alignment with international work.
16. In addition, a few respondents also noted that it would be beneficial to group all the regulatory products so that they will be implemented simultaneously. Having separate pieces of legislation to comply with may prove too challenging, given that interaction across the different regulatory products is likely.
17. Finally, a couple of respondents note that they believe that the low prioritisation of the credit risk mitigation (CRM) framework should be reconsidered, albeit for different reasons. One respondent suggests that the current CRM framework facilitates regulatory arbitrages between the banking and trading book, for instance by using credit default swaps to offset credit risk exposures, just as it notes that the complexity of the framework is (too) high. The other respondent notes that the importance of financial stability for the mortgage market, which was severely affected in some EU countries during the crisis, is sufficient justification for the higher priority of this area.
18. While there is support for the prioritisation among most respondents, there are, however, almost unanimous concerns expressed about the level of ambition as regards implementation timelines, which are considered too ambitious or even unrealistic. The timeline should, therefore, be reviewed in order to allow institutions more time to implement the changes.
19. The indications given regarding the time needed for the implementation of the changes to be introduced by the future EBA regulatory products differ among the respondents. Some believe that a three- to five-year period is sufficient; others argue that five to seven years are needed; while others stress that individual time plans should be established with the local supervisors. The proposed two-year horizon for the implementation of the changes is, therefore, generally assessed as being too challenging and the EBA should consider the use of, in some cases, substantially longer implementation timeframes.
20. One important concern, raised by several respondents, is the use of historical data during the transitional period in the context of the changes in the definition of default. The requirement

of a minimum of five years of data for the estimation of risk parameters is noted as a challenge, which may be difficult to fulfil, given that the conversion of the data series cannot in all cases be done retroactively. Hence, the EBA should consider this issue in more detail and the suggestions made, including transitional periods, grandfathering, and data proxies or waivers, are noted as possible solutions in this context.

21. Consequently, the overall take-away on prioritisation and timelines appears to indicate that the EBA should maintain the current prioritisation, although it must continue to reflect on any future revisions to the IRB Approach undertaken at the BCBS level so as to ensure that the EBA's work is coordinated with the changes agreed at the global level. On the timelines, there is a clear request for further time to be allocated to the implementation of the changes stemming from the future EBA regulatory products, just as the matter of how to address changes in the historical time series needs to be considered.

## 2.2 Technical adjustments

### 2.2.1 Definition of default

22. The purpose of the Guidelines on the definition of default is to clarify all those aspects that leave room for different interpretations, in order to ensure the harmonised application of the requirements of Article 178 of the CRR. Therefore, the industry was asked for its views regarding the aspects of the definition of default that required further clarification. The respondents indicated numerous aspects, including, among others, the counting of days past due, the definition of technical defaults, and indications of unlikeliness to pay. In particular, aspects raised included distressed restructuring, the treatment of multiple defaults, and the conditions to return to non-defaulted status, in particular the length of the recovery (monitoring) period.

23. It is clear that, in the case of the IRB Approach, in order to reflect the changes in the definition of default in the risk estimates, it will be necessary, at least in some cases, to adjust the historical data. As the EBA recognises that such adjustments might require significant time and expertise, the industry respondents were asked about their experience in that area. The majority of respondents had limited experience with adjusting historical data and indicated that adjustments are usually not possible over lengthy periods and that the further back in time the adjustments need to be implemented, the more difficult this task is. Furthermore, respondents indicated that the quality of the data after the adjustments is often not satisfactory.

24. According to responses to a specific question on this issue, the adjustments in historical data related to a change in the materiality threshold for a past due credit obligation are perceived to be very burdensome and, in some cases, not even feasible. It was indicated in particular that business processes are integrated with the definition of default, and therefore past performance, as judged on the basis of a definition that was not in place at the time, is obviously not a reliable indicator of future performance. If default were recognised in a

different moment in the past, the actions of the institution would be different; therefore, the actual result cannot be replicated. For this reason, among others, the expected quality of any data resulting from the adjustments is expected to be low.

25. Some respondents mentioned various methods that could be used to adjust historical data in light of the changed definition of default. These include, among others, evaluating the impact of a change on a sample of data and then assigning proxies to the remaining data, monitoring differences over a period of one year, and then adjusting the historical data accordingly, using regression models for the extrapolation of time series to the past, and using scaling factors, manual corrections or adjustments based on expert judgement. This is also in line with the supervisory experience, which confirms that, depending on a specific situation, various approaches might be appropriate.

### **2.2.2 Risk estimates**

26. From the perspective of the comparability of risk estimates and capital requirements, it is considered crucial that, in the regulatory review of the IRB Approach, the main definitions and aspects related to the estimation of PD and LGD parameters are clarified. At the same time, it is recognised that the harmonisation of practices that lead to non-risk-based differences in capital requirements might result in material changes in the currently applied internal models. Therefore, one of the questions included in the Discussion Paper is aimed at assessing the materiality of the envisaged changes for the respondents. However, the majority of respondents indicated that the requirements are not yet clear enough to estimate the impact of the changes, and that it will depend on the final policy decisions, as well as other elements, such as the differences that will remain between the prudential and accounting frameworks after the implementation of IFRS 9.

27. Nevertheless, nearly all respondents agreed with the direction of the proposed changes and believed they would reduce divergences in the models. While some respondents would welcome precise requirements on how to compute risk parameters, it was also argued that harmonisation should take into account the heterogeneity of credit activities (such as banking loans, leasing, factoring and consumer credit).

28. Regarding the scope of the EBA Guidelines in the area of risk parameters, the margin of conservatism was identified by most respondents as an aspect that should be clarified. How the margin of conservatism should be applied, which elements it should cover and how it should be combined with downturn adjustments are currently perceived as confusing. Other aspects indicated by the respondents as not sufficiently clear include, among others, the treatment of low default portfolios, the calculation of default rate, several aspects related to LGD calculation (such as indirect costs, the definition of loss and the treatment of credit risk mitigation techniques), as well as the definitions of the notions of 'long run average' and 'economic cycle'.

### **2.2.3 Treatment of defaulted assets**

29. The feedback received confirmed that, in the absence of clear rules with regard to LGD models for exposures in default, institutions developed different practices, with some respondents using separate LGD models for exposures in default, and some not. Several respondents requested further clarification in this area, especially regarding, among others, the treatment of forbearance cases in the LGD calculation, the discount rates and the level of calibration.
30. The best estimate of expected loss (ELBE) was also mentioned by several respondents as an area that requires further clarifications, including in particular whether it should reflect a point-in-time estimation and how it should be calculated for purchased assets. In addition, it was requested that the link between ELBE and accounting provisions be clarified, especially in the context of the implementation of IFRS 9.
31. In general, the majority of respondents supported the proposed direction of work and agreed that the proposed changes are adequate to address the weaknesses and divergences in the treatment of defaulted assets across institutions.

### **2.2.4 Scope of application of the IRB Approach**

32. Numerous respondents noticed that some flexibility in the application of roll-out plans is necessary to account for specific situations. The main reason indicated in this context is that some portfolios are not appropriate for modelling, including in particular low default portfolios and also portfolios where structural changes or new business initiatives were observed. In addition, respondents see the necessity for competent authorities to approve changes when circumstances change.
33. It was also indicated that the limitation of the overall length of roll-out to five years, as initially proposed in the Consultation Paper on the RTS on the assessment methodology of the IRB Approach, is too restrictive and inappropriate for complex organisations. It was pointed out that this period includes supervisory approval processes, which are often lengthy and shorten the effective time for institutions to prepare the rating systems.
34. Several respondents mentioned that strict requirements may result in a lower quality of modelling, as this may need to be tailored to the task of meeting the roll-out schedule rather than improving underlying risk management. This, in effect, would lead to inaccurate risk estimates and inadequate capital requirements, and the overall objective of the IRB Approach would not be met.

### **2.2.5 Internal risk management processes**

35. The RTS on the assessment methodology of the IRB Approach refers not only to internal models but also to other requirements of the IRB Approach related to the internal risk management of the institutions, including in particular corporate governance, the use of risk estimation in internal risk management, and decision-making processes and stress testing. In

order to assess the impact of the proposals included in the Consultation Paper, a question was asked on the expected changes that institutions would have to implement as a result of these proposals.

36. The majority of responses focused on the allocation of tasks related to credit risk control, validation and internal audit, especially in the context of the independence of the validation function from models' development. While several respondents indicated that the proposed requirements will not lead to significant changes, other respondents expect that such changes will be necessary. Some respondents mentioned proportionality issues for smaller institutions, while others pointed out that where an internal audit is organisationally independent it should not also be required for validation function. Finally, some respondents pointed out the specific situation of institutions that use pooled models, where the validation is performed, at least partially, by the model provider.
37. Stress testing was another aspect related to internal risk management that was mentioned in the responses. Some respondents expect that this area may have strong implications on capital requirements and that more precise provisions are necessary, in particular to clarify the treatment of stress tests under Pillar 1 and Pillar 2.

#### **2.2.6 Credit risk mitigation**

38. The mandates included in the CRR for the EBA to develop technical standards in the area of CRM are only focused on a few selected aspects of the CRM framework, including the eligibility of conditional guarantees, the specification of liquid assets, and the use of the Internal Models Approach for master netting agreements. As it was considered that these elements should not have a significant impact on capital requirements, it is planned that these RTS will be specified in the last phase of the IRB review process.
39. The majority of respondents agreed that, in comparison to other areas under consideration, CRM-related mandates should have lower priority. However, it was also indicated that the CRM framework as a whole is of the utmost importance and that other aspects of the framework should also be taken into consideration. In particular, in the opinion of several respondents, the scope and granularity of credit risk mitigation techniques eligible under the Foundation IRB Approach should be expanded. It was suggested that, for this purpose, the EBA should be involved in the ongoing work at the Basel level.
40. Further, several respondents suggested that the work on CRM should be carried out in parallel with the work on LGD estimation. This proposal is based on an expectation that guidance on CRM appearing at a later stage might lead to a second structural change of the IT systems and LGD models, whereas it would be more effective to include all necessary changes to the LGD models in one redevelopment process.

### 2.2.7 Other areas of discrepancy

41. The EBA is aware that the proposed scope of the IRB review will not address all areas of potential discrepancy, either at the EU or at the global level. In this context, the industry was requested to point out the areas where further harmonisation might be beneficial. Among such areas of discrepancy, the respondents mentioned in particular double validations and various supervisory approaches by home and host authorities. It is considered necessary to align not only requirements but also supervisory assessment methodologies and processes by increased cooperation between competent authorities.
42. Some respondents also mentioned discrepancies between EU and non-EU authorities (e.g. the different materiality thresholds for past due credit obligations). In this context, it was suggested that the EBA should coordinate the efforts with the work carried out at the Basel level to make sure that the technical standards and Guidelines will not result in additional discrepancies between EU and non-EU jurisdictions.
43. Other technical aspects mentioned by respondents included, among others, the application of supervisory floors on risk parameters, the concept of significant deterioration introduced by IFRS 9 (which is an earlier state to default), the use of a 0% risk weight to sovereign exposures, and various add-ons applicable under Pillar 2 related in particular to underestimation and concentration risk.

## 2.3 Transparency and supervisory consistency

44. The respondents agreed that transparency fosters greater understanding of internal models and that more transparency should be part of an overall solution aimed at restoring confidence and repairing IRB models. However, the general consensus among respondents was that the work done by the BCBS and the Enhanced Disclosure Task Force (EDTF), and in particular the changes implemented in respect of Pillar 3 disclosures, reduced the need for additional work in this area by the EBA. As a minimum, no further work should be initiated before the finalisation of the other aspects of the regulatory review.
45. The respondents were particularly concerned about greater disclosure of the results of the benchmarking exercise, as the inevitable limitations of this exercise meant that it would be confusing and difficult for external parties to understand. Therefore, the prevailing view was that the individual results of the benchmarking exercise should not be disclosed.
46. The respondents also expressed concerns at the suggestion that the EBA might front-run BCBS proposals on disclosure requirements, as it was felt that this would disadvantage EU institutions. It was stressed by some respondents that the changes should be initiated at the Basel level and that there is no need for additional requirements at the EU level.
47. Regarding supervisory reporting requirements, the general sentiment was that these requirements should be aligned with the disclosure requirements in Pillar 3 in order to avoid duplication. Some respondents also argued that the reporting framework should be simplified,

while others suggested specific improvements such as greater delineation of information on defaulted and non-default assets, specifically on Expected Loss (EL) and provision values within COREP. Finally, some respondents warned about the potential impact of the changes on IT systems and suggested, similarly to the case with disclosures, that any modifications to the reporting framework on the IRB Approach should only be implemented after all the regulatory products in this area are finalised.

## 2.4 Possible future regulatory developments

### 2.4.1 Low default portfolios

48. One of the main aspects of the IRB Approach that is currently being discussed at the international level and also mentioned in the Discussion Paper is the definition and treatment of so-called low default portfolios (LDPs). Many respondents are of the view that LDPs should be defined precisely, and that the definition should be based on quantitative and qualitative criteria rather than a segment or class of exposures. However, views were split on the flexibility that should be retained for the definition. While some respondents argue that the proportionality principle should be used and that the LDP could actually be called a 'low data portfolio', the others warn that there will be very little harmonisation if the definition of LDP depends on the segmentation used by the bank.
49. Many respondents believed that data pooling is essential to overcoming problems related to data scarcity, and, therefore, that data pooling should be encouraged. It was also suggested that additional clarification should be provided on which external databases are 'fit for purpose'. In addition, some technical aspects could be clarified, including the treatment of external data collected with a different or unknown materiality threshold.
50. In general, respondents see the need for more guidance in the area of the treatment of LDP, although there are various proposals on what would be the appropriate approach. The suggestions of respondents in that regard included, in particular, the specification of a more sophisticated F-IRB Approach, the application of the permanent partial use of the Standardised Approach, more extensive use of expert judgement, or more explicit standards on model development, conservatism and back-testing requirements.
51. Furthermore, some respondents mentioned that applying a floor on a LGD parameter would not be an appropriate solution, as it would perpetuate data scarcity by not giving incentives to collect data for LDP and would lead to misrepresentation of risk and subsequently provide incentives for lower quality portfolios. It is, therefore, suggested that, if LGD floors are specified, they should only be treated as temporary measures and should at least be set at different levels for different portfolios.
52. The considerations around the treatment of LDP and other portfolios less suitable for modelling are closely related to the aspects of permanent partial use (PPU) of the Standardised Approach (SA) and sequential implementation of the IRB Approach (roll-out). In

the absence of strict limitations to the use of PPU and the length of the roll-out of IRB models, there seems to be a risk of ‘cherry-picking’ portfolios that allow for the greatest capital relief.

53. Many respondents seem to believe that this possibility of ‘cherry-picking’ is limited by the supervisory approval processes. Other suggestions regarding how to mitigate this risk included, among others, the use of benchmarking in conjunction with supervisory judgement, appropriate disclosures, limitation of PPU based on the characteristics of certain facilities, and the application of a threshold on data availability.

#### **2.4.2 Other aspects**

54. There was general agreement between respondents that moving towards the harmonisation of the exposure classes for the purpose of the IRB and the Standardised Approach would be beneficial. Several respondents suggested that the definition of exposure classes should be flexible, and others believed that the common segmentation by classes should be based on the one currently used for the IRB Approach. Some respondents specifically proposed that defaulted exposures should not form a separate class of exposures under the Standardised Approach.

55. Another topic that attracted a lot of attention from the respondents is the discussion on the philosophy of the rating systems. Most of the responses seem to indicate the importance of both Point-in-Time (PIT) and Through-the-Cycle (TTC) approaches, as these serve different purposes. Many respondents argued that a requirement to use the TTC approach would lead to inconsistencies in internal risk management due to, for example, the need for the PIT approach in provisioning. Other arguments in favour of the PIT approach included concerns that TTC approach may conflict with fundamental risk appetite and strategy priorities, including from an early warning point of view. The respondents expect that short-term exposures may be incorrectly assessed on a TTC basis, given that TTC assumptions may never actually apply during the lifetime of such exposures. In addition, a PIT approach is considered to be more relevant in some aspects of risk management, such as origination, stress testing and planning.

56. Nevertheless, irrespective of the above issues raised, reassessing PIT and TTC with a view to reducing cyclicalities would, in general, be welcome. It was suggested by some respondents that the attention should be focused on the application of hybrid approaches and the specification of what level of sensitivity to the economic cycle would be viewed as desirable.

57. Regarding the proposal included in the Discussion Paper to aim at removing the possibility to grant permission for the data waiver, it was noted by several respondents that certain exposures may well be suitable for modelling, even in the absence of five years of data, and that such modelling would nevertheless be preferable to using the Standardised Approach as it would contribute to improved risk management. These considerations apply in particular to high-default portfolios, for which risk may be adequately captured with shorter data series. In addition, some respondents noted that the removal of the possibility of the data waiver would

raise the entry barriers for the IRB Approach and hence have negative competitive implications.

58. Other aspects mentioned by respondents where the review and clarification would bring benefits of enhanced comparability of the risk estimates and capital requirements include, among others, the double default methodology within the CRM framework, the application of the margin of conservatism, and the role of stress testing and Pillar 2 in the context of Risk Weighted Assets (RWA) variability. Further, IFRS 9 provisioning was mentioned and it is clear that this causes concern, not only from the point of view of capital requirements but also in terms of reporting requirements.
59. A respondent welcomes the EBA initiative and is generally supportive, but also notes that, in this context, there is a need to reconsider the use of IRB models more generally and consider the possibility that simpler measures, such as the leverage ratio, should be used as Pillar 1 measures to complement or even replace IRB models. The respondent also notes that the IRB Approach puts large banks at an advantage relative to smaller banks, given that the IRB Approach generally leads to lower capital requirements. Furthermore, the ability of models is undermined by model uncertainty, complexity and regulatory arbitrage. Hence, the EBA should use the opportunity to rethink the current framework. The respondent suggests that allowing the IRB Approach only for SME exposures can be considered one possible response in this context.

## 3. The EBA's Considerations About the Received Responses

### 3.1 Prioritisation of the regulatory products

60. As broad support was expressed for the proposed prioritisation of regulatory products as presented in the Discussion Paper, the EBA intends to continue the work in line with the order presented in the table below. However, it is also clear that the EBA should remain mindful of the regulatory developments at the international level and coordinate efforts with the work of the BCBS in the area of the IRB Approach.

Table 1: Prioritisation and the current status of regulatory products related to the review of the IRB Approach

Prioritisation	Regulatory products	Current status
<b>Phase 1: Assessment methodology</b>	RTS under Articles 144(2), 173(3) and 180(3b) on the IRB assessment methodology	Finalisation stage
<b>Phase 2: Definition of default</b>	RTS under Article 178(6) on the materiality threshold  GL under Article 178(7) on the application of the definition of default	Finalisation stage
<b>Phase 3: Risk parameters</b>	Own-initiative EBA Guidelines in line with the conclusions of the report on Article 502: <ul style="list-style-type: none"> <li>▪ GL on PD estimation</li> <li>▪ GL on LGD estimation</li> <li>▪ GL on treatment of defaulted assets</li> </ul> RTS under Articles 181(3a) and 182(4a) on downturn conditions	Preparation stage
<b>Phase 4: Credit risk mitigation</b>	RTS under Article 183(6) on conditional guarantees  RTS under Article 194(10) on liquid assets  RTS under Article 221(9) on master netting agreements in the Internal Models Approach	Planning stage

61. The concerns of the industry were focused mostly on the timelines for the implementation of the changes. As this is closely related to the EBA's work plan regarding the review of the IRB Approach, these aspects, including timelines for both the development of regulatory products and their subsequent implementation, are discussed in more detail in the next section.

## 3.2 Technical adjustments

62. The EBA considers the feedback received from the industry on the technical aspects of the application of the IRB Approach and the implementation of the changes highly valuable for its future work on regulatory products. The opinions and detailed suggestions expressed by the respondents will be taken into consideration in the development process of the relevant technical standards and Guidelines. It is considered beneficial that, on the basis of the feedback already received, the industry's opinion will be taken into consideration at the early stages of the development of regulatory products. Nevertheless, the EBA will continue to practise public consultations and any interested parties will have an opportunity to express their detailed comments on the specific regulatory products during the relevant consultation periods.

63. Specifically in the area of the definition of default, most of the aspects indicated by the respondents as requiring harmonisation will be addressed in the Guidelines on the definition of default and RTS on the materiality threshold for past due credit obligation. Some elements, like the treatment of multiple defaults, will be clarified at later stages in other EBA Guidelines on the estimation of risk parameters. These detailed clarifications should significantly increase comparability in the identification of defaults and the calculated long run average default rate.

64. Taking into account the received feedback, the EBA, while specifying the requirements for the implementation of the changes in the definition of default, will keep in mind that there are various techniques that can be used in order to adjust the historical default rates and that, depending on the data structure and the nature of the change in the definition of default, a recollection of historical defaults might, in some cases, not be possible. Therefore, although proper data series will remain a priority, an alternative solution will have to be provided to allow implementation of the changes in the definition of default, even in a situation where the recollection of historical defaults are not feasible or is overly burdensome.

65. In the area of risk estimates and the treatment of defaulted assets, the EBA appreciates the positive feedback from the industry indicating that the proposed direction of the changes should lead to reduced divergences in the models. The EBA intends to move forward as planned and provide in the Guidelines the necessary clarifications on the estimation of risk parameters including, to the extent possible, the areas indicated by the respondents. However, it has to be noted that, at this stage, it will only be possible to provide further explanations within the legal framework provided by the CRR. Any clarifications or changes regarding more fundamental aspects, such as the definition and treatment of low default portfolios, will depend on the conclusions taken at the Basel level and will require change in the CRR.

66. In this context, it has to be noted that the EBA is sympathetic to many of the remarks provided by the respondents on the scope of application of the IRB Approach and recognises that some portfolios are clearly less suitable for full modelling. For that reason, the EBA decided not to submit the draft RTS on the permanent partial use and sequential implementation of the IRB Approach to the Commission at this stage. The EBA is of the view that once final conclusions are reached in that regard at the international level, there would be merit in addressing these aspects through modification of the CRR.

67. More general aspects related to the internal risk management of institutions will be addressed to some extent in the RTS on the assessment methodology of the IRB Approach. Various opinions were expressed by the respondents on the proposed internal governance requirements, especially in the context of the independence of the validation function from the models' development. While the EBA recognises the need for flexible solutions, especially for smaller firms, the independence of the validation function from models' development is also considered crucial to ensuring that the validation of IRB models is performed with sufficient objectivity and provides genuine challenges for model development. As model validation requires specific, specialised competencies, it is usually not sufficient to rely on an internal audit in that regard. Therefore, a certain level of independence of the validation function—achieved by appropriate allocation of tasks, reporting lines or organisational structure—is considered necessary to ensure the effective maintenance of high-quality models.

68. The RTS on assessment methodology also touches upon some aspects related to the CRM requirements. However, more detailed guidance on the aspects covered by the EBA mandates is planned to be provided only at the last phase of the IRB review. As it is not possible to develop all technical standards and Guidelines at the same time, the prioritisations and the specification of a step-by-step approach were necessary. Nevertheless, the EBA recognises that the CRM framework as a whole requires more fundamental revision, and intends to actively participate in the work on this area at the Basel level. The implementation of these more fundamental changes to the European legal framework will require a change of the CRR. Until this is possible, the EBA's work will focus on the aspects covered by the specific mandates.

69. Finally, in the context of the industry's comments regarding insufficient coordination of the supervisory practices, the EBA's efforts will continue to be focused, to a large extent, on ensuring supervisory consistency across the EU. This is expected to be achieved in particular by common assessment methodologies, increased cooperation within supervisory colleges and the use of the annual benchmarking of internal models in the supervisory processes.

### 3.3 Transparency and supervisory consistency

70. Regarding disclosures, the EBA may work on the implementation in the EU of the BCBS-revised Pillar 3 framework issued in January 2015, and is actively contributing to the work ongoing at the international level to further develop and update the Pillar 3 framework. The specificities

of the EU banking system may require some adaptation of the Basel-revised Pillar 3 framework, which will be decided following the regular due process, including a consultation with institutions and other stakeholders.

71. At the same time, the EBA will continue to run specific disclosure exercises, either on a standalone basis or as part of the EU-wide stress tests, to make public relevant information under a consistent format, which is currently lacking in the disclosure of individual institutions. This relevant information may include information on exposures, risk-weighted assets, capital requirements and key P&L items, on both a bank-by-bank and aggregated basis by country. Aggregate risk parameters are also regularly published by the EBA as part of its efforts to increase disclosure on the outcome of internal models.
72. The completion of the regulatory review and the finalisation of new regulatory products may trigger the need for additional disclosure or additional supervisory reporting. However, these additions will be decided once the regulatory product they stem from is finalised.
73. The benchmarking of the internal models used by banks is an essential element of the EBA's efforts to ensure more supervisory consistency, along with increased interactions within supervisory colleges. The benchmarking exercise complements the other work that the EBA has been doing since 2012 on the consistency of risk-weighted assets, with the last report published in July 2015 as regards low default portfolios and counterparty credit risk. The inclusion of a disclosure component in the benchmarking exercise, as well as the format such a disclosure could take, has not been decided at this point in time, but the EBA is well aware that some information is particularly sensitive and not suitable for bank-by-bank disclosure.

### 3.4 Possible future regulatory developments

74. The Discussion Paper underlined the excessively high degree of complexity of the rating systems, the high degree of flexibility in the development of the models, and the resultant substantial divergences across banks in terms of model outcomes. Given that this flexibility was, in many cases, not justified by risk-based drivers, this has led to questioning from supervisors and other market participants about the robustness of the models and the comparability of capital requirements. The positive aspects, in terms of preserving a risk-sensitive approach, have led the EBA to initiate the work outlined in the Discussion Paper, since addressing these issues is necessary to restore trust in the models.
75. The Discussion Paper presented a number of technical solutions, which can generally take place by clarifying aspects within the existing framework. The majority of this report considers these aspects in more detail, as doing so is most relevant for future EBA work. It is, however, clear, as also noted in the Discussion Paper, that there are some aspects that may have to be fixed and will require more fundamental changes. These fundamental changes are most optimally considered at the international level in order to ensure global consistency. Nonetheless, the work of the EBA has already led to some conclusions on which elements

should be part of future reform, hence this report will also attempt to provide clarity on what—from a European perspective—future reforms should optimally contain.

76. A clear conclusion from the EBA's work, as well as from work presented at the international level, is that the current treatment of LDPs, especially in the area of LGD modelling, is one of the aspects that largely contributes to the excessive variability of capital requirements. Given the challenges of providing robust risk estimates in a situation where only a few observations are available, it is a clear conclusion that those portfolios are less suitable for modelling. Hence, one of the main aspects of future reforms should be to identify these portfolios and limit modelling freedom in this area; these portfolios should be subject to either the Standardised Approach or the Foundation IRB Approach.
77. The EBA is actively participating in the discussions held at the Basel level regarding the definition and treatment of LDPs, and the feedback received from the industry will be taken into account for that purpose. It is also clear that the problems with data scarcity may be overcome to some extent via the use of pooled data. However, in that case the representativeness of the data, as well as the homogeneity of the portfolios, has to be taken into consideration. Hence, it appears necessary to develop more wide-ranging proposals at the internal level, where restrictions to the LGD parameter must be given particular consideration.
78. In addition, the EBA also believes that it may be beneficial to consider those elements that have proven difficult to implement consistently. These elements include, in particular, simplifying or constraining the modelling of downturn LGDs, standardising the implementation of the rating philosophy (the PIT vs TTC approaches), and simplifying the complex CRM framework. When bringing clarity and simplification to the framework, the contribution of such a bottom-up repair to the reduction of variability is very significant. The benefits of such an intrusive approach to the repair of models should be assessed and exhibited with a view to its recognition in the final framework, in particular when thinking of the setting of floors. It would hence be optimal if such aspects are included in the international work.
79. In addition, given that there is a risk of divergence, the EBA feels that the discussion of the floors cannot be separated from discussion of the other aspects of the reforms, such as the revisions to the IRB Approach and the revision of the Standardised Approach. While floors have a value in constraining arbitrage and model risk, the tool might put into question the risk sensitivity of the prudential framework, especially if applied at the exposure level. Therefore, any consideration of whether the introduction of the floor is needed and, if so, what the appropriate level of application of such a floor would be, should take into account the impacts and benefits of all other changes to the regulatory framework. While, in the opinion of the EBA, a floor to the overall capital requirements could be a part of the solution and act as a backstop for potential outliers, it should be subject to careful calibration to ensure that the risk sensitivity of the capital framework is preserved. This calibration can only take place after the finalisation of the Standardised Approach and the IRB review.

80. Finally, it is important to stress that the IRB revision should not have increasing the overall level of capital requirements as a goal. Clearly, any reform may lead to increases for individual banks, especially in outlier cases, just as the implementation of the changes and simplifications may lead to higher capital requirements. Nevertheless, the review would need to be very mindful of the overall level of capital requirements, as it should not lead to a disproportionate increase in capital requirements. The final structure of the IRB Approach, and any possible constraints to the application of internal models, will have to be carefully assessed in this context.
81. The conclusions of the Basel discussions will subsequently become part of the IRB framework and will have to be transposed into the EU legislation via appropriate changes in the CRR. Until that time, the EBA will refrain from specifying any requirements with regard to the specific treatment of LDP. This is why the EBA decided not to submit the RTS on the permanent partial use and sequential implementation of the IRB Approach to the Commission at this stage, but rather to take part in the discussions on the optimal scope of application of the IRB Approach at the Basel level.
82. Similarly, the EBA will also take into consideration the opinions expressed by the respondents on other topics while discussing possible solutions at both the Basel and EU levels.

## 4. Finalisation of the Regulatory Review of IRB Models in the EU

---

83. The responses to the consultation have, in general, reinforced the EBA's view that the IRB Approach continues to offer substantial benefits and have confirmed the industry's commitment to the use of IRB models. The risk sensitivity of the IRB Approach still appears to be superior compared to alternatives, just as the integration with bank risk management practices and the incentives provided to improve risk management practices support the current regulatory use of IRB models. At this point in time, the EBA therefore remains convinced that the IRB Approach is still the preferred way to determine capital requirements for those banks that are willing to commit the substantial resources required to adopt and maintain the approach.

84. It will in addition be important, that the changes implemented in the EBA regulatory review, which aims at harmonising definitions and supervisory practices, also is supplemented by changes to the underlying framework – beyond what is currently allowed in European legislation – in order to reduce undue variability. This in particular relates to low-default portfolios, where modelling choices should be restricted, just as increased clarity on in particular LGD modelling is necessary. It will however also be necessary to pay attention to the overall capital impact, as EBA is of the opinion that the Basel Committee should avoid that the new proposals lead to significant increase in overall capital requirements.

85. The EBA in particular draws three conclusions in upcoming EBA work, which will be the basis of the building blocks for future EBA policy in this area.

**Conclusion 1: The EBA will continue working on the repair of internal models by promoting the convergence of key definitions and supervisory practices. The identified regulatory deliverables and the timeline presented in Table 2 reflect this goal.**

**Conclusion 2: The regulatory IRB review should be implemented following a dialogue with the supervisor to agree on an implementation plan during 2016 and 2017. The implementation of the plan should not go beyond 2020. The EBA Opinion (published separately) details the principles of the implementation.**

**Conclusion 3: IRB models have high value as regulatory tools, and should be preserved in the broad range of metrics used for prudential supervision, provided their variability is reduced. The EBA will hence continue to advocate for the use of the IRB Approach, but some elements of the IRB Approach, as illustrated in section 3.4, justify a reduction in modelling options, in particular in the area of LGD modelling for low-default portfolios.**

86. Consequently, the EBA will follow the work plan as specified in the table below.

Table 2: Time plan for the development of regulatory products related to the review of the IRB Approach

Prioritisation	Regulatory product	Publication of the Consultation Paper	Publication of the final text
<b>Phase 1: Assessment methodology</b>	RTS under Articles 144(2), 173(3) and 180(3b) on IRB assessment methodology	Done	Q1 2016
<b>Phase 2: Definition of default</b>	RTS under Article 178(6) on materiality threshold	Done	Mid-2016
	GL under Article 178(7) on the application of the definition of default	Done	Mid- 2016
<b>Phase 3: Risk parameters</b>	GL on PD estimation	3 <sup>rd</sup> quarter 2016	Mid-2017
	GL on LGD estimation	3 <sup>rd</sup> quarter 2016	Mid-2017
	GL on the treatment of defaulted assets	4 <sup>th</sup> quarter 2016	Mid-2017
	RTS under Articles 181(3a) and 182(4a) on downturn conditions	4 <sup>th</sup> quarter 2016	Mid- 2017
<b>Phase 4: Credit risk mitigation</b>	RTS under Article 183(6) on conditional guarantees	2 <sup>nd</sup> quarter 2017	End- 2017
	RTS under Article 194(10) on liquid assets	2 <sup>nd</sup> quarter 2017	End-2017
	RTS under Article 221(9) on master netting agreements in the Internal Models Approach	2 <sup>nd</sup> quarter 2017	End-2017

87. The dates provided in the column 'Publication of the final text' refer to the planned deadline for submitting the final draft technical standards to the Commission or to the publication of the final EBA Guidelines. The deadlines for the submission of technical standards to the Commission, where different than in the primary legislation, will be subject to approval by the Commission, and should at this stage be seen as indicative.

88. It has to be stressed that, while developing the regulatory products listed in the table above, the EBA will at the same time follow the international developments at the level of the BCBS. Although it is expected that the EBA's work will be complementary to the Basel review, some of the discussions at the international level may influence the scope and timelines of the EBA's review of the IRB Approach. Therefore, the timelines included in the table above should be treated as indicative since they may have to be amended over time; for instance, as a consequence of international developments but also in the case of other legislative actions by the European Commission.

89. It must be recognised—as identified equally by institutions, supervisory authorities and regulators—that the IRB Approach, as it is currently implemented, gives rise to non-comparable capital requirements across institutions. This is, to a large extent, attributable to the high degree of flexibility in the IRB Approach, which has led to different implementations and adoptions across institutions and jurisdictions. The EBA will, therefore, continue to put substantial effort into a regulatory review of the IRB Approach in order to mitigate or remove the shortcomings identified in the current implementation.

90. As noted in the Discussion Paper, where the goal of higher comparability of IRB models across institutions and jurisdictions cannot be obtained solely by a regulatory review, a future framework must rely on three areas:

- review of the regulatory framework;
- ensuring supervisory consistency, which in part relies on the EBA benchmarking exercises; and
- increased transparency based on standardised comparable disclosure templates.

91. Consequently, the regulatory review will only be one element of the future work on the IRB Approach. The supervisory consistency, which will be supported by the EBA benchmarking exercises, is of equally high importance. A higher degree of comparability can only be obtained by consistent implementation, and supervisory authorities will play an essential role in this process. Similarly, a harmonised disclosure framework will be necessary in order to facilitate comparison across institutions and enable a better understanding by markets of the reasons behind the legitimate differences observed in risk-weighted assets and the capital requirements of banks under the IRB Approach.

92. Regarding the timelines for the implementation of the regulatory products, taking into account the expected scope of the changes, the EBA agrees with the concerns expressed by the industry that the initial proposal included in the Discussion Paper might, in some cases, be too ambitious. As the changes in the regulatory framework will affect different institutions to different extents, the EBA is of the opinion that the implementation of the review of the IRB Approach will be most efficient if based on individual timelines agreed by the institutions with their competent authorities. This approach will allow supervisory authorities to ensure that the implementation is conducted in the shortest possible timeframe, taking into account the

capacities and specific circumstances of individual institutions, and will help to avoid backlogs in the supervisory assessment processes.

93. The EBA is also aware that more clarity on the implementation issues is needed. In order to address these concerns, the EBA is publishing a separate document, in the form of an EBA Opinion, that provides the necessary explanations and the EBA's expectations with regard to the implementation of the review of the IRB Approach, including the final deadline when, in the view of the EBA, all changes should be implemented. This opinion should help to carry out the supervisory approval processes in the most efficient manner and ensure that the implementation deadline is met.



**EUROPEAN BANKING AUTHORITY**

---

Floor 46, One Canada Square, London, E14 5AA

---

Tel.: +44 (0)207 382 1776

Fax: +44 (0)207 382 1771

Email: [info@eba.europa.eu](mailto:info@eba.europa.eu)

---

<http://www.eba.europa.eu>