EBA/CP/2014/36

12 November 2014

Consultation Paper

Draft Regulatory Technical Standards
On the specification of the assessment methodology for competent authorities regarding compliance of an institution with the requirements to use the IRB Approach in accordance with Articles 144(2), 173(3) and 180(3)(b) of Regulation (EU) No 575/2013

Contents

1. Responding to this Consultation

The EBA invites comments on all proposals put forward in this paper and in particular on the specific questions summarised in 5.2.

Comments are most helpful if they:

- respond to the question stated;
- indicate the specific point to which a comment relates;
- contain a clear rationale;
- provide evidence to support the views expressed/ rationale proposed; and
- describe any alternative regulatory choices the EBA should consider.

Submission of responses

To submit your comments, click on the 'send your comments' button on the consultation page by 12.03.2015. Please note that comments submitted after this deadline, or submitted via other means may not be processed.

Publication of responses

Please clearly indicate in the consultation form if you wish your comments to be disclosed or to be treated as confidential. A confidential response may be requested from us in accordance with the EBA's rules on public access to documents. We may consult you if we receive such a request. Any decision we make not to disclose the response is reviewable by the EBA's Board of Appeal and the European Ombudsman.

Data protection

The protection of individuals with regard to the processing of personal data by the EBA is based on Regulation (EC) N° 45/2001 of the European Parliament and of the Council of 18 December 2000 as implemented by the EBA in its implementing rules adopted by its Management Board. Further information on data protection can be found under the Legal notice section of the EBA website.

2. Executive Summary

The Capital Requirements Regulation (CRR) and the Capital Requirements Directive (CRD)[1] set out prudential requirements for banks and other financial institutions which have been applied from 1 January 2014. Among others, the CRR contains specific mandates for the EBA to develop draft Regulatory Technical Standards (RTS) to specify the assessment methodology competent authorities shall follow in assessing the compliance of an institution with the requirements to use the Internal Ratings Based Approach (IRB Approach).

These proposed draft RTS are considered an integral part of the efforts of the EBA to ensure consistency in models outputs and comparability of the risk-weighted exposure amounts. It is expected that these proposed draft RTS should enable harmonisation of the supervisory assessment methodology across all EU Member States. It will therefore rectify the issues identified in this regard in the EBA Report on the comparability of the IRB models and provide enhanced clarity on various aspects of the IRB Approach application.

Main features of the draft RTS

These draft RTS set out standards for the competent authorities in assessment of the institution compliance with minimum IRB requirements as defined in Chapter 3, Title II, Part Three of the CRR, when institution initially applies to use the IRB Approach, applies to use IRB approach for certain types of exposures in accordance with the sequential implementation plan, applies for implementation of material changes to the IRB approach and applies to return to the use of less sophisticated approaches. Competent authorities will also use this draft RTS to assess whether institution meets minimum IRB requirements on an ongoing basis following the regular review of IRB Approach and review of changes that require notifications from the institution. Consequently, these RTS will need to be embedded in day-to-day practices of supervisory authorities.

With a view to ensuring uniform interpretation and application by relevant competent authorities across the European Union of all minimum IRB requirements, as defined in the CRR, these draft RTS provides a mapping of these requirements into the fourteen chapters. Each chapter starts with a brief description of the assessment criteria to be used by competent authorities as regards verification requests and of the methods to be used by competent authorities in this context.

Among other aspects these draft RTS provide further clarification on the independence of validation function from the credit risk control unit. The level of independence is based on proportionality principle, therefore for global and other systematically important institutions the separation requirements are stricter.

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[1] Regulation (EU) No 575/2013 of 26 June 2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, and Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC.

It is clarified that own-LGD estimates should be calculated as the average based on the number of defaults, i.e. default-weighted average. This is mainly due to the fact that LGD parameters should be calculated for homogenous pools or facility grades; hence if risk drivers like exposure amount are relevant, they should be used for segregation or risk differentiation of the LGD.

The calculation of the difference between expected loss amounts and credit risk adjustments, additional value adjustments and other own funds reductions should be performed on an aggregate level separately for the portfolio of defaulted exposures and the portfolio of exposures that are not in default. This is necessary in order to ensure that the negative amounts resulting from the calculation performed for the defaulted portfolio are not used to offset the positive amounts resulting from the calculation performed for the portfolio of exposures that are not in default.

These RTS will replace the CEBS 'Guidelines on the Implementation, Validation and Assessment of Advanced Measurement (AMA) and Internal Ratings Based (IRB) Approaches' (GL-10 CEBS, issued in 2006), limited to Section 2.2.2 and Section 3 and Annexes III in the context of assessment methodology by competent authorities for IRB Approach.

Next steps

Following the consultation, the EBA will review the draft RTS to ensure that any relevant comments arising from the consultation process are take into account.

3. Background and rationale

Introduction

For purposes of own funds requirements for credit risk, Article 143(1) of Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR) allows competent authorities to permit institutions to use the Internal Ratings Based Approach (IRB Approach), provided that the conditions set out in Chapter 3, Title II, Part three of the CRR are met.

In the case of retail exposures the institution that uses the IRB Approach has to provide own estimates of PD, LGD and conversion factors. In the case of exposures to corporates, institutions and central governments and central banks, the institution must specify in the application to use the IRB approach whether it wants to apply regulatory LGD and conversion factors or use own estimates of those parameters. The permission to use own estimates of LGD and conversion factors is granted by the competent authorities in accordance with Article 151(9) of the CRR.

The risk weighted exposure amounts for the equity exposures covered by IRB Approach can be calculated with the use of one of the following methods: simple risk weight approach, PD/LGD approach or internal models approach, as laid down in Article 155(2)-(4) of the CRR. The permission to use PD/LGD approach or internal models approach has to be granted by the competent authorities in accordance with Article 151(4) of the CRR.

Subject to prior permission of the competent authorities, the implementation of the IRB Approach may be carried out sequentially, as laid down in Article 148 of the CRR. The rating systems implemented by the institutions according to the plan of sequential implementation of the IRB Approach have to be approved by the competent authorities before the institution starts using them for the purpose of own funds requirements calculation. Additionally, also subject to prior permission of the competent authorities, some exposures may be permanently exempted from the use of the IRB Approach. The permission for permanent partial use of the Standardised Approach is granted in accordance with Article 150 of the CRR.

According to Article 143(3) of the CRR where the competent authorities have already granted permission to use the IRB Approach, the institution has to obtain permission of the competent authorities for any material changes. These material changes include the range of application of a rating system or an internal models approach to equity exposures that the institution has received permission to use and for any material changes to such rating system or an internal models approach to equity exposures.

Finally, the assessment of the IRB Approach is performed by the competent authorities not only for the purpose of granting permissions as described above, but also during the on-going supervision of the institutions. In particular competent authorities are required to perform the regular review of the IRB Approach at least every 3 years in accordance with Article 101 of the Directive (EU) 36/2013 (Capital Requirements Directive – CRD).

According to Article 144(2) the EBA is required to develop draft regulatory technical standards, to be submitted by the EBA to the Commission, to specify the assessment methodology competent authorities shall follow in assessing the compliance of an institution with the requirements to use the IRB Approach. Additionally, according to Article 173(3), EBA should develop draft regulatory technical standards for the methodologies of the competent authorities to assess the integrity of the assignment process and the regular and independent assessment of risks. Finally, according to Article 180(3)(b) the regulatory technical standards should also specify the methodologies according to which competent authorities shall assess the methodology of an institution for estimating the PD. These draft RTS covers all three mandates described above. They apply to the competent authorities in all situations described in the previous paragraphs, both for the purpose of granting permission in accordance with Articles 143(1)-(3), 148, 150, 151(4) and 151(9) and for on-going supervision including regular reviews of the IRB Approach.

Similar mandates exist for the advanced approaches to own funds requirements calculation for operational and market risk. The operational risk assessment methodology is close to finalisation, whereas the market risk assessment methodology is in earlier stages. In order to ensure a consistent treatment of all approaches based on internal models in the capital requirements framework, some amendments to the wording of these proposed draft RTS may be introduced at a later stage.

These proposed draft RTS are considered an integral part of the efforts of the EBA to ensure consistency in models outputs and comparability of the risk-weighted exposure amounts. It is expected that these proposed draft RTS should enable harmonisation of the supervisory assessment methodology across all EU Member States. It will therefore rectify the issues identified in this regard in the EBA Report on the comparability of the IRB models and provide enhanced clarity on various aspects of the IRB Approach application.

Structure and scope of the proposed draft RTS

In order to structure these proposed draft RTS, all minimum IRB requirements, as defined in Chapter 3, Title II, Part three of the CRR, have been mapped into the 13 parts covering:

   (i) Implementation plan and permanent partial use;

   (ii) Internal governance and validation;

  (iii) Use test and experience test;

  (iv) Assignment of exposures to grades and pools;

   (v) Definition of default and loss;

  (vi) Design, operational details and documentation of the rating systems (models);

  (vii) Risk quantification;

(viii) Assignment of exposures to exposure classes;

(ix) Stress tests used in assessment of capital adequacy;

(x) Own funds requirements calculation;

(xi) Data maintenance;

(xii) Requirement for Equity Exposures under the Internal Models Approach;

(xiii) Management of changes to the rating systems.

Each chapter starts with a brief description of the assessment criteria (including the reference to the CRR requirements) and the methods to be used by competent authorities in this context. The requirements included in these proposed draft RTS focus on the main aspects of the IRB Approach and where necessary provide clarification of the CRR requirements.

Additionally, these proposed draft RTS include introductory general rules, which is expected to link all other parts of the regulation, and define cross-cutting principles. In particular this part of the proposed draft RTS specify the general rules on the conclusions drawn by the competent authorities from the assessment performed in accordance with these proposed draft RTS and possible decisions taken by competent authorities with regard to the use of IRB Approach.

It is important to stress that these proposed draft RTS are not meant to repeat the requirements of the CRR. Regardless of the content of these proposed draft RTS competent authorities are directly obliged by Article 144(1) of the CRR to verify all requirements laid down in Chapter 3, Title II, Part three of the CRR before granting the permission to use the IRB Approach. Additionally, to the extent the provisions of Chapters 4 and 5, Title II, Part three of the CRR are used by the institution for the purpose of IRB Approach, competent authorities should also verify the compliance of the institution with those requirements.

Main policy decisions and their rationale

General chapter

Permission in case of roll-out plan

In order to ensure consistency and comprehensiveness of the assessment of the overall IRB Approach, including subsequent requests for permission on the basis of the approved sequential implementation plan of an institution, competent authorities should base their assessment by applying at least the rules on the use and experience test, assignment to grades or pools, rating systems and risk quantification, as these aspects of the assessment relate to every individual rating system of the IRB approach.

Outsourcing

One of the general cross-cutting principles included in these proposed draft RTS is that all rating systems should be equally verified regardless whether they were built internally by the institution or obtained from third party vendor. Similarly all material processes related with the application of IRB Approach should be assessed in line with these proposed draft RTS even if they are outsourced to a third party. The management body of the institution is ultimately responsible for the outsourced processes and the performance of rating systems even when obtained from a third party vendor, therefore sufficient in-house understanding and full documentation has to be ensured. As additional risks may be related with the outsourcing of important tasks, activities or functions it is important to verify that the institution implemented adequate controls to mitigate those risks and ensure continuity of the outsourced processes. The use of the rating models and risk parameters must be embedded in the risk management of the institution and while outsourcing of these aspects can be implemented, institutions must understand the rating models and risk parameters in detail.

PPU and roll-out plan

Roll-out plan

The plan for sequential implementation of IRB Approach (so called roll-out plan) has to be approved by the competent authorities. It has been specified in these proposed draft RTS that such plan should contain at least the scope of application of each rating system, the planned dates of implementation of IRB Approach with regard to each type of exposures and the information about the current exposure values and risk weighted exposure amounts of those types of exposures. It implies that fixed and reasonable dates have to be specified with regard to the implementation of all rating systems envisaged by the roll-out plan, which is a maximum of five years, unless where any of the specific conditions is met.

The IRB Approach goes beyond internal models and technical calculation of the own funds requirements, it defines also the internal governance, including corporate culture and management of the institution. For that reason, as a general rule, the IRB Approach should be implemented for all exposures, unless the institution has received the permission to permanently use the Standardised Approach, subject to strict conditions defined in the CRR. Therefore it is important that competent authorities closely monitor the realisation of the roll-out plan in order to avoid undue delays in the full implementation of the IRB Approach. Any changes of the roll-out plan have to be approved by the competent authorities and can only be allowed if specific conditions are met that justify the change.

Governance and validation

General and CRCU

As internal governance is largely affected by the IRB Approach certain aspects of it also have to be assessed by the competent authorities. Sound management processes and adequate involvement of the management body, relevant committees and senior management of the institution are

necessary to ensure proper application of IRB Approach. In particular the internal reporting in the area of credit risk management should be based in large part on the rating systems.

One of the most important roles in the implementation of IRB Approach is played by the credit risk control unit or units. They are responsible among others for the development of rating systems and their monitoring as well as active participation in the implementation and validation of models. Therefore competent authorities should verify if those units are adequately equipped and managed and that they are located at an adequate level of the institution. In order to perform their tasks in an objective manner these units have to be independent from the originating or renewing of exposures.

Independence of the validation function

The main role of the validation function is ensuring good quality of rating systems and their compliance with the relevant requirements. In order to allow objective assessment of the rating systems the validation function should be granted adequate level of independence from the credit risk control unit that is responsible for the development of the models.

Since both in the credit risk control unit as well as for the purpose of the validation function highly qualified staff is required, the assessment of the adequacy of the level of independence should be based on the proportionality principle. As a minimum, in smaller institutions, the staff performing the validation function should be separate from the staff responsible for the model design or development. Larger institutions, with more complex operations should aim at establishing a separate validation unit with adequate independent reporting lines.

Frequency of the validation

The rating systems are the core of the IRB Approach, and their quality may impact significantly the level of own funds requirements calculation. In order to ensure continuous good quality of the rating systems and timely adjustments to the changed conditions, validation should be performed on a regular basis. As a minimum the backtesting of each rating system should be carried out at least annually. However the performance of those rating systems that cover material portfolios of the institution should be fully reviewed by the validation function at least annually.

Internal audit

Internal audit is often referred to as a third line of defence in the institution's internal control system. Although the rating systems are regularly verified by the validation function, also internal audit should review the IRB Approach. The review of the internal audit would typically be broader and include all aspects of the IRB Approach. According to Article 191 of the CRR requires that the review of the IRB Approach should be performed on an annual basis and should include adherence to all applicable requirements. These proposed draft RTS is designed to grant some flexibility to institution in specifying their audit plans in order to allow efficient use of resources but at the same time ensuring that all areas of IRB approach are effectively covered by internal audits. It is therefore expected that the internal audit performs a general annual review of all

aspects of the IRB Approach in order to determine the areas that due to increased risk require more thorough review during the year.

Use test and experience test

Use test

The calculation of the own funds requirements according to the IRB Approach is based on internal estimates of the risk parameters. In order to ensure that the parameters used for the calculation of own funds requirements truly reflect the level of risk as assessed by the institution, it is required that the same data and parameters are used in the internal risk management and decision making processes. Any differences in the relevant data and risk estimates have to be properly justified in order to avoid possible underestimation of the own funds requirements.

These proposed draft RTS specify the methodology to assess the adequacy of the scope of use of the risk estimates in the internal processes of the institution. Within three broader areas as listed in the CRR, i.e. (i) risk management, credit approval and decision-making processes, (ii) internal capital allocation, and (iii) corporate governance functions, more specific expectations have been proposed. Competent authorities should make sure that the relevant risk estimates are properly used in the basic areas of internal processes and that they are sufficiently integrated with the corporate culture of the institution.

Experience test

Article 145 of the CRR requires that the institution uses the rating systems that were broadly in line with the requirements set out in Section 6, Chapter 3, Title II, Part three of the CRR for internal risk measurement and management purposes for at least three years prior to its qualification to use the IRB Approach. These proposed draft RTS specify that in order to assess whether these requirements are met competent authorities should verify whether the risk parameters have been used at least in the most basic areas of risk management, including the credit decisions, competences for the credit approval process, lending policies, risk monitoring and reporting. Additionally in the experience period the rating systems should be subject to regular monitoring, validation and internal audit reports.

Assignment of exposures to grades and pools

Independence of the assignment of exposures to grades or pools

These proposed draft RTS specify the methodology to assess the process of assignment of exposures to grades or pools. In particular the requirement on the independence of this process from the origination or renewal of exposures has been clarified. Such independence is necessary to avoid assigning unduly favourable ratings and as a result underestimation of risk, in particular by inappropriate application of human judgement. Independence of the assignment process is required for non-retail exposures because the application of human judgement is typically necessary in the process. In the case of retail exposures the assignment process is usually fully

automatic, based on objective information about the obligor and his transactions. The correctness of the assignment process is ensured by proper implementation of the rating system in the institution's IT systems and procedures. Nevertheless if overrides are allowed human judgement has to be applied in the rating process. Therefore where overrides are used, even in the case of retail exposures, the assignment process has to be independent from the origination or renewal of exposures.

Treatment of outdated ratings

It is required by the CRR that the assignment of exposures to grades or pools has to be reviewed at least annually or whenever new material information on the obligor or exposure becomes available. A well-established assignment process should ensure that the assignment reflects the actual risk related with an obligor or an exposure, taking into account all currently available material information. According to the general rule, whenever there's uncertainty related with insufficient data or assumptions increased margin of conservatism should be adopted. Therefore it has been clarified in the proposed draft RTS that where ratings are older than 12 months or where the review of the assignment hasn't been performed in due time according to the institution's policy, conservative adjustments should be performed in terms of risk weighted assets calculation. The adjustment should be proportional to the length of the period during which the rating or the information underlying the rating is out-of-date.

Definition of default

The definition of default as specified in Article 178 of the CRR is the basis for the estimation of risk in the IRB Approach. Therefore competent authorities should carefully assess the compliance of the definition with the requirements and the application of this definition in practice, paying particular attention to any differences in the definition of default between different types of exposures, legal entities or geographical locations. In order to do that competent authorities will require the institution to provide detailed documentation in that regard, including the operationalization of all indications of unlikeliness to pay.

In order to ensure an adequate assessment of risk, and subsequently adequate estimation of risk parameters, it is also important that the institution has robust criteria and processes to reclassify previously defaulted exposures back to a non-defaulted status. The criteria should take into account the institution's previous default experience to avoid reclassification to non-defaulted status such obligors that are likely to default again in a short period of time.

Rating systems (models)

Map of rating systems

In order to enable the competent authorities to thoroughly review the rating systems, the institution has to provide detailed documentation on the design and operational details of the rating systems. These proposed draft RTS specify the minimum content of such documentation. In particular, competent authorities should be provided with the map of rating systems, i.e. a

register of all rating systems including all current and past versions of rating systems for the period of at least three years. Such register, regularly updated by the institution, should be used by the competent authorities to assess the completeness of the application of the IRB approach, the scope of application of each rating system and the requirements related with the sequential implementation of IRB approach and permanent partial use of the Standardised Approach. The information about the changes implemented during the last 3 years should be used to assess the compliance with the requirements related to experience test and in order to perform a supervisory review, which competent authorities are required to carry out at least every 3 years.

General

These proposed draft RTS specify detailed methodology of the assessment of the rating systems, including statistical models and other mechanical methods. The main aspects of the assessment are focused on the selection of risk drivers and rating criteria, adequate distribution of obligors and exposures in the grades or pools, risk differentiation and homogeneity of obligors or exposures assigned to the same grade or pool. In the case of statistical models and other mechanical methods it is important to ensure that the models are based on adequate data, takin into account their quality and representativeness for the current portfolio. The institution should be fully aware of and properly document the model's capabilities and limitations.

Human judgement

In the specification of the methodology of assessment of the rating systems attention is drawn also to the application of human judgement at various stages of the development and use of rating systems. Human judgement may be used to include in the model additional information that is not reflected in the available data. Reasonable application of human judgement can increase the quality of the model and the accuracy of predictions. Nevertheless since it changes the estimates based on prior experience in a subjective manner the application of human judgement should be controlled and justified by a positive impact on the accuracy of predictions.

Human judgement may also be applied after the implementation of the rating system, in particular by overriding the results of the model. In that situation the quantity and justifications for overrides should be regularly analysed by the institution to identify possible weaknesses of the models. In particular large number of overrides of the results of the model might indicate that some important information is not included in the rating system. Any detected weaknesses of the model should be adequately addressed in the model review.

Risk quantification

General and data

It is also specified in these proposed draft RTS how the competent authorities should assess the quantification of risk parameters. Some aspects of these methods are general and apply to all parameters, others take into account the specificities of the estimation of PD, LGD and conversion factors as well as specific treatment of the purchased receivables. Among general rules, similarly

to the assessment of rating models, emphasis is put to the adequate selection of data. Apart from the appropriate quality, including completeness and representativeness of data, competent authorities should verify whether the data reflect the definition of default as required by Article 178 of the CRR and whether sufficient length of the historical observation period was used.

General and Margin of conservatism

In all cases the competent authorities should assess whether the institution has adopted sufficient margin of conservatism, as referred to in Article 179(1)(f) of the CRR. This conservatism should account, in particular, for any identified deficiencies in data or methods used in the risk quantification and increased uncertainty that might result for example from the changes in the lending or recovery policies. The competent authorities should ensure that the margin of conservatism is applied irrespective of the requirements of Article 146 of CRR, as that Article aims at ensuring that models are corrected in a timely manner to meet the requirements of that Regulation; hence the application of the margin of conservatism should not be used as an alternative to correcting the models and ensuring their full compliance with the requirements of that Regulation.

Long run average for PD

In particular the PD estimates should reflect the long run average of one-year default rates in order to ensure that they are relatively stable over time and extensive cyclicality of own funds requirements is avoided. It means that the PD estimates should be based on a period representative of the likely range of variability of default rates in that type of exposures in a complete economic cycle, considering the cyclicality of major economic factors. In practice the institution might not have sufficient data to encompass the whole economic cycle in terms of the cyclicality of major economic factors. In that case some reconstruction methods may be used to account for the missing data, because due to increased uncertainty, additional margin of conservatism should be adopted. In any case the long run average based on the reconstruction method should not be less conservative than the average of one-year default rates estimated from the observed data.

Default weighted average of LGD

With regard to the LGD estimates it has been clarified in these proposed draft RTS that the estimation should be based on the average weighted by the number of defaults, as required by the CRR. If however the exposure value is a material risk driver, it should be used for the segregation or risk differentiation of LGD in order to ensure that the parameter is calculated for homogenous pools or facility grades. This approach ensures consistency with the calculation of PD parameter and a meaningful application of the risk weight formula. The CRR differentiates the LGD calculation method at the level of individual exposures for the purpose of risk weighted exposure amounts from the LGD calculated at the portfolio level. As opposed to the individual LGD calculation, the LGD floor for exposures secured by immovable property, applied at the overall portfolio level, is defined as an exposure-weighted average LGD.

Treatment of multiple defaults

In order to ensure consistency between the estimates of various risk parameters the multiple defaults should be treated in a similar manner. The prudent approach requires that a defaulted exposure that after the return to non-defaulted status is classified as defaulted again in a short period of time should be treated as constantly defaulted from the first moment when the default occurred. Such treatment reflects also the real economic meaning of the default experience. Treatment of multiple defaults of the same obligor as separate defaults might lead to significant errors in risk parameters estimates, because higher default rate would lead to higher PD estimates. On the other hand the LGD would be underestimated, because the first default of the obligor would be treated as a cure case with no loss, where in fact the institution experienced loss on that obligor at the later stage. Therefore the treatment of multiple defaults should be verified by the competent authorities.

LGD in-default

According to these proposed draft RTS competent authorities should also verify the adequacy of estimation of LGD for defaulted exposures. The methodology of assessment of LGD estimation recognises that the institution may estimate the LGD doe defaulted exposures either directly or as a sum of best estimate of expected loss and an add-on that captures the unexpected loss that might occur during the recovery period. Irrespective of the approach it is expected that the method for the estimation of LGD for exposures in default should be different from the estimation of LGD for performing exposures to account for the additional information available for such exposures. In particular the LGD for defaulted exposures should take into account the time the particular exposure has been in defaulted status and recoveries realized so far and consider possible reverse change in economic conditions during the expected length of the recovery process. LGD for defaulted exposures should reflect the sum of expected loss under current economic circumstances and possible unexpected loss that might occur during the recovery period whereas the LGD for non-defaulted exposures always reflects the downturn conditions.

Collateral management

The requirements of the CRR with regard to the quantification of risk parameters refer also to certain qualitative aspects of risk management processes at the institutions. In particular according to Article 181(1)(f) of the CRR in the case of institutions that use own estimates of LGD it is required that the internal requirements for collateral management should be generally consistent with requirements of Section 3, Chapter 4, Title II, Part three of the CRR. It has been clarified in these proposed draft RTS that in the assessment of compliance of the institution with this requirement particular emphasis should be put to the regular valuation of collaterals and legal certainty. The valuation should reflect the real market value under current market conditions and the frequency and character of revaluation should be adjusted to the type of collateral. Outdated or inaccurate evaluation might lead to the underestimation of risk related with the credit exposures. It is also important to ensure that the collateral is legally effective and

enforceable in all relevant jurisdictions. If this condition is not met then the exposure should be treated as unsecured. If nevertheless such collateral is recognised in the risk quantification it may lead to the underestimation of risk.

Eligibility of guarantors and guarantees

Additionally, where own estimates of LGD are used the Article 183 CRR sets requirements on the eligibility of guarantors, guarantees and credit derivatives. In order to ensure that the quality of the guarantee and the guarantor is properly assessed when adjusting the risk estimates it is required in these proposed draft RTS that as a general rule only those guarantors may be treated as eligible that are rated with a rating system approved under the IRB Approach. Other guarantors may also be eligible, provided that they are classified as an institution, a central government or central bank, or a corporate entity that has a credit assessment by ECAI, and the guarantee meets the requirements set out in Section 3, Chapter 4, Title II, Part three of the CRR that are applicable for the Standardised Approach.

It has also been clarified that the effect of guarantees and credit derivatives can be recognised through either adjusting PD or LGD estimates. Alternatively, in the case of the guarantors that are internally rated with a rating system approved under the IRB Approach, the effect of the guarantee can be recognised by applying Article 153 (3) of the CRR. Competent authorities should verify that the methods of recognising the effects of collaterals are use consistently and do not lead to underestimation of risk.

Assignment of exposures to exposure classes

Retail exposures

Under the IRB Approach different requirements apply to different exposure classes. Therefore the methodology for assessing the methodology and process of assigning of exposures to exposure classes has also been defined in these proposed draft RTS. In this assessment particular attention should be drawn to the assignment of exposures to retail exposures class due to their preferential treatment in terms of risk weighted exposure amounts calculation.

Sequencing

Competent authorities should assess among others whether the assignment is performed in a consistent and unequivocal manner. Since some exposure classes are defined on the basis of the characteristics of the transaction and the other on the basis of the type of obligor, there might be exposures that fulfil the criteria of more than one exposure class. Therefore it has been clarified that the assignment process should follow a correct sequence, according to which first the assignment of exposures to exposure classes based on the characteristics of the transaction should be performed, later the assignment of the remaining exposures to the exposure classes based on the characteristics of the obligor and finally, all other exposures should be classified as corporate exposures.

Stress tests used in assessment of capital adequacy

Integration of the stress tests with the risk and capital management processes

According to Article 177 of the CRR institutions should have in place sound stress testing processes for use in the assessment of its capital adequacy. Such stress tests should be performed in addition to Pillar 2 stress tests, nevertheless, unless justified by specific circumstances, the methods should be consistent. The IRB stress tests should focus on the own funds requirements under stress conditions. It has been clarified in these proposed draft RTS that the results of the stress tests should be taken into account in the decision making process in the area of risk and capital management processes. In particular the default rates and rating migrations under stress conditions should be taken into account in the assessment of the adequacy of the calculation of the long-run averages of one-year default rates and the dynamics of rating systems. The integration of the stress tests results in the decision making processes ensures that the scenarios and their impact on capital requirements are developed and performed in a meaningful manner and that forward looking aspects of capital requirements are taken into account in managing the institution.

Own funds requirements calculation

The CRR specifies detailed rules on the calculation of own funds requirements with the use of risk parameters, either estimated by the institution or assigned to the exposures according to the requirements. The latter group of parameters include the maturity (M), correlation coefficient (R), total sales of an obligor (S), and in the case of Foundation IRB Approach also LGD and conversion factors. These proposed draft RTS provide the methodology on the assessment of the correctness of the assignment of risk parameters and calculation of own funds requirements.

The purpose of these proposed draft RTS was not to repeat the requirements of the CRR, therefore it is focused rather on the methods of assessment, including reconciliation of the data used for the purpose of own funds requirements calculation with the accounting data and values of risk parameters used for internal purposes. However these proposed draft RTS provides clarification on some of those requirements that have caused interpretational problems.

Effective maturity (M)

In particular it has been clarified that where effective maturity is calculated for the revolving exposures it should be based on the expiry date of the facility. Assignment of the M parameter based on the repayment date of a current drawing is not sufficient because it does not account for possible additional drawings. In fact the institution is at risk for a longer period than the repayment date of the current drawing.

Calculation of IRB shortfall

Furthermore the Article 159 of the CRR requires the institutions to calculate the difference between expected loss amounts and credit risk adjustments, additional value adjustments and

other own funds reductions for the purpose of own funds recognition (the so called IRB shortfall). It has been clarified in these proposed draft RTS that this difference should be calculated at an aggregate level separately for the portfolio of defaulted exposures and the portfolio of exposures that are not in default.

Separation between defaulted and non-defaulted exposures is necessary in order to ensure that the negative amounts resulting from the calculation performed for the defaulted portfolio are not used to offset the positive amounts resulting from the calculation performed for the portfolio of exposures that are not in default. Apart from that the overall calculation is in line with the general concept of own funds, according to which the own funds should be fully available to cover unexpected losses in case of insolvency of the institution. Since the amounts of provisions included in the calculation of IRB shortfall have already been deducted from own funds to cover the expected losses, their excess part on the total EL is fully available to cover losses identified on all defaulted exposures. Therefore only overall IRB shortfall when the amount of provisions does not fully cover the EL of defaulted exposures should be deducted from the own funds. Requirement to calculate the IRB shortfall individually for each defaulted exposure would be too conservative and burdensome.

Data maintenance

Data quality

The estimation of risk parameters and calculation of own funds requirements as well as most of the internal processes at the institutions are based in large part on the IT systems and use large quantities of data. In order to ensure the correctness of the calculations and processes the institutions have to attach great importance to the quality of data and reliability of IT systems. Unreliable, inaccurate, incomplete or outdated data may lead to errors in risk estimation and in the calculation of own funds requirements. When used in the risk management processes of the institution it may also lead to wrong credit and management decisions. The quality of data should therefore be regularly controlled and corrected if necessary. Also, the infrastructure related to gathering and storing the information as well as the relevant procedures have to be well documented. Also the competent authorities in their assessment should put adequate emphasis on the quality of data. In order to perform the assessment they will require detailed documentation, including the description of the characteristics and the sources of data are necessary for their proper use in the risk management and own funds requirements calculation processes.

IT infrastructure

Additionally, the quality of data and the correctness of risk estimation and of calculation of own funds requirements are highly dependent on the reliability of the IT systems used for the purpose of IRB approach. The continuity of risk management processes and own funds requirements calculation can only be ensured when the IT systems used for that purpose are safe, secure and reliable and the IT infrastructure is sufficiently robust. Therefore competent authorities should also verify the reliability of the institution's IT systems and the robustness of the IT infrastructure.

These proposed draft RTS provides the methodology of such assessment that focuses on the aspects considered most important for the proper application of IRB Approach.

Internal models for equity exposures

Article 155 of the CRR specifies 3 alternative methods to calculate own funds requirements for equity exposures under the IRB Approach, namely: simple risk weight approach, PD/LGD approach and internal models approach. To those institutions that decide to use internal models approach additional requirements apply. Although this approach is not very popular among the EU institutions these proposed draft RTS provides the methodology for competent authorities to assess such models and compliance of the institutions with the additional requirements related with this approach.

Non-overlapping observations

In particular competent authorities should verify whether the non-overlapping observations of returns on equity exposures are used both for the purpose of development as well as validation of internal models for equity exposures. As far as possible non-overlapping observations should be used, because they ensure higher quality of predictions, by assigning the same weight to all observations and avoiding excessive correlation between them.

Management of changes to rating systems

An institution that submits the application to use IRB Approach has to be prepared to manage this approach after the permission is granted. The rating systems, risk parameters and all related processes and policies have to be regularly reviewed and, if necessary, modified. Any material changes to the rating systems and the scope of application of the rating systems have to be approved by competent authorities, the other changes have to be adequately notified. Therefore it is necessary that the institutions implement the policy to define the classification of the changes and the internal process of management of the changes. Detailed criteria should ensure that the classification of changes is consistent and any arbitrage in that regard is avoided.

These proposed draft RTS specifies the methodology to assess such policies, in particular it defines the minimum content of the policy that should be required by the competent authorities. The policy and its implementation should ensure that all material changes are approved by the competent authorities as required by the CRR and that only the changes of good quality are implemented. As a result it contributes to the use of better rating systems both for the purpose of own funds requirements calculation as well as in the internal risk management processes.

4. Draft Regulatory Technical Standards on the specification of the assessment methodology for competent authorities regarding compliance of an institution with the requirements to use the IRB Approach in accordance with Articles 144(2), 173(3) and 180(3)(b) of Regulation (EU) No 575/2013.

In between the text of the draft RTS that follows, further explanations on specific aspects of the proposed text are occasionally provided, which either offer examples or provide the rationale behind a provision, or set out specific questions for the consultation process. Where this is the case, this explanatory text appears in a framed text box.

Contents

EUROPEAN COMMISSION

Brussels, XXX
[…](2012) XXX draft

COMMISSION DELEGATED REGULATION (EU) No …/..

of XXX

[…]

Supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 with regard to regulatory technical standards on the specification of the assessment methodology for competent authorities regarding the compliance of an institution with the requirements to use the IRB Approach in accordance with Articles 144(2), 173(3) and 180(3)(b) of Regulation (EU) No 575/2013

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 [2] , and in particular the third subparagraph of Article 144(2), the third subparagraph of Article 173(3) and the third subparagraph of Article 180(3) in relation to point (b) thereof,

Whereas:

(1)   The requirement, in Regulation (EU) No 575/2013 for competent authorities to assess the compliance of an institution with the requirements to use the IRB Approach is general, in that relates to all of the requirements for the use of the IRB Approach, irrespective of their degree of materiality, and implies compliance with

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[2]   OJ L 176, 27.06.2013, p. 1.

the requirements at all times. As a result, such an assessment does not only relate to the initial application of an institution for the permission to use the rating systems in accordance with Articles 143(1), 151(4) and (9) of Regulation (EU) No 575/2013, but also applies to: the assessment of any additional applications of an institution for the permission to use the rating systems implemented according to the institution's approved plan of sequential implementation of the IRB Approach as referred to in Article 148 of that Regulation; the assessment of the application for material changes to the internal approaches that the institution has received permission to use in accordance with Article 143(3) of that Regulation and Commission Delegated Regulation (EU) No 529/2014[3]; to the assessment of application to return to the use of less sophisticated approaches in accordance with Article 149 of that Regulation; to the regular review of the IRB Approach that the institution has received permission to use in accordance with Article 101(1) of Directive (EU) 36/2013[4]; and to changes to the IRB Approach that require notification in accordance with Article 143(4) of Regulation (EU) No 575/2013 and Commission Delegated Regulation (EU) No 529/2014. Competent authorities apply the same considerations to all of these particular aspects of the assessment of compliance with the requirements to use the IRB Approach, hence rules specifying that assessment methodology should apply to all of the above cases, in order to ensure harmonisation of assessment methodologies by competent authorities and mitigate regulatory arbitrage.

(2)   In the cases referred to in recital (1), where competent authorities assess the compliance of an institution with the requirements to use the IRB Approach, other than the initial application for permission by institutions, given that the assessment relates to a particular scope of application of the IRB Approach, competent authorities should apply only and all of those rules that are relevant to the scope of the assessment by the competent authority in each case using the conclusions from the former assessments as the starting point.

(3)   Where the assessment relates to applications for the permissions referred to in Article 20(1)(a) of Regulation (EU) No 575/2013, the technical standards referred to in paragraph 8 of that Article in relation to the joint decision process apply.

(4)   Article 144(2) of Regulation (EU) No 575/2013 refers to the assessment of compliance with the requirements of that Regulation in their entirety, and at all times. In that context competent authorities are required to verify compliance of institutions with the specific regulatory requirements, as well as evaluate the overall quality of the solutions, systems and approaches implemented by an institution, and request constant improvements and adaptations to changed circumstances in order to achieve continuous compliance with the requirements of the IRB Approach. With that in mind, such an assessment inevitably involves, to a large extent, a subjective judgement by competent authorities. Hence rules for the assessment

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[3] Commission Delegated Regulation (EU) No 529/2014 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for assessing the materiality of extensions and changes of the Internal Ratings Based Approach and the Advanced Measurement Approach of 12 March 2014 (OJ L 148, 20.5.2014, p.36).

[4] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC.

methodology on one hand should allow the possibility for competent authorities to exercise their discretion as provided in Regulation (EU) No 575/2013 by carrying out additional checks to those specified therein, as necessary and on the other should ensure harmonisation and comparability of supervisory practices across different jurisdictions. For the same reasons, competent authorities should avail of the flexibility necessary to apply the most appropriate method or methods for verifying particular requirements, depending, among others, on the materiality of the types of exposures covered by each rating system, the complexity of the models, the particularities of the situation, the specific solution implemented by the institution, the quality of evidence provided by the institution, the resources available to the competent authorities themselves. Further, and for the same reasons, competent authorities should be able to carry out additional tests and verifications which might be necessary in case of doubts regarding the fulfilment of the requirements of the IRB Approach, and in order to be able to apply the assessment methodology in accordance with the principle of proportionality, which is a general principle of EU law, and hence depending on the nature, size and complexity of an institution's business and structure.

(5)   In order to ensure consistency and comprehensiveness of the assessment of the overall IRB Approach, in the case of subsequent requests for permission on the basis of the approved sequential implementation plan of an institution, competent authorities should base their assessment by applying at least the rules on the use and experience test, assignment to grades or pools, rating systems and risk quantification, as these aspects of the assessment relate to every individual rating system of the IRB Approach.

(6)   In order to assess the adequacy of the application of the IRB Approach all rating systems and related processes have to be verified, including where these are outsourced. Additional risks may be related to the outsourcing of important tasks, activities or functions related to the IRB Approach, therefore adequate controls have to be implemented at the institution and full documentation should be available; further as the management body of the institution is ultimately responsible for the outsourced processes and the performance of rating systems obtained from a third party vendor, sufficient in-house understanding needs to be ensured. As a result of the above, all tasks, activities and functions that have been outsourced, including the rating systems obtained from the third party vendors have to be assessed by competent authorities in a manner similar to the cases where the IRB Approach has been developed fully via internal processes of the institution.

(7)   In order to avoid misuse of the rules on the sequential implementation of the IRB Approach that could lead to the creation of a quasi permanent partial use of the Standardised Approach, a deadline for the implementation of the so-called 'roll-out plan' is necessary, as well as a limitation of possible changes to the roll-out plan. All exposures covered by the roll-out plan need to have a defined reasonable timeplan of implementation which is a maximum of five years, unless where any of the specific conditions is met.

(8)   It is important to ensure the independence of the validation function from the credit risk control unit in order to allow for an objective assessment of the rating systems, a limited incentive to disguise the model deficiencies and weaknesses, as well as a

fresh view on the rating systems by people not involved in the development process. On the other hand, since both in the credit risk control unit as well as in the validation unit highly qualified staff is required, full independence between the two units might be too burdensome for smaller institutions. As a result of the above, competent authorities should verify that an adequate level of independence is in place, based on the proportionality principle.

(9)   As the rating systems are the core of the IRB Approach, and their quality may impact significantly the level of own funds requirements calculation, the performance of the rating systems should be regularly reviewed. Given that rating systems have to be assessed at least annually by competent authorities (as referred to in Article 78 of Directive 2013/36/EU) and by the internal audit (according to Article 191 of Regulation (EU) No 575/2013), and given that, in order for this task to be performed, input from the validation function is necessary, it is appropriate that the validation of the performance of the ratings systems covering material portfolios and back-testing of all other rating systems should be performed at least annually.

(10)   All areas of the IRB Approach should be effectively covered by internal audits. Nevertheless, an efficient use of the internal audit resources should be ensured so that internal audit focuses on the most risky areas. Some flexibility is important particularly in the case of those institutions that use numerous rating systems. As a consequence, competent authorities should verify that annual reviews are performed in order to determine areas that require more thorough reviews during the year.

(11)   In order to ensure a minimum level of harmonisation in relation to the scope of use of the rating systems (the so-called 'use test'), competent authorities should verify that the rating systems are incorporated in the relevant processes of the institution within the broader processes of risk management, credit approval and decision-making processes, internal capital allocation, and corporate governance functions. These are basic areas where internal processes require the use of risk parameters, therefore if there are differences between the risk parameters used in those areas and those used for the purpose of the own funds requirements calculation, they have to be well justified.

(12)   In relation to experience test requirements, while assessing whether the rating systems used by the institution prior to the application to use the IRB Approach were 'broadly in line' with the IRB requirements, competent authorities should verify in particular that during at least three years before the use of the IRB Approach, the rating system has been used in the internal risk measurement and management processes of the institution and that it has been subject to monitoring, internal validation and internal audit. Such specification is necessary to ensure a minimum level of harmonisation. At least the most basic areas of use have to be covered to prove that the rating systems have been effectively used by the institution and that both the personnel as well as the management are accustomed to those parameters and understand well their meaning and weaknesses. Finally, monitoring, validation and internal audit during the experience period should ensure that the rating systems were compliant with the basic requirements of the IRB Approach and that they were gradually improved during that time.

(13)   Independence of the process of assignment of exposures to grades or pools is required for non-retail exposures because the application of human judgement is typically necessary in the process. In the case of retail exposures the assignment process is usually fully automatic, based on objective information about the obligor and his transactions. The correctness of the assignment process is ensured by proper implementation of the rating system in the institution's IT systems and procedures. Nevertheless if overrides are allowed human judgement has to be applied in the rating process. Therefore where overrides are used, even in the case of retail exposures, the assignment process has to be independent from the origination or renewal of exposures; People responsible for origination or renewal of exposures are typically inclined to assign better ratings in order to increase sales and volumes of credits. Therefore if the same personnel is responsible for rating assignment that requires the application of human judgement the risk related with the obligors and exposures might be underestimated.

(14)   Where ratings are older than 12 months or where the review of the assignment has not been performed in due time according to the institution's policy, conservative adjustments should be performed in terms of the risk weighted assets calculation. The reasons for that are multiple. If the rating is outdated or based on outdated information the risk assessment might not be accurate. In particular, if the situation of the obligor has deteriorated during the last 12 months it is not reflected in the rating, and the risk is underestimated. In addition, according to the general rule related to the estimation of the risk parameters, whenever there is uncertainty related to insufficient data or assumptions, an increased margin of conservatism should be adopted. The same rule should apply to the process of assignment of exposures to grades or pools, i.e. due to insufficient information having been taken into account in the assignment process, an additional margin of conservatism should be adopted in the calculation of risk weights. The method of applying additional margin of conservatism in the calculation of risk weights should not be specified as the institution may adjust either the rating, the risk parameter estimation or the risk weight directly. The adjustment should be proportional to the length of the period during which the rating or the information underlying the rating is out-of-date.

(15)   Article 175(3) of Regulation (EU) No 575/2013 requires institutions to document the specific definitions of default and loss used internally and ensure consistency with the definitions set out in that Regulation. In assessing this consistency each institution should therefore have clear policies that specify when an obligor or facility is classified as being in default. These should be consistent with the general principles regarding default as referred to in Article 178, paragraphs (1) to (3) of that Regulation. These policies should also be embedded into the institutions' risk management processes and systems since Article 144(1)(b) of Regulation (EU) No 575/2013 requires in particular that internal ratings, i.e. including the assignment to a default rating grade, play an essential role in the risk management and other internal processes of an institution.

(16)   The information on the performance of an obligor and on the exposures in default and those not in-default, is the basis for the institution's internal processes, for the quantification of risk parameters and for the own funds requirements calculation. Therefore not only the identification of defaulted obligors but also the process of

reclassification of defaulted obligors to non-defaulted status should be robust and effective. The prudent reclassification process should make sure that obligors are not reclassified to a non-defaulted status where the institution expects that the exposure will probably return to default in a short period of time.

(17) In order to provide competent authorities with a consistent and accurate overview of the rating systems that the institution has been using as well as their improvement over time, it is necessary for competent authorities to assess the completeness of the register of the current and historical versions of rating systems used by the institution ('map of rating systems'). Given that the requirements of the use test relate to the preceding three years from the time of consideration of an application for approval of an internal model, and given that there is also the requirement of overall review of the internal model by competent authorities on a regular basis, and at least every 3 years, as referred to in Article 101 of Directive 2013/36/EU, it would be appropriate for competent authorities to verify that such a map of rating systems covers at least the versions of the internal models used by the institution over the three preceding years.

(18) Human judgement is used at various stages of the development and use of rating systems. Reasonable application of human judgement can increase the quality of the model and the accuracy of its predictions. Nevertheless, since human judgement changes the estimates based on prior experience in a subjective manner, the application of human judgement should be controlled and justified by a positive impact on the accuracy of predictions. Thus, a large number of overrides of the results of the model might indicate that some important information is not included in the rating system. Therefore competent authorities should verify that the number and justifications for overrides is regularly analysed by institutions and that any detected weaknesses of the model are adequately addressed in the model review.

(19) In all cases the competent authorities should assess whether the institution has adopted sufficient margin of conservatism, as referred to in Article 179(1)(f) of Regulation (EU) No 575/2013. This conservatism should account, in particular, for any identified deficiencies in data or methods used in the risk quantification and increased uncertainty that might result for example from the changes in the lending or recovery policies. The competent authorities should verify that the margin of conservatism is applied irrespective of the requirements of Article 146 of Regulation (EU) No 575/2013, as that Article aims at ensuring that models are corrected in a timely manner to meet the requirements of that Regulation; hence the application of the margin of conservatism should not be used as an alternative to correcting the models and ensuring their full compliance with the requirements of that Regulation.

(20) It is desirable that the PD estimates are relatively stable over time in order to avoid the excessive cyclicality of own funds requirements. To achieve that, the PD estimates should be based on the long run average of yearly default rates. In addition, as the own funds should help institutions survive in a time of stress, the risk estimates should take into account the possible deterioration in the economic conditions even in the times of prosperity. Finally, whenever there is an increased uncertainty that results from insufficient data, an additional margin of conservatism should be adopted. If the length of available time series does not encompass the

whole economic cycle in terms of the cyclicality of major economic factors, some reconstruction methods should be adopted to account for the missing data. Nevertheless in any case the long run average based on the reconstruction method should not be less conservative than the average of one-year default rates estimated from the observed data.

(21) The LGD estimation should be based on the average weighted by the number of defaults, as required by Regulation (EU) No 575/2013. If however the exposure value is a material risk driver, it should be used for the segregation or risk differentiation of LGD in order to ensure that the parameter is calculated for homogenous pools or facility grades. This approach ensures consistency with the calculation of the PD parameter and a meaningful application of the risk weight formula. Regulation (EU) No 575/2013 distinguishes the LGD calculation method at the level of individual exposures for the purpose of risk weighted exposure amounts from the LGD calculated at the portfolio level. Differently from the individual LGD calculation, the LGD floor for exposures secured by immovable property, applied at the overall portfolio level, is defined as an exposure-weighted average LGD.

(22) Defaulted exposures that, after the return to non-defaulted status, are classified as defaulted again in a short period of time should be treated as constantly defaulted from the first moment when the default occurred, as the temporary reclassification to non-defaulted status is most likely performed on the basis of incomplete information on the real situation of the obligor. As a result the treatment of multiple defaults as one default better represents the real default experience and competent authorities should treat multiple defaults of the same obligor within a short period of time as one default. Further, the treatment of multiple defaults of the same obligor as separate defaults might lead to significant errors in risk parameter estimates, because higher default rates would lead to higher PD estimates. On the other hand the LGD would be underestimated, because the first defaults of the obligor would be treated as cure cases with no loss related to them, where in fact the institution experienced loss on that obligor; Additionally, due to the relations between PD and LGD estimates and in order to ensure adequate estimation of expected loss, the treatment of multiple defaults should be consistent for the purpose of PD and LGD estimation.

(23) The scope of information available for the institution with regard to defaulted exposures is significantly different from the performing exposures. In particular, two additional risk drivers are available, namely the time in-default and recoveries realized. Therefore the estimation of LGD at a time before the default is not sufficient, because the risk estimates should take into account all significant risk drivers. Additionally, for defaulted exposures it is already known what the economic conditions were at the moment of default. Further, LGD for defaulted exposures should reflect the sum of expected loss under current economic circumstances and possible unexpected loss that might occur during the recovery period. Therefore competent authorities should verify that LGD in-default is estimated either directly or as a sum of best estimate of expected loss ('ELBE') and an add-on that captures the unexpected loss that might occur during the recovery period. Irrespective of the approach applied the estimation of LGD should take into account the information on the time in-default and recoveries realized so far and

consider possible reverse change in economic conditions during the expected length of the recovery process. Therefore in practice for exposures already in default the institution should not be allowed to use the same LGD estimates as for non-defaulted exposures.

(24) In the case of institutions using own-LGD estimates internal requirements for collateral management should be generally consistent with requirements of Section 3, Chapter 4, Title II in Part three of Regulation (EU) No 575/2013. Competent authorities should focus in particular on the requirements of collateral valuation and legal certainty. This is because it is important to ensure regular and reliable valuation of collateral, and that the valuation reflects the real market value under current market conditions. The frequency and character of revaluation should be adjusted to the type of collateral, as outdated or inaccurate evaluation might lead to the underestimation of risk related with the credit exposures. It is also crucial to ensure that the collateral is legally effective and enforceable in all relevant jurisdictions. In the contrary case, the exposure should be treated as unsecured; if nevertheless such collateral is recognised in the risk quantification, it may lead to the underestimation of risk.

(25) For the purpose of the advanced IRB Approach, i.e. where own-LGD estimates are used, eligible guarantors are those that are rated with a rating system approved under the IRB Approach. Other guarantors may also be eligible, provided that they are classified as an institution, a central government or central bank, or a corporate entity that has a credit assessment by an ECAI, and the guarantee meets the requirements set out in Section 3, Chapter 4, Title II in Part three of Regulation (EU) No 575/2013, which are also applicable for the Standardised Approach. The effect of the guarantee may be recognised through the adjustment of PD or LGD estimates. In the case of the guarantors that are internally rated with a rating system approved under the IRB Approach the effect of the guarantee can alternatively be recognised by applying Article 153(3) of Regulation (EU) No 575/2013. Such an approach towards the eligibility of the guarantors is prudent and ensures that the quality of the guarantee and the guarantor is properly assessed in order to include it in the risk estimates for the purpose of own funds requirements calculation.

(26) In the assessment of the process of assignment of exposures to exposure classes, competent authorities should focus on the assignment of exposures to retail exposures because of their preferential treatment in terms of risk weighted exposure amounts calculation.

(27) Some exposure classes are defined on the basis of the characteristics of the transaction and others on the basis of the type of obligor; as a result, there might be exposures that fulfil the criteria of more than one exposure classes. Therefore there is a need for competent authorities to verity that institution applies the correct sequencing in order to ensure the consistent and unequivocal assignment of exposures to exposure classes.

(28) The results of the stress tests should be taken into account in the decision making process in the area of risk and capital management processes, because the integration of the stress tests results in the decision making processes ensures that the scenarios and their impact on own funds requirements are developed and performed in a meaningful manner and that forward-looking aspects of own funds

requirements are taken into account in managing the institution. In particular the default rates and rating migrations under stress conditions should be taken into account in the assessment of the adequacy of the calculation of the long-run averages of one-year default rates and the dynamics of rating systems. This is because the long-run average of one-year default rates should cover the likely range of variability of default rates in that type of exposures in a complete economic cycle. In the opposite case, where the default rate under the severe but plausible stress scenario is outside of the range of long-run average, then it does not cover the full plausible variability of default rates and the PD parameter might be underestimated.

(29) Institutions that use own-LGD and own conversion factors estimates should calculate effective maturity of the exposures under the IRB Approach for the purpose of own funds requirements calculation. In the case of revolving exposures, an institution is at risk for a longer period than the repayment date of the current drawing, given that the borrower may redraw additional amounts. Therefore, competent authorities should verify that the calculation of effective maturity of revolving exposures is based on the expiry date of the facility.

(30) The calculation of the difference between expected loss amounts and credit risk adjustments, additional value adjustments and other own funds reductions ('IRB shortfall') in line with Article 159 of Regulation (EU) No 575/2013 should be performed on an aggregate level separately for the portfolio of defaulted exposures and the portfolio of exposures that are not in default. The separation between defaulted and non-defaulted exposures is necessary in order to ensure that the negative amounts resulting from the calculation performed for the defaulted portfolio are not used to offset the positive amounts resulting from the calculation performed for the portfolio of exposures that are not in default. Apart from that the overall calculation is in line with the general concept of own funds, according to which the own funds should be fully available to cover unexpected losses in case of insolvency of the institution. Since the amounts of credit risk adjustments, additional value adjustments and other own funds reductions included in the calculation of IRB shortfall have already been deducted from own funds to cover the expected losses ('EL'), their excess part on the total EL is fully available to cover losses identified on all defaulted exposures. Therefore only the overall IRB shortfall, where the amount of provisions does not fully cover the EL of defaulted exposures, should be deducted from the own funds.

(31) Unreliable, inaccurate, incomplete or outdated data may lead to errors in the risk estimation and in the calculation of own funds requirements. Further, when used in the risk management processes of the institution such data may also lead to wrong credit and management decisions. Consequently, in order to ensure reliability and high quality of data the infrastructure related to gathering and storing of data as well as the relevant procedures have to be well documented, and there needs to be a full description of the characteristics and the sources of data in order to ensure their proper use in the internal processes and own funds requirements calculation processes. Hence competent authorities, in the assessment of the IRB Approach, should put particular attention to the quality and documentation of data used in the process of the development of rating systems, in the assignment of exposures to grades or pools and in the calculation of own funds requirements.

(32)   The quality of data and the correctness of risk estimation and of calculation of own funds requirements are highly dependent on the reliability of the IT systems used for the purpose of the IRB Approach. Further, the continuity and consistency of the risk management processes and the calculation of own funds requirements can only be ensured when the IT systems used for those purposes are safe, secure and reliable and the IT infrastructure is sufficiently robust. As a consequence, it is necessary that, in the course of the assessment of the IRB Approach, competent authorities also verify the reliability of the institution's IT systems and the robustness of the IT infrastructure.

(33)   As far as possible non-overlapping observations of returns on equity exposures should be used both for the purpose of development as well as for the validation of internal models for equity exposures. This is because non-overlapping observations ensure higher quality of predictions, given that all observations are assigned the same weight and the observations are not closely correlated to each other.

(34)   The use of the IRB Approach requires approval of the competent authorities and similarly any material changes to that approach have to be approved. As a result, competent authorities should verify that internal process of management and in particular approval of changes ensure that only the changes of good quality are implemented and, in that context, that the classification of changes is consistent in order to avoid any arbitrage.

(35)   The provisions in this Regulation are closely linked, since they all deal with aspects of the assessment methodology that competent authorities should follow in assessing the compliance of an institution with the IRB Approach. To ensure coherence between those provisions, which should enter into force at the same time, and to facilitate a comprehensive view and compact access to them by persons subject to those obligations, it is desirable to include all of the regulatory technical standards required by Regulation (EU) No 575/2013 in a single Regulation.

(36)   This Regulation is based on the draft regulatory technical standards submitted by the European Banking Authorities to the Commission.

(37)   The European Banking Authorities has conducted open public consultations on the draft regulatory technical standards on which this Regulation is based, analysed the potential related costs and benefits and requested the opinion of the Banking Stakeholder Group established in accordance with Article 37 of Regulation (EU) No 1093/2010[5] of the European Parliament and of the Council,

HAS ADOPTED THIS REGULATION:

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[5]   Regulation (EU) No 1093/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC (OJ L 331, 15.12.2010, p. 12).

CHAPTER 1

General rules for the assessment methodology

Article 1

1. Competent authorities shall assess the compliance of an institution with the requirements to use the Internal Ratings Based Approach ('IRB Approach') referred to in Articles 144(2), 173(3) and 180(3)(b) of Regulation (EU) No 575/2013, in accordance with the requirements established in this Regulation.

2. In performing the assessment referred to in paragraph 1, competent authorities shall apply the methods defined in each chapter and may also, to the extent appropriate, apply additional methods which are relevant to the nature, size and degree of complexity of the institution´s business and organizational structure, in particular to:

   (a) the materiality of the types of exposures covered by rating systems;

   (b) the complexity of the rating models and risk parameters and their implementation.

Text for consultation purposes

Q1: What views do you have on the nature and appropriateness of the proportionality principle in Article 1(2)?

Article 2

Assessment of sequential implementation of the IRB Approach

Where an institution requests the permission to extend the IRB Approach in accordance with the approved sequential implementation plan, competent authorities, in the course of their assessment, shall apply those parts of this Regulation that are relevant to the scope of the request for permission and at least Chapters 4 on use test and experience test, 5 on assignment of exposures to grades or pools, 7 on rating systems design, operational details and documentation and 8 on risk quantification.

Article 3

Quality and auditability of documentation

1. In the course of the assessment referred to in Article 1, competent authorities shall verify the quality and auditability of the documentation on the rating systems as these are defined in point (1) of Article 142(1) of Regulation (EU) 575/2013, as further specified with regard to the relevant parts of this Regulation.

2. In assessing the quality of the documentation referred to in paragraph 1, competent authorities shall verify that it is sufficiently detailed and accurate in order to allow the examination of the rating systems by third parties and shall, in particular, verify that:

    (c) the documentation is approved at the appropriate management level of the institution;

    (d) the institution has in place policies outlining specific standards to ensure high quality of internal documentation, and that there is a specific accountability for ensuring that the documentation maintained is complete, consistent, accurate, updated, approved and secure;

    (e) the layout of the documentation set out in the policy referred to in point (b) provides for the identification of at least the following items: type of document; author; reviewer; authorising agent and owner; dates of development and approval; version number; and history of changes to the document;

    (f) the institution adequately documents its policies, procedures and methodologies referred to in this Regulation.

3. In assessing the auditability of the documentation referred to in paragraph 1 competent authorities shall verify in particular that:

    (a) the documentation of the rating system design is sufficiently detailed to allow third parties to understand the reasoning and procedures underlying its development;

    (b) the documentation of the rating system is sufficiently detailed in order to allow third parties to understand how each rating model and risk parameter operates, its limitations and key assumptions and to replicate the model development;

    (c) the documentation of the rating process is sufficiently detailed to allow third parties to understand the assignment of exposures to grades or pools and to replicate the grade or pool assignment.

Article 4

Outsourcing

1. In the course of the assessment referred to in Article 1, competent authorities shall verify that the outsourcing by an institution of tasks, activities or functions related to the design, implementation and validation of rating systems, or obtaining a rating system or pooled data from a third party vendor, does not prevent or in other way inhibit the implementation of the methodology referred to in this Regulation for the purpose of assessing the institution's compliance with the provisions of Chapter 3, Title II, Part three of Regulation (EU) No 575/2013.

2. For the purpose of paragraph 1 competent authorities shall verify in particular that:

(a) the outsourcing is not extended to areas beyond the ones explicitly permitted under relevant legislation, including Article 190(3) of Regulation (EU) No 575/2013;

(b) the senior management and the management body or the committee designated by it, is also in practice ultimately responsible for the performance of the tasks outsourced by the institution and of the rating systems obtained from third parties;

(c) there is sufficient in-house understanding of the outsourced tasks, activities or functions and of the structure of data and rating systems obtained from a third party;

(d) continuity of service is ensured, including by means of appropriate contingency planning;

(e) internal audit or other control of the outsourced tasks, activities and functions by the institution is not limited or inhibited by the outsourcing;

(f) full access is granted to competent authorities to all relevant information including where appropriate by way of on-site inspections by the competent authorities to the third party.

3. Competent authorities shall verify that where the third party is involved in the development of the rating systems and risk quantification tasks this third party is not involved in the activities performed by the validation function with regard to these specific rating systems and risk estimates.

4. For the purpose of applying paragraphs 1 to 3, competent authorities shall in particular:

(a) review the outsourcing agreement;

(b) obtain written statements or interview the staff and senior management or the management body or the designated committee thereof of the institution or the third party to whom the task, activity or function is outsourced;

(c) review other relevant documents of the institution or of the third party.

Article 5

Temporary non-compliance with the requirements of the IRB Approach

For the purposes of Article 146 of Regulation (EU) No 575/2013, and where the institution does not manage to demonstrate to the satisfaction of competent authorities the immateriality of non-compliance in accordance with point (b) of that Article, competent authorities, in the context of assessing the fulfilment of the conditions of point (a) of that Article, shall in particular:

(a) review the institution's plan to return to compliance, in particular assess whether the planned actions are sufficient and the timeline is reasonable taking into account

the materiality of non-compliance, the scope of work required to return to compliance and available resources;

(b) where satisfied, confirm the detailed plan to return to compliance, including the required actions and the expected timeline;

(c) monitor on a regular basis the progress in the implementation of the plan as referred to in point (b);

(d) after the implementation of the plan verify the institution's compliance with the relevant requirements by applying this Regulation in the scope relevant to the scope of previous non-compliance.

CHAPTER 2

Assessment methodology of roll-out plans and permanent partial use of Standardised Approach

Article 6

General

1. In order to assess compliance of an institution with the requirements on the implementation of the IRB Approach in accordance with Articles 148 and 150 of Regulation (EU) No 575/2013, competent authorities shall verify in particular the following:

(a) the institution's initial coverage and plan for sequential implementation of the IRB Approach, according to Article 7;

(b) that the exposure classes, types of exposures or business units where the Standardised Approach is applied are eligible for permanent exemption from the IRB Approach, according to Article 8.

2. For the purposes of paragraph 1 competent authorities shall in particular:

(a) review the institution's relevant internal policies and procedures, including the calculation methods for the relevant thresholds;

(b) review the roles and responsibilities of the units and management bodies involved in the assignment of particular exposures to the IRB or the Standardised Approach;

(c) review the minutes of the institution's internal bodies, including the management body, or other committees;

(d) review the findings of the internal audit or of other control functions of the institution;

(e) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during audits;

(f) obtain written statements or interview the staff and senior management of the institution.

3. For the purposes of paragraph 1, competent authorities may also, to the extent appropriate:

(a) review the functional documentation of the IT systems used in the process of the assignment of particular exposures to the IRB or the Standardised Approach;

(b) conduct sample testing and review documents related to the characteristics of an obligor and to the origination and maintenance of the exposures;

(c) review other relevant documents of the institution.

Article 7

Implementation of the IRB Approach

1. In assessing the initial coverage and the institution's plan for sequential implementation of the IRB Approach as referred to in Article 6(1)(a), competent authorities shall verify that:

(a) the content of the plan covers at least the following:

    (i)   the specification of the scope of the rating systems, as well as which types of exposures shall be rated by each rating model;

    (ii)   the planned dates of application of the IRB Approach with regard to each type of exposures;

    (iii)   the information on the current total exposure values and risk weighted exposure amounts calculated according to the approach currently applied for each type of exposures;

(b) the plan comprises all exposures of the institution, or any parent undertaking, and its subsidiaries unless they are assessed according to Article 8;

(c) the implementation is planned to be performed in accordance with the second and third subparagraphs of Article 148(1) of Regulation (EU) 575/2013;

(d) the initial coverage of the IRB Approach is compliant with the conditions specified in the technical standards developed in accordance with Article 148(6) of Regulation (EU) 575/2013;

(e) where an institution is permitted to use the IRB Approach for any exposure class, that it uses the IRB Approach for equity exposures except for the cases specified in Article 148(5) of Regulation (EU) No 575/2013;

(f) the sequence and time periods of the implementation of the IRB Approach are specified on the basis of the real capabilities of the institution, including availability of data, rating systems and required experience periods as laid down in Article 145 of Regulation (EU) 575/2013 and are not used selectively for the purpose of achieving reduced own funds requirements;

(g) the sequence ensures that the credit exposures related to the institution's core business are treated with priority;

(h) a definite time period for the implementation of the IRB Approach is identified for all exposures and business units and is reasonable on the basis of the nature and scale of the institution's activities.

2. For the purposes of point (h) of paragraph 1, a reasonable definite time period shall be a maximum of five years, unless where any of the following conditions is met:

(a) the plan for the sequential implementation of the IRB Approach comprises numerous entities, including the parent undertaking and its subsidiaries, or high number of business units or business lines within the institution, or any parent undertaking, and its subsidiaries;

(b) the rating systems to be implemented by the institution, or any parent undertaking, and its subsidiaries, are either numerous or difficult to develop;

(c) the rating systems to be implemented by subsidiaries are located in third countries where significant legal or other difficulties for the approval of IRB models exist;

(d) the time series data are unavailable or unsuitable due to inaccuracy or incompleteness.

3. In the course of their regular assessment of the institution's compliance with the plan for sequential implementation of the IRB Approach, which has been subject to permission of the competent authorities in accordance with Article 148 of Regulation (EU) No 575/2013, competent authorities may approve any changes to the sequence and time period only where either of the following conditions is met:

(a) there are significant changes in the business environment and in particular changes in strategy, mergers and acquisitions;

(b) any of the conditions referred to in paragraph 2 were not considered adequately in the institution's initially approved plan for sequential implementation of the IRB Approach.

4. Where the institution does not comply with its plan for sequential implementation of the IRB Approach, Article 146(a) of Regulation (EU) No 575/2013 applies, unless the institution submits an updated plan for sequential implementation of the IRB Approach for the approval of the competent authorities.

Article 8

Conditions for permanent partial use

1. In assessing the institution's compliance with the conditions for permanent partial use of the Standardised Approach as referred to in Article 6(1)(b), competent authorities shall verify in particular the conditions of paragraphs 2 to 4.

2. For the purpose of paragraph 1, and in relation to points (a) and (b) of Article 150(1) of Regulation (EU) 575/2013, competent authorities shall assess the compliance of the institution with the technical standards developed in accordance with Article 150(3) of Regulation (EU) 575/2013 and shall verify in particular that:

   (a) the availability of external data for representative counterparties is assessed and taken into account by the institution;

   (b) the cost to the institution of developing a rating system for the counterparties in the relevant exposure class is assessed in relation to its scale;

   (c) the operational capability of the institution to develop a rating system is assessed in relation to the nature and scale of the institution's activity.

3. Competent authorities shall verify that an institution implements the procedures for regular monitoring of compliance with the requirements of Article 150 of Regulation (EU) 575/2013.

CHAPTER 3

Assessment methodology of the function of validation of internal estimates and of the internal governance and oversight of an institution

Article 9

General

1. In order to assess whether an institution is compliant with the requirements on internal governance, including requirements on senior management and management body, internal reporting, credit risk control and internal audit, oversight and validation, as referred to in Articles 144(1)(c) and (f) of Regulation (EU) No 575/2013, competent authorities shall verify the following:

   (a) the robustness of the arrangements, mechanisms and processes of validation of rating systems of an institution including the personnel responsible for the performance of the validation ('validation function') as referred to in Articles 174(d), 185 and 188 of Regulation (EU) No 575/2013, in accordance with Section 1, and more in particular:

      (i) the independence of the validation function, in accordance with Article 10;

(ii) the completeness of the validation process, also in terms of frequency, in accordance with Article 11;

(iii) the adequacy of the validation methods and procedures, in accordance with Article 12;

(iv) the soundness of the reporting process and the process for addressing the validation conclusions and recommendations in accordance with Article 13;

(b) the internal governance and oversight of the institution, including the credit risk control unit and the internal audit of the institution, as referred to in Articles 189 to 191 of Regulation (EU) No 575/2013 in accordance with Section 2, and more in particular:

(i) the role of senior management and management body, in accordance with Article 14;

(ii) the internal reporting, in accordance with Article 15;

(iii) the credit risk control unit, in accordance with Article 16;

(iv) the internal audit, in accordance with Article 17.

2. For the purposes of paragraph 1, competent authorities shall, in particular:

(a) review the institution´s relevant internal policies and procedures;

(b) review the minutes of the institution´s internal bodies, including the management body, or other committees;

(c) review the reports relating to the rating systems, as well as any conclusions and decisions taken on the basis of those reports;

(d) review the reports on the activities of all functions referred to in paragraph 1 prepared by the staff responsible for each of those functions or by any other control function of the institution, as well as their conclusions and recommendations;

(e) obtain written statements or interview the staff and senior management of the institution;

(f) review other relevant documents of the institution.

3. For the assessment of the validation function, referred to in paragraph 1(a), in addition to the requirements referred to in paragraph 2, competent authorities shall review, in particular:

(a) the roles and responsibilities of all staff involved in the validation function;

(b) the adequacy and appropriateness of the annual validation work plan;

(c) the validation manuals used by the validation function;

(d) the process of categorization of the findings and the relevant recommendations in accordance with their materiality;

(e) the consistency of the conclusions, findings and recommendations of the validation function;

(f) the role of the validation function in the internal approval procedure of rating systems and all related changes;

(g) the action plan of each relevant recommendation, also in terms of its follow-up, as approved by the appropriate management level.

4. For the assessment of the credit risk control unit, referred to in paragraph 1(b)(iii), in addition to the requirements referred to in paragraph 2, competent authorities shall review, in particular:

(a) the roles and responsibilities of all staff and senior management of the credit risk control unit;

(b) the relevant reports submitted by the credit risk control unit and the senior management, to the management body or to the designated committee thereof.

5. For the assessment of the internal audit or any other comparable independent auditing unit, referred to in paragraph 1(b)(iv), in addition to the requirements referred to in paragraph 2, competent authorities shall review, in particular:

(a) the roles and responsibilities of all staff involved in the internal audit;

(b) the adequacy and appropriateness of the annual internal audit work plan;

(c) the auditing manuals, the work programs, the findings and the recommendations included in the audit reports;

(d) the action plan of each relevant recommendation, also in terms of its follow-up, as approved by the appropriate management level.

Section 1

Methodology for assessing the validation function

Article 10

Independence of the validation function

1. In assessing the independence of the validation function as referred to in Article 9(1)(a)(i), competent authorities shall verify that:

(a) the unit responsible for the validation function is independent from the personnel and management function responsible for originating or renewing exposures and reports directly to senior management;

(b) where the unit responsible for the validation function is organisationally separate from the credit risk control unit and both units report to different members of the senior management, then competent authorities shall verify, in particular:

    (i)   that the validation function has at its disposal adequate resources, including experienced and qualified personnel to perform its tasks;

    (ii)   that the remuneration of the staff and senior managers responsible for the validation function is independent from the performance of the tasks related to credit risk control and to originating or renewing exposures;

(c) where the unit responsible for the validation is organisationally separate from the credit risk control unit but both units report to the same member of the senior management, competent authorities shall, in addition to (b) above, verify that:

    (i)   there is a decision-making process in place to ensure that the conclusions, findings and recommendations of the validation function are properly taken into account by the senior management of the institution;

    (ii)   no undue influence is exercised on the validation conclusions;

    (iii)   all necessary corrective measures are decided and implemented in a timely manner;

    (iv)   internal audit regularly assesses the fulfilment of the conditions referred to in points (i) to (iii);

(d) where the staff performing the validation function is separate from the staff responsible for the model design or development or the credit risk control function but no separate validation unit exists, competent authorities shall, in addition to (b) and (c) above, verify that:

    (i)   there is effective separation between the staff performing the validation function and the staff performing the other tasks;

    (ii)   the institution is not a global or other systemically important institution in the meaning of Article 131 of Directive 2013/36/EU.

2. In performing the overall assessment of the independence of the validation function, competent authorities shall pay particular attention to the degree of correspondence of the organizational options referred to in points (b) to (d) of paragraph 1 as employed by the institution to the nature, size, scale and complexity of the risks inherent in its business model.

Text for consultation purposes

Q2: Do you agree with the required independence of the validation function in Article 4(3) and Article 10? How would these requirements influence your validation function and your governance in general?

Article 11

Frequency and completeness of the validation process

1. In assessing the completeness of the validation function as referred to in Article 9(1)(a)(ii) competent authorities shall verify that:

    (a) the institution has defined and documented a complete validation process for all rating systems;

    (b) the institution applies the validation process referred to in point (a) with an adequate frequency.

2. In assessing the frequency of the validation process as referred to in paragraph 1(b), competent authorities shall verify that this process is performed regularly for all rating systems of the institution following an annual work plan and, more in particular, that:

    (a) for all rating systems the backtesting referred to in Article 185(b) of Regulation (EU) 575/2013 is performed at least on an annual basis;

    (b) for the rating systems covering material types of exposures, the performance of the rating systems as referred to in point (c) of paragraph 3, is performed at least on an annual basis.

3. In assessing the completeness of the validation process as referred to in paragraph 1(a), competent authorities shall verify that the validation function:

    (a) critically reviews all the aspects of specification of the internal ratings and risk parameters, including the data collection and data cleansing procedures, the choices of the methodology and model structure, and the variable selection process;

    (b) verifies the adequacy of internal ratings and risk parameters implementation in IT systems and that grade and pool definitions are consistently applied across departments and geographic areas of the institution;

    (c) verifies the performance, including both risk differentiation and quantification, and the stability of the internal ratings and risk parameters and the model specifications;

    (d) verifies all changes related to internal ratings and risk parameters and their materiality in accordance with the relevant provisions of Delegated Regulation (EU) No 529/2014 and, in particular, that it consistently follows up on its own conclusions and recommendations.

4. Where there are applications for permission to use the internal ratings and risk parameters of each rating system or of any material changes to internal ratings and risk

parameters of each rating system, competent authorities shall verify that the institution performs the validation referred to in points (a) to (c) of paragraph 3 before the rating system is used for own funds calculation and internal purposes.

Article 12

Adequacy of the validation function methods and procedures

In assessing the adequacy of the validation function methods and procedures as referred to in Article 9(1)(a)(iii), competent authorities shall verify that validation methods and procedures allow for a consistent and meaningful assessment of the performance of the internal rating and risk estimates as required by Article 185 of Regulation (EU) 575/2013, and more in particular that:

(a) the validation methods and procedures are of adequate quality for facilitating the assessment of accuracy and consistency of the rating system;

(b) the validation methods and procedures are appropriate to the nature, degree of complexity and scope of application of the institution´s rating systems and data availability;

(c) the validation methods clearly state the validation objectives, standards and limitations, including a description of all validation tests and datasets, as well as data cleansing, data sources and reference time periods, and the fixed targets and tolerances for defined metrics, which may be different for the initial and regular validation;

(d) the validation methods, in particular the tests performed, the reference dataset used and the respective data cleansing are applied consistently over time;

(e) the validation methods include back-testing and benchmarking as referred to in Article 185(b) and (c) of Regulation (EU) No 575/2013;

(f) the validation methods take account of the way business cycles and the related systematic variability of the default experience are considered in the internal ratings and risk parameters, especially regarding PD estimation.

Article 13

Soundness of the reporting process and the process to address the validation conclusions, findings and recommendations

In assessing the soundness of the reporting process and the process to address the validation conclusions, findings and recommendations, as referred to in Article 9(1)(a)(iv), competent authorities shall verify, in particular, that:

(a) the validation reports identify and describe the validation methods used, the tests performed, the reference dataset used and the respective data cleansing processes

and include the results of these tests, the conclusions, the findings and the relevant recommendations;

(b) the conclusions and recommendations of the validation reports are directly communicated to the senior management and to the management body of the institution or to the committee designated by it;

(c) the conclusions and recommendations of the validation report directly influence the design of internal ratings and risk estimates and the decision making process of the institution at the appropriate management level, including in the cases referred to in Article 185(e) of Regulation (EU) No 575/2013.

Section 2

Methodology for assessing internal governance and oversight

Article 14

Senior management and management body

1. In assessing the soundness of the institution's internal governance as referred to in Article 9(1)(b)(i), competent authorities shall verify in particular that:

(a) the decision-making process of the institution, including its hierarchy, reporting lines and levels of responsibility, are clearly laid down in the institution's internal documentation and consistently reflected in the minutes of its internal bodies;

(b) the management body or the committee designated by it approves all material aspects of the rating systems and sets the appropriate organizational structure for their sound implementation by way of a formal decision;

(c) the management body or the committee designated by it approves all relevant policies related with the implementation of rating systems and application of the IRB Approach, including the policies related with the IT infrastructure and contingency planning.

(d) the senior management of the institution has a good understanding of all rating systems of the institution as well as of their design and operation, including the requirements for the IRB Approach and the institution's approach to meeting these requirements;

(e) the senior management of the institution provides notice to the management body or the committee designated by it, of material changes or exceptions from established policies that materially impact the operations of the institution's rating systems;

(f) the senior management of the institution is in practice in a position to ensure on an ongoing basis the good functioning of the rating systems;

(g) the senior management of the institution undertakes relevant measures, in case where weaknesses of the rating systems are identified by the credit risk control, the validation, the internal audit or any other control function.

2. For the purposes of verifying the requirements referred to in paragraph 1(b), competent authorities shall verify that at least the following have been approved by the institution's senior management and the management body or the committee designated by it:

(a) the risk management strategies and policies regarding the internal rating systems including all material aspects of the rating assignment and risk parameter estimation processes;

(b) the internal ratings and risk parameters of all rating systems;

(c) the organisational structure of the control functions, including the tasks and setup of validation, internal audit and credit risk control unit;

(d) the specification of the acceptable level of risk, taking into account the internal rating system scheme of the institution.

Article 15

Internal reporting

In assessing the adequacy of the internal reporting as referred to in Article 9(1)(b)(ii), competent authorities shall, in particular, verify that:

(a) reporting includes a risk profile of the obligors or exposures as applicable, by grade, the migration across grades, an estimation of the relevant parameters per grade and a comparison of realised default rates, and, to the extent that own estimates are used, of realised LGDs and realised conversion factors against expectations, and stress test assumptions and results;

(b) reporting also includes information about the performance of the rating process, areas needing improvement and the status of efforts to improve previously identified deficiencies of the rating systems, in particular with regard to the validation reports which are a part of the internal reporting;

(c) the form of reporting and the frequency of reporting correspond to the significance and type of the information and to the level of recipient, taking into account the institution's organizational structure;

(d) the institution's reporting facilitates the senior management's monitoring of the credit risk in the overall portfolio of exposures covered by the IRB Approach.

(e) the institution's reporting is proportionate to the nature, size, and degree of complexity of the institution´s business and organizational structure.

Article 16

Credit risk control unit

1. In assessing the internal governance and oversight of the institution in relation to the credit risk control unit, as referred to in Article 9(1)(b)(iii), competent authorities shall verify in particular that:

    (a) the credit risk control unit or units are separate and independent from the personnel and management functions responsible for originating or renewing exposures;

    (b) the credit risk control unit or units are adequate, proportional and functional.

2. In the course of the assessment referred to in paragraph 1(a), competent authorities shall verify in particular that:

    (a) the credit risk control unit is one or more distinct organizational structures in the institution´s organizational chart;

    (b) the head or heads of the credit risk control unit or units are senior managers of the institution;

    (c) the staff and the senior management responsible for the credit risk control unit or units are not responsible for originating or renewing exposures;

    (d) senior managers of the credit risk control unit or units and of units responsible for originating or renewing exposures have different reporting lines at the level of the management body of the institution or the committee designated by it;

    (e) the remuneration of the staff and senior management responsible for the credit risk control unit or units is independent from the performance of the tasks related to originating or renewing exposures.

3. In the course of the assessment referred to in paragraph 1(b), competent authorities shall verify, in particular, that:

    (a) the credit risk control unit or units are proportionate to the nature, size and degree of complexity of the institution´s business and organizational structure, and in particular to the complexity of the models and their implementation;

    (b) the credit risk control unit or units have adequate resources, and experienced and qualified personnel to undertake all relevant activities;

    (c) the credit risk control unit or units are responsible for the design or selection, implementation and oversight and the performance of the rating systems and the tasks referred to in Article 190(2) of Regulation (EU) No 575/2013;

    (d) the credit risk control unit or units regularly inform the senior management about the performance of the rating systems, areas needing improvement, and the status of efforts to improve previously identified deficiencies.

Article 17

Internal audit

1. In assessing the internal governance and oversight of the institution in relation to the internal audit or another comparable independent auditing unit, as referred to in Article 9(1)(b)(iv), competent authorities shall verify in particular that:

   (a) the internal audit or another comparable independent auditing unit reviews at least annually all rating systems of an institution as defined in Article 142(1) of Regulation (EU) No 575/2013 and the operations of the credit risk control function, credit approval process and internal validation function;

   (b) the revision referred to in point (a) facilitates the specification of areas in the annual work plan where it is necessary to carry out a detailed review of adherence to all applicable requirements referred to in Chapter 3, Title II, Part three of Regulation (EU) No 575/2013;

   (c) the internal audit or another comparable independent auditing unit are adequate, proportional and functional for performing their tasks.

2. In the course of the assessment of paragraph 1(c), competent authorities shall verify in particular that:

   (a) the internal audit or other comparable independent auditing unit provide sufficient information to the senior management and the management body of the institution on the compliance of the rating systems with all applicable requirements for the IRB Approach;

   (b) the internal audit or other comparable independent auditing unit is proportionate to the nature, size and degree of complexity of the institution´s business and organizational structure, and in particular to the complexity of the models and their implementation;

   (c) the internal audit or other comparable independent auditing unit has adequate resources, and experienced and qualified personnel to undertake all relevant activities;

   (d) the internal audit or other comparable independent auditing unit is not involved in any aspect of the rating systems and its operation which is the subject of the revision that the internal audit or other comparable independent auditing unit carry out in accordance with paragraph 1(a);

   (e) the internal audit or other comparable independent auditing unit is independent from the personnel and management function responsible for originating or renewing exposures and report directly to senior management;

(f) the remuneration of the staff and senior management responsible for the internal audit function is independent from the performance of the tasks related to originating or renewing exposures.

CHAPTER 4

Assessment methodology of use test and experience test

Article 18

General

1. In order to assess whether an institution is compliant with the requirements on the use of rating systems, as referred to in Articles 144(1)(b), 145, 171(1)(c), 172(1)(a), 172(1)(b), 172(1)(c), 172(2) and 175(3) of Regulation (EU) No 575/2013, competent authorities shall verify, in particular, that:

    (a) internal ratings and default and loss estimates of the rating systems used in the calculation of own funds play an essential role in all of the following areas:

        (i) in the risk management, credit approval and decision making process, in accordance with Article 19;

        (ii) in the process of the internal capital allocation in accordance with Article 20;

        (iii) in the corporate governance functions in accordance with Article 21;

    (b) data and estimates used by the institution for the calculation of own funds and those used for internal purposes are consistent, and that, where discrepancies exist, these are fully documented and reasonable;

    (c) rating systems broadly in line with the requirements set out in Part Three, Title II, Chapter 3, Section 6 of Regulation (EU) No 575/2013 have been applied by the institution at least three years prior to the use of the IRB Approach, in accordance with Article 22.

2. For the purpose of paragraph 1 competent authorities shall in particular:

    (a) review the institution´s relevant internal policies and procedures;

    (b) review the minutes the institution´s internal bodies, including the management body, or other committees involved in the credit risk management governance;

    (c) review the documented operating credit delegation schemes, credit management manuals and the commercial channels schemes;

(d) review the institution's analysis of the credit approvals and the rejection data, including the exceptions, the overrides and the non-rated exposures including their justifications, the manual decisions and the cut-off points;

(e) review the institution's forbearance policies;

(f) review the documented regular credit risk reporting;

(g) review the documentation on calculation of internal capital of the institution and the distribution of the internal capital to types of risk, subsidiaries and portfolios;

(h) review the findings of the internal audit or of other control functions of the institution;

(i) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during audits;

(j) obtain written statements or interview the staff and senior management of the institution.

3. For the purpose of paragraph 1, competent authorities may also to the extent appropriate, review:

(a) the documentation of early warning systems;

(b) the credit risk adjustments methodology and the documented analysis of its coherence with the own funds requirements calculation;

(c) the documented analysis of the risk-adjusted profitability of the institution;

(d) the collection and recovery procedures;

(e) the risk budgetary planning manuals and reports;

(f) the remuneration policy and the minutes of the remuneration committee;

(g) other relevant documents of the institution.

Article 19

Use test in risk management, decision making and credit approval process

1. In assessing whether internal ratings and default and loss estimates of the rating systems used in the calculation of own funds requirements play a substantial role in the institution's risk management, credit approval and decision-making processes as referred to in Article 18(1)(a)(i), competent authorities shall verify in particular that:

(a) the number of non-rated exposures and outdated ratings is immaterial;

(b) these ratings and estimates play an important role, in particular, in:

(i) making a decision on the approval, rejection, forbearance, restructuring and renewal of a credit facility;

(ii) setting the global credit risk profile of the institution, by the management board or by any other internal committee designated by it;

(iii) determining the lending policies including the exposure limits, mitigation techniques and credit enhancements;

(iv) allocating or delegating competence for the credit approval process by the management board to internal committees, to the senior management and to the staff;

(v) assessing the credit performance of obligors and exposures;

(vi) the credit management reporting.

2. In the course of the assessment referred to in paragraph 1, and where the institution applies such practices, competent authorities shall also evaluate whether these ratings and estimates play an important role, in particular, in:

(a) pricing each credit facility or obligor;

(b) the early warning systems used for the credit risk management;

(c) determining and implementing the collection and recovery policies and processes;

(d) calculating credit risk adjustments, where this is in line with the applicable accounting framework.

Article 20

Use test in the internal capital allocation

1. In assessing whether internal ratings and default and loss estimates of the rating systems used in the calculation of own funds requirements play an essential role in the institution's internal capital allocation as referred to in Article 18(1)(a)(ii), competent authorities shall evaluate whether these ratings and estimates play an important role, in particular, in:

(a) assessing the amount of internal capital of the institution in accordance with Article 73 of Directive 2013/36/EU;

(b) distributing the internal capital among types of risk, subsidiaries and portfolios.

2. In the course of the assessment referred to in paragraph 1, where the institution applies such practices, competent authorities shall also evaluate whether the ratings and estimates play an important role in the risk budgetary planning of the institution.

Article 21

Use test in corporate governance functions

1. In assessing whether internal ratings and default and loss estimates of the rating systems used in the calculation of own funds requirements play an essential role in the institution's corporate governance functions as referred to in Article 18(1)(a)(iii), competent authorities shall evaluate whether these ratings and estimates play an important role, in particular, in:

   (a) the institution's internal reporting;

   (b) the credit risk monitoring.

2. In the course of the assessment referred to in paragraph 1, and where the institution applies such practices, competent authorities shall also evaluate whether these ratings and estimates play an important role, in particular, in:

   (a) the internal audit planning;

   (b) the design of the remuneration scheme of the institution in accordance with Article 92(2)(a) of Directive 2013/36/EU.

Article 22

Experience test

1. In assessing whether the rating systems broadly in line with the requirements set out in Part Three, Title II, Chapter 3, Section 6 of Regulation (EU) 575/2013 have been applied by the institution at least three years prior to the use of the IRB Approach for the purpose of the own funds requirements calculation, as referred to in Article 18(1)(c), competent authorities shall verify in particular that:

   (a) internal ratings and risk estimates of the rating systems have been used for at least the last three years in the internal risk measurement and management processes as referred to in Article 19(1);

   (b) adequate documentation of the effective operation of the rating systems for at least the last three years is available, in particular with regard to monitoring, internal validation and internal audit reports.

2. The assessment referred to in paragraph 1 shall apply also to the extension of the use of the IRB Approach after application of the requirement of Article 145(3) of Regulation (EU) No 575/2013.

CHAPTER 5

Assessment methodology for assignment of exposures to grades or pools

Article 23

General

1. In order to assess the institution's process of assignment of obligors or exposures to grades of pools in accordance with Articles 169, 171, 172 and 173 of Regulation (EU) No 575/2013, competent authorities shall verify, in particular, the following:

   (a) the adequacy of definitions, processes and criteria used by the institution for assigning or reviewing the assignment of exposures to grades or pools, as referred to in Articles 169, 171 and 172 of Regulation (EU) No 575/2013 including the treatment of cases where these criteria are overridden ('overrides'), in accordance with Article 24;

   (b) the integrity of the assignment process including the independence of the assignment process, as referred to in Article 173 of Regulation (EU) No 575/2013, as well as the reviews of the assignment, in accordance with Article 25.

2. For the purposes of paragraph 1, competent authorities shall, in particular:

   (a) review the institution's relevant internal policies and procedures;

   (b) review the roles and responsibilities of the units responsible for origination and renewal of exposures and units responsible for the assignment of exposures to grades or pools;

   (c) review the minutes of the institution's internal bodies, including the management body, or other committees;

   (d) review the institution's internal reports regarding the performance of the assignment process;

   (e) review the findings of the internal audit or of other control functions of the institution;

   (f) review the progress reports on the effort of the institution to correct shortfalls in the assignment or review process and mitigate risks detected during audits;

   (g) obtain written statements or interview the staff and senior management of the institution;

   (h) review the criteria used by the personnel responsible for the human judgement in the assignment of exposures to grades or pools.

3. For the purposes of paragraph 1, competent authorities may also, to the extent appropriate:

   (a) review the functional documentation of the relevant IT systems;

   (b) conduct sample testing and review documents related to the characteristics of an obligor and to the origination and maintenance of the exposures;

(c) perform own tests on the data of the institution or request the institution to perform tests proposed by the competent authorities;

(d) review other relevant documents of the institution.

Article 24

Assignment definitions, processes and criteria

1. In assessing the adequacy of definitions, processes and criteria used by the institution to assign or review the assignment of exposures to grades or pools as referred to in point (a) of Article 1(1), competent authorities shall, in particular, verify that:

   (a) there are adequate procedures and mechanisms in place that ensure a consistent assignment of obligors or facilities to an appropriate rating system;

   (b) there are adequate procedures and mechanisms in place to ensure that each exposure is assigned to a grade or pool as required by the rating system;

   (c) for exposures to corporates, institutions and central governments and central banks, and for equity exposures where an institution uses the PD/LGD approach, there are adequate procedures and mechanisms in place to ensure that all exposures to the same obligor are assigned to the same obligor grade, in particular along different lines of business, departments, geographical locations, legal entities within the group and IT systems, or to ensure the correct application of the exceptions from the assignment to the same obligor grade, as provided in Articles 172(1)(e) and 170(2) of Regulation (EU) No 575/2013;

   (d) the assignment's definitions and criteria are sufficiently detailed to facilitate a common understanding and consistent assignment by all the responsible personnel, regardless of the lines of business, departments, geographical locations, legal entities within the group and use of different IT systems;

   (e) there are adequate criteria, procedures and mechanisms in place to obtain all relevant information about the obligor and the facilities;

   (f) all relevant, currently available and most up-to-date information is taken into account, including, in the case of exposures to corporates, institutions and central governments and central banks, and for equity exposures where an institution uses the PD/LGD approach, both financial and non-financial information;

   (g) where the information is not fully available, the institution specifies tolerances for defined metrics and rules to account for missing or not up-to-date information that is required for the rating assignment in an adequate and conservative way; in particular financial statements older than 24 months are considered as not up-to-date information;

(h) the assignment to grades or pools makes part of the credit approval process, according to the methodology specified in Chapter 4 on use test and experience test;

(i) the criteria for assignment to grades or pools are consistent with lending standards and policies for handling troubled obligors and facilities, according to the methodology specified in Chapters 7 on rating systems design, operational details and documentation and 8 on risk quantification.

2. In the course of the assessment referred to in paragraph 1, competent authorities shall assess the extent to which human judgement is used to override any inputs or outputs of the rating system in accordance with Article 172(3) of Regulation (EU) No 575/2013, and they shall, in particular, verify that:

(a) there are documented polices specifying possible reasons for and maximum extent of overrides and the stage of the assignment process where the overrides are acceptable;

(b) the overrides are sufficiently justified in accordance with the policies referred to in point (a) and whether this justification is documented;

(c) the institution regularly carries out an analysis of the performance of exposures whose rating has been overridden, including the analysis of overrides per person applying the overrides, and whether the results of this analysis are taken into account in the decision making process at an appropriate management level;

(d) the institution collects full information on overrides, including information both before and after the override, monitors on a regular basis the number and justifications for overrides, and analyses the effect of overrides on the model's performance;

(e) the number and justifications for overrides do not indicate significant weaknesses of the rating model.

3. In the course of the assessment referred to in paragraph 1, competent authorities shall verify, in particular, whether the assignment definitions, processes and criteria contain adequate procedures and mechanisms:

(a) to identify groups of connected clients, as defined in point (39) of Article 4(1) of Regulation (EU) No 575/2013;

(b) to include such information on the ratings, in particular defaults, of other entities within the group of connected clients in an obligor grade assignment in such a way that the rating grades of the different entities are consistent with the structure of the group;

(c) to ensure that the cases where the obligors are assigned to a better grade than their parent entities are documented and justified.

Article 25

Integrity of assignment process

1. In assessing the independence of the assignment process referred to in point (b) of Article 23(1), competent authorities shall verify in particular that:

    (a) the staff and management responsible for the final approval of the assignment or review of the assignment of exposures to grades or pools are not also responsible for, and also not involved in, the origination or renewal of exposures;

    (b) senior managers of units responsible for the final approval of the assignment or review of the assignment of exposures to grades or pools and of units responsible for the origination or renewal of exposures have different reporting lines at the level of the management body or the relevant designated committee of the institution;

    (c) the remuneration of the staff and management responsible for the final approval of the assignment or review of the assignment of exposures to grades or pools does not depend on the performance of the tasks related to the origination or renewal of exposures;

    (d) points (a) to (c) also apply to retail exposures only in case of overrides.

2. In assessing the frequency and adequacy of the assignment process referred to in point (b) of Article 23(1), competent authorities shall, in particular, verify that:

    (a) there are adequate and detailed policies in place that specify the frequency of the review, and that specify the criteria for identifying cases where a more frequent review is necessary due to the higher risk of obligors or problematic exposures and that those policies are applied consistently over time;

    (b) the review and necessary adjustments of assignment are carried out whenever new material information on the obligor or exposure becomes available, and within a maximum of 12 months after the approval of the current assignment;

    (c) the institution has defined criteria and processes for assessing the materiality of new information and the subsequent need for reassignment and that these criteria and processes are applied consistently over time;

    (d) in the review of the assignment the most recent information available is used;

    (e) there are adequate policies in place with regard to the situations where the assignment is not reviewed in accordance with the requirements laid down in points (a) to (d), and that measures are taken that ensure adherence with points (a) to (d);

    (f) senior management is regularly informed about the performance of the process of review of assignment of exposures to grades or pools, in particular in with regard to the situations as referred to in point (e);

(g) there are adequate procedures to allow for effective obtaining and regular updating of relevant information, and in particular that this is reflected appropriately in the terms of contracts with the obligors.

3. In the course of the assessment referred to in paragraph 1, competent authorities shall assess the value and number of exposures that are not reviewed in accordance with points (a) to (d) of paragraph 3, and whether these exposures are treated in a conservative manner in terms of risk weighted assets calculation. Such assessment shall be carried out separately for each rating system and each risk parameter.

CHAPTER 6

Assessment methodology for definition of default

Article 26

General

1. In order to assess whether the institution effectively identifies all defaults in accordance with Article 178 of Regulation (EU) No 575/2013 competent authorities shall verify in particular the following:

   (a) the compliance of an institution with, and the operationalization of, the triggers for identification of default of an obligor, in accordance with Article 27;

   (b) the robustness and effectiveness of the process used by an institution for the identification of default of an obligor, in accordance with Article 28;

   (c) the triggers and process used by an institution for the reclassification of a defaulted obligor to a non-defaulted status, in accordance with Article 29.

2. For the purposes of paragraph 1 competent authorities shall in particular:

   (a) review the institution's internal policies and procedures with regard to the application of definition of default and the treatment of defaulted exposures;

   (b) review the roles and responsibilities of the units and management bodies involved in the identification of the default of an obligor and management of defaulted exposures;

   (c) review the minutes of the institution's internal bodies, including the management body, or other committees;

   (d) review the findings of the internal audit or of other control functions of the institution;

   (e) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during audits;

(f) obtain written statements or interview the staff and senior management of the institution;

(g) review the criteria used by the personnel responsible for the human judgement identification of default of an obligor and return to the non-defaulted status.

3. For the purposes of paragraph 1, competent authorities may also, to the extent appropriate:

(a) review the functional documentation of the IT systems used in the process of identification of default of an obligor;

(b) conduct sample testing and review documents related to the characteristics of an obligor and to the origination and maintenance of the exposures;

(c) perform own tests on institution's data or request the institution to perform tests proposed by the competent authorities;

(d) review other relevant documents of the institution.

Article 27

Triggers of default of on obligor

1. In assessing the compliance with and operationalization of the triggers for identification of default of an obligor applied by the institution as referred to in Article 26(1)(a), competent authorities shall verify in particular that:

(a) there is an adequate policy in place with regard to the counting of days past due, including in particular re-ageing of facilities, granting of extensions, amendments or deferrals, renewals and netting of existing accounts;

(b) the definition of default applied by the institution includes at least all of the triggers of default as referred to in Articles 178(1) and (3) of Regulation (EU) 575/2013;

(c) where an institution uses multiple definitions of default within or across legal entities, that the scope of application of each definition of default is clearly specified and that the differences between the definitions are justified.

2. For the purpose of paragraph 1, competent authorities shall assess whether the definition of default is sufficiently operationalised for all types of exposures in order to ensure its consistent and meaningful application, in particular whether the following elements that are potential indications of unlikeness to pay are sufficiently specified:

(a) the non-accrued status;

(b) events that constitute specific credit risk adjustments resulting from a significant perceived decline in credit quality;

(c) sales of credit obligations that constitute a material credit-related economic loss;

(d) events that constitute a distressed restructuring;

(e) events that constitute a similar protection as bankruptcy;

(f) other indications of unlikeliness to pay.

3. Competent authorities shall assess that the policies and procedures do not allow classifying the obligor as non-defaulted in situations where any of the default triggers apply.

Article 28

Robustness and effectiveness of the process of identification of default of an obligor

1. In assessing the robustness and effectiveness of the process of identification of default of an obligor as referred to in Article 26(1)(b), competent authorities shall verify, in particular, that:

   (a) there are adequate procedures and mechanisms in place to ensure that all defaults are identified in a timely manner, in particular that the frequency and process of gathering and updating relevant information is effective;

   (b) where the identification of default of an obligor is based on automatic processes, the correctness of implementation of the default definition in the IT system is evidenced by the relevant implementation tests;

   (c) where the identification of default of an obligor is based on human judgement the definitions and triggers of default are sufficiently detailed to facilitate a common understanding and consistent identification of default of an obligor by all the relevant staff;

   (d) where the institution applies the definition of default at the obligor level, there are adequate procedures and mechanisms in place to ensure that once default is identified for an obligor all exposures to that obligor are in default across all relevant systems, business lines and geographical locations within the institution, or any parent undertaking, and its subsidiaries;

   (e) where there is a time delay with regard to the assignment of the defaulted status across all exposures to an obligor as referred to in point (d), that time delay does not lead to errors or inconsistencies in risk management, risk reporting, own funds requirements calculation or the use of data in risk quantification.

2. For the purpose of paragraph 1, competent authorities shall assess the application of the materiality threshold in the default definition and its consistency with the materiality threshold of a credit obligation past due, defined by the competent authorities in accordance with the technical standards referred to in Article 178(6) of Regulation (EU) No 575/2013, and shall verify, in particular, that:

(a) there are adequate procedures and mechanisms in place to ensure that all credit obligations above the threshold are assigned the defaulted status;

(b) the process of counting of days past due is consistent with the contractual or legal obligations of an obligor, handles partial payments robustly and is applied consistently.

3. In the specific case of retail exposures, in addition to paragraphs 1 and 2, competent authorities shall also verify that:

(a) the institution has a clearly specified policy with regard to the application of the default definition for retail exposures either at the level of an obligor or at the level of the individual credit facility;

(b) the policy referred to in point (a) is applied by the institution consistently across all retail exposures and over time;

(c) where the institution applies the definition of default at the level of the individual facility:

    (i)   there are adequate procedures and mechanisms in place to ensure that once a credit facility is identified as being in default, that credit facility is marked as being in default across all relevant systems within the institution;

    (ii)   where there is a time delay with regard to the assignment of the defaulted status of a facility across all relevant systems as referred to in point (i), that time delay does not lead to errors or inconsistencies in risk management, risk reporting, own funds requirements calculation or the use of data in risk quantification.

Article 29

Return to non-defaulted status

1. In assessing the robustness of the triggers and process of reclassification of defaulted obligor to a non-defaulted status as referred to in Article 26(1)(c), competent authorities shall verify in particular that:

(a) the triggers for reclassification are defined for each trigger of default, in particular that the treatment of credit obligations subject to distressed restructuring is specified;

(b) the reclassification is possible only after no trigger of default continues to apply and all relevant conditions for reclassification are met;

(c) the triggers and process of reclassification are sufficiently prudent, in particular that reclassification to a non-defaulted status is not performed where the institution expects that the credit obligation will probably not be paid in full without recourse by the institution to actions such as realising security.

2. For the purpose of paragraph 1 competent authorities shall verify that the institution's policies and procedures do not allow for reclassification of defaulted obligor to a non-defaulted status only as result of changes in the terms or conditions unless it is assessed that those changes lead to consider the obligor as not unlikely to pay.

3. Competent authorities shall assess the robustness of the institution's analysis on which it has based its approach used for reclassification. The analysis shall take into account the institution's previous default experience, with special consideration given to the portion of obligors that cure and subsequently default within a short period of time.

CHAPTER 7

Assessment methodology for rating systems design, operational details and documentation

Section 1

General

Article 30

General

1. In order to assess whether an institution is compliant with the requirements on the design, management and documentation of rating systems, as referred to in Article 144(1)(e) of Regulation (EU) No 575/2013, competent authorities shall verify in particular the following:

   (a) the adequacy of the documentation on the design, operational details and rationale of the rating systems, as referred to in Article 175 of Regulation (EU) No 575/2013, according to the provisions of Section 2;

   (b) the adequacy of the structure of the rating systems, as referred to in Article 170 of Regulation (EU) No 575/2013, according to the provisions of Section 3;

   (c) the application by the institution of the specific requirements for statistical models or other mechanical methods, as referred to in Article 174 of Regulation (EU) No 575/2013, according to the provisions of Section 4.

2. For the purposes of paragraph 1, competent authorities shall in particular:

   (d) review the institution's relevant internal policies;

   (e) review the institution´s technical documentation on methodology and process of the rating systems development;

(f) review and challenge the assumptions of rating systems' development manuals, methodologies and processes;

(g) review the minutes of the institution´s internal bodies responsible for rating systems' approval, including the management body or other committees;

(h) review the reports on the performance of the rating systems and the recommendations by the credit risk control unit, validation function, internal audit function or any other control function of the institution;

(i) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during monitoring, validations and audits;

(j) obtain written statements or interview the staff and senior management of the institution.

3. For the purposes of paragraph 1, competent authorities may also, to the extent appropriate:

(a) request and analyse data used in the process of the development of the rating systems;

(b) conduct their own or replicate the institution's estimations performed during the development and monitoring of the rating systems using relevant data supplied by the institution;

(c) request the provision of additional documentation or analysis substantiating the methodological choices and the results obtained;

(d) review the functional documentation of the relevant IT systems;

(e) review other relevant documents of the institution.

<div align="center">Section 2</div>

Methodology for assessing the documentation on the design and operational details of rating systems

<div align="center">*Article 31*</div>

<div align="center">*Documentation of rating systems*</div>

In assessing the documentation on the design, operational details and rationale of the rating systems as referred to in point (a) of Article 30(1), competent authorities shall verify the following:

(a) the completeness of the documentation, according to Article 32;

(b) the procedures for gathering and storing the information on the rating systems ('map of rating systems'), according to Article 33.

Article 32

Completeness of the documentation

1. In assessing the completeness of the documentation on the design, operational details and rationale of the rating systems, competent authorities shall verify that it fully covers the following areas:

   (a) the adequacy of the rating system and the models used within the rating system in relation to the portfolio characteristics;

   (b) the description of data sources and cleansing practices;

   (c) the definitions of default and loss;

   (d) the methodological choices, including human judgement;

   (e) the technical specification of the models;

   (f) the models' weaknesses, limitations and possible mitigating factors thereof;

   (g) the results of the implementation of models to IT environment;

   (h) the self-assessment of compliance with regulatory requirements.

2. For the purposes of paragraph 1(a), competent authorities shall verify that:

   (a) the purpose which the rating system and the models is intended to satisfy is clearly outlined in the model documentation;

   (b) the documentation includes a description of the scope of application of the rating system and the models, that specifies the type of exposures covered by each model within the rating system, both in a qualitative and in a quantitative manner, and the type of outputs including where they will be used and for what reason;

   (c) the documentation includes an explanation about how the rating system's and models' results are taken into account in the processes of credit granting, monitoring and recovery, as defined in Chapter 4 on use test and experience test.

3. For the purposes of paragraph 1(b), competent authorities shall verify that the documentation includes:

   (a) detailed information regarding all data used for the model development, including the precise definition of its content and its source, format, coding and, where applicable, exclusions.

   (b) any cleansing procedures including procedures for data exclusions, outlier detection and treatment and data adaptations, as well as explicit justification for their use, and evaluation of their impact.

4. For the purposes of paragraph 1(c), competent authorities shall verify whether the definitions of default and loss used in the development of the model are adequately documented, in particular where different definitions of default are used for the

purpose of model specification than that which is actually being used by the institution in accordance with Article 178 of Regulation (EU) No 575/2013.

5. For the purposes of paragraph 1(d), competent authorities shall verify that the documentation includes:

   (a) detail on the design, theory, assumptions, and logic underlying the model;

   (b) detailed explanations on the model methodologies, its specifications, statistical techniques and approximations and, where appropriate, the rationale and details on segmentation methods, the outputs of statistical processes, their diagnostics and measures of discriminatory power;

   (c) the role of business experts in the process of the rating system and models development, including a detailed description of the consultation process with the business experts in the design of the rating system and models as well as outputs and rational produced by the business experts;

   (d) an explanation on how statistical model and human judgement are combined to derive the final model output;

   (e) an explanation on how the institution addresses, including by way of human judgement and adjustments, qualitative elements that may affect the performance of the rating system or model, in particular the unsatisfactory quality of the data, the lack of homogeneous pools, and changes in business processes, economic or legal environment;

   (f) description of the analyses performed for the purpose of statistical models or other mechanical methods, as applicable:

       (i) the univariate analysis of the variables considered and respective criteria for variable selection;

       (ii) the multivariate analysis of the variables selected and respective criteria for variable selection;

       (iii) the procedure for the design of the final model: final selection of variables, including adjustments based on human judgement to the variables resulting from the multivariate analysis, variables' transformations, assignment of weights to the variables and the method of composition of model components, in particular where the contribution of qualitative and quantitative component is joint.

6. For the purposes of paragraph 1(e), competent authorities shall verify that the documentation includes:

   (a) the final model structure, including final model specification, input components including type and format of selected variables, weights applied for variables and output components including type and format of output data;

(b) the computer code and tools used to develop the model.

7. For the purposes of paragraph 1(f), competent authorities shall verify that documentation includes a description of model limitations, an assessment of whether the key assumptions of the model are met and the anticipation of situations where the model may perform below expectations or become inadequate as well as the assessment of materiality of model weaknesses and possible mitigating factors thereof.

8. For the purposes of paragraph 1(g), competent authorities shall verify that:

(a) the documentation specifies the process to be followed when a new or changed model is moved into the production environment;

(b) the documentation covers the results of the tests of the implementation of the rating models in the IT systems, including the confirmation that the rating model implemented in the production system is the same as the one described in the documentation and is operating as intended.

9. For the purposes of paragraph 1(h), competent authorities shall verify that:

(a) the documentation includes a description of the institution's self-assessment of compliance with regulatory requirements for the Internal Ratings Based Approach as referred to in Section 6, Chapter 3, Title II, Part three of Regulation (EU) 575/2013;

(b) the self-assessment referred to in point (a) is performed separately for each rating system and is reviewed by the internal audit or another comparable independent auditing unit.

Article 33

Map of rating systems

1. In assessing the procedures for gathering and storing the information on the rating systems as referred to in Article 31(b), competent authorities shall verify that the institution has implemented and keeps updated a register of all rating systems including all current and past versions of rating systems for the period of at least three years ('map of rating systems').

2. For the purposes of paragraph 1, competent authorities shall verify that the procedures for the map of rating systems include the recording of at least the following information:

(a) the scope of the rating system, specifying which types of exposures shall be rated by each rating model;

(b) the approval body and date of approval, the date of notification to the competent authorities, the date of the approval by the competent authorities, where applicable, and the date of implementation of the version;

(c) a brief description of all changes performed relatively to the last version, including the aspects of the rating system changed and reference to model documentation;

(d) the change category assigned and reference to the criteria for assignment to a change category.

Section 3

Methodology for assessing the structure of rating systems

Article 34

Structure of rating systems

In order to assess the structure of rating systems in accordance with Article 30(1)(b), competent authorities shall verify the following:

(a) the structure of the rating system in terms of risk drivers and rating criteria, as referred to in Articles 170(1)(a), (c) and (e), 170(3)(a) and 170(4) of Regulation (EU) No 575/2013, according to Article 35;

(b) the distribution of obligors and exposures in the grades or pools, as referred to in Articles 170(1)(b) (d) (f), 170(2) and 170(3)(c) of Regulation (EU) No 575/2013, according to Article 36;

(c) the ability of the rating system to differentiate risk, as referred to in Articles 170(1) and (3)(b) and (c) of Regulation (EU) No 575/2013, according to Article 37;

(d) the homogeneity of obligors and exposures assigned to the same grade or pool, as referred to in Article 170(1) and (3)(c) of Regulation (EU) No 575/2013, according to Article 38.

Article 35

Risk drivers and rating criteria

1. In assessing the structure of the rating system in terms of risk drivers and rating criteria in accordance with Article 34(a), competent authorities shall in particular:

(a) assess the selection process of the relevant risk drivers and rating criteria, including the definition of potential risk drivers, criteria for selection of risk drivers and decisions taken on the relevant risk drivers;

(b) assess the consistency of the selected risk drivers and rating criteria and their contribution to the risk assessment with the expectations of the business users of the rating system;

(c) assess the consistency of the risk drivers and rating criteria selected on the basis of statistical methods with the statistical evidence on risk differentiation associated with each grade or pool.

2. The potential relevant risk drivers and rating criteria to be analysed according to paragraph 1(a) shall include the following, where available for a given type of exposures:

(a) obligor risk characteristics, including:

   (i) for exposures to corporates and institutions: financial statements, qualitative information, industry risk, country risk, support from parent entity;

   (ii) for retail exposures: financial statements or personal income information, qualitative information, behavioural information, socio-demographic information.

(b) transaction risk characteristics, including type of product, type of collateral, seniority, loan-to-value ratio;

(c) information on delinquency, internal information or derived from external sources as credit bureaus.

Article 36

Distribution of obligors and exposures in the grades or pools

1. In assessing the distribution of obligors and exposures within the grades or pools of each rating system in accordance with Article 34(b), competent authorities shall verify that:

(a) the number of rating grades and pools is adequate to ensure meaningful risk differentiation and quantification of the loss characteristics at the grade or pool level, in particular:

   (i) for exposures to corporates, institutions, and central governments and central banks and specialised lending exposures, that the obligor rating scale has at least the number of grades as set out in Articles 170(1)(b) and (2) respectively;

   (ii) for purchased receivables classified as retail exposures, that the grouping reflects the seller's underwriting practices and the heterogeneity of its customers.

(b) the concentration of numbers of exposures or obligors is not excessive in any grade or pool, unless supported by convincing empirical evidence of homogeneity of risk of those exposures or obligors;

(c) the rating and facility grades or pools for retail exposures, except where direct estimates as described in Article 169(3) of Regulation (EU) No 575/2013 are used, do not have too few exposures or obligors in a single grade or pool, unless supported by convincing empirical evidence of adequacy of grouping of those exposures or obligors;

(d) the rating and facility grades or pools for exposures to corporates, institutions, and central governments and central banks where sufficient quantity of data is available, except where direct estimates as described in Article 169(3) of Regulation (EU) No 575/2013 are used, do not have too few exposures or obligors in a single grade or pool, unless supported by convincing empirical evidence of adequacy of grouping of those exposures or obligors.

2. For the purpose of paragraph 1, competent authorities shall assess:

  (a) the maximum and minimum overall number of grades or pools;

  (b) the criteria applied by the institution in the assessment of the distribution of exposures and obligors within each grade or pool either as a percentage or as an absolute value.

3. For the purposes of paragraphs 1 and 2, competent authorities shall take into account the current and past observed distributions of the number of exposures and obligors and of the exposure values, including the migration of exposures and obligors between different grades or pools.

Article 37

Risk differentiation

In assessing the risk differentiation of each rating system in accordance with Article 34(c) for retail exposures and for other exposures whenever sufficient quantity of data is available, competent authorities shall verify that:

  (a) the tools used to assess risk differentiation are sound and adequate considering the available data, and if applicable are also evidenced with time series of realised default rates or loss rates for grades or pools under various economic conditions;

  (b) the expected risk differentiation performance is defined by the institution in terms of clearly established fixed targets and tolerances for defined metrics and tools as well as actions to rectify deviations from these targets or tolerances; separate targets and tolerances may be defined for the initial development and the ongoing performance;

  (c) the targets and tolerances referred to in paragraph (b) and mechanisms applied to meet them ensure sufficient differentiation of risk.

Article 38

Homogeneity

1. In assessing the homogeneity of obligors or exposures assigned to the same grade or pool referred to in Article 34(d), competent authorities shall assess the similarity of the obligor and transaction loss characteristics included in each grade or pool for internal ratings, estimates of PD, and, where applicable, own estimates of LGD, own estimates of conversion factors and estimates of total losses of each rating system for retail exposures, and for other exposures whenever sufficient quantity of data is available.

2. For the purposes of paragraph 1, competent authorities shall assess the range of values and the distributions of the obligor and transaction loss characteristics ('estimates of PD, LGD, conversion factors and total losses') included within a single grade or pool.

Section 4

Methodology for assessing specific requirements for statistical models or other mechanical methods

Article 39

General

In assessing the specific requirements for statistical models or other mechanical methods as referred to in Article 30(1)(c), competent authorities shall verify in particular:

 (a) the data vetting process and data representativeness, as referred to in Article 174(b) of Regulation (EU) No 575/2013, in accordance with Article 40;

 (b) the model design including identification of its weaknesses, as referred to in Article 174(a) of Regulation (EU) No 575/2013, in accordance with Article 41;

 (c) the proportionate and adequate incorporation of human judgement, as referred to in Article 174(e) of Regulation (EU) No 575/2013, in accordance with Article 42;

 (d) the model performance in terms of discriminatory power and stability, as referred to in Article 174(a) of Regulation (EU) No 575/2013, in accordance with Article 43.

Article 40

Data requirements

1. In assessing the process for vetting data inputs into the model as referred to in Article 39(a), competent authorities shall verify:

(a) the reliability and quality of the internal and external data sources and the range of data obtained from these sources, as well as the time horizon these sources cover;

(b) the process of data merging, where the model is fed with the data from multiple data sources;

(c) the rationale and scale of the data exclusions broken down by cause with statistics indicating what share of total data particular exclusions cover, where some data were excluded from the model development sample;

(d) the approach in dealing with erroneous and missing data, treatment of outliers and categorical data, in particular where the type of categorization has changed along the time;

(e) the data transformation processes, including standardization and other functional transformations and its appropriateness in terms of the risk of model overfitting.

2. In assessing the data representativeness as referred to in Article 39(a), competent authorities shall verify:

(a) the structure of exposures covered by a particular rating model in terms of different risk characteristics of the obligors or facilities, in particular that the current portfolio is similar, to the degree required, to the portfolios constituting the reference data set;

(b) the comparability of the underwriting and recovery standards with the reference data set;

(c) the consistency of default definition over time, in particular:

    (i) where this definition has been changed in the observation period, that the adjustments are performed in order to achieve the required level of consistency with the current default definition;

    (ii) where default definitions vary across jurisdictions in which the institution operates, the adequacy of measures and conservatism adopted by the institution;

    (iii) where a different definition of default is used for the purpose of model specification than that which is actually being used by the institution in accordance with Article 178 of Regulation (EU) 575/2013, competent authorities shall verify that this definition does not negatively impact the structure and performance of the rating model;

(d) where external data and data pooled across institutions are used in the model development, the relevance and appropriateness of these data for the institution's exposures, products and risk profile.

Article 41

Model design

In assessing the rating model design as referred to in Article 39(b), competent authorities shall verify:

(a) the model's adequacy to its specific application;

(b) the institution's analysis of alternative assumptions or approaches to the chosen model design;

(c) the institution's methodology for model development;

(d) that the institution fully understands the model's capabilities and limitations, in particular that the institution:

   (i) describes which of the model limitations are related to the model inputs, uncertain assumptions, the processing component of the model, or the way the model output is performed;

   (ii) identifies situations where the model can perform below expectations or become inadequate as well assesses the materiality of model weaknesses and possible mitigating factors thereof.

Article 42

Human judgement

In assessing the human judgement applied in the development of the rating model and the process of assignment of exposures to grades or pools as referred to in Article 39(c), competent authorities shall verify that:

(a) human judgement is justified, fully documented and its impact on the rating system is assessed, including if possible the computation of the marginal contribution of human judgment to the discriminatory power of the rating system;

(b) human judgement takes into account all relevant information not considered in the model and provides for an adequate level of conservatism;

(c) where the process of assignment of exposures to grades or pools requires from the user of rating system the application of human judgement in the form of subjective input data or where the credit policy allows for overrides of inputs or outputs of the model, that the following apply:

   (i) the manual for model users clearly defines the input data and the situations where the input data can be adjusted by human judgement;

   (ii) the cases of adjusting the input data are limited and treated as an exception;

   (iii) the manual for model users clearly defines the situations where rating models outputs may be overridden and the procedures to perform that overriding.

(iv) all data regarding human judgement and all overrides are stored and analysed periodically by the credit risk control unit or validation function in terms of its impact on the rating model;

(d) the application of human judgement, including overrides, is appropriately managed and proportionate to the type of exposures for each rating system.

Article 43

Model performance

In assessing the model performance in terms of discriminatory power as referred to in Article 39(d), competent authorities shall verify that the institution's internal standards:

(a) provide an outline of the assumptions and theory underlying specific metrics of the model's performance;

(b) specify the scope of use of given metrics with special attention to whether the use of a given metric is compulsory or optional and on which occasions it shall be used, assuring that the given set of metrics is used coherently over time;

(c) specify the conditions of the applicability and acceptable thresholds and tolerances for given metrics and provide information regarding whether and how statistical errors related to the values of these metrics are incorporated in the assessment process; where more than one metric is calculated, the methods of aggregating several test results to one single assessment;

(d) determine an escalation process in the event of model performance deterioration leading to the breach of the thresholds referred to in point (c), with clear guidance on how the outcomes of discriminatory metrics are considered by relevant parties responsible for taking final decision as regards implementation of the necessary changes to the model design.

CHAPTER 8

Assessment methodology for risk quantification

Section 1

General

Article 44

General

1. In order to assess compliance of an institution with the requirements on quantification of risk parameters, as referred to in Article 144(1)(a) of Regulation (EU) No 575/2013, competent authorities shall, in particular, verify the institution's:

   (a) compliance with the overall requirements for estimation as referred to in Article 179 of Regulation (EU) No 575/2013, in accordance with Section 2;

   (b) compliance with the requirements specific to PD estimation as referred to in Article 180 of Regulation (EU) No 575/2013, in accordance with Section 3;

   (c) compliance with the requirements specific to own-LGD estimates as referred to in Article 181 of Regulation (EU) No 575/2013, in accordance with Section 4;

   (d) compliance with the requirements specific to own-conversion factor estimates as referred to in Article 182 of Regulation (EU) No 575/2013, in accordance with Section 5;

   (e) compliance with the requirements for assessing the effect of guarantees and credit derivatives as referred to in Article 183 of Regulation (EU) No 575/2013, in accordance with Section 6;

   (f) compliance with the requirements for purchased receivables as referred to in Article 184 of Regulation (EU) No 575/2013, in accordance with Section 7.

2. For the purposes of paragraph 1, competent authorities shall in particular:

   (a) review the institution's relevant internal policies;

   (b) review the institution´s technical documentation of estimation methodology and process;

   (c) review and challenge the model development manuals, methodologies and processes;

   (d) review the minutes of the institution's internal bodies, including the management body, model committee, or other committees;

   (e) review the reports on risk parameters' performance and the recommendations by the credit risk control unit, validation function, internal audit function or any other control function of the institution;

   (f) assess progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during audits, validations and monitoring;

   (g) obtain written statements or interview the staff and the senior management of the institution.

3. For the purposes of paragraph 1, competent authorities may also, to the extent appropriate:

   (a) request the provision of additional documentation or analysis substantiating the institution's methodological choices and the results obtained;

(b) conduct their own or replicate the institution's estimations of risk parameters using the relevant data supplied by the institution;

(c) request and analyse the data used in the process of estimation;

(d) review the functional documentation of the relevant IT systems;

(e) review other relevant documents of the institution.

Section 2

Methodology for assessing overall requirements for quantification of risk parameters

Article 45

Data requirements

1. In assessing the overall requirements for estimation and the quality of the data used for the quantification of risk parameters as referred to in Article 44(1)(a), competent authorities shall verify:

   (a) the completeness of the quantitative and qualitative data and other information in relation to the methods used for the quantification of risk parameters to ensure that all relevant historical experience and empirical evidence are used;

   (b) the availability of the quantitative data providing differentiation of the loss experience by the material factors which drive the respective risk parameters as referred to in Article 179(1)(b) of Regulation (EU) No 575/2013;

   (c) the representativeness of the data used to estimate the risk parameters for certain types of exposures, in the manner further specified in paragraph 2;

   (d) the adequacy of the number of exposures in the sample and the length of the data period, as referred to in Articles 48, 50 and 56, used for the quantification, and in particular whether that is sufficient to provide the institution with confidence in the accuracy and robustness of its estimates;

   (e) the justification and documentation of all data cleansing, such as deletion of some observations, and confirmation that this does not bias the risk quantification; in particular for PD estimates, that the impact of the data cleansing on the long-run average default rate is justified, conservative and documented;

   (f) the consistency between the data sets used for the risk parameters estimation, in particular with regard to the default definition, treatment of defaults, including multiple defaults as described in Articles 49 and 52, and the sample composition.

2. For the purposes of point (c) of paragraph 1, competent authorities shall assess the representativeness of the data used to estimate the risk parameters for certain types of exposures, in particular by assessing:

(a) the structure of exposures covered by a particular rating model in terms of different risk characteristics of the obligors or facilities, and whether the current portfolio is similar, to the required degree, to the portfolios constituting the reference data set;

(b) the comparability of the underwriting and recovery standards with the reference data set;

(c) the consistency of default definition over time, in particular:

(i) were this definition has been changed in the observation period, the description of the adjustments performed in order to achieve the required level of consistency with current default definition;

(ii) where default definitions vary across the jurisdictions in which the institution operates, the adequacy of measures and conservatism adopted by the institution.

(d) where external data and data pooled across institutions are used in the quantification of risk parameters, the relevance and appropriateness of these data for the institution's exposures, products and risk profile and the definition of default;

(e) where the external or pooled data are not consistent with the institution's internal default definition, the description of adjustments performed by the institution in order to achieve the required level of consistency with the internal default definition.

3. In assessing the quality of the data pooled across institutions that is used for quantification of risk parameters, in addition to the conditions of paragraphs 1 and 2, competent authorities shall also apply the considerations of Article 179(2) of Regulation (EU) No 575/2013.

Article 46

Revision of estimates

In assessing the regular revision of risk parameter estimates as referred to in Article 179(1)(c) of Regulation (EU) No 575/2013, competent authorities shall verify that:

(a) the process and the annual plan for the revision of estimates provide for the timely revision of all estimates;

(b) criteria for the identification of situations which trigger a more frequent revision have been identified;

(c) the methodologies and data used for the estimation of risk parameters reflect changes in the underwriting process and in the composition of the portfolios;

(d) the methodologies and data used for the LGD estimation reflect changes in the recovery process, in particular in terms of the types of recoveries and the duration of the recovery process;

(e) the methodologies and data used for the conversion factor estimation reflect changes in the monitoring process of undrawn amounts;

(f) the data set used for the estimation of risk parameters includes the relevant data from the latest observation period, and are updated at least on an annual basis;

(g) the technical advances and other relevant information are reflected in the risk parameters estimates.

Article 47

Margin of conservatism

1. Competent authorities shall assess whether an appropriate margin of conservatism is included in the estimated values of risk parameters as referred to in Article 179(1)(f) of Regulation (EU) No 575/2013, in particular where any of the following considerations apply:

   (a) the methods and data cannot provide for sufficient certainty of the risk parameter estimates, including where there are high estimation errors;

   (b) relevant deficiencies in the methods, information and data have been identified, in particular by control functions, including credit risk control unit, validation function or internal audit function;

   (c) relevant changes to the standards of underwriting or recovery policies, in particular given by changes in the institution's risk appetite.

2. The requirements referred to in paragraph 1 shall not prevent an application of the requirements referred to in Article 146 of Regulation (EU) No 575/2013 and any related corrective actions by the institution, but shall apply in addition to them.

Text for consultation purposes

If high estimation errors are observed or other considerations are identified, institution must add a margin of conservatism and also correct the errors. In addition, if required under article 146 of Regulation (EU) No 575/2013, institution should inform the competent authorities of such errors or considerations.

Section 3

Methodology for assessing requirements specific for PD estimation

Article 48

Length of the historical observation period

In assessing the length of the historical observation period and the calculation of one-year default rates as referred to in Articles 180(1)(h), 180(2)(e), 180(3)(a) of Regulation (EU) No 575/2013, competent authorities shall verify in particular:

(a) that the length of the historical observation period covers at least the minimum length as referred to in Articles 180(1)(h) and 180(2)(e) of Regulation (EU) No 575/2013 and, where applicable, in accordance with the draft regulatory technical standards referred to in Article 180(3)(a) of Regulation (EU) No 575/2013;

(b) where the available observation is a longer period than the minimum required in Articles 180(1)(h) and 180(2)(e) of Regulation (EU) No 575/2013 for any data source and these data are relevant, that the information for this longer period is used in order to estimate the long-run average of one-year default rates;

(c) for retail exposures, where the institution does not give equal importance to all historical data used, that this is justified by better prediction of default rates and that specific weights applied to one-year default rates are significantly higher than zero;

(d) that there is consistency between underwriting standards and rating systems currently in place and that it is used at the time of generating the internal default data;

(e) for exposures to corporates, institutions, and central governments and central banks, that the definition of highly leveraged obligors and obligors whose assets are predominantly traded assets and the identification of periods of stressed volatilities for these types of obligors are adequate.

Article 49

Method of PD estimation

1. In assessing the method of PD estimation, as referred to in Articles 4(78) and 180 of Regulation (EU) No 575/2013, competent authorities shall verify that the requirements of paragraphs 2 to 8 are met.

2. For the purposes of paragraph 1, competent authorities shall verify that the one-year default rate for each grade or pool is calculated in accordance with Article 4(78) of Regulation (EU) No 575/2013, considering the following:

(a) the denominator includes the obligors or exposures which are not in default assigned to that rating grade or pool at the beginning of one year period ('time 0');

(b) the numerator includes the obligors or exposures referred in point (a) that have defaulted during a period of one year after time 0; in case during the period of one year multiple defaults are observed for the same obligor or exposure, single default with the date of the first observed default is considered.

3. For the purposes of paragraph 1, competent authorities shall verify that the method of PD estimation by obligor grade or pool is based on the long-run average of one-year default rates.

For this purpose, competent authorities shall consider that a given period is adequate for the estimation of the long-run average of one-year default rates in a given type of exposures where it is representative of the likely range of variability of default rates in that type of exposures in a complete economic cycle.

Where observed data are not likely to be representative of the range of variability of the default rate of a type of exposures in a complete economic cycle, competent authorities shall verify that both of the following conditions are met:

(a) the institution uses a relevant method to estimate the average of one-year default rates over a period that is representative of the variability of the default rates of that type of exposures in a complete economic cycle;

(b) this method does not lead to a less conservative calculation of long-run average of one-year default rates than those estimated from the observed data.

Text for consultation purposes

In order to guarantee that long run average of one year default rates is representative of the likely range of variability of default rates in complete economic cycle, competent authorities should assess whether the length of the economic cycle recognised by the institution is sufficient, considering the cyclicality of major economic factors.

If available period of observed range of variability of default rates does not cover complete economic cycle, the competent authorities should assess whether the institution use:

(a) the reconstruction methods:

(i) in case real historic period is considered representative for complete economic cycle, the default rates of the portfolio are estimated for those years in which observed default rates are not available.

(ii) in case real historic period is considered not representative for complete economic cycle, additional artificial periods are constructed. Default rates for those artificial periods are estimated and averaged with observed default rates.

(b) the conservative adjustments in PD estimations to address the incompleteness of the range variability of the default rates for complete economic cycle.

Application of different reconstruction methods should not lead to less conservative calculation of long-run averages of one-year default rates estimated from the observed data.

Q3: Are the provisions introduced in Article 49(3) on the calculation of the long-run average of one-year default rates sufficiently clear? Are there aspects which need to be elaborated further?

4. For the purposes of paragraph 1, competent authorities shall verify that the functional and structural form of the estimation method, assumptions regarding this method, its cyclicality, length of data series used in accordance with Article 48, margin of conservatism in accordance with Article 47, the human judgement and, where applicable, the choice of risk drivers, are adequate to the type of exposures to which they are applied.

5. For the purposes of paragraph 1, for exposures to corporates, institutions, and central governments and central banks, where the obligors are highly leveraged or with predominantly traded assets, competent authorities shall verify that the PD reflects the performance of the underlying assets in the periods of stressed volatility.

6. For the purposes of paragraph 1, for exposures to corporates, institutions, and central governments and central banks, where the , where the institution makes use of an ECAI rating scale, competent authorities shall verify the institution's analysis of compliance with the criteria referred to in Article 180(1)(f) of Regulation (EU) No 575/2013, in particular that this analysis takes into account the representativeness of the types of exposures rated by ECAI to the institution's types of exposures and the time horizon for the credit assessment of ECAI.

7. For the purposes of paragraph 1, for retail exposures, where the institution derives the estimates of PD or LGD from an estimate of total losses and an appropriate estimate of PD or LGD as referred to in Article 180(2)(d) of Regulation (EU) No 575/2013, competent authorities shall verify the institution's analysis of compliance with all criteria on PD and LGD estimation.

8. For the purposes of paragraph 1, for retail exposures, competent authorities shall verify that the institution regularly analyses and takes into account the expected changes of PD over the life of credit exposures ('seasoning effects').

9. In the assessment of statistical default prediction models, competent authorities shall additionally apply the considerations referred to in Articles 39 to 43 of Chapter 7 on rating systems design, operational details and documentation.

Section 4

Methodology for assessing requirements specific to own-LGD estimates

Article 50

Length of the historical observation period

In assessing the length of the historical observation period used for LGD estimation as referred to in Articles 181(1)(j), 181(2) and 181(3)(b) of Regulation (EU) No 575/2013, competent authorities shall verify that:

(a) the length of the historical observation period covers at least the minimum length in accordance with the requirements referred to in Articles 181(1)(j) and 181(2) of Regulation (EU) No 575/2013 and, where applicable, the technical standards referred to in Article 181(3)(b) of Regulation (EU) No 575/2013;

(b) where the available observation period is longer than the minimum required in Articles 181(1)(j) and 181(2) of Regulation (EU) No 575/2013 for any data source, and these data are relevant, that the information for this longer period is used;

(c) for retail exposures, where the institution does not give equal importance to all historical data used, that this is justified by better prediction of loss rates and that specific weights applied to losses of defaults from that year are significantly higher than zero.

Article 51

Method of LGD estimation

1. In assessing the method of LGD estimation, as referred to in Article 181 of the Regulation (EU) No 575/2013, competent authorities shall verify that:

(a) the institution assesses LGD by facility grade or pool;

(b) the average realized LGD by facility grade or pool is calculated using the number of default weighted average.

Text for consultation purposes

Default weighted average LGD

Article 181(1)(a) of CRR clearly requires determining average realised LGDs as a default weighted average whereas e.g. Article 262(1) of CRR requires determining ELGD as an exposure-weighted average loss given default. The general formula for weighted LGD ($\overline{\mathrm{LGD}}_{\mathrm{dw}}$) is calculated in the following way:

$\overline{\text{LGD}}_{dw} = \sum_{i=1}^{n} w_i \times \text{LGD}_i$, where n is the number of exposures and $\sum_{i=1}^{n} w_i = 1$.

The difference between the approaches stems from calculation of weights w_i:

Option 1: Exposure-weighted average, meaning that the individual weights equal: $w_i = \frac{\text{EAD}_i}{\sum_i \text{EAD}_i}$

Option 2: Number of default (n) weighted average, where the individual weights are defined as: $w_i = \frac{1}{n}$

The Basel in their QIS3 Q&A (see: http://www.bis.org/bcbs/qis/qis3qa_i.htm) provides an interpretation of time weighted LGD vs default weighted LGD. From this we can conclude that default weighted LGD should be used. According to Basel answer 'LGD is obtained by dividing total losses by the total amount of assets in default'. The calculation example provided in QIS3 FAQ 6 makes clear that 'amount' does not refer to EAD but to the number of assets in default. If this example were meant as an example for an exposure-weighted average in contrast to weighting by the number of defaults, it would not make any sense to use for each exposure the same amount of 1€ which makes the exposure-weighted average under this specific condition identical to the default weighted average.

The less homogeneous the portfolio is, the bigger the discrepancies are between the number of default weighted LGD and the exposure-weighted (portfolio) LGD. This is particularly the case for low default portfolios.

The following arguments support the number of default weighted LGD calculation:

(i) LGD parameter should be calculated for homogenous pools or facility grades, therefore if risk drivers like exposure amount are relevant they should be used for segregation or risk differentiation of LGD.

(ii) PD parameter is calculated in accordance with number of default weighted average, for the sake of consistency the LGD measurement approach should also follow this method.

(iii) For IRB approach, the individual risk estimation is necessary for single exposure and obligor, contrary for Pillar II where the risk is measured directly at portfolio level (we are not looking for risk measure for single exposure and obligor). Therefore weighting by exposure is applied for Pillar II models, and for models for IRB approach the LGD is weighted by number of defaults and

the information on exposure value is applied as separate component (EAD) and the final RWA is summed up.

(iv) The LGD floor for exposures secured by immovable property is defined as an exposure-weighted average LGD. For LGD quantification the CRR is using the notion 'default-weighted average LGD. If we interpret the default-weighted average LGD as number of defaults than we argue that the exposure-weighted floor is applied at portfolio level, whereas default weighted LGD at single exposure level- this follows the arguments of point (ii).

(v) If LGD is 'exposure weighted', a few big observations can have a disproportionate effect on LGD. Given that LGDs are derived from far less observations than PDs, the impact of a few 'big defaults' could lead to less robust estimation.

The following arguments support the exposure weighted LGD calculation:

(i) The exposure-weighted LGD equals the LGD on a portfolio level given all the underlying LGDs of the individual exposure.

(ii) The LGD floor for exposures secured by immovable property is defined as an exposure-weighted average LGD. The floor calculation method should be the same as the calculation method of the LGD to be able to replace the lower LGDs where needed in the RWA calculation.

(iii) For retail portfolios, e.g. retail mortgages, exposure-weighted average LGD yields more conservative results. These exposures default mostly in the first years of the loan and thus the larger exposures have worse ratings.

Q4: Do you agree with the required number of default weighted average LGD calculation method introduced in Article 51(1)(b) and supportive arguments? How will this requirement influence your current LGD calculation method? More generally, what are your views as to balance of arguments for identifying the most appropriate method?

(c) all observed defaults within the data sources are used in particular that the incomplete recovery processes are taken into account in a conservative manner for the purposes of LGD estimation; and that the choice of workout period and methodologies for estimating additional costs and recoveries beyond this period and, where necessary, within this period, are relevant;

(d) the LGD estimates of secured exposures are based on the collateral's estimated market value and realised revenues and that they take into account the potential inability of an institution to gain control and liquidate the collateral;

(e) the LGD estimates of secured exposures that are based on the collateral's estimated market value and realised revenues take into account the potential decreases in collateral value that may occur from the point of LGD estimation to the eventual recovery;

(f) the degree of dependence between the risk of the obligor and collateral and also the cost of liquidating the collateral is taken into account conservatively;

(g) the capitalized unpaid late fees are added to the institution's measure of exposure and loss;

(h) future drawings are taken into account appropriately in the LGD estimation for retail exposures, unless they have been included in the conversion factor estimation for those exposures;

(i) the functional and structural form of the estimation method, the assumptions regarding this method, its downturn effect, the length of data series used in accordance with Article 50, the margin of conservatism in accordance with Article 47, and the human judgement and, where applicable, the choice of risk drivers, are adequate to the type of exposures to which they are applied.

2. Competent authorities shall verify that the LGD estimates represent a forward-looking economic loss.

Article 52

PD and LGD consistency and treatment of multiple defaults

For the treatment of obligors that default and recover several times in a limited timeframe ('multiple defaults'), competent authorities shall assess the adequacy of the methods used by the institution and shall verify, in particular that:

(a) explicit conditions are defined before a facility can be considered to be cured for the purposes of LGD estimation, including the definition of the length of cure period after full repayment of all amounts due or distressed restructuring;

(b) the length of the cure period is supported by the institution's internal policies and analysis of the default experience;

(c) during the cure period, the multiple defaults are recognised as single default for the purpose of LGD estimation, and the default date of the first observed default and recovery process as including all the observed defaults in this period are taken into account;

(d) defaults used for the purpose of LGD estimation are treated consistently with defaults used for the purpose of PD, in such a way that the products of PD and LGD is an adequate estimator of the expected loss ('EL') of an obligor or credit facility.

Text for consultation purposes

The assessment methodology for indications and process of identification of default of an obligor as well as classification of an obligor identified in default to a non-defaulted status are defined in Chapter 6 on definition of default of this Regulation. The purpose of Article 52 is to clarify how already identified defaults should be treated for the purpose of PD and LGD calculation in case multiple defaults are observed for single obligor or exposure. Given the relation between both parameters in terms of moment and number of defaults observed, it is necessary to ensure a consistent treatment of defaults for risk quantification. For instance if two defaults are observed in next 4 months, it is expected that they will be counted as one default for PD and LGD computation, with the date of the first observed default.

Q5: Are the provisions introduced in Article 52 on the treatment of multiple defaults sufficiently clear? Are there aspects which need to be elaborated further?

Article 53

Use of LGD estimates appropriate for economic downturn

In assessing the requirements for LGD estimates appropriate for economic downturn as referred to in Article 181(1)(b) of Regulation (EU) No 575/2013, competent authorities shall verify that:

(a) the institution uses LGD estimates that are appropriate for an economic downturn, where those are more conservative than the long-run average;

(b) the institution provides both long-run averages and estimates appropriate for an economic downturn for justification of its choices;

(c) the institution avails of a rigorous and well documented process for assessing the effects of an economic downturn on recovery rates and for producing LGD estimates consistent with downturn conditions, and more in particular that the institution:

   (i)   specifies the nature, severity and duration of an economic downturn in accordance with the technical standards referred to in Article 181(3)(a) of Regulation (EU) No 575/2013;

(ii)   incorporates in the LGD estimates any adverse dependencies that have been identified between selected credit and economic factors versus recovery rates.

Text for consultation purposes

Due to the complexity and high variety of methods applied for downturn LGD calculation the specification of the detailed criteria to be applied by institutions will be investigated by the EBA in different standards and guidelines. Firstly, in accordance with RTS on Article 181(3)(a) of the CRR, the EBA will produce detailed criteria for specification on the nature, severity and duration of economic downturn. This specification should be linked with the very final purpose which is calculation of a downturn LGD parameter. After finalization of this RTS the EBA will continue working on guidelines on calculation of downturn LGD, which should further contribute to harmonization of the methods used by institutions and comparability of RWA.

Article 54

LGD, ELbe and UL estimation for exposures already in-default

1. In assessing the requirements for LGD estimates for the exposures already in default, and for the best estimate of expected losses ('ELbe') as referred to in Articles 153(2)(ii), 154(1)(i) and 181(1)(h) of Regulation (EU) No 575/2013, competent authorities shall verify that the institution uses one of the following approaches and shall assess the approach used by the institution:

    (a) direct estimation of LGD ('LGD in-default') and ELbe for defaulted exposures;

    (b) direct estimation of ELbe and estimation of LGD in-default as the sum of Elbe and an add-on capturing of the unexpected loss related with exposures in default that might occur during the recovery period.

2. In assessing the approaches referred to in paragraph 1, competent authorities shall verify that:

    (a) the LGD in-default estimation methods, either as direct estimation or as an add-on to Elbe, include possible additional unexpected losses during the recovery period, in particular considering reverse change in economic conditions during the expected length of the recovery process;

    (b) the LGD in-default estimation methods take into account the information on the time in-default and recoveries realized so far;

    (c) where the institution use a direct estimation of LGD in-default, the estimation methods are consistent with the requirements of Articles 50 to 52;

(d) the LGD in-default estimate is higher than the best estimate of expected losses, or, in the case of individual exposures equal to it, on condition that such cases for individual exposures are limited and duly justified by the institution;

(e) the ELbe estimation methods take into account all currently available and relevant information and in particular consider current economic circumstances;

(f) the differences between the ELbe estimation and specific credit risk adjustments are analysed and any differences are duly justified;

(g) the LGD in-default and ELbe estimation methods are clearly documented.

Article 55

Requirements on collateral management, legal certainty and risk management

In assessing whether the institution has established internal requirements for collateral management, legal certainty and risk management as referred to in Article 181(1)(f) of Regulation (EU) No 575/2013, competent authorities shall verify that at least policies and procedures of the institution relating to the internal requirements for collateral valuation and legal certainty are fully consistent with requirements of Section 3 of Chapter 4 of Title II in Part three of Regulation (EU) No 575/2013.

Section 5

Methodology for assessing requirements specific to own-conversion factor estimates

Article 56

Length of the historical observation period

In assessing the length of the historical observation period used for conversion factors estimation, as referred to in Articles 182(2), 182(3) and 182(4) of Regulation (EU) No 575/2013, competent authorities shall verify that:

(a) the length of the historical observation period, covers at least the minimum length in accordance with the requirements referred to in Articles 182(2) and (3) of Regulation (EU) No 575/2013 and, where applicable, the technical standards referred to in Article 182(4)(b) of that Regulation;

(b) where the available observation spans a longer period than the minimum required in Articles 182(2) and (3) of Regulation (EU) No 575/2013 for any source, and these data are relevant, this longer period is used in order to cover the long-run average;

(c) for retail exposures, where the institution does not give equal importance to all historic data used, that this is justified by better prediction of conversion factors

and that specific weights applied to realised conversion factors are significantly higher than zero.

Article 57

Method of conversion factors estimation

In assessing the method of conversion factors estimation, as referred to in Article 182 of the Regulation (EU) No 575/2013, competent authorities shall verify that:

(a) the institution assesses conversion factors by facility grade or pool;

(b) the average realised conversion factors by facility grade or pool are calculated using number of default weighted average;

(c) all observed defaults within the data sources are used for conversion factors estimation;

(d) the possibility of additional drawings are taken into account in a conservative manner, unless for retail exposures they are included in the LGD estimates;

(e) the institution's policies and strategies regarding account monitoring, including limit monitoring, and payment processing are reflected in the conversion factors estimation;

(f) the functional and structural form of the estimation method, assumptions regarding this method, where applicable its downturn effect, length of data series used in accordance with Article 56, margin of conservatism in accordance with Article 47, and the human judgement and, where applicable, the choice of risk drivers, are adequate to the type of exposures to which they are applied.

Article 58

Use of conversion factor estimates appropriate for economic downturn

In assessing the requirements for conversion factor estimates as referred to in Article 182 of Regulation (EU) No 575/2013, competent authorities shall verify that:

(a) the institution uses conversion factor estimates that are appropriate for an economic downturn, where those are more conservative than the long-run average;

(b) the institution provides both the long-run averages and the estimates appropriate for an economic downturn for justification of its choices;

(c) the institution avails of a rigorous and well documented process for assessing any effects of economic downturn conditions on drawing of credit limits and for producing conversion factor estimates consistent with downturn conditions, and more in particular that the institution:

(i)   specifies the nature, severity and duration of an economic downturn in accordance with the technical standards referred to in Article 182(4)(a) of Regulation (EU) No 575/2013;

(ii)   incorporates in the conversion factor estimates any adverse dependencies that have been identified between selected credit and economic factors versus drawing of credit limits.

Article 59

Requirements on policies and strategies for account monitoring and payment processing

In order to assess the quality of the conversion factors estimation as referred to Articles 182(1)(d) and (e) of Regulation (EU) No 575/2013, competent authorities shall verify that the institution has policies and strategies in respect of account monitoring and payment processing, including adequate systems and procedures in place to monitor facility amounts on a daily basis.

Section 6

Methodology for assessing the effect of guarantees and credit derivatives

Article 60

Eligibility of guarantors and guarantees

In assessing the effect of guarantees and credit derivatives on risk parameters, as referred to in Article 183 of Regulation (EU) No 575/2013, competent authorities shall verify that:

(a) the institution has clearly specified criteria for identifying the situations where PD estimates are to be adjusted and those situations where LGD estimates are to be adjusted in order to incorporate mitigating effects of guarantees, and that such criteria are used consistently over time;

(b) where the PD of the protection provider is to be used for the purpose of risk weighted exposure amount in accordance with Article 153(3) of Regulation (EU) No 575/2013, the mitigating effects of guarantees are not included in the estimates of LGD or PD of the obligor;

(c) the institution has clearly specified criteria for recognising guarantors and guarantees for the calculation of risk-weighted exposure amount, in particular through own estimates of LGD or PD;

(d) the institution documents the criteria for adjusting own estimates of LGD or PD to reflect the impact of guarantees;

(e) in the own estimates of LGD or PD the institution recognises only the guarantees that meet the following criteria:

    (i)   where the guarantor is internally rated by the institution with a rating system that has already been approved by the competent authorities for the purpose of the IRB Approach, the guarantee meets the requirements specified in Article 183(1)(c) of Regulation (EU) No 575/2013;

    (ii)   where the institution has received permission to use the Standardised Approach for exposures to entities such as the guarantor pursuant to Articles 148 and 150 of Regulation (EU) 575/2013, the guarantor is classified according to Article 147 of that Regulation as an institution, a central government or central bank, or a corporate entity that has a credit assessment by ECAI, and the guarantee meets the requirements set out in Section 3, Chapter 4, Title II, Part three of that Regulation that are applicable for the Standardised Approach;

(f) the institution meets the requirements of points (a) and (e) also for the single-name credit derivatives.

Text for consultation purposes

A key aspect of the assessment of the use of guarantees for the purpose of own estimates of LGD is evaluation whether only the guarantees provided by eligible guarantors are taken into account. As CRR is not clear in that respect it could be explained in these RTS which guarantors should be treated as eligible.

As there seems to be a contradiction between Articles 183(4) and 201(2) of the CRR, a clarification as to which case is considered in each article should be included in these RTS.

(i) According to Article 183, which deals with the effect of guarantees on LGD, paragraph 4 allows for recognition of guarantors if the permanent partial use has been permitted (for non-retail entities) or if those entities are included in the roll-out plan of the IRB approach. In those cases, the requirements of Chapter 4 shall apply instead of Article 183 para. 1 to 3 of the CRR.

(ii) Article 201(2) CRR within chapter 4, however, deals with unfunded protection and states that for the IRB approach only those guarantors that are internally rated according to IRB requirements can be treated as eligible for unfunded protection, i.e. the exception under Article 183(4) CRR does not apply.

If it is assumed that under Article 183(4) CRR, the effect of a funded guarantee will be reflected in the LGD of the exposure, whereas under Article 201 of the CRR, the effect of the unfunded

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guarantee will be reflected in the PD estimate of the guaranteed exposure, the seeming contradiction can be dispelled. Therefore it has to be specified that in the case of Article 183(4) of the CRR for funded guarantees or credit derivatives, only those requirements of chapter 4 that are applicable for the Standardised Approach should be met, i.e. with the exception of Article 201(2) of the CRR.

Q6: Are the provisions introduced in Article 60 on the treatment of eligible guarantors for the purpose of own-LGD estimates sufficiently clear? Are there aspects which need to be elaborated further?

Section 7

Methodology for assessing the requirements for purchased receivables

Article 61

Risk parameter estimates for purchased corporate receivables

1. In assessing whether the institution can use its own estimates of PD and LGD for purchased corporate receivables, where the institution derives PD or LGD for purchased corporate receivables from an estimate of EL and an appropriate estimate of PD or LGD, competent authorities shall verify in particular that:

   (a) EL is estimated from the long-run average of one-year total loss rates or by other meaningful approach;

   (b) the process for estimating the total loss is consistent with the concept of LGD as set out in Article 181(1)(a) of Regulation (EU) No 575/2013;

   (c) for purchased retail receivables sufficient external and internal data are used.

2. In assessing whether the institution can use its own estimates of PD and LGD for purchased corporate receivables in cases other than those referred to in paragraph 1, competent authorities shall:

   (a) assess these estimates according to Sections 2 and 3;

   (b) verify that the requirements of Article 184 of Regulation (EU) No 575/2013 are met.

3. Where the institution does not meet the requirements of Article 184 of Regulation (EU) No 575/2013 and the requirements of Section 6, Chapter 3, Title II, Part three of that Regulation, competent authorities shall verify that the PD and LGD estimates for purchased corporate receivables are derived according to Articles 160(2), 161(1)(e) to (f) and 161(2) of that Regulation. For the purpose of Articles 160(2)(c) and 161(2) of

that Regulation, the competent authorities shall verify that the institution is able to decompose its EL estimates into PDs and LGDs in a meaningful way.

CHAPTER 9

Assessment methodology for assignment of exposures to exposure classes

Article 62

General

1. In order to assess compliance of an institution with the requirement to assign each exposure to a single exposure class in a time-consistent manner as referred to in Article 147 of Regulation (EU) No 575/2013, competent authorities shall assess the following:

    (a) the institution's assignment methodology and its implementation, in accordance with Article 63;

    (b) the sequence of the process of the assignment of exposures to exposure classes, in accordance with Article 64;

    (c) whether specific considerations with regard to the retail exposure class have been taken into account by the institution, in accordance with Article 65.

2. For the purposes of paragraph 1, competent authorities shall:

    (a) review the institution's relevant internal policies, procedures and assignment methodology;

    (b) review the minutes of the institution's internal bodies, including the management body, or other committees;

    (c) review the findings of the internal audit or of other control functions of the institution;

    (d) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during audits;

    (e) obtain written statements or interview the staff and senior management of the institution;

    (f) review the criteria used by the personnel responsible for the manual assignment of exposures to exposure classes.

3. For the purpose of paragraph 1, competent authorities may also, to the extent appropriate:

(a) conduct sample testing and review documents related to the characteristics of an obligor and to the origination and maintenance of the exposures;

(b) review the functional documentation of the relevant IT systems or perform own tests on institution's data;

(c) match the institution's data with data publicly available, including data recorded in the EBA databases in accordance with Article 115(2) of Regulation (EU) No 575/2013 and in Commission's decisions issued in accordance with Articles 107(4), 114(7), 115(4) and 116(5) of Regulation (EU) No 575/2013 or in the databases held by the competent authorities;

(d) review other relevant documents of the institution.

Article 63

Assignment methodology and its implementation

1. In assessing the institution's assignment methodology as referred to in Article 62(1)(a), competent authorities shall, in particular, verify that:

(a) the methodology fully documents all requirements of Article 147 of Regulation (EU) No 575/2013;

(b) the methodology reflects the sequencing referred to in Article 64;

(c) the methodology includes a list of third countries' regulatory and supervisory regimes considered equivalent to those applied in the Union by relevant competent authorities or EU Commission, consistent with the Commission's decisions as referred to in Articles 107(4), 114(7), 115(4) and 116(5) of Regulation (EU) No 575/2013, when such an equivalence is required for the assignment of an exposure to a specific class.

2. In assessing the implementation of the assignment methodology as referred to in Article 62(1)(a), competent authorities shall verify, in particular, that:

(a) the procedures governing the input and transformations of data in the IT systems are sufficiently robust to ensure correct assignment of each exposure to an exposure class;

(b) sufficiently detailed criteria are available for the personnel responsible for the assignment of the exposures to ensure a consistent assignment;

(c) the assignment to exposure classes referred to in Article 147(2)(e) and (f) and Article 147(8) of Regulation (EU) No 575/2013 is performed by personnel who are aware of the terms and conditions and of relevant details of the transaction that results in the exposure that is subject to the assignment;

(d) the assignment is performed using the most current data available.

3. For exposures to CIU, competent authorities shall assess that institutions make every effort to assign to adequate exposure classes the underlying exposures in accordance with Article 152 of Regulation (EU) No 575/2013.

Article 64

Assigning sequence

In assessing the institution's sequence of the process of the assignment of exposures to exposure classes as referred to in Article 62(1)(b), competent authorities shall verify in particular that the following sequencing is applied by the institution in the assignment of exposures:

(a) exposures eligible to be classified under equity, items representing securitization positions and non-credit obligation assets as referred to in points (e), (f) and (g) of Article 147(2) of Regulation (EU) No 575/2013 are being assigned first;

(b) next, exposures not eligible for classification in accordance with point (a) are assigned to the classes referred to points (a), (b), (c) and (d) of Article 147(2) of Regulation (EU) No 575/2013;

(c) all remaining exposures are finally assigned to exposures to corporates, as referred to in Article 147(2)(c) of Regulation (EU) No 575/2013.

Article 65

Specific requirements for retail exposures

1. In assessing the assignment of exposures to the retail exposure class as referred to in Article 62(1)(c), competent authorities shall, in particular, verify that:

(a) the institution distinguishes between exposures to natural persons and to SMEs based on clear criteria in a consistent manner;

(b) the institution has in place adequate procedures and mechanisms for the purpose of monitoring the limit referred to in Article 147(5)(a)(ii) of Regulation (EU) No 575/2013:

   (i) to identify groups of connected clients and to aggregate relevant exposures that each institution and its parent or subsidiaries maintain against this group of connected clients;

   (ii) to assess cases where the limit has been exceeded;

   (iii) to ensure that an exposure to small and medium enterprises ('SME'), whose limit has been exceeded, is, without undue delay, re-assigned to the corporate exposure class;

(c) that the conditions of paragraphs 2 to 4 are met.

2. In verifying that retail exposures are not managed as individually as exposures in the corporate exposure class in the meaning of Article 147(5)(c) of Regulation (EU) No 575/2013, competent authorities shall take into consideration in particular the following components of the credit process: marketing and sales activities, type of product, rating process, rating system, credit decision process, credit risk mitigation methods, monitoring processes, collection and recovery process.

3. In determining whether the criteria laid down in Article 147(5)(c) and (d) of Regulation (EU) No 575/2013 are met, competent authorities shall in particular compare the assignment of exposures with the institution's business lines and the way they are managed.

4. Competent authorities shall verify that the institution assigns each retail exposure to a single category of exposures to which the relevant correlation coefficient applies in accordance with Article 154 of Regulation (EU) No 575/2013, and in particular:

   (a) for the purposes of verifying compliance with Article 154(4)(d) and (e) of Regulation (EU) No 575/2013, competent authorities shall verify that:

   (i)   the volatility of loss rates for qualifying revolving retail exposures portfolio is low relative to their average level of loss rates, by assessing an institution's comparison of the volatility of loss rates for qualifying revolving retail exposures portfolio as opposed to other retail exposures or to other benchmark values;

   (ii)   the risk management of qualifying revolving retail exposures portfolio is consistent with the underlying risk characteristics, including loss rates;

   (b) for the purposes of verifying compliance with Article 154(3) of Regulation (EU) No 575/2013, competent authorities shall verify in particular that all exposures where the immovable property collateral is used in the own-LGD estimates in accordance with 181(1)(f) of Regulation (EU) No 575/2013, a coefficient of correlation as referred to in Article 154(3) of Regulation (EU) No 575/2013 is assigned.

CHAPTER 10

Assessment methodology for stress test used in assessment of capital adequacy

Article 66

General

1. In order to assess the soundness of an institution's stress tests used in the assessment of its capital adequacy in accordance with Article 177 of Regulation (EU) No 575/2013, competent authorities shall verify in particular the following:

(a) the adequacy of methods used in designing the stress tests, in accordance with Article 67;

(b) the robustness of organisation of the stress tests process, in accordance with Article 68;

(c) the integration of the stress tests with the risk and capital management processes, in accordance with Article 69.

2. For the purposes of paragraph 1, competent authorities shall in particular:

(a) review the institution's internal policies, methods and procedures on the design and execution of stress tests;

(b) review the institution's outcomes of the stress tests;

(c) review the roles and responsibilities of the units and management bodies involved in designing, approval and execution of the stress tests;

(d) review the minutes of the institution's internal bodies, including the management body, or other committees;

(e) review the findings of the internal audit or of other control functions of the institution;

(f) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during audits;

(g) obtain written statements or interview the staff and senior management of the institution.

3. For the purpose of paragraph 1, competent authorities may also, to the extent appropriate:

(a) review the functional documentation of the IT systems used for the stress tests;

(b) request the institution to perform a computation of the stress tests based on alternative assumptions;

(c) perform own stress tests calculation on the institution's data for certain types of exposures;

(d) review other relevant documents of the institution.

Article 67

Adequacy of methods used in designing the stress tests

1. In assessing the adequacy of methods used in designing the stress tests used by the institution in the assessment of the capital adequacy as referred to in Article 66(1)(a), competent authorities shall verify in particular that:

(a) the tests are meaningful, reasonably conservative and involve identifying possible events of future changes in economic and credit conditions that could have unfavourable effects on an institution's credit exposures and on the assessment of the institution's ability to withstand such changes;

(b) where an institution operates in several markets, the stressed portfolios contain at least the majority of an institution's exposures covered by the IRB Approach;

(c) the methods are consistent to the extent appropriate with methods used by the institution for the purpose of internal capital allocation stress tests;

(d) the documentation of the methodology of stress tests including internal and external data as well as expert judgment input is detailed enough to allow third parties to understand the rational for the chosen scenarios and proceed the stress tests.

2. For the purpose of paragraph 1(a), competent authorities shall verify that the stress tests include at least the following steps:

(a) the identification of the scenarios including the effect of severe, but plausible, scenarios and, where the treatment referred to in Article 153(3) of Regulation (EU) No 575/2013 is used, the impact of a deterioration of credit quality of protection providers;

(b) the assessment of impact of identified scenarios on the institution's risk parameters, rating migration, expected losses and own funds requirements calculation for credit risk;

(c) the assessment of adequacy of own funds requirements.

3. In assessing the adequacy of scenarios as referred to paragraph 2(a), competent authorities shall verify in particular that:

(a) the methodology for identifying a group of economic drivers, mainly outside the control of the institution, that substantially affect economic losses of exposures to be stressed is sound;

(b) the methodology for building stress scenarios, including their severity, duration and likelihood of occurrence, is consistent with economic theory and the historical experience of the values of economic drivers is sound;

(c) the methodology for projecting the impact of each scenario on the relevant risk parameters is sound.

Article 68

Robustness of the organisation of the stress tests process

In assessing the robustness of the organisation of the stress tests process used by the institution in the assessment of the capital adequacy as referred to in Article 66(1)(b), competent authorities shall verify in particular that:

(a) the common stress tests exercise for all exposures is performed regularly and at least on a yearly basis;

(b) the roles and responsibilities of the unit or units in charge of the design and execution of the stress test are clearly defined;

(c) the results of stress tests are approved on an adequate management level and that senior management is informed of the results in a timely manner;

(d) the IT infrastructure effectively supports the performance of stress tests.

Article 69

Integration of the stress tests with the risk and capital management processes

In assessing the integration of the stress tests with the risk and capital management processes of the institution as referred to in Article 66(1)(c), competent authorities shall verify in particular that:

(a) the institution takes into account the results of stress tests in its decision making process and in particular with regard to the risk and capital management;

(b) the institution takes into account the results of stress tests within the capital management processes so as to check the forward looking nature of capital requirements;

(c) the institution takes into account the default rates and rating migrations for given type of exposures under the stress test in the assessment of the adequacy of the computation of the long-run averages of one-year default rates and the dynamics of rating systems.

CHAPTER 11

Assessment methodology of own funds requirements calculation

Article 70

General

1. In order to assess whether an institution calculates the own funds requirements using its risk parameters for different exposure classes in accordance with Articles 110(2) and (3), 144(1)(g), 151 to 168 and 500 of Regulation (EU) No 575/2013 and is able to

submit the reporting required by Article 99 of Regulation (EU) No 575/2013, competent authorities shall verify in particular the following:

(a) the reliability of the system used for the own funds requirements calculation, in accordance with Article 71;

(b) the data quality, in accordance with Article 72;

(c) the correctness of the implementation of the methodology and procedures for different exposure classes, in accordance with Article 73;

(d) the organization of the own funds requirements calculation process, in accordance with Article 74.

2. For the purpose of paragraph 1 competent authorities, where applicable, shall take in due consideration the structure of the banking group and the established roles and responsibilities of the parent institution and its subsidiaries in the own funds requirements calculation.

3. For the purposes of paragraphs 1 and 2, competent authorities shall in particular:

(a) review the institution's internal policies and procedures with regard to the own funds requirements calculation process, including the sources of data, calculation methods and controls applied;

(b) review the roles and responsibilities of the different units and internal bodies involved in the own funds requirements calculation process;

(c) review the minutes of the institution's internal bodies, including the management body, or other committees;

(d) review the documentation of the tests of the calculation system, including the scenarios covered in the tests, their results and approvals;

(e) review the control reports, including the reconciliation results;

(f) review the findings of the internal audit or of other control function of the institution;

(g) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during audits;

(h) obtain written statements or interview the staff and senior management of the institution.

4. For the purpose of paragraphs 1 and 2, competent authorities may also, to the extent appropriate:

(a) review the functional documentation of the IT systems used for the own funds requirements calculation;

(b) request the institution to perform a live computation of the own funds requirements for certain types of exposures;

(c) perform own sample testing of the own funds requirements calculation on institution's data for certain types of exposures;

(d) review other relevant documents of the institution.

Article 71

Reliability of the system used for the own funds requirements calculation

In assessing the reliability of the institution's system used for the own funds requirements calculation as referred to in Article 70(1)(a), in addition to the requirements of Chapter 12 on data maintenance, competent authorities shall verify in particular that:

(a) the control tests performed by the institution to provide confirmation that the calculation of own funds requirements calculation is compliant with Articles 151 to 168 of Regulation (EU) No 575/2013 are complete;

(b) the control tests performed by the institution are reliable, and in particular the calculations made in the system used for the own funds requirements are coherent with the calculation in an alternative calculation tool;

(c) the frequency of the control tests performed by the institution is adequate and the tests take place at least at the moment of the implementation of the algorithms for the own funds requirements calculation and in all other cases where changes to the system are made.

Article 72

Data quality

1. In assessing the data quality used for the own funds requirements calculation referred to in Article 70(1)(b), in addition to the requirements of Article 76 of Chapter 12 on the data maintenance, competent authorities shall verify the mechanisms and procedures implemented by the institution for identifying the exposure values with all relevant characteristics, including data related to risk parameters and credit risk mitigation techniques. In particular, competent authorities shall verify that:

   (a) the risk parameters are complete, including in cases where missing parameters are substituted by default values, and that where such a substitution has taken place, it is conservative, adequately justified and documented;

   (b) the range of the parameters values takes into account the regulatory thresholds specified in Articles 162 to 164 of Regulation (EU) No 575/2013;

   (c) the data used in the own funds requirements calculation is consistent with the data used in other internal processes;

(d) the application of risk parameters is in accordance with the exposure characteristics, and in particular that the LGD assigned is accurate and consistent with the type of exposure and collateral used to secure the exposure in accordance with Articles 164 and 230(2) of Regulation (EU) No 575/2013;

(e) the calculation of the exposure value is correct, and in particular the netting agreements and the classification of off-balance sheet items are used as specified in Article 166 of Regulation (EU) No 575/2013;

(f) where the PD/LGD method is applied for equity exposures, the classification of the exposures and the application of risk parameters is correct in accordance with Article 165 of Regulation (EU) No 575/2013.

2. In assessing the coherence of the data used for the own funds requirements calculation with the data used for the internal purposes in accordance with Chapter 4 on the use test and experience test and for accounting purposes, competent authorities shall verify in particular that:

(a) there are adequate control and reconciliation mechanisms in place to ensure that the values of risk parameters used in the own funds requirements calculation are consistent with the value of parameters used for internal purposes in accordance with Chapter 4 on the use test and experience;

(b) there are adequate control and reconciliation mechanisms in place to ensure that the value of exposures for which the own funds requirements are calculated is consistent with the accounting data;

(c) the calculation of own funds requirements for all exposures included in the general ledger of the institution is complete, and that the split between the exposures under the IRB and the Standardised Approach is correct in accordance with Articles 148 and 150 of Regulation (EU) No 575/2013.

Article 73

Correctness of the implementation of the methodology and procedures for different exposure classes

In assessing the correctness of the implementation of the methodology and procedures for different exposure classes as referred to in Article 70(1)(c), competent authorities shall in particular verify that:

(a) the RW formula is implemented correctly in accordance with Articles 153 and 154 of Regulation (EU) No 575/2013, taking into account the assignment of exposures to exposure classes;

(b) the calculation of the correlation coefficient ('R') is done in accordance with the characteristics of certain exposures, in particular that the total sales ('S') parameter is applied on the basis of consolidated financial information;

(c) the credit risk mitigation techniques are applied in accordance with Article 153(3) of Regulation (EU) No 575/2013 on the basis of the following considerations:

    (i)   that the information on the PD of the protection provider is applied correctly;

    (ii)   that for those exposures where the PD of the obligor has been replaced with the PD of the protection provider, an adequate protection from an eligible provider is available and the credit protection meets the requirements of Article 217 of Regulation (EU) No 575/2013;

    (iii)   that the PD of the protection provider is estimated with the use of the rating system that has been approved by the competent authorities under the IRB Approach;

(d) the calculation of the maturity (M) parameter is correct, and in particular:

    (i)   that for the purpose of Article 162(2)(f) of Regulation (EU) No 575/2013 the maturity parameter is calculated using the expiry date of the facility;

    (ii)   that for the purpose of Article 162(3) of Regulation (EU) No 575/2013 the exemptions from the 1 year maturity floor are adequately justified and documented;

(e) the floors for the exposure-weighted average LGD for retail exposures secured by residential property and commercial real estate, which are not benefiting from guarantees of central governments in accordance with Article 164(4) and (6) of Regulation (EU) No 575/2013, are calculated at the aggregated level of all retail exposures secured by residential property and commercial real estate respectively, and that, where the exposure-weighted average LGD at the aggregated level is below the respective floors, relevant adjustments are applied consistently over time by the institution;

(f) the application of different approaches for different equity portfolios where the institution itself uses different approaches for internal risk management in accordance with Article 155 of Regulation (EU) No 575/2013, is correct, in particular considering:

    (i)   that the choice of the approach does not lead to underestimation of own funds requirements;

    (ii)   that the choice of the approach is made consistently, including over time;

    (iii)   that the choice of the approach is justified by internal risk management practices;

(g) where the Simple risk weight approach is used in accordance with Article 155(2) of Regulation (EU) No 575/2013, the application of risk weights is correct, in particular that the risk weight of 190% is used only for sufficiently diversified portfolios, where the institution has proven that significant reduction of risk has

been achieved as a result of the diversification of the portfolio in comparison to the risk of individual exposures in the portfolio;

(h) the calculation of the difference between expected loss amounts and credit risk adjustments, additional value adjustments and other own funds reductions in line with Article 159 of Regulation (EU) No 575/2013 is correct, and in particular:

    (i)   that the calculation is performed separately for the portfolio of defaulted exposures and the portfolio of exposures that are not in default;

    (ii)   where the calculation performed for the defaulted portfolio results in a negative amount, that this amount is not used to offset the positive amounts resulting from the calculation performed for the portfolio of exposures that are not in default;

    (iii)   that the calculation is performed gross of tax effects;

(i) the various approaches for the treatment of exposures in the form of units or shares in CIUs are applied correctly, and in particular:

    (i)   whether the institution correctly distinguishes between exposures in CIUs subject to the look-through approach according to Article 152(1) and (2) of Regulation (EU) No 575/2013 and other exposures in CIUs;

    (ii)   whether the exposures in CIUs treated according to Article 152(1) or (2) of Regulation (EU) No 575/2013 meet the requirements of Article 132(3) of that Regulation;

    (iii)   where the institution uses the approach according to Article 152(4) of Regulation (EU) No 575/2013 for the calculation of the average risk weighted exposure amounts, whether:

        - the correctness of the calculation is confirmed by an external auditor;

        - the multiplication factors of Article 152(2)(b)(i) and (ii) of Regulation (EU) No 575/2013 are applied correctly;

        - where the institution relies on a third party for the calculation of the risk-weighted exposure amounts, whether the third party meets the requirements of Article 152(4)(a) and (b) of Regulation (EU) No 575/2013.

Article 74

Organization of the own funds requirements calculation process

In assessing the soundness of the own funds requirements calculation process as referred to in Article 70(1)(d), competent authorities shall verify in particular that:

(a) the responsibilities of the unit or units in charge of the control and management of the calculation process and in particular with regard to the specific controls to be performed at each step of the calculation process, are clearly defined;

(b) relevant procedures, including back-up procedures, ensure that the own funds requirements calculation is carried out at least on a semi-annual basis in accordance with Article 99(1) of Regulation (EU) No 575/2013;

(c) all input data, including the values of risk parameters as well as previous versions of the system are stored to allow replication of the own funds requirements calculation;

(d) the results of the calculation are approved on an adequate management level and that senior management is informed about possible errors or inadequacies of the calculation and the measures to be taken.

CHAPTER 12

Assessment methodology of data maintenance

Article 75

General

1. In order to assess compliance of an institution with the requirements on data maintenance, as referred to in Articles 144(1)(d) and 176 of Regulation (EU) No 575/2013, competent authorities shall evaluate in particular the following:

(a) the quality of the internal, external or pooled data, including the data quality management process, in accordance with Article 76;

(b) the data documentation and reporting, in accordance with Article 77;

(c) the relevant IT infrastructure, in accordance with Article 78.

2. For the purpose of paragraph 1, competent authorities shall in particular:

(a) review the data quality management policies, methods and procedures relevant for the data used in the IRB Approach;

(b) review the relevant data quality reports, as well as their conclusions and recommendations;

(c) review the IT infrastructure policies and IT systems management procedures, including the contingency planning policies, relevant for the IT systems used for the purpose of the IRB Approach;

(d) review the minutes of the institution's internal bodies, including management body, or other committees;

(e) review the findings of the internal audit or of other control functions of the institution;

(f) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during audits;

(g) obtain written statements or interview the staff and senior management of the institution;

(h) review other relevant documents of the institution.

Article 76

Data quality

1. In assessing the quality of internal, external or pooled data, which the institution uses to provide effective support to its credit risk measurement and management process, as referred to in Article 75(1)(a), competent authorities shall, in particular, verify that:

   (a) the values are present in the attributes that require them ('completeness');

   (b) the data is error-free ('accuracy');

   (c) a given set of data can be matched across different data sources of the institution ('consistency');

   (d) the data values are up to date ('timeliness');

   (e) the aggregate data is free from any duplication given by filters or other transformations of source data ('uniqueness');

   (f) the data is founded on an adequate system of classification, rigorous enough to compel acceptance ('validity');

   (g) the history, processing and location of data under consideration can be easily traced ('traceability').

2. In assessing the data quality management process as referred to in Article 75(1)(a), competent authorities shall, in particular, verify that:

   (a) the following are in place:

      (i)   adequate data quality standards that set the objectives and the overall scope of the data quality management process;

      (ii) adequate rules in a form of policies, standards and procedures for data collection, storage, migration, actualisation and use;

      (iii) a practice of the continuous updating and improving of the data quality management process;

(iv) a set of criteria and procedures for determining conformity with the data quality standards, and in particular the general criteria and process of data reconciliation across and within systems including among accounting and internal ratings-based data;

(v) adequate processes for internally assessing and constantly improving data quality, including the process of issuing internal recommendations to address problems in areas which need improvement and the process of implementing these recommendations with a priority based on their materiality and more in particular the process for addressing material discrepancies arising during the data reconciliation process;

(b) there is a degree of independence of the data collection from the data quality management process, including a separation of the organizational structure and staff, where appropriate.

Article 77

Data documentation and reporting

1. In assessing data documentation as referred to in Article 75(1)(b), competent authorities shall, in particular, evaluate the following:

(a) the specification of the set of databases and in particular:

(i) the global map of databases involved in the calculation systems used for the purpose of the IRB Approach;

(ii) the sources of data;

(iii) the processes of data extraction and transformation and criteria used in this regard;

(iv) the functional specification of databases, including their size, date of construction, data dictionaries including the content of the fields and of the different values inserted in the fields with clear definitions of data items;

(v) the technical specification of databases, including the type of database, tables, database management system, data base architecture; and data models given in any standard data modelling notation;

(vi) the work-flows and procedures relating to data collection and data storage;

(b) the data management policy and allocation of responsibilities, including users' profiles and data owners;

(c) the transparency, accessibility and consistency of the controls implemented in the data management framework.

2. In assessing data reporting as referred to in Article 75(1)(b), competent authorities shall verify, in particular, that data reporting:

   (a) specifies the scope of reports or reviews, the findings and, where applicable, the recommendations to address weaknesses or shortfalls detected;

   (b) is communicated to the senior management and management body of the institution with an adequate frequency and that the level of the recipient of the data reporting is determined in accordance with the institution´s organizational structure, and the type and significance of the information;

   (c) is performed regularly and where appropriate, on an *ad hoc* basis;

   (d) provides adequate evidence that the recommendations are sufficiently addressed and properly implemented by the institution.

Article 78

IT infrastructure

1. In assessing the architecture of the IT systems, which are of relevance to the institution's rating systems and to the application of the IRB Approach as referred to in Article 75(1)(c), competent authorities shall, in particular, evaluate the following:

   (a) the IT systems architecture including all applications, their interfaces and interactions;

   (b) a data flow diagram showing a map of the key applications, databases and IT components involved in the application of the IRB Approach and related to rating systems;

   (c) the assignment of IT systems owners;

   (d) the capacity, scalability and efficiency of IT systems;

   (e) the manuals of the IT systems and databases.

2. In assessing the soundness, safety and security of the IT infrastructure, competent authorities shall in particular verify that:

   (a) the IT infrastructure is deemed sound, on the basis that it can support the ordinary and extraordinary processes of an institution in a timely, automatic and flexible manner;

   (b) the IT infrastructure is deemed safe, on the basis that the risk of suspension of its abilities ('failures'), the risk of loss of data and the risk of incorrect evaluations ('faults') are appropriately addressed;

   (c) the IT infrastructure is deemed secure, on the basis that it is adequately protected against theft, fraud, manipulation or sabotage of data or systems by malicious insiders or outsiders.

3. In assessing the robustness of the IT infrastructure, competent authorities shall verify in particular that:

   (a) the procedures to back up the IT systems, data and documentation are implemented and tested on a periodic basis;

   (b) continuity action plans are implemented to critical IT systems;

   (c) the recovery procedures of IT systems in case of failure are defined and tested on a periodic basis;

   (d) the management of IT systems users is compliant with the institution's relevant policies and procedures;

   (e) audit trails are implemented for critical IT systems;

   (f) the management of changes of IT systems is adequate and the monitoring of changes covers all IT systems.

4. In assessing whether the IT infrastructure is reviewed both regularly and on an *ad hoc* basis, competent authorities shall verify, in particular that:

   (a) regular monitoring and *ad hoc* reviews result in findings and, where appropriate, in recommendations to address weaknesses or shortfalls detected;

   (b) the findings and the recommendations are communicated to the senior management and management body of the institution;

   (c) there is adequate evidence that the recommendations are sufficiently addressed and properly implemented by the institution.

CHAPTER 13

Assessment methodology of internal models for equity exposures

Article 79

General

1. In order to assess whether an institution is able to develop and validate the internal model for equity exposures and to assign each exposure to the range of application of an internal models approach for equity exposures, as referred to in Articles 144(1)(f) and (h) and 186 to 188 of Regulation (EU) No 575/2013, competent authorities shall in particular evaluate the following:

   (a) the adequacy of the data used, in accordance with Article 80;

   (b) the adequacy of the models, in accordance with Article 81;

(c) the comprehensiveness of the stress-testing programme, in accordance with Article 82;

(d) the integrity of the model and modelling process, in accordance with Article 83;

(e) the adequacy of the assignment of exposures to the internal models approach, in accordance with Article 84;

(f) the adequacy of the validation function, in accordance with Article 85.

2. For the purposes of paragraph 1, competent authorities shall in particular:

(a) review the institution's relevant internal policies and procedures;

(b) review the institution's technical documentation on the methodology and process of the development of the internal model for equity exposures;

(c) review and challenge the relevant development manuals, methodologies and processes;

(d) review the roles and responsibilities of the different units and internal bodies involved in the design, validation and application of the internal model for equity exposures;

(e) review the minutes of the institution's internal bodies, including the management body, or other committees;

(f) review the reports on the performance of the internal models for equity exposures and the recommendations by the credit risk control unit, validation function, internal audit function or any other control function of the institution;

(g) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during monitoring, validations and audits;

(h) obtain written statements or interview the staff and senior management of the institution.

3. For the purposes of paragraph 1, competent authorities may also, to the extent appropriate:

(a) request and analyse data used in the process of development of internal models for equity exposures;

(b) conduct their own or replicate the institution's VaR estimations using relevant data supplied by the institution;

(c) request the provision of additional documentation or analysis substantiating the methodological choices and the results obtained;

(d) review the functional documentation of the IT systems used for the VaR calculation;

(e) review other relevant documents of the institution.

Article 80

Adequacy of the data

In assessing the adequacy of the data used to represent the actual return distributions on equity exposures in accordance with Article 79(1)(a), in addition to the requirements of Article 75(1)(a) and (b) of Chapter 12 on data maintenance, competent authorities shall verify that:

(a) the data represents the risk profile of the institution's specific equity exposures;

(b) the data is sufficient to provide statistically reliable loss estimates or it has been adequately adjusted in order to attain model outputs that achieve appropriate realism and conservatism;

(c) the data used comes from external sources or, where internal data is used, it is independently reviewed;

(d) the data reflects the longest available period in order to provide a conservative estimate of potential losses over a relevant long-term or business cycle, and in particular that it includes the period of significant financial stress relevant to the institution's portfolio;

(e) where converted-quarterly data from a shorter horizon is used, that the conversion procedure is supported by empirical evidence through a well-developed and documented approach and applied conservatively and consistently over time;

(f) the longest time horizon is chosen which allows the estimation of the 99 percentile with non-overlapping observations.

Article 81

Adequacy of the models

In assessing the adequacy of the models used to estimate the equity return distributions for the own funds requirements calculation in accordance with Article 79(1)(b), competent authorities shall verify in particular that:

(a) the model is appropriate for the risk profile and complexity of an institution´s equity portfolio, and that where the institution has material holdings with values that are highly non-linear in nature, the model accounts for that in an appropriate manner;

(b) the mapping of individual positions to proxies, market indices and risk factors is plausible, intuitive and conceptually sound;

(c) the selected risk factors are appropriate and effectively cover both general and specific risk;

(d) the model adequately explains the historical price variation;

(e) the model captures both the magnitude and changes in the composition of potential concentrations.

Article 82

Stress-testing programme

1. In assessing the comprehensiveness of the stress-testing programme in accordance with Article 79(1)(c), competent authorities shall verify in particular whether the institution is able to provide loss estimates under alternative adverse scenarios and whether those scenarios are different from the ones used by the internal model but still likely to occur.

2. For the purpose of paragraph 1, competent authorities shall verify in particular that:

   (a) the stress scenarios are relevant to the specific holdings of the institution, reflect significant losses to the institution and capture effects which are not reflected in the outcomes of the model;

   (b) the outcomes of the model under the stress scenarios are used in the actual risk management for the equity portfolio and they are periodically reported to senior management;

   (c) the stress scenarios are periodically reviewed.

Article 83

Integrity of the model and modelling process

1. In assessing the integrity of the model and modelling process in accordance with Article 79(1)(d), competent authorities shall verify in particular that:

   (a) the internal model is fully integrated into the management of the non-trading book equity portfolio, the overall management information systems of the institution and the institution´s risk management infrastructure and it is used to monitor the investment limits and the risk of equity exposures;

   (b) the modelling unit is competent and independent from the unit responsible for managing the individual investments.

2. For the purpose of paragraph 1(a), competent authorities shall verify that:

   (a) the institution´s management body and senior management are actively involved in the risk control process in the sense that they have, at least, endorsed a set of investment limits based, among other factors, on the internal model´s results;

   (b) the reports produced by the risk control unit are reviewed by a level of management with sufficient authority to enforce reductions of positions as well as reduction in the institution´s overall risk exposure;

(c) action plans are in place for market crisis situations affecting activities within the model´s scope, describing the events that trigger them and the planned actions.

3. For the purpose of paragraph 1(b), competent authorities shall verify in particular that:

(a) the staff and the senior management responsible for the modelling unit do not perform tasks related to managing the individual investments;

(b) the senior managers of modelling units and of units responsible for managing the individual investments have different reporting lines at the level of the management body of the institution or the committee designated by it;

(c) the remuneration of the staff and of the senior management responsible for the modelling unit is independent from the performance of the tasks related to managing the individual investments.

Article 84

Adequacy of assignment of exposures to the internal models approach

In assessing the adequacy of the assignment of each exposure in the range of application of an approach for equity exposures to this internal models approach in accordance with Article 79(1)(e), competent authorities shall evaluate in particular the definitions, processes and criteria for assigning or reviewing the assignment.

Article 85

Adequacy of the validation function

In assessing the adequacy of the validation function in accordance with Article 79(1)(f), competent authorities shall apply Articles 10 to 13 of Chapter 3 on the function of validation of internal estimates and of the internal governance and oversight of an institution and in addition they shall verify in particular that:

(a) the institution makes comparison between the 1st percentile of the actual equity returns and the modelled estimates at least on a quarterly basis;

(b) the comparison referred to in point (a) makes use of an observation period equal at least to one year and of a time horizon that allows the computation of the 1st percentile based on non-overlapping observations;

(c) where the percentage of observations below the estimated 1st percentile of equity returns is above 1%, it is adequately justified and relevant remedial actions are taken by the institution.

CHAPTER 14

Assessment methodology for management of changes to rating systems

Article 86

General

1. In order to assess an institution's compliance with the requirements on the management of changes to the range of application of a rating system or an internal models approach to equity exposures, or of changes to the rating systems or internal models approach to equity exposures in accordance with Articles 143(3) and (4) and 175(2) of Regulation (EU) No 575/2013, competent authorities shall verify that the institution's policy related to changes to rating systems and, where applicable, internal models approach to equity exposures ('change policy') has been implemented adequately and meets the requirements of Commission Delegated Regulation (EU) No 529/2014[6].

2. For the purposes of paragraph 1, in addition to reviewing the change policy itself, competent authorities shall, in particular:

   (a) review the minutes of the institution's internal bodies, including the management body, model committee, or other committees;

   (b) review the reports on the management of changes to the rating systems and the recommendations by the credit risk control unit, validation function, internal audit function or any other control function of the institution;

   (c) review the progress reports on the effort of the institution to correct shortfalls and mitigate risks detected during monitoring, validations and audits;

   (d) obtain written statements or interview the staff and the senior management of the institution;

   (e) review other relevant documents of the institution.

Article 87

Change policy content

In assessing an institution's change policy, as referred to in Article 86(1), competent authorities shall verify that the change policy includes provisions relating to the operationalization of the requirements of Regulation (EU) 575/2013 as well as of the criteria laid down in Regulation (EU) No 529/2014 suitable for the IRB Approach and, in particular:

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[6] Commission Delegated Regulation (EU) No 529/2014 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for assessing the materiality of extensions and changes of the Internal Ratings Based Approach and the Advanced Measurement Approach of 12 March 2014 (OJ L 148, 20.5.2014, p.36).

(a) responsibilities, reporting lines and procedures for the internal approval of changes, taking into account the institution's organisational characteristics and approach specificities;

(b) definitions, methods and, where applicable, metrics for the classification of changes;

(c) procedures to identify, monitor, notify and apply for permission on changes to relevant competent authorities;

(d) procedures for the implementation of changes, including their documentation.

CHAPTER 15

Final provision

Article 88

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the Commission
The President

[For the Commission
On behalf of the President

[Position]

5. Accompanying documents

5.1 Draft Cost- Benefit Analysis / Impact Assessment

Introduction

Articles 144(2), 173(3) and 180(3)(b) require the EBA to develop draft regulatory technical standards (RTS) that specify the assessment methodology competent authorities (CAs) shall follow in assessing the compliance of an institution with the requirements to use the IRB Approach.

As per Article 10(1) of the EBA regulation (Regulation (EU) No 1093/2010 of the European Parliament and of the Council), any RTS developed by the EBA – when submitted to the EU Commission for adoption - shall be accompanied by an Impact Assessment (IA) annex which analyses 'the potential related costs and benefits'. Such annex shall provide the reader with an overview of the findings as regards the problem identification, the options identified to remove the problem and their potential impacts.

This annex presents the impact assessment with cost-benefit analysis of the provisions included in the RTS described in the present Consultation Paper.

EBA survey

For the impact assessment, the EBA prepared a qualitative survey addressing the competent authorities. The qualitative survey aimed to collect data and information on the baseline and the expected costs and benefits of the draft RTS for the industry. The section of the survey that is related to the baseline aims to indicate the level of current practices in each Member State in relation to the draft RTS. Precisely, the survey collected information on the current practices against each chapter of the draft RTS to understand the extent to which the current practices overlap with the standards to be introduced under the draft RTS. Secondly, the section of the survey that is related to the expected costs and benefits of the draft RTS aims to capture a negative correlation between the current practice and the potential costs and benefits of the draft RTS. In other words, if the current practice in a Member State is very similar to the standards to be introduced under the draft RTS, the corresponding costs for that Member State are expected to be negligible and the benefits may be negligible or greater due to positive externalities[7]. The presentation of the baseline and the analysis of the costs and benefits are based on the responses to the survey.

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[7] Although the current practice is 'fully compliant', i.e. overlaps with the draft RTS, the benefits for the Member State may be great due to positive externalities. This largely depends on the level of practices in other EU Member States.

A total of 16 Member States [AT, BG, CZ, DE, ES, FR, HR, LT, LU, LV, NL, PT, SE, SI, SK, UK] responded to the survey. The sample, given the data/information as of mid-2014, covers 47 parent institutions, 58 subsidiaries[8] and 44 stand-alone institutions. The total asset value of the institutions and subsidiaries in the sample is about EUR 23,164 billion which is about 67% of the total assets in the entire banking sector covered by the sample. The coverage in terms of the asset share of the entities that use the IRB Approach in the entire banking sector in each Member State varies from 7% to over 95%.

Problem definition

Under the current regulatory framework there are no common standards to assess the compliance of institutions' with the requirements to use the IRB Approach. The criteria and procedures that the CAs may use in their assessment vary across jurisdictions.

The lack of common standards for the assessment of the IRB Approaches may lead to:

- uneven playing field: two institutions located in two different jurisdictions, can be treated differently if the conditions and parameters for the assessment of the rating systems are not consistent between jurisdictions,

- regulatory arbitrage: institutions may have large leeway to decide on a specific model and related assumptions that are not necessarily prudent. In certain cases, the objective of the institution may be to reduce the own funds requirements rather than deciding on an appropriate level of capital, and

- asymmetric information and lack of comparability in home-host coordination when authorities handle cross-border cases.

At the larger scale, such problems in the regulatory framework may prevent the effective and efficient functioning of the EU banking sector as well as the Internal Market.

Objectives

The objective of the draft RTS is to establish a harmonised regulatory framework by introducing a set of criteria and methods that CAs have to use in the assessment of the IRB Approaches applied by institution for the purpose of own funds requirements calculation.

The policy intervention is expected to provide CAs with more information in terms of benchmarking and cross-jurisdiction comparison when they assess the robustness, consistency and accuracy of the rating systems used by the institutions.

Baseline scenario

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[8] In BG one subsidiary is in the process of receiving authorisation to use IRB model.

At the consolidated level, there are currently more than 5400 IRB models including 2639 IRB PD models, 1618 LGD IRB models and 1153 CCF IRB models, assessed by the home competent authorities in 17 Member States[9]. Of the total IRB models about 30% (1556 cases) have cross-border element, i.e. home-host cooperation takes place in the assessment of the IRB models.

Due to the high number of IRB models used in Member States such as Spain, Germany, the UK and the Netherlands, the regulation is expected to have the greatest impact on these Member States in absolute terms. These Member States have a share of about 65% of total number of IRB models in Europe.

The form and the scope of the current practices related to the supervision of the IRB Approach vary across Member States. In overall, most Member States (70%) currently have national rules or relevant practices to regulate the usage of the IRB Approach and when such rules or practices are available in most cases they are in the form of non-public rules (45%), e.g. handbooks, standards, principles used only by the CAs and terms and conditions formulated by the CAs, or in the form of public and non-binding rules (28%) such as national guidelines, working papers and recommendations. In 27% of the cases, Member States rely on public and binding rules such as national legislation.

The majority of the responses indicated that the current practices in Member States are either in full compliance (65%) or mostly complied (33%) with the proposed requirements in the draft RTS. The level of compliance and the basis of the current practice in Member States depend also on the chapter covered in the draft RTS. Table 1 presents by chapter the basis of the current practices and the aggregate level of compliance with the draft RTS.

Table 1 Current practices and the level of compliance with respect to the draft RTS (sample level)

	Availability of national rules/practices	Form of the national rules/practices			Overall level of compliance with the draft RTS			
	Yes	Non public	Public and binding	Public and non-binding	Not complied	Partially complied	Mostly complied	Fully complied
Chapter 1	88%	36%	43%	21%	0%	14%	21%	64%
Chapter 2	69%	36%	36%	27%	0%	9%	45%	45%
Chapter 3	81%	46%	23%	31%	0%	0%	31%	69%
Article 10	69%	55%	18%	27%	9%	0%	27%	64%
Chapter 4	69%	27%	36%	36%	0%	0%	18%	82%
Chapter 5	75%	50%	17%	33%	0%	0%	42%	58%
Chapter 6	81%	33%	42%	25%	0%	0%	31%	69%
Chapter 7	75%	58%	17%	25%	0%	0%	42%	58%
Chapter 8	81%	54%	15%	31%	0%	8%	31%	62%

[9] Member States refer to EEA member countries and this sample includes AT, BE, DE, DK, EL, ES, FR, HU, IE, IT, LU, MT, NL, NO, PT, SE and UK.

Article 51	75%	50%	25%	25%	17%	8%	33%	42%
Chapter 9	75%	50%	17%	33%	0%	0%	25%	75%
Chapter 10	56%	44%	22%	33%	0%	0%	33%	67%
Chapter 11	69%	55%	27%	18%	0%	0%	27%	73%
Article 75	63%	50%	30%	20%	0%	10%	50%	40%
Chapter 12	63%	60%	20%	20%	0%	0%	40%	60%
Chapter 13	44%	43%	29%	29%	0%	0%	43%	57%
Chapter 14	56%	33%	33%	33%	0%	0%	33%	67%
Average*	70%	45%	27%	28%	0%	2%	33%	65%

Source and notes:

EBA analysis

* Average is based on the overall scores for the chapters and excludes the percentages specific to the Articles 10, 51 and 75.

The sums may not equal to 100% due to rounding.

The variations of the national practices from the content of the draft RTS are mainly related to the following issues:

- Some Member States apply less restrictive rules specific to outsourcing [Chapter 1].

- Some Member States have more flexible rules and give institutions more discretion in the assessment methodologies of roll-out plans and permanent partial use [Chapter 2].

- With regards to the independence of the validation function, compared to the draft RTS some Member States currently apply more stringent rules, i.e. organisational separation of the validation function from the credit risk control unit, some others do not have any requirements [Article 10, Chapter 3].

- The definition of default is more conservative and strict in certain jurisdictions and it is more flexible in some others than that of the draft RTS [Chapter 6].

- The provision of map of rating systems by the institutions is not required in some Member States, as it is included in the draft RTS [Chapter 7].

- A number of Member States currently apply exposure weighted average of loss given default a opposed to the default weighted average that is suggested in the draft RTS [Article 51, Chapter 8].

- In some Member States the framework does not cover models for equity exposures [Chapter 13].

Despite some variations, the survey results show that almost all Member States (98% of the sample) are mostly/fully compliant with the content of the draft RTS therefore the expected costs (e.g. operational, administrative) are expected to be somewhat negligible or small at the EU level.

Assessment of the technical options

Technical options

Options related to governance and validation

Independence of the validation function

Option 1a: No specific independence requirement

Option 1b: Specification of the independence of the validation function on the basis of proportionality principle

Option 1c: Specification of independence requirements in terms of staff, organisational unit and reporting lines up to the level of management board

Options related to risk quantification

Weighted average of loss given default (LGD)

Option 2a: Default weighted average of loss given default (LGD)

Option 2b: Exposure weighted average of loss given default (LGD)

Options related to RWA calculation

Calculation of the IRB shortfall

Option 3a: Calculation of the IRB shortfall separately for the defaulted exposures and non-defaulted exposures portfolios

Option 3b: Calculation of the IRB shortfall for defaulted exposures individually

Option 3c: Calculation of the IRB shortfall at the level of a homogenous sub-portfolio

Assessment of the technical options and the preferred options

a.   Independence of the validation function

Current regulatory framework does not provide clear criteria for the independence of the validation function, leaving room for various interpretations. No requirement for independence of validation function in the draft RTS (option 1a) means that the setup of the validation function would remain unchanged, with significant differences across jurisdictions in terms of supervisory expectations. Such flexibility could allow better adjustment of the setup of the validation function to the needs and complexity of the institution. However, in the cases where the framework fails

to achieve independence from the credit risk control unit (CRCU), the quality of the rating systems may decrease due to the lack of objective assessment of the models. In addition, the option 1a is not expected to address the identified problems and achieve the policy objectives.

Option 1c introduces full independence for all institutions in terms of staff, organisational unit and reporting lines up to the level of management board. Full independence is expected to ensure objective review of the models and therefore constant improvements of the models by addressing identified weaknesses. However, one major argument against the option is that it does not respect the concept of proportionality. Full independence requirement may be disproportionately burdensome for small institutions because the qualified staff for both the CRCU and validation unit should operate separately.

It is expected that the independence of the validation function based on the proportionality principle (option 1b) is the optimum level of requirement: it finds a balance between sufficient level of independence and proportionality. This approach to the requirements for the independence of the validation functions from CRCU:

- ensures an objective assessment of the rating systems and limited pressure on the results of the validation,

- allows for objective and robust view on the rating systems by staff that is not involved in the development process, and

- accounts for the concept of proportionality.

Given these arguments, option 1b is selected as the preferred option.

b.   Weighted average of loss given default (LGD)

According to option 2a the institutions should calculate the weighted average of LGD by the number of defaults. The major arguments for the option are the followings:

- LGD parameter should be calculated for homogenous pools or facility grades, therefore if risk drivers like exposure amount are relevant, they should be used for the segregation or risk differentiation of LGD.

- PD parameter is calculated in accordance with the number of default weighted average, for the sake of consistency the LGD measurement approach should also follow this method.

- For the IRB Approach, the individual risk estimation is necessary for single exposure and obligor. This is different than for Pillar II where the risk is measured directly at portfolio level and risk measure for single exposure and obligor is not applicable. Therefore, weighting by exposure is applied for Pillar II models and for models for IRB Approach the

LGD is weighted by number of defaults and the information on exposure value is applied as separate component (EAD) and the final RWA is summed up.

▪ The LGD floor for exposures secured by immovable property is defined as an exposure-weighted average LGD. For LGD quantification the CRR is using the notion of default-weighted average LGD. If the interpretation of the default-weighted average LGD is the number of defaults then it is possible to argue that the exposure-weighted floor is applied at portfolio level, whereas default weighted LGD at single exposure level.

▪ If LGD is exposure weighted, a few big observations can have a disproportionate effect on LGD. Given that LGDs are derived from far less observations than PDs, the impact of a few "big defaults" could lead to less robust estimation.

Option 2b proposes that the default weighted average is treated as exposure weighted average LGD. Major arguments for the option can be that:

▪ The exposure-weighted LGD equals the LGD on a portfolio level given all the underlying LGDs of the individual exposure.

▪ The LGD floor for exposures secured by immovable property is defined as an exposure-weighted average LGD. The floor calculation method should be the same as the calculation method of the LGD to be able to replace the lower LGDs where needed in the RWA calculation.

▪ For retail portfolios, e.g. retail mortgages, exposure-weighted average LGD yields more conservative results. These exposures default mostly in the first years of the loan and thus the larger exposures have worse ratings.

Given the abovementioned arguments option 2a is selected to be the preferred option.

c.   Calculation of the IRB shortfall

The IRB shortfall is the difference between the expected loss amounts and credit risk adjustments, additional value adjustments and other own funds reductions. The calculation of the IRB shortfall is carried out in line with Article 159 of Regulation (EU) 575/2013 and is performed on an aggregate level separately for the portfolio of defaulted exposures and the portfolio of exposures that are not in default (option 3a). The practice, as suggested under option 3a, ensures that the negative amounts resulting from the calculation for the defaulted portfolio are not used to offset the positive amounts resulting from the calculation for the portfolio of exposures that are not in default.

Secondly, according to the Article 36 of Regulation (EU) 575/2013 when the amount of provisions does not fully cover the expected losses of defaulted exposures, the difference should be deducted from Tier 1 capital. This is because the purpose of own funds is to ensure that the unexpected losses are fully covered in case of insolvency of the institution. The amounts of

provisions cover the expected losses and are therefore deducted from Tier 1 capital. On the other hand, when the amount of provisions exceeds the amount of expected losses, the excess amount of provisions on the total expected losses can be allocated to cover the unexpected losses and can therefore be added to Tier 2 capital, up to a limit defined in Article 62 of Regulation (EU) 575/2013. Similarly, when the amount of provisions on one defaulted exposure exceeds the expected loss on that exposure, the excess amount can be allocated to cover the expected loss on another defaulted exposure where the amount of provisions is not sufficient. Therefore, the calculation of the IRB shortfall should be performed at an aggregate level for all defaulted exposures. Similarly, the IRB shortfall should be calculated at an aggregate level for all non-defaulted exposures.

Thirdly, in the case of defaulted exposures the loss had already been identified, therefore most of the amount of defaulted exposures is covered by the provisions for the expected loss and the capital requirement for the unexpected loss is typically lower. For defaulted exposures, institutions have to calculate the best estimate of expected loss that takes into account all available information about the obligor and the transaction. This expected loss should be covered by provisions, but in some cases the provisions may be calculated in a simpler way, leading to IRB shortfall or excess. If calculating the IRB shortfall for defaulted exposures on individual level is required, the institutions may have incentives to avoid excessive deductions from Tier 1 capital by aligning their best estimate for the expected loss with the value of provisions. On the contrary, the approach to be elaborated should not discourage the institutions from an appropriate calculation of expected loss and RWA for their defaulted exposures.

Option 3b suggests the calculation of the IRB shortfall for the exposures at the individual level. It is reasonable to argue that the individual calculation of the IRB shortfall for the exposures is a more prudent approach. The calculation of the IRB at the aggregate level pools the exposures to the counterparties and allows for the netting of individual shortfalls/excesses of provisions. Individual approach on the other hand is expected to avoid the "subsidisation" effect of the individual shortfall/excess. This therefore would lead to deducting the sum of all individual shortfalls from Tier 1 capital and adding the sum of all individual excesses to Tier 2 capital (up to a limit of 0.6% of RWA). In the case of institutions that currently use less strict approach such rule would lead to significant shift in own funds and decrease in capital adequacy ratios. On the other hand, with regard to the institutions that currently calculate the IRB shortfall at the level of individual exposures the opposite effect of the transfer of a part of Tier 2 own funds to Tier 1 own funds and possible increase of total own funds would be avoided.

More conservative approach with regard to the calculation of IRB shortfall may be desirable in order to account for potential weaknesses in the calculation of expected loss best estimate and loss given default (LGD) for defaulted exposures. However, the individual calculations of the IRB shortfall may be disproportionately burdensome for the institutions and may lead to excessive conservatism in the recognition of own funds.

Another shortcoming of the option 3b is that according to the Article 159 of Regulation (EU) 575/2013 and for the purpose of the IRB shortfall calculation, a) both specific and general credit

risk adjustments, b) additional value adjustments in accordance with Articles 34 and 110 of Regulation (EU) 575/2013 and c) other own funds reductions related to these exposures should be taken into account. There is currently not an explicit requirement on the calculation methodology of these adjustments, i.e. whether on individual exposure level or portfolio or global level. The calculation approach may depend on the specificities of different accounting frameworks. The requirement to allocate all the above mentioned adjustments to individual exposures would be burdensome. Also, the results of the calculation of the IRB shortfall would differ under different accounting rules while one of the major principles in the Basel framework is that the calculation of the expected losses and risk weighted exposures should be independent of the accounting framework.

In addition, Basel framework requires the calculation of the IRB shortfall for the exposures at the aggregate level and the individual calculation of the IRB shortfall may lead to unfavourable treatment of EU institutions vis-à-vis the non-EU institutions that are subject to Basel framework.

Calculation of the IRB shortfall at the level of a homogenous sub-portfolio (option 3c) has also been considered. The calculation of IRB shortfall at the sub-portfolio level may provide a balance between the relatively lax approach, the IRB shortfall calculation at a global level and the relatively conservative approach, the IRB shortfall calculation at the individual level. It may therefore mitigate the possible cliff effect of the adoption of unified rules.

However, there is currently not a legal basis for the adoption of such approach under the Regulation (EU) 575/2013 and it would be difficult to define the homogenous sub-portfolios for the purpose of IRB shortfall calculation.

Given the above mentioned arguments and reasoning option 3a is selected to be the preferred option.

Cost and benefit analysis

The qualitative survey asked the CAs potential costs and benefits that can occur in their jurisdictions with the application of the draft RTS. The CAs have been requested to indicate[10] the expected costs and benefits associated with each chapter of the draft RTS. Table 2 shows the expected costs and benefits for the CAs.

Table 2 Expected level of costs and benefits for the CAs by chapter (sample level)

	Costs				Benefits			
	Negligible	Small	Medium	Large	Negligible	Small	Medium	Large
Chapter 1	47%	27%	20%	7%	20%	47%	27%	7%
Chapter 2	40%	40%	20%	0%	36%	36%	21%	7%
Chapter 3	20%	47%	33%	0%	20%	27%	47%	7%
Article 10	33%	47%	20%	0%	33%	20%	40%	7%
Chapter 4	40%	33%	27%	0%	33%	20%	40%	7%

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[10] Indicate costs and benefits as negligible, small, medium or large.

Chapter 5	40%	40%	20%	0%	27%	27%	40%	7%
Chapter 6	40%	33%	20%	7%	33%	20%	40%	7%
Chapter 7	33%	33%	33%	0%	7%	40%	40%	13%
Chapter 8	27%	47%	27%	0%	20%	33%	40%	7%
Article 51	33%	40%	13%	13%	20%	33%	40%	7%
Chapter 9	53%	33%	13%	0%	27%	40%	27%	7%
Chapter 10	13%	40%	40%	7%	27%	20%	47%	7%
Chapter 11	40%	40%	20%	0%	27%	27%	40%	7%
Article 75	33%	53%	13%	0%	33%	27%	33%	7%
Chapter 12	33%	27%	40%	0%	27%	20%	40%	13%
Chapter 13	47%	40%	13%	0%	40%	27%	27%	7%
Chapter 14	60%	20%	20%	0%	27%	33%	33%	7%
Average*	38%	36%	25%	1%	26%	30%	36%	8%

Source and notes:
EBA analysis
* Average is based on the overall scores for the chapters and excludes the percentages specific to the Articles 10, 51 and 75.
The sums may not equal to 100% due to rounding.

About 74% of the Member States believe that the draft RTS will have a negligible/small cost impact on the CAs. Most of these costs emerge from administration for the assessment of compliance, learning and training of staff and amendments to supervisory procedures, rules and practices to comply with the draft RTS. Some Member States also mentioned that given the detailed requirements introduced by the draft RTS the workload will increase for the CAs.

With regards to [Chapter 1] some Member States highlighted that the RTS increases costs for outsourcing, e.g. visiting vendor sites and dealing with vendors.

Some Member States expect minor amendments to the current inspection techniques of the CAs, in order to ensure the use of the inspection techniques listed in the draft RTS. Also, the analysis of the roll-out portfolios will be completed in a shorter timeline, which may lead to more frequent inspections [Chapter 2].

With regard to [Chapter 4], some Member States mentioned that minor amendments are expected to the current inspection techniques. Some inspection techniques are not mandatory (e.g. Article 18, paragraph 3) but if CAs decide to apply it, then they will have to perform additional analysis such the analysis of Early Warning Systems, collection and recovery process and risk budgetary planning.

The RTS introduce a set of specifications for the requirements under Regulation (EU) 575/2013. For example, for exposures in default the LGD should consider additional drivers which are not available for LGD for performing loans. This may imply changes to current practices [Chapter 8].[11] Under the same chapter additional costs are expected for some CAs because the CAs need to amend current rules and/or practices, to monitor implementation of the RTS by the institutions

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[11] This argument has also been stated under the analysis for the institutions.

and to assess the redevelopment of the LGD models by the institutions in case the exposure weighted LGD is currently applied [Article 51].

In [Chapter 10] the stress test requirements will have a cost impact on the CAs as in some Member States the stress test is a Pillar II requirement and respective CAs will need to move the requirement under Pillar I supervision and make an amendments in their assessment methods.

Approximately 43% of the Member States expect medium/large beneficial impact on the supervisory practice. The sources of these benefits are:

- Harmonisation of and consistency among national practices,

- Building sound and clear legal basis,

- Providing positive externalities,

- Minimising regulatory arbitrage,

- Creating level playing field in the industry, and improve cooperation between the colleges.

Similarly, Table 3 shows the expected per chapter costs and benefits for the institutions. About 65% of the respondents expect the costs to the institutions to be negligible or small.

Table 3 Expected level of costs and benefits for the institutions by chapter (sample level)

	Costs				Benefits			
	Negligible	Small	Medium	Large	Negligible	Small	Medium	Large
Chapter 1	33%	20%	27%	20%	33%	20%	47%	0%
Chapter 2	43%	21%	29%	7%	57%	14%	29%	0%
Chapter 3	27%	33%	33%	7%	36%	7%	57%	0%
Article 10	27%	33%	27%	13%	36%	7%	50%	7%
Chapter 4	40%	33%	20%	7%	43%	21%	36%	0%
Chapter 5	40%	27%	27%	7%	43%	7%	50%	0%
Chapter 6	33%	20%	40%	7%	43%	14%	43%	0%
Chapter 7	20%	33%	33%	13%	36%	21%	43%	0%
Chapter 8	27%	33%	20%	20%	36%	21%	43%	0%
Article 51	33%	13%	27%	27%	43%	14%	43%	0%
Chapter 9	60%	20%	13%	7%	38%	31%	31%	0%
Chapter 10	33%	13%	40%	13%	36%	14%	43%	7%
Chapter 11	40%	40%	13%	7%	46%	23%	31%	0%
Article 75	40%	40%	7%	13%	38%	15%	46%	0%
Chapter 12	40%	27%	20%	13%	38%	15%	38%	8%
Chapter 13	47%	40%	7%	7%	46%	31%	23%	0%
Chapter 14	53%	20%	20%	7%	38%	23%	38%	0%
Average*	38%	27%	24%	10%	41%	19%	39%	1%

Source and notes:

EBA analysis

* Average is based on the overall scores for the chapters and excludes the percentages specific to the Articles 10, 51 and 75.

The sums may not equal to 100% due to rounding.

The costs associated with the relevant chapters are indicated below.

▪ The institutions will have one-off costs associated with the implementation of the requirements including amendments in processes and methodologies and the adaptation of new elements [Chapters 1-14, Article 10, Article 75], especially in terms of model development, review and validation [Chapter 1], IRB roll-out plans [Chapter 2], LGD calculation [Article 51], remuneration schemes [Chapter 3], stress testing [Chapter 10].

▪ Additional training for the members of staff [Chapter 1, Article 10], and change in the IT system [Article 51, Chapter 11] may be necessary.

▪ Where the current practice is less prescriptive and flexible (as indicated in the baseline section) institutions need to adjust the IRB models/internal rules accordingly [Chapters 1-14].

▪ Some costs may be related with the recovery of historical information/data in order to improve/complete the documentation [Chapter 1-14].

- The definition of a time period for the implementation of the IRB Approach (maximum of 5 years) may represent additional costs of implementation, given that the institutions will have to comply with this deadline [Chapter 2].

- Where the scope of use of internal ratings and risk parameters is not sufficient according to the use test and experience test requirements the institutions will be required to implement changes in their internal processes [Chapter 4].

- Assignment of exposures to grades and pools as envisaged in the draft RTS may lead to the increase of own funds requirements [Chapter 5].

- The map of models will need to be provided or adjusted [Chapter 7].

- Additional costs due to additional data analysis and calculations are expected to occur regarding the assessment of the representativeness of the data (Article 49) [Chapter 8].

- The introduction of a clear rule with regard to the weighing of the average LGD will have such effect that all or a part of institutions in some Member States will need to redevelop LGD models and the CAs will have to assess the changes to the models [Article 51].

On the other hand, about 60% of the respondents expect negligible or small benefits from the draft RTS and only 1% of the respondents expect a large change. The respondents believe that the benefits of the draft RTS derive from clear, explicit and harmonised rules. This framework is expected to increase legal certainty, generate positive externalities and create level playing field in the industry.

In addition some Member States think that the draft RTS will:

- Minimise regulatory arbitrage [Chapters 2, 3, Article 10,].

- Enforce the validation function [Article 10].

- Increase comparability of the RWA levels across Member States [Chapters 8-9, Article 51].

- Make the stress test more robust and resilient [Chapter 10].

- Improve data management practices [Chapter 12].

Text for consultation purposes

Q7: Do you support the view that costs for institutions arising from the implementation of these draft RTS are expected to be negligible or small? If not, could you please indicate the main sources of costs?

Q8: What are the main benefits for institutions that you expect by the adoption of these draft RTS?

Q9: Do you expect that these draft RTS will trigger material changes to the rating systems (subject of the RTS on materiality of model changes)? If yes, could you please indicate the main sources of the changes (please list the relevant Articles of these draft RTS)?

5.2 Overview of questions for Consultation

Q1: What views do you have on the nature and appropriateness of the proportionality principle in Article 1(2)?

Q2: Do you agree with the required independence of the validation function in Article 4(3) and Article 10? How would these requirements influence your validation function and your governance in general?

Q3: Are the provisions introduced in Article 49(3) on the calculation of the long-run average of one-year default rates sufficiently clear? Are there aspects which need to be elaborated further?

Q4: Do you agree with the required number of default weighted average LGD calculation method introduced in Article 51(1)(b) and supportive arguments? How will this requirement influence your current LGD calculation method? More generally, what are your views as to balance of arguments for identifying the most appropriate method?

Q5: Are the provisions introduced in Article 52 on the treatment of multiple defaults sufficiently clear? Are there aspects which need to be elaborated further?

Q6: Are the provisions introduced in Article 60 on the treatment of eligible guarantors for the purpose of own-LGD estimates sufficiently clear? Are there aspects which need to be elaborated further?

Q7: Do you support the view that costs for institutions arising from the implementation of these draft RTS are expected to be negligible or small? If not, could you please indicate the main sources of costs?

Q8: What are the main benefits for institutions that you expect by the adoption of these draft RTS?

Q9: Do you expect that these draft RTS will trigger material changes to the rating systems (subject of the RTS on materiality of model changes)? If yes, could you please indicate the main sources of the changes (please list the relevant Articles of these draft RTS)?