

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 (Text with EEA relevance)

[<sup>X1</sup>PART THREE

**CAPITAL REQUIREMENTS**

TITLE II

**CAPITAL REQUIREMENTS FOR CREDIT RISK**

CHAPTER 3

**Internal Ratings Based Approach**

[<sup>X1</sup>Section 6

**Requirements for the IRB approach**

Sub-Section 1

**Rating systems**

*Article 169*

**General principles**

1 Where an institution uses multiple rating systems, the rationale for assigning an obligor or a transaction to a rating system shall be documented and applied in a manner that appropriately reflects the level of risk.

2 Assignment criteria and processes shall be periodically reviewed to determine whether they remain appropriate for the current portfolio and external conditions.

3 Where an institution uses direct estimates of risk parameters for individual obligors or exposures these may be seen as estimates assigned to grades on a continuous rating scale.

*Article 170*

**Structure of rating systems**

1 The structure of rating systems for exposures to corporates, institutions and central governments and central banks shall comply with the following requirements:

- a a rating system shall take into account obligor and transaction risk characteristics;

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*Changes to legislation:* There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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- b a rating system shall have an obligor rating scale which reflects exclusively quantification of the risk of obligor default. The obligor rating scale shall have a minimum of 7 grades for non-defaulted obligors and one for defaulted obligors;
- c an institution shall document the relationship between obligor grades in terms of the level of default risk each grade implies and the criteria used to distinguish that level of default risk;
- d institutions with portfolios concentrated in a particular market segment and range of default risk shall have enough obligor grades within that range to avoid undue concentrations of obligors in a particular grade. Significant concentrations within a single grade shall be supported by convincing empirical evidence that the obligor grade covers a reasonably narrow PD band and that the default risk posed by all obligors in the grade falls within that band;
- e to be permitted by the competent authority to use own estimates of LGDs for own funds requirement calculation, a rating system shall incorporate a distinct facility rating scale which exclusively reflects LGD related transaction characteristics. The facility grade definition shall include both a description of how exposures are assigned to the grade and of the criteria used to distinguish the level of risk across grades;
- f significant concentrations within a single facility grade shall be supported by convincing empirical evidence that the facility grade covers a reasonably narrow LGD band, respectively, and that the risk posed by all exposures in the grade falls within that band.

2 Institutions using the methods set out in Article 153(5) for assigning risk weights for specialised lending exposures are exempt from the requirement to have an obligor rating scale which reflects exclusively quantification of the risk of obligor default for these exposures. These institutions shall have for these exposures at least four grades for non-defaulted obligors and at least one grade for defaulted obligors.

3 The structure of rating systems for retail exposures shall comply with the following requirements:

- a rating systems shall reflect both obligor and transaction risk, and shall capture all relevant obligor and transaction characteristics;
- b the level of risk differentiation shall ensure that the number of exposures in a given grade or pool is sufficient to allow for meaningful quantification and validation of the loss characteristics at the grade or pool level. The distribution of exposures and obligors across grades or pools shall be such as to avoid excessive concentrations;
- c the process of assigning exposures to grades or pools shall provide for a meaningful differentiation of risk, for a grouping of sufficiently homogenous exposures, and shall allow for accurate and consistent estimation of loss characteristics at grade or pool level. For purchased receivables the grouping shall reflect the seller's underwriting practices and the heterogeneity of its customers.

4 Institutions shall consider the following risk drivers when assigning exposures to grades or pools:

- a obligor risk characteristics;
- b transaction risk characteristics, including product or collateral types or both. Institutions shall explicitly address cases where several exposures benefit from the same collateral;
- c delinquency, except where an institution demonstrates to the satisfaction of its competent authority that delinquency is not a material driver of risk for the exposure.

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## Article 171

### Assignment to grades or pools

- 1 An institution shall have specific definitions, processes and criteria for assigning exposures to grades or pools within a rating system that comply with the following requirements:
  - a the grade or pool definitions and criteria shall be sufficiently detailed to allow those charged with assigning ratings to consistently assign obligors or facilities posing similar risk to the same grade or pool. This consistency shall exist across lines of business, departments and geographic locations;
  - b the documentation of the rating process shall allow third parties to understand the assignments of exposures to grades or pools, to replicate grade and pool assignments and to evaluate the appropriateness of the assignments to a grade or a pool;
  - c the criteria shall also be consistent with the institution's internal lending standards and its policies for handling troubled obligors and facilities.
- 2 An institution shall take all relevant information into account in assigning obligors and facilities to grades or pools. Information shall be current and shall enable the institution to forecast the future performance of the exposure. The less information an institution has, the more conservative shall be its assignments of exposures to obligor and facility grades or pools. If an institution uses an external rating as a primary factor determining an internal rating assignment, the institution shall ensure that it considers other relevant information.

## Article 172

### Assignment of exposures

- 1 For exposures to corporates, institutions and central governments and central banks, and for equity exposures where an institution uses the PD/LGD approach set out in Article 155(3), assignment of exposures shall be carried out in accordance with the following criteria:
  - a each obligor shall be assigned to an obligor grade as part of the credit approval process;
  - b for those exposures for which an institution has received the permission of the competent authority to use own estimates of LGDs and conversion factors pursuant to Article 143, each exposure shall also be assigned to a facility grade as part of the credit approval process;
  - c institutions using the methods set out in Article 153(5) for assigning risk weights for specialised lending exposures shall assign each of these exposures to a grade in accordance with Article 170(2);
  - d each separate legal entity to which the institution is exposed shall be separately rated. An institution shall have appropriate policies regarding the treatment of individual obligor clients and groups of connected clients;
  - e separate exposures to the same obligor shall be assigned to the same obligor grade, irrespective of any differences in the nature of each specific transaction. However, where separate exposures are allowed to result in multiple grades for the same obligor, the following shall apply:
    - (i) country transfer risk, this being dependent on whether the exposures are denominated in local or foreign currency;

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- (ii) the treatment of associated guarantees to an exposure may be reflected in an adjusted assignment to an obligor grade;
- (iii) consumer protection, bank secrecy or other legislation prohibit the exchange of client data.

2 For retail exposures, each exposure shall be assigned to a grade or a pool as part of the credit approval process.

3 For grade and pool assignments institutions shall document the situations in which human judgement may override the inputs or outputs of the assignment process and the personnel responsible for approving these overrides. Institutions shall document these overrides and note down the personnel responsible. Institutions shall analyse the performance of the exposures whose assignments have been overridden. This analysis shall include an assessment of the performance of exposures whose rating has been overridden by a particular person, accounting for all the responsible personnel.

### *Article 173*

#### **Integrity of assignment process**

1 For exposures to corporates, institutions and central governments and central banks, and for equity exposures where an institution uses the PD/LGD approach set out in Article 155(3), the assignment process shall meet the following requirements of integrity:

- a Assignments and periodic reviews of assignments shall be completed or approved by an independent party that does not directly benefit from decisions to extend the credit;
- b Institutions shall review assignments at least annually and adjust the assignment where the result of the review does not justify carrying forward the current assignment. High risk obligors and problem exposures shall be subject to more frequent review. Institutions shall undertake a new assignment if material information on the obligor or exposure becomes available;
- c An institution shall have an effective process to obtain and update relevant information on obligor characteristics that affect PDs, and on transaction characteristics that affect LGDs or conversion factors.

2 For retail exposures, an institution shall at least annually review obligor and facility assignments and adjust the assignment where the result of the review does not justify carrying forward the current assignment, or review the loss characteristics and delinquency status of each identified risk pool, whichever applicable. An institution shall also at least annually review in a representative sample the status of individual exposures within each pool as a means of ensuring that exposures continue to be assigned to the correct pool, and adjust the assignment where the result of the review does not justify carrying forward the current assignment.

3 <sup>[F1]</sup>The <sup>[F2]</sup>PRA may make technical standards for the methodologies <sup>[F3]</sup>it may use to assess the integrity of the assignment process and the regular and independent assessment of risks.

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

#### Textual Amendments

- F1** Words in Art. 173(3) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **222(1)(a)(2)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F2** Words in Art. 173(3) substituted (1.1.2022) by [Financial Services Act 2021](#) (c. 22), s. 49(5), **Sch. 1 para. 47**; S.I. 2021/671, reg. 5(1)(b) (with reg. 5(2)) (as amended by S.I. 2021/1163, regs. 1(2), 2)
- F3** Words in Art. 173(3) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **225(4)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F4** Words in Art. 173(3) omitted (31.12.2020) by virtue of [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **222(1)(b)** (with savings in S.I. 2019/680, **reg. 11**); 2020 c. 1, **Sch. 5 para. 1(1)**

#### Article 174

##### Use of models

If an institution uses statistical models and other mechanical methods to assign exposures to obligors or facilities grades or pools, the following requirements shall be met:

- (a) the model shall have good predictive power and capital requirements shall not be distorted as a result of its use. The input variables shall form a reasonable and effective basis for the resulting predictions. The model shall not have material biases;
- (b) the institution shall have in place a process for vetting data inputs into the model, which includes an assessment of the accuracy, completeness and appropriateness of the data;
- (c) the data used to build the model shall be representative of the population of the institution's actual obligors or exposures;
- (d) the institution shall have a regular cycle of model validation that includes monitoring of model performance and stability; review of model specification; and testing of model outputs against outcomes;
- (e) the institution shall complement the statistical model by human judgement and human oversight to review model-based assignments and to ensure that the models are used appropriately. Review procedures shall aim at finding and limiting errors associated with model weaknesses. Human judgements shall take into account all relevant information not considered by the model. The institution shall document how human judgement and model results are to be combined.

#### Article 175

##### Documentation of rating systems

1 The institutions shall document the design and operational details of its rating systems. The documentation shall provide evidence of compliance with the requirements in this Section, and address topics including portfolio differentiation, rating criteria, responsibilities of parties that rate obligors and exposures, frequency of assignment reviews, and management oversight of the rating process.

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2 The institution shall document the rationale for and analysis supporting its choice of rating criteria. An institution shall document all major changes in the risk rating process, and such documentation shall support identification of changes made to the risk rating process subsequent to the last review by the competent authorities. The organisation of rating assignment including the rating assignment process and the internal control structure shall also be documented.

3 The institutions shall document the specific definitions of default and loss used internally and ensure consistency with the definitions set out in this Regulation.

4 Where the institution employs statistical models in the rating process, the institution shall document their methodologies. This material shall:

- a provide a detailed outline of the theory, assumptions and mathematical and empirical basis of the assignment of estimates to grades, individual obligors, exposures, or pools, and the data source(s) used to estimate the model;
- b establish a rigorous statistical process including out-of-time and out-of-sample performance tests for validating the model;
- c indicate any circumstances under which the model does not work effectively.

5 An institution shall demonstrate to the satisfaction of the competent authority that the requirements of this Article are met, where an institution has obtained a rating system, or model used within a rating system, from a third-party vendor and that vendor refuses or restricts the access of the institution to information pertaining to the methodology of that rating system or model, or underlying data used to develop that methodology or model, on the basis that such information is proprietary.

### *Article 176*

#### **Data maintenance**

1 Institutions shall collect and store data on aspects of their internal ratings as required under [F5the Disclosure (CRR) Part of the PRA Rulebook].

2 For exposures to corporates, institutions and central governments and central banks, and for equity exposures where an institution uses the PD/LGD approach set out in Article 155(3), institutions shall collect and store:

- a complete rating histories on obligors and recognised guarantors;
- b the dates the ratings were assigned;
- c the key data and methodology used to derive the rating;
- d the person responsible for the rating assignment;
- e the identity of obligors and exposures that defaulted;
- f the date and circumstances of such defaults;
- g data on the PDs and realised default rates associated with rating grades and ratings migration.

3 Institutions not using own estimates of LGDs and conversion factors shall collect and store data on comparisons of realised LGDs to the values as set out in Article 161(1) and realised conversion factors to the values as set out in Article 166(8).

4 Institutions using own estimates of LGDs and conversion factors shall collect and store:

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- a complete histories of data on the facility ratings and LGD and conversion factor estimates associated with each rating scale;
  - b the dates on which the ratings were assigned and the estimates were made;
  - c the key data and methodology used to derive the facility ratings and LGD and conversion factor estimates;
  - d the person who assigned the facility rating and the person who provided LGD and conversion factor estimates;
  - e data on the estimated and realised LGDs and conversion factors associated with each defaulted exposure;
  - f data on the LGD of the exposure before and after evaluation of the effects of a guarantee/ or credit derivative, for those institutions that reflect the credit risk mitigating effects of guarantees or credit derivatives through LGD;
  - g data on the components of loss for each defaulted exposure.
- 5 For retail exposures, institutions shall collect and store:
- a data used in the process of allocating exposures to grades or pools;
  - b data on the estimated PDs, LGDs and conversion factors associated with grades or pools of exposures;
  - c the identity of obligors and exposures that defaulted;
  - d for defaulted exposures, data on the grades or pools to which the exposure was assigned over the year prior to default and the realised outcomes on LGD and conversion factor;
  - e data on loss rates for qualifying revolving retail exposures.

#### Textual Amendments

- F5** Words in [Art. 176\(1\)](#) substituted (1.1.2022) by [The Financial Services Act 2021 \(Prudential Regulation of Credit Institutions and Investment Firms\) \(Consequential Amendments and Miscellaneous Provisions\) Regulations 2021 \(S.I. 2021/1376\)](#), regs. 1(3), **25(20)**

### Article 177

#### Stress tests used in assessment of capital adequacy

1 An institution shall have in place sound stress testing processes for use in the assessment of its capital adequacy. Stress testing shall involve identifying possible events or future changes in economic conditions that could have unfavourable effects on an institution's credit exposures and assessment of the institution's ability to withstand such changes.

2 An institution shall regularly perform a credit risk stress test to assess the effect of certain specific conditions on its total capital requirements for credit risk. The test shall be one chosen by the institution, subject to supervisory review. The test to be employed shall be meaningful and consider the effects of severe, but plausible, recession scenarios. An institution shall assess migration in its ratings under the stress test scenarios. Stressed portfolios shall contain the vast majority of an institution's total exposure.

3 Institutions using the treatment set out in Article 153(3) shall consider as part of their stress testing framework the impact of a deterioration in the credit quality of protection providers, in particular the impact of protection providers falling outside the eligibility criteria.

*Changes to legislation:* There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

## Sub-Section 2

### Risk quantification

#### Article 178

#### Default of an obligor

1 A default shall be considered to have occurred with regard to a particular obligor when either or both of the following have taken place:

- a the institution considers that the obligor is unlikely to pay its credit obligations to the institution, the parent undertaking or any of its subsidiaries in full, without recourse by the institution to actions such as realising security;
- <sup>[F6]</sup>b the obligor is more than 90 days past due on any material credit obligation to the institution, the parent undertaking or any of its subsidiaries. Competent authorities may replace the 90 days with 180 days for exposures secured by residential property or SME commercial immovable property in the retail exposure class, as well as exposures to public sector entities. The 180 days shall not apply for the purposes of point (m) Article 36(1) or Article 127.]

In the case of retail exposures, institutions may apply the definition of default laid down in points (a) and (b) of the first subparagraph at the level of an individual credit facility rather than in relation to the total obligations of a borrower.

2 The following shall apply for the purposes of point (b) of paragraph 1:

- a for overdrafts, days past due commence once an obligor has breached an advised limit, has been advised a limit smaller than current outstandings, or has drawn credit without authorisation and the underlying amount is material;
- b for the purposes of point (a), an advised limit comprises any credit limit determined by the institution and about which the obligor has been informed by the institution;
- c days past due for credit cards commence on the minimum payment due date;
- d materiality of a credit obligation past due shall be assessed against a threshold, defined by the competent authorities. This threshold shall reflect a level of risk that the competent authority considers to be reasonable;
- e institutions shall have documented policies in respect of the counting of days past due, in particular in respect of the re-ageing of the facilities and the granting of extensions, amendments or deferrals, renewals, and netting of existing accounts. These policies shall be applied consistently over time, and shall be in line with the internal risk management and decision processes of the institution.

3 For the purpose of point (a) of paragraph 1, elements to be taken as indications of unlikelihood to pay shall include the following:

- a the institution puts the credit obligation on non-accrued status;
- b the institution recognises a specific credit adjustment resulting from a significant perceived decline in credit quality subsequent to the institution taking on the exposure;
- c the institution sells the credit obligation at a material credit-related economic loss;
- d the institution consents to a distressed restructuring of the credit obligation where this is likely to result in a diminished financial obligation caused by the material forgiveness, or postponement, of principal, interest or, where relevant fees. This includes, in the case of equity exposures assessed under a PD/LGD Approach, distressed restructuring of the equity itself;



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- e the institution has filed for the obligor's bankruptcy or a similar order in respect of an obligor's credit obligation to the institution, the parent undertaking or any of its subsidiaries;
- f the obligor has sought or has been placed in bankruptcy or similar protection where this would avoid or delay repayment of a credit obligation to the institution, the parent undertaking or any of its subsidiaries.

4 Institutions that use external data that is not itself consistent with the definition of default laid down in paragraph 1, shall make appropriate adjustments to achieve broad equivalence with the definition of default.

5 If the institution considers that a previously defaulted exposure is such that no trigger of default continues to apply, the institution shall rate the obligor or facility as they would for a non-defaulted exposure. Where the definition of default is subsequently triggered, another default would be deemed to have occurred.

6 <sup>[F7]</sup>The <sup>[F8]</sup>PRA may] make technical standards] to specify the conditions according to which a <sup>[F9]</sup>it] shall set the threshold referred to in paragraph 2(d).

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#### Textual Amendments

- F6** Substituted by Regulation (EU) 2019/630 of the European Parliament and of the Council of 17 April 2019 amending Regulation (EU) No 575/2013 as regards minimum loss coverage for non-performing exposures (Text with EEA relevance).
- F7** Words in Art. 178(6) substituted (31.12.2020) by The Capital Requirements (Amendment) (EU Exit) Regulations 2018 (S.I. 2018/1401), regs. 1(3), **222(1)(a)(2)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F8** Words in Art. 178(6) substituted (1.1.2022) by Financial Services Act 2021 (c. 22), s. 49(5), **Sch. 1 para. 47**; S.I. 2021/671, reg. 5(1)(b) (with reg. 5(2)) (as amended by S.I. 2021/1163, regs. 1(2), 2)
- F9** Word in Art. 178(6) substituted (31.12.2020) by The Capital Requirements (Amendment) (EU Exit) Regulations 2018 (S.I. 2018/1401), regs. 1(3), **225(1)(2)(3)(f)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F10** Words in Art. 178(6) omitted (31.12.2020) by virtue of The Capital Requirements (Amendment) (EU Exit) Regulations 2018 (S.I. 2018/1401), regs. 1(3), **222(1)(b)** (with savings in S.I. 2019/680, **reg. 11**); 2020 c. 1, **Sch. 5 para. 1(1)**
- F11** Art. 178(7) omitted (31.12.2020) by virtue of The Capital Requirements (Amendment) (EU Exit) Regulations 2018 (S.I. 2018/1401), regs. 1(3), **134** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)

### Article 179

#### Overall requirements for estimation

1 In quantifying the risk parameters to be associated with rating grades or pools, institutions shall apply the following requirements:

- a an institution's own estimates of the risk parameters PD, LGD, conversion factor and EL shall incorporate all relevant data, information and methods. The estimates shall be derived using both historical experience and empirical evidence, and not based purely on judgemental considerations. The estimates shall be plausible and intuitive and shall

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- be based on the material drivers of the respective risk parameters. The less data an institution has, the more conservative it shall be in its estimation;
- b an institution shall be able to provide a breakdown of its loss experience in terms of default frequency, LGD, conversion factor, or loss where EL estimates are used, by the factors it sees as the drivers of the respective risk parameters. The institution's estimates shall be representative of long run experience;
  - c any changes in lending practice or the process for pursuing recoveries over the observation periods referred to in Article 180(1)(h) and (2)(e), Article 181(1)(j) and (2), and Article 182(2) and (3) shall be taken into account. An institution's estimates shall reflect the implications of technical advances and new data and other information, as it becomes available. Institutions shall review their estimates when new information comes to light but at least on an annual basis;
  - d the population of exposures represented in the data used for estimation, the lending standards used when the data was generated and other relevant characteristics shall be comparable with those of the institution's exposures and standards. The economic or market conditions that underlie the data shall be relevant to current and foreseeable conditions. The number of exposures in the sample and the data period used for quantification shall be sufficient to provide the institution with confidence in the accuracy and robustness of its estimates;
  - e for purchased receivables the estimates shall reflect all relevant information available to the purchasing institution regarding the quality of the underlying receivables, including data for similar pools provided by the seller, by the purchasing institution, or by external sources. The purchasing institution shall evaluate any data relied upon which is provided by the seller;
  - f an institution shall add to its estimates a margin of conservatism that is related to the expected range of estimation errors. Where methods and data are considered to be less satisfactory, the expected range of errors is larger, the margin of conservatism shall be larger.

Where institutions use different estimates for the calculation of risk weights and for internal purposes, it shall be documented and be reasonable. If institutions can demonstrate to their competent authorities that for data that have been collected prior to 1 January 2007 appropriate adjustments have been made to achieve broad equivalence with the definition of default laid down in Article 178 or with loss, competent authorities may permit the institutions some flexibility in the application of the required standards for data.

2 Where an institution uses data that is pooled across institutions it shall meet the following requirements:

- a the rating systems and criteria of other institutions in the pool are similar to its own;
- b the pool is representative of the portfolio for which the pooled data is used;
- c the pooled data is used consistently over time by the institution for its estimates;
- d the institution shall remain responsible for the integrity of its rating systems;
- e the institution shall maintain sufficient in-house understanding of its rating systems, including the ability to effectively monitor and audit the rating process.

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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## Article 180

### Requirements specific to PD estimation

1 In quantifying the risk parameters to be associated with rating grades or pools, institutions shall apply the following requirements specific to PD estimation to exposures to corporates, institutions and central governments and central banks and for equity exposures where an institution uses the PD/LGD approach set out in Article 155(3):

- a institutions shall estimate PDs by obligor grade from long run averages of one-year default rates. PD estimates for obligors that are highly leveraged or for obligors whose assets are predominantly traded assets shall reflect the performance of the underlying assets based on periods of stressed volatilities;
- b for purchased corporate receivables institutions may estimate the EL by obligor grade from long run averages of one-year realised default rates;
- c if an institution derives long run average estimates of PDs and LGDs for purchased corporate receivables from an estimate of EL, and an appropriate estimate of PD or LGD, the process for estimating total losses shall meet the overall standards for estimation of PD and LGD set out in this part, and the outcome shall be consistent with the concept of LGD as set out in Article 181(1)(a);
- d institutions shall use PD estimation techniques only with supporting analysis. Institutions shall recognise the importance of judgmental considerations in combining results of techniques and in making adjustments for limitations of techniques and information;
- e to the extent that an institution uses data on internal default experience for the estimation of PDs, the estimates shall be reflective of underwriting standards and of any differences in the rating system that generated the data and the current rating system. Where underwriting standards or rating systems have changed, the institution shall add a greater margin of conservatism in its estimate of PD;
- f to the extent that an institution associates or maps its internal grades to the scale used by an ECAI or similar organisations and then attributes the default rate observed for the external organisation's grades to the institution's grades, mappings shall be based on a comparison of internal rating criteria to the criteria used by the external organisation and on a comparison of the internal and external ratings of any common obligors. Biases or inconsistencies in the mapping approach or underlying data shall be avoided. The criteria of the external organisation underlying the data used for quantification shall be oriented to default risk only and not reflect transaction characteristics. The analysis undertaken by the institution shall include a comparison of the default definitions used, subject to the requirements in Article 178. The institution shall document the basis for the mapping;
- g to the extent that an institution uses statistical default prediction models it is allowed to estimate PDs as the simple average of default-probability estimates for individual obligors in a given grade. The institution's use of default probability models for this purpose shall meet the standards specified in Article 174;
- h irrespective of whether an institution is using external, internal, or pooled data sources, or a combination of the three, for its PD estimation, the length of the underlying historical observation period used shall be at least five years for at least one source. If the available observation period spans a longer period for any source, and this data is relevant, this longer period shall be used. This point also applies to the PD/LGD Approach to equity. Subject to the permission of competent authorities, institutions which have not received the permission of the competent authority pursuant to Article

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143 to use own estimates of LGDs or conversion factors may use, when they implement the IRB Approach, relevant data covering a period of two years. The period to be covered shall increase by one year each year until relevant data cover a period of five years.

- 2 For retail exposures, the following requirements shall apply:
- a institutions shall estimate PDs by obligor grade or pool from long run averages of one-year default rates;
  - b PD estimates may also be derived from an estimate of total losses and appropriate estimates of LGDs;
  - c institutions shall regard internal data for assigning exposures to grades or pools as the primary source of information for estimating loss characteristics. Institutions may use external data (including pooled data) or statistical models for quantification provided that the following strong links both exist:
    - (i) between the institution's process of assigning exposures to grades or pools and the process used by the external data source; and
    - (ii) between the institution's internal risk profile and the composition of the external data;
  - d if an institution derives long run average estimates of PD and LGD for retail exposures from an estimate of total losses and an appropriate estimate of PD or LGD, the process for estimating total losses shall meet the overall standards for estimation of PD and LGD set out in this part, and the outcome shall be consistent with the concept of LGD as set out in point (a) of Article 181(1);
  - e irrespective of whether an institution is using external, internal or pooled data sources or a combination of the three, for their estimation of loss characteristics, the length of the underlying historical observation period used shall be at least five years for at least one source. If the available observation spans a longer period for any source, and these data are relevant, this longer period shall be used. An institution need not give equal importance to historic data if more recent data is a better predictor of loss rates. Subject to the permission of the competent authorities, institutions may use, when they implement the IRB Approach, relevant data covering a period of two years. The period to be covered shall increase by one year each year until relevant data cover a period of five years;
  - f institutions shall identify and analyse expected changes of risk parameters over the life of credit exposures (seasoning effects).

For purchased retail receivables, institutions may use external and internal reference data. Institutions shall use all relevant data sources as points of comparison.

- 3 <sup>[F12]</sup>The <sup>[F13]</sup>PRA may] make technical standards] to specify the following:
- a the conditions according to which <sup>[F14]</sup>it] may grant the permissions referred to in point (h) of paragraph 1 and point (e) of paragraph 2;
  - b the methodologies according to which <sup>[F14]</sup>it] shall assess the methodology of an institution for estimating PD pursuant to Article 143.

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

### Textual Amendments

- F12** Words in Art. 180(3) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **222(1)(a)(2)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F13** Words in Art. 180(3) substituted (1.1.2022) by [Financial Services Act 2021](#) (c. 22), s. 49(5), **Sch. 1 para. 47**; S.I. 2021/671, reg. 5(1)(b) (with reg. 5(2)) (as amended by S.I. 2021/1163, regs. 1(2), 2)
- F14** Word in Art. 180(3)(a)(b) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **225(1)(2)(3)(g)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F15** Words in Art. 180(3) omitted (31.12.2020) by virtue of [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **222(1)(b)** (with savings in S.I. 2019/680, **reg. 11**); 2020 c. 1, **Sch. 5 para. 1(1)**

## Article 181

### Requirements specific to own-LGD estimates

1 In quantifying the risk parameters to be associated with rating grades or pools, institutions shall apply the following requirements specific to own-LGD estimates:

- a institutions shall estimate LGDs by facility grade or pool on the basis of the average realised LGDs by facility grade or pool using all observed defaults within the data sources (default weighted average);
- b institutions shall use LGD estimates that are appropriate for an economic downturn if those are more conservative than the long-run average. To the extent a rating system is expected to deliver realised LGDs at a constant level by grade or pool over time, institutions shall make adjustments to their estimates of risk parameters by grade or pool to limit the capital impact of an economic downturn;
- c an institution shall consider the extent of any dependence between the risk of the obligor and that of the collateral or collateral provider. Cases where there is a significant degree of dependence shall be addressed in a conservative manner;
- d currency mismatches between the underlying obligation and the collateral shall be treated conservatively in the institution's assessment of LGD;
- e to the extent that LGD estimates take into account the existence of collateral, these estimates shall not solely be based on the collateral's estimated market value. LGD estimates shall take into account the effect of the potential inability of institutions to expeditiously gain control of their collateral and liquidate it;
- f to the extent that LGD estimates take into account the existence of collateral, institutions shall establish internal requirements for collateral management, legal certainty and risk management that are generally consistent with those set out in Chapter 4, Section 3;
- g to the extent that an institution recognises collateral for determining the exposure value for counterparty credit risk in accordance with [F<sup>16</sup>Chapter 6, Section 6 of this Regulation or Section 5 of Chapter 3 of the Counterparty Credit Risk (CRR) Part of the PRA Rulebook], any amount expected to be recovered from the collateral shall not be taken into account in the LGD estimates;
- h for the specific case of exposures already in default, the institution shall use the sum of its best estimate of expected loss for each exposure given current economic circumstances and exposure status and its estimate of the increase of loss rate caused by possible additional unexpected losses during the recovery period, i.e. between date of default and final liquidation of the exposure;

*Changes to legislation:* There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

- i to the extent that unpaid late fees have been capitalised in the institution's income statement, they shall be added to the institution's measure of exposure and loss;
  - j for exposures to corporates, institutions and central governments and central banks, estimates of LGD shall be based on data over a minimum of five years, increasing by one year each year after implementation until a minimum of seven years is reached, for at least one data source. If the available observation period spans a longer period for any source, and the data is relevant, this longer period shall be used.
- 2 For retail exposures, institutions may do the following:
- a derive LGD estimates from realised losses and appropriate estimates of PDs;
  - b reflect future drawings either in their conversion factors or in their LGD estimates;
  - c For purchased retail receivables use external and internal reference data to estimate LGDs.

For retail exposures, estimates of LGD shall be based on data over a minimum of five years. An institution need not give equal importance to historic data if more recent data is a better predictor of loss rates. Subject to the permission of the competent authorities, institutions may use, when they implement the IRB Approach, relevant data covering a period of two years. The period to be covered shall increase by one year each year until relevant data cover a period of five years.

- 3 <sup>[F17]</sup>The <sup>[F18]</sup>PRA may] make technical standards] to specify the following:
- a the nature, severity and duration of an economic downturn referred to in paragraph 1;
  - b the conditions according to which a <sup>[F19]</sup>it] may permit an institution pursuant to paragraph 2 to use relevant data covering a period of two years when the institution implements the IRB Approach.

F20  
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#### Textual Amendments

- F16** Words in Art. 181(1)(g) substituted (1.1.2022) by [The Financial Services Act 2021 \(Prudential Regulation of Credit Institutions and Investment Firms\) \(Consequential Amendments and Miscellaneous Provisions\) Regulations 2021 \(S.I. 2021/1376\)](#), regs. 1(3), **25(21)**
- F17** Words in Art. 181(3) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018 \(S.I. 2018/1401\)](#), regs. 1(3), **222(1)(a)(2)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F18** Words in Art. 181(3) substituted (1.1.2022) by [Financial Services Act 2021 \(c. 22\)](#), s. 49(5), **Sch. 1 para. 47**; S.I. 2021/671, reg. 5(1)(b) (with reg. 5(2)) (as amended by S.I. 2021/1163, regs. 1(2), 2)
- F19** Word in Art. 181(3)(b) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018 \(S.I. 2018/1401\)](#), regs. 1(3), **225(1)(2)(3)(h)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F20** Words in Art. 181(3) omitted (31.12.2020) by virtue of [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018 \(S.I. 2018/1401\)](#), regs. 1(3), **222(1)(b)** (with savings in S.I. 2019/680, **reg. 11**); 2020 c. 1, **Sch. 5 para. 1(1)**

### Article 182

#### Requirements specific to own-conversion factor estimates

1 In quantifying the risk parameters to be associated with rating grades or pools, institutions shall apply the following requirements specific to own-conversion factor estimates:

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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- a institutions shall estimate conversion factors by facility grade or pool on the basis of the average realised conversion factors by facility grade or pool using the default weighted average resulting from all observed defaults within the data sources;
- b institutions shall use conversion factor estimates that are appropriate for an economic downturn if those are more conservative than the long-run average. To the extent a rating system is expected to deliver realised conversion factors at a constant level by grade or pool over time, institutions shall make adjustments to their estimates of risk parameters by grade or pool to limit the capital impact of an economic downturn;
- c institutions' estimates of conversion factors shall reflect the possibility of additional drawings by the obligor up to and after the time a default event is triggered. The conversion factor estimate shall incorporate a larger margin of conservatism where a stronger positive correlation can reasonably be expected between the default frequency and the magnitude of conversion factor;
- d in arriving at estimates of conversion factors institutions shall consider their specific policies and strategies adopted in respect of account monitoring and payment processing. Institutions shall also consider their ability and willingness to prevent further drawings in circumstances short of payment default, such as covenant violations or other technical default events;
- e institutions shall have adequate systems and procedures in place to monitor facility amounts, current outstandings against committed lines and changes in outstandings per obligor and per grade. The institution shall be able to monitor outstanding balances on a daily basis;
- f if institutions use different estimates of conversion factors for the calculation of risk-weighted exposure amounts and internal purposes it shall be documented and be reasonable.

2 For exposures to corporates, institutions and central governments and central banks, estimates of conversion factors shall be based on data over a minimum of five years, increasing by one year each year after implementation until a minimum of seven years is reached, for at least one data source. If the available observation period spans a longer period for any source, and the data is relevant, this longer period shall be used.

3 For retail exposures, institutions may reflect future drawings either in their conversion factors or in their LGD estimates.

For retail exposures, estimates of conversion factors shall be based on data over a minimum of five years. By way of derogation from point (a) of paragraph 1, an institution need not give equal importance to historic data if more recent data is a better predictor of draw downs. Subject to the permission of competent authorities, institutions may use, when they implement the IRB Approach, relevant data covering a period of two years. The period to be covered shall increase by one year each year until relevant data cover a period of five years.

- 4 [F21The [F22PRA may] make technical standards] to specify the following:
- a the nature, severity and duration of an economic downturn referred to in paragraph 1;
  - b conditions according to which a [F23it] may permit and institution to use relevant data covering a period of two years at the time an institution first implements the IRB Approach.

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*Changes to legislation: There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)*

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#### **Textual Amendments**

- F21** Words in Art. 182(4) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **222(1)(a)(2)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F22** Words in Art. 182(4) substituted (1.1.2022) by [Financial Services Act 2021](#) (c. 22), s. 49(5), **Sch. 1 para. 47**; S.I. 2021/671, reg. 5(1)(b) (with reg. 5(2)) (as amended by S.I. 2021/1163, regs. 1(2), 2)
- F23** Word in Art. 182(4)(b) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **225(1)(2)(3)(i)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F24** Words in Art. 182(4) omitted (31.12.2020) by virtue of [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018](#) (S.I. 2018/1401), regs. 1(3), **222(1)(b)** (with savings in S.I. 2019/680, **reg. 11**); 2020 c. 1, **Sch. 5 para. 1(1)**

### *Article 183*

#### **Requirements for assessing the effect of guarantees and credit derivatives for exposures to corporates, institutions and central governments and central banks where own estimates of LGD are used and for retail exposures**

1 The following requirements shall apply in relation to eligible guarantors and guarantees:

- a institutions shall have clearly specified criteria for the types of guarantors they recognise for the calculation of risk-weighted exposure amounts;
- b for recognised guarantors the same rules as for obligors as set out in Articles 171, 172 and 173 shall apply;
- c the guarantee shall be evidenced in writing, non-cancellable on the part of the guarantor, in force until the obligation is satisfied in full (to the extent of the amount and tenor of the guarantee) and legally enforceable against the guarantor in a jurisdiction where the guarantor has assets to attach and enforce a judgement. Conditional guarantees prescribing conditions under which the guarantor may not be obliged to perform may be recognised subject to permission of the competent authorities. The assignment criteria shall adequately address any potential reduction in the risk mitigation effect.

2 An institution shall have clearly specified criteria for adjusting grades, pools or LGD estimates, and, in the case of retail and eligible purchased receivables, the process of allocating exposures to grades or pools, to reflect the impact of guarantees for the calculation of risk-weighted exposure amounts. These criteria shall comply with the requirements set out in Articles 171, 172 and 173.

The criteria shall be plausible and intuitive. They shall address the guarantor's ability and willingness to perform under the guarantee, the likely timing of any payments from the guarantor, the degree to which the guarantor's ability to perform under the guarantee is correlated with the obligor's ability to repay, and the extent to which residual risk to the obligor remains.

3 The requirements for guarantees in this Article shall apply also for single-name credit derivatives. In relation to a mismatch between the underlying obligation and the reference obligation of the credit derivative or the obligation used for determining whether a credit event has occurred, the requirements set out under Article 216(2) shall apply. For retail exposures and eligible purchased receivables, this paragraph applies to the process of allocating exposures to grades or pools.



**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

The criteria shall address the payout structure of the credit derivative and conservatively assess the impact this has on the level and timing of recoveries. The institution shall consider the extent to which other forms of residual risk remain.

4 The requirements set out in paragraphs 1 to 3 shall not apply for guarantees provided by institutions, central governments and central banks, and corporate entities which meet the requirements laid down in Article 201(1)(g) if the institution has received permission to apply the Standardised Approach for exposures to such entities pursuant to Articles 148 and 150. In this case the requirements of Chapter 4 shall apply.

5 For retail guarantees, the requirements set out in paragraphs 1, 2 and 3 shall also apply to the assignment of exposures to grades or pools, and the estimation of PD.

6 <sup>F25</sup>The <sup>F26</sup>PRA may] make technical standards] to specify the conditions according to which <sup>F27</sup>it] may permit conditional guarantees to be recognised.

F28  
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#### Textual Amendments

- F25** Words in Art. 183(6) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018 \(S.I. 2018/1401\)](#), regs. 1(3), **222(1)(a)(2)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F26** Words in Art. 183(6) substituted (1.1.2022) by [Financial Services Act 2021 \(c. 22\)](#), s. 49(5), **Sch. 1 para. 47**; S.I. 2021/671, reg. 5(1)(b) (with reg. 5(2)) (as amended by S.I. 2021/1163, regs. 1(2), 2)
- F27** Word in Art. 183(6) substituted (31.12.2020) by [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018 \(S.I. 2018/1401\)](#), regs. 1(3), **225(1)(2)(3)(j)** (with savings in S.I. 2019/680, reg. 11); 2020 c. 1, Sch. 5 para. 1(1)
- F28** Words in Art. 183(6) omitted (31.12.2020) by virtue of [The Capital Requirements \(Amendment\) \(EU Exit\) Regulations 2018 \(S.I. 2018/1401\)](#), regs. 1(3), **222(1)(b)** (with savings in S.I. 2019/680, **reg. 11**); 2020 c. 1, **Sch. 5 para. 1(1)**

### Article 184

#### Requirements for purchased receivables

1 In quantifying the risk parameters to be associated with rating grades or pools for purchased receivables, institutions shall ensure the conditions laid down in paragraphs 2 to 6 are met.

2 The structure of the facility shall ensure that under all foreseeable circumstances the institution has effective ownership and control of all cash remittances from the receivables. When the obligor makes payments directly to a seller or servicer, the institution shall verify regularly that payments are forwarded completely and within the contractually agreed terms. Institutions shall have procedures to ensure that ownership over the receivables and cash receipts is protected against bankruptcy stays or legal challenges that could materially delay the lender's ability to liquidate or assign the receivables or retain control over cash receipts.

3 The institution shall monitor both the quality of the purchased receivables and the financial condition of the seller and servicer. The following shall apply:

- a the institution shall assess the correlation among the quality of the purchased receivables and the financial condition of both the seller and servicer, and have in place internal policies and procedures that provide adequate safeguards to protect against any

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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- contingencies, including the assignment of an internal risk rating for each seller and servicer;
- b the institution shall have clear and effective policies and procedures for determining seller and servicer eligibility. The institution or its agent shall conduct periodic reviews of sellers and servicers in order to verify the accuracy of reports from the seller or servicer, detect fraud or operational weaknesses, and verify the quality of the seller's credit policies and servicer's collection policies and procedures. The findings of these reviews shall be documented;
  - c the institution shall assess the characteristics of the purchased receivables pools, including over-advances; history of the seller's arrears, bad debts, and bad debt allowances; payment terms, and potential contra accounts;
  - d the institution shall have effective policies and procedures for monitoring on an aggregate basis single-obligor concentrations both within and across purchased receivables pools;
  - e the institution shall ensure that it receives from the servicer timely and sufficiently detailed reports of receivables ageings and dilutions to ensure compliance with the institution's eligibility criteria and advancing policies governing purchased receivables, and provide an effective means with which to monitor and confirm the seller's terms of sale and dilution.
- 4 The institution shall have systems and procedures for detecting deteriorations in the seller's financial condition and purchased receivables quality at an early stage, and for addressing emerging problems pro-actively. In particular, the institution shall have clear and effective policies, procedures, and information systems to monitor covenant violations, and clear and effective policies and procedures for initiating legal actions and dealing with problem purchased receivables.
- 5 The institution shall have clear and effective policies and procedures governing the control of purchased receivables, credit, and cash. In particular, written internal policies shall specify all material elements of the receivables purchase programme, including the advancing rates, eligible collateral, necessary documentation, concentration limits, and the way cash receipts are to be handled. These elements shall take appropriate account of all relevant and material factors, including the seller and servicer's financial condition, risk concentrations, and trends in the quality of the purchased receivables and the seller's customer base, and internal systems shall ensure that funds are advanced only against specified supporting collateral and documentation.
- 6 The institution shall have an effective internal process for assessing compliance with all internal policies and procedures. The process shall include regular audits of all critical phases of the institution's receivables purchase programme, verification of the separation of duties between firstly the assessment of the seller and servicer and the assessment of the obligor and secondly between the assessment of the seller and servicer and the field audit of the seller and servicer, and evaluations of back office operations, with particular focus on qualifications, experience, staffing levels, and supporting automation systems.

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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### Sub-Section 3

#### **Validation of internal estimates**

##### *Article 185*

#### **Validation of internal estimates**

Institutions shall validate their internal estimates subject to the following requirements:

- (a) institutions shall have robust systems in place to validate the accuracy and consistency of rating systems, processes, and the estimation of all relevant risk parameters. The internal validation process shall enable the institution to assess the performance of internal rating and risk estimation systems consistently and meaningfully;
- (b) institutions shall regularly compare realised default rates with estimated PDs for each grade and, where realised default rates are outside the expected range for that grade, institutions shall specifically analyse the reasons for the deviation. Institutions using own estimates of LGDs and conversion factors shall also perform analogous analysis for these estimates. Such comparisons shall make use of historical data that cover as long a period as possible. The institution shall document the methods and data used in such comparisons. This analysis and documentation shall be updated at least annually;
- (c) institutions shall also use other quantitative validation tools and comparisons with relevant external data sources. The analysis shall be based on data that are appropriate to the portfolio, are updated regularly, and cover a relevant observation period. Institutions' internal assessments of the performance of their rating systems shall be based on as long a period as possible;
- (d) the methods and data used for quantitative validation shall be consistent through time. Changes in estimation and validation methods and data (both data sources and periods covered) shall be documented;
- (e) institutions shall have sound internal standards for situations where deviations in realised PDs, LGDs, conversion factors and total losses, where EL is used, from expectations, become significant enough to call the validity of the estimates into question. These standards shall take account of business cycles and similar systematic variability in default experience. Where realised values continue to be higher than expected values, institutions shall revise estimates upward to reflect their default and loss experience;

### Sub-Section 4

#### **Requirements for equity exposures under the internal models approach**

##### *Article 186*

#### **Own funds requirement and risk quantification**

For the purpose of calculating own funds requirements institutions shall meet the following standards:

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*Changes to legislation:* There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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- (a) the estimate of potential loss shall be robust to adverse market movements relevant to the long-term risk profile of the institution's specific holdings. The data used to represent return distributions shall reflect the longest sample period for which data is available and meaningful in representing the risk profile of the institution's specific equity exposures. The data used shall be sufficient to provide conservative, statistically reliable and robust loss estimates that are not based purely on subjective or judgmental considerations. The shock employed shall provide a conservative estimate of potential losses over a relevant long-term market or business cycle. The institution shall combine empirical analysis of available data with adjustments based on a variety of factors in order to attain model outputs that achieve appropriate realism and conservatism. In constructing value at risk (VaR) models estimating potential quarterly losses, institutions may use quarterly data or convert shorter horizon period data to a quarterly equivalent using an analytically appropriate method supported by empirical evidence and through a well-developed and documented thought process and analysis. Such an approach shall be applied conservatively and consistently over time. Where only limited relevant data is available the institution shall add appropriate margins of conservatism;
- (b) the models used shall capture adequately all of the material risks embodied in equity returns including both the general market risk and specific risk exposure of the institution's equity portfolio. The internal models shall adequately explain historical price variation, capture both the magnitude and changes in the composition of potential concentrations, and be robust to adverse market environments. The population of risk exposures represented in the data used for estimation shall be closely matched to or at least comparable with those of the institution's equity exposures;
- (c) the internal model shall be appropriate for the risk profile and complexity of an institution's equity portfolio. Where an institution has material holdings with values that are highly non-linear in nature the internal models shall be designed to capture appropriately the risks associated with such instruments;
- (d) mapping of individual positions to proxies, market indices, and risk factors shall be plausible, intuitive, and conceptually sound;
- (e) institutions shall demonstrate through empirical analyses the appropriateness of risk factors, including their ability to cover both general and specific risk;
- (f) the estimates of the return volatility of equity exposures shall incorporate relevant and available data, information, and methods. Independently reviewed internal data or data from external sources including pooled data shall be used;
- (g) a rigorous and comprehensive stress-testing programme shall be in place.

#### *Article 187*

### **Risk management process and controls**

With regard to the development and use of internal models for own funds requirement purposes, institutions shall establish policies, procedures, and controls to ensure the integrity of the model and modelling process. These policies, procedures, and controls shall include the following:

- (a) full integration of the internal model into the overall management information systems of the institution and in the management of the non-trading book equity portfolio. Internal models shall be fully integrated into the institution's risk management

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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infrastructure if they are particularly used in measuring and assessing equity portfolio performance including the risk-adjusted performance, allocating economic capital to equity exposures and evaluating overall capital adequacy and the investment management process;

- (b) established management systems, procedures, and control functions for ensuring the periodic and independent review of all elements of the internal modelling process, including approval of model revisions, vetting of model inputs, and review of model results, such as direct verification of risk computations. These reviews shall assess the accuracy, completeness, and appropriateness of model inputs and results and focus on both finding and limiting potential errors associated with known weaknesses and identifying unknown model weaknesses. Such reviews may be conducted by an internal independent unit, or by an independent external third party;
- (c) adequate systems and procedures for monitoring investment limits and the risk exposures of equity exposures;
- (d) the units responsible for the design and application of the model shall be functionally independent from the units responsible for managing individual investments;
- (e) parties responsible for any aspect of the modelling process shall be adequately qualified. Management shall allocate sufficient skilled and competent resources to the modelling function.

#### *Article 188*

### **Validation and documentation**

Institutions shall have robust systems in place to validate the accuracy and consistency of their internal models and modelling processes. All material elements of the internal models and the modelling process and validation shall be documented.

The validation and documentation of institutions' internal models and modelling processes shall be subject to the following requirements:

- (a) institutions shall use the internal validation process to assess the performance of its internal models and processes in a consistent and meaningful way;
- (b) the methods and data used for quantitative validation shall be consistent over time. Changes in estimation and validation methods and changes to data sources and periods covered, shall be documented;
- (c) institutions shall regularly compare actual equity returns computed using realised and unrealised gains and losses with modelled estimates. Such comparisons shall make use of historical data that cover as long a period as possible. The institution shall document the methods and data used in such comparisons. This analysis and documentation shall be updated at least annually;
- (d) institutions shall make use of other quantitative validation tools and comparisons with external data sources. The analysis shall be based on data that are appropriate to the portfolio, are updated regularly, and cover a relevant observation period. Institutions' internal assessments of the performance of their models shall be based on as long a period as possible;
- (e) institutions shall have sound internal standards for addressing situations where comparison of actual equity returns with the models estimates calls the validity of the

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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estimates or of the models as such into question. These standards shall take account of business cycles and similar systematic variability in equity returns. All adjustments made to internal models in response to model reviews shall be documented and consistent with the institution's model review standards;

- (f) the internal model and the modelling process shall be documented, including the responsibilities of parties involved in the modelling, and the model approval and model review processes.

#### Sub-Section 5

### Internal governance and oversight

#### Article 189

### Corporate Governance

1 All material aspects of the rating and estimation processes shall be approved by the institution's management body or a designated committee thereof and senior management. These parties shall possess a general understanding of the rating systems of the institution and detailed comprehension of its associated management reports.

- 2 Senior management shall be subject to the following requirements:
- a they shall provide notice to the management body or a designated committee thereof of material changes or exceptions from established policies that will materially impact the operations of the institution's rating systems;
  - b they shall have a good understanding of the rating systems designs and operations;
  - c they shall ensure, on an ongoing basis that the rating systems are operating properly.

Senior management shall be regularly informed by the credit risk control units about the performance of the rating process, areas needing improvement, and the status of efforts to improve previously identified deficiencies.

3 Internal ratings-based analysis of the institution's credit risk profile shall be an essential part of the management reporting to these parties. Reporting shall include at least risk profile by grade, migration across grades, estimation of the relevant parameters per grade, and 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 results. Reporting frequencies shall depend on the significance and type of information and the level of the recipient.

#### Article 190

### Credit risk control

1 The credit risk control unit shall be independent from the personnel and management functions responsible for originating or renewing exposures and report directly to senior management. The unit shall be responsible for the design or selection, implementation, oversight and performance of the rating systems. It shall regularly produce and analyse reports on the output of the rating systems.

- 2 The areas of responsibility for the credit risk control unit or units shall include:

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**Changes to legislation:** There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6. (See end of Document for details)

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- a testing and monitoring grades and pools;
  - b production and analysis of summary reports of the institution's rating systems;
  - c implementing procedures to verify that grade and pool definitions are consistently applied across departments and geographic areas;
  - d reviewing and documenting any changes to the rating process, including the reasons for the changes;
  - e reviewing the rating criteria to evaluate if they remain predictive of risk. Changes to the rating process, criteria or individual rating parameters shall be documented and retained;
  - f active participation in the design or selection, implementation and validation of models used in the rating process;
  - g oversight and supervision of models used in the rating process;
  - h ongoing review and alterations to models used in the rating process.
- 3 Institutions using pooled data in accordance with Article 179(2) may outsource the following tasks:
- a production of information relevant to testing and monitoring grades and pools;
  - b production of summary reports of the institution's rating systems;
  - c production of information relevant to a review of the rating criteria to evaluate if they remain predictive of risk;
  - d documentation of changes to the rating process, criteria or individual rating parameters;
  - e production of information relevant to ongoing review and alterations to models used in the rating process.
- 4 Institutions making use of paragraph 3 shall ensure that the competent authorities have access to all relevant information from the third party that is necessary for examining compliance with the requirements and that the competent authorities may perform on-site examinations to the same extent as within the institution.

#### *Article 191*

#### **Internal Audit**

Internal audit or another comparable independent auditing unit shall review at least annually the institution's rating systems and its operations, including the operations of the credit function and the estimation of PDs, LGDs, ELs and conversion factors. Areas of review shall include adherence to all applicable requirements.]

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#### **Editorial Information**

- X1** Substituted by [Corrigendum 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 \(OJ L 176, 27.6.2013, p. 1\)](#).

**Changes to legislation:**

There are currently no known outstanding effects for the Regulation (EU) No 575/2013 of the European Parliament and of the Council, Section 6.