Chapter 4

The IRB approach
4.3 The IRB approach: Provisions common to different exposure classes

Application

4.3.1 This section applies to all exposures treated under the IRB approach.

Exposure classes

4.3.2 Each exposure must be assigned to one of the following exposure classes:

1. claims or contingent claims on central governments and central banks;
2. claims or contingent claims on institutions;
3. claims or contingent claims on corporates;
4. retail claims or contingent retail claims;
5. equity claims;
6. securitisation positions; and
7. non credit-obligation assets.

[Note: BCD Article 86(1)]

4.3.3 The methodology used by a firm for assigning exposures to different IRB exposure classes must be appropriate and consistent over time.

[Note: BCD Article 86(9)]

Calculation of risk weighted exposure amounts

4.3.4 The risk weighted exposure amounts for credit risk for exposures belonging to one of the exposure classes referred to in (1) to (4) must, unless deducted from capital resources, be calculated in accordance with the following provisions:

1. for exposures in the sovereign, institution and corporate IRB exposure class, BIPRU 4.4.57 R to BIPRU 4.4.60 R, BIPRU 4.4.79 R, BIPRU 4.5.8 R to BIPRU 4.5.10 R (for specialised lending exposures), BIPRU 4.9.3 R
and ■ BIPRU 4.8.16 R to ■ BIPRU 4.8.17 R (for purchased corporate exposure receivables);

(2) for exposures in the retail exposure class, ■ BIPRU 4.6.41 R to ■ BIPRU 4.6.44 R, ■ BIPRU 4.6.57 R and ■ BIPRU 4.8.18 R to ■ BIPRU 4.8.20 R (for purchased retail exposure receivables);

(3) for exposures in the equity exposure class, ■ BIPRU 4.7.5 R to ■ BIPRU 4.7.6 R, ■ BIPRU 4.7.9 R to ■ BIPRU 4.7.11 R, ■ BIPRU 4.7.14 R to ■ BIPRU 4.7.16 R and ■ BIPRU 4.7.24 R to ■ BIPRU 4.7.25 R; and

(4) for exposures in the non credit-obligation assets exposure class, ■ BIPRU 4.9.6 R.

[Note: BCD Article 87(1)]

4.3.5 The calculation of risk weighted exposure amounts for credit risk and dilution risk must be based on the relevant parameters associated with the exposure in question. These include probability of default (PD), loss given default (LGD), maturity (M) and the exposure value of the exposure. PD and LGD may be considered separately or jointly, in accordance with the provisions relating to PD and LGD in ■ BIPRU 4.4, ■ BIPRU 4.6, ■ BIPRU 4.7 and ■ BIPRU 4.8 at:

(1) for exposures in the sovereign, institution and corporate IRB exposure class, ■ BIPRU 4.4.34 R - ■ BIPRU 4.4.35 R, ■ BIPRU 4.4.42 R to ■ BIPRU 4.4.43 R, ■ BIPRU 4.4.63 R - ■ BIPRU 4.4.66 R, ■ BIPRU 4.4.80 R and, for PD and LGD for dilution risk of purchased corporate exposure receivables, ■ BIPRU 4.8.23 Rand ■ BIPRU 4.8.26 R;

(2) for exposures in the retail exposure class, ■ BIPRU 4.6.50 R - ■ BIPRU 4.6.54 R, ■ BIPRU 4.6.58 R, and, for PD and LGD for dilution risk of purchased retail exposure receivables, ■ BIPRU 4.8.24 R and ■ BIPRU 4.8.27 R; and

(3) for exposures in the equity exposure class, ■ BIPRU 4.7.18 R and ■ BIPRU 4.7.20 R - ■ BIPRU 4.7.21 R.

[Note: BCD Article 87(3)]

Calculation of expected loss amounts

4.3.6 The expected loss amounts for exposures belonging to one of the IRB exposure classes referred to in (1) to (3) must be calculated in accordance with the methods set out in the following provisions:

(1) for exposures in the sovereign, institution and corporate IRB exposure class, ■ BIPRU 4.4.61 R to ■ BIPRU 4.4.62 R and (for specialised lending exposures) ■ BIPRU 4.5.13 R to ■ BIPRU 4.5.15R;

(2) for exposures in the retail exposure class, ■ BIPRU 4.6.47 R to ■ BIPRU 4.6.48 R;

(3) for exposures in the equity exposure class, ■ BIPRU 4.7.12 R, ■ BIPRU 4.7.17 R and ■ BIPRU 4.7.26 R; and
(4) (for purchased receivables falling into one of the IRB exposure classes in (1) to (3)) BIPRU 4.8.30 R.

[Note: BCD Article 88(1)]

4.3.7 The calculation of expected loss amounts in accordance with BIPRU 4.3.6 R must be based on the same input figures of PD, LGD and the exposure value for each exposure as being used for the calculation of risk weighted exposure amounts in accordance with BIPRU 4. For defaulted exposures, where a firm uses its own estimate of LGDs, EL must be the firm’s best estimate of expected loss (ELBE), for the defaulted exposure in accordance with BIPRU 4.3.122 R.

[Note: BCD Article 88(2)]

Treatment of expected loss amounts

4.3.8 The expected loss amounts calculated in accordance with BIPRU 4.3.6 R (1), BIPRU 4.3.6 R (2) and BIPRU 4.3.6 R (4) must be subtracted from the sum of value adjustments and provisions related to these exposures. Discounts on balance sheet exposures purchased when in default according to BIPRU 4.4.71 R must be treated in the same manner as value adjustments. Expected loss amounts for securitised exposures and value adjustments and provisions related to these exposures must not be included in this calculation.

[Note: BCD Annex VII Part 1 point 36]

Corporate governance

4.3.9 All material aspects of the rating and estimation processes must be approved by the firm’s governing body or a designated committee thereof and senior management. These parties must possess a general understanding of the firm’s rating systems and detailed comprehension of its associated management reports.

[Note: BCD Annex VII Part 4 point 124]

4.3.10 (1) A firm’s governing body or designated committee may choose to approve only material aspects of the firm’s rating systems and material changes to the firm’s rating systems.

(2) Where a firm’s governing body or designated committee chooses to approve only material aspects of the firm’s rating systems and material changes to the firm’s rating systems:

(a) the firm’s governing body or designated committee should define the firm’s overall approach to material aspects of rating and estimation processes for all rating systems, including non-material rating systems and approve a policy statement defining that approach; and

(b) the firm should define and document the process for approval of non-material aspects of the firm’s rating systems.
4.3.11 Senior management must provide notice to the governing body or a designated committee thereof of material changes or exceptions from established policies that will materially impact the operations of the firm's rating systems.

[Note: BCD Annex VII Part 4 point 125]

4.3.12 Where the firm's rating systems are used on a unified basis for the parent undertaking and its subsidiary undertakings under ■ BIPRU 4.2.3 R, and approval and reporting of the ratings systems are carried out at the group level, the governance requirements in ■ BIPRU 4.3.9 R and ■ BIPRU 4.3.11 R may be met if:

1) the subsidiary undertakings have delegated to the governing body or designated committee of the EEA parent institution or EEA parent financial holding company responsibility for approval of the firm's rating systems;

2) the governing body or designated committee of the EEA parent institution or EEA parent financial holding company approves either:

   a) all aspects of the firm's rating systems, and material changes; or

   b) all aspects of the firm's rating systems that are material in the context of the group, and material changes to those, and a policy statement defining the overall approach to material aspects of rating and estimation processes for all rating systems, including non-material rating systems.

4.3.13 Senior management must have a good understanding of the rating system's designs and operations. Senior management must ensure on an ongoing basis that the rating systems are operating properly. Senior management must 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.

[Note: BCD Annex VII Part 4 point 126]

4.3.14 Internal ratings-based analysis of the firm's credit risk profile must be an essential part of the management reporting required under ■ BIPRU 4.3.9 R, ■ BIPRU 4.3.11 R and ■ BIPRU 4.3.13 R. Reporting must 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 must depend on the significance and type of information and the level of the recipient.

[Note: BCD Annex VII Part 4 point 127]

Credit risk control

The credit risk control unit must be independent from the personnel and management functions responsible for originating or renewing exposures and report directly to senior management. The unit must be responsible for the design or selection, implementation, oversight and performance of the
The areas of responsibility for the credit risk control unit(s) must include the following:

1. testing and monitoring grades and pools;
2. production and analysis of summary reports from the firm’s rating systems;
3. implementing procedures to verify that grade and pool definitions are consistently applied across departments and geographic areas;
4. reviewing and documenting any changes to the rating process, including the reasons for the changes;
5. reviewing the rating criteria to evaluate if they remain predictive of risk (and changes to the rating process, criteria or individual rating parameters must be documented and retained);
6. active participation in the design or selection, implementation and validation of models used in the rating process;
7. oversight and supervision of models used in the rating process; and
8. ongoing review and alterations to models used in the rating process.

Notwithstanding BIPRU 4.3.16 R, a firm using pooled data according to BIPRU 4.3.92 R - BIPRU 4.3.94 R (Overall requirements for estimation) may outsource the following tasks:

1. production of information relevant to testing and monitoring grades and pools;
2. production of summary reports from the firm’s rating systems;
3. production of information relevant to review of the rating criteria to evaluate if they remain predictive of risk;
4. documentation of changes to the rating process, criteria or individual rating parameters; and
5. production of information relevant to ongoing review and alterations to models used in the rating process.

A firm making use of BIPRU 4.3.17 R must ensure that the appropriate regulator has access to all relevant information from the third party that is necessary for examining compliance with the minimum IRB standards and
the firm’s IRB permission and that the appropriate regulator may perform on-site examinations to the same extent as within the firm.

[Note: BCD Annex VII Part 4 point 130 (part)]

Documentation of rating systems

4.3.19  R

A firm must document the design and operational details of its rating systems. The documentation must evidence compliance with the minimum IRB standards and the firm’s IRB permission, 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.

[Note: BCD Annex VII Part 4 point 31]

4.3.20  R

A firm must ensure that all documentation relating to its rating systems or otherwise required by the rules governing the IRB approach are stored, arranged and indexed in such a way that the firm would be able to make them all available to the appropriate regulator, or to make any class or description of them specified by the appropriate regulator available to the appropriate regulator, immediately on demand or within a short time thereafter.

4.3.21  R

A firm must document the rationale for and analysis supporting its choice of rating criteria. A firm must document all major changes in the risk rating process, and such documentation must support identification of changes made to the risk rating process subsequent to the last review by the appropriate regulator. The organisation of rating assignment including the rating assignment process and the internal control structure must also be documented.

[Note: BCD Annex VII Part 4 point 32]

4.3.22  R

A firm must document the specific definitions of default and loss used internally and demonstrate consistency with the definitions of default and loss set out in the glossary and BIPRU 4.

[Note: BCD Annex VII Part 4 point 33]

4.3.23  G

A firm’s documentation relating to data should include clear identification of responsibility for data quality. A firm should set standards for data quality and aim to improve them over time. A firm should measure its performance against those standards. A firm should ensure that its data is of high enough quality to support its risk management processes and the calculation of its capital requirements.

4.3.24  R

Where a firm employs statistical models in the rating process, the firm must document its methodologies. This material must:

(1) provide a detailed outline of the theory, assumptions and/or 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;
(2) establish a rigorous statistical process (including out-of-time and out-of-sample performance tests) for validating the model; and

(3) indicate any circumstances under which the model does not work effectively.

[Note: BCD Annex VII Part 4 point 34]

**Rating systems**

4.3.25 A *rating system* comprises all of the methods, processes, controls, data collection and IT systems that support the assessment of credit risk, the assignment of *exposures* to grades or pools (rating), and the quantification of *default* and *loss* estimates for a certain type of *exposure*.

[Note: BCD Annex VII Part 4 point 1]

4.3.26 If a *firm* uses multiple *rating systems*, the rationale for assigning an obligor or a transaction to a *rating system* must be documented and applied in a manner that appropriately reflects the level of risk.

[Note: BCD Annex VII Part 4 point 2]

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

[Note: BCD Annex VII Part 4 point 3]

4.3.28 Where a *firm* uses direct estimates of risk parameters these may be seen as the outputs of grades on a continuous rating scale.

[Note: BCD Annex VII Part 4 point 4]

**Validation of internal estimates**

4.3.29 A *firm* must have robust systems in place to validate the accuracy and consistency of *rating systems*, processes, and the estimation of all relevant risk parameters (*PD*, *LGD*, *conversion factors* and *EL*). A *firm* must be able to demonstrate to the appropriate regulator that the internal validation process enables it to assess the performance of internal rating and risk estimation systems consistently and meaningfully.

[Note: BCD Annex VII Part 4 point 110]

4.3.30 (1) A *firm* must validate its *rating systems*. Its validation process must include, as a minimum, the elements set out in (2) - (8).

(2) A *firm* must establish and define standards of objectivity, accuracy, stability and conservatism that it designs its *ratings systems* to meet. It must have processes that establish whether its *rating systems* meet those standards.

(3) A *firm* must establish and define standards of accuracy of calibration (i.e. whether outcomes are consistent with estimate) and
discriminative power (i.e. the ability to rank-order risk) that it designs its rating systems to meet. It must have processes that establish whether its rating systems meet those standards.

(4) A firm must have polices and standards that specify the actions to be taken when a rating system fails to meet the standards of accuracy and discriminative power referred to in (2) and (3).

(5) A firm's validation process must include a mix of developmental evidence, benchmarking and process verification. A firm's validation process must include policies on how this mixture varies between different rating systems.

(6) A firm's validation process must include the use of both quantitative and qualitative techniques.

(7) A firm's validation process must include policies on how validation procedures are expected to vary over time.

(8) A firm's validation process must include independent input into and review of its rating systems.

(9) The standards set under (2) and (3) must meet the minimum IRB standards.

(10) For the purpose of (5):

(a) developmental evidence means evidence that substantiates whether the logic and quality of a rating system (including the quantification process) adequately discriminates between different levels of, and delivers accurate estimates of PD, EL, LGD and conversion factors (as applicable); and

(b) process verification means the process of establishing whether the methods used in a rating system to discriminate between different levels of risk and to quantify PD, EL, LGD and conversion factors are being used, monitored and updated in the way intended in the design of the rating system.

4.3.31 G A firm should have regard to the involvement of management at an appropriately senior level in the validation process.

4.3.32 G The approach to validation may vary with the significance of the exposures covered by a rating system.

4.3.33 R A firm must regularly compare realised default rates with estimated PDs for each grade and where realised default rates are outside the expected range for that grade a firm must specifically analyse the reasons for the deviation. A firm using its own estimates of LGDs and/or conversion factors must also perform analogous analysis for own estimates of LGDs and conversion factors. Such comparisons must make use of historical data that cover as long a period as possible. A firm must document the methods and data used in such comparisons. This analysis and documentation must be updated at least annually.

[Note: BCD Annex VII Part 4 point 111]
(1) This paragraph sets out guidance on assessing the adequacy of a rating system’s discriminative power (see BIPRU 4.3.30 R (3) on the meaning of discriminative power).

(2) A firm should be able to explain the performance of its rating systems against its chosen measure (or measures) of discriminative power. In making this comparison a firm should rely primarily on actual historic default experience where this is available. In particular, a firm should be able to explain:

(a) the extent of any potential inaccuracy in these measures, caused in particular by small sample size; and

(b) the potential for divergence in the future, whether caused by changing economic conditions or other factors.

(3) The assessment of discriminative power should include appropriate use of external benchmarks where available.

(4) The appropriate regulator will, in assessing the firm’s performance, take into consideration the sophistication of the measure of discrimination chosen.

(5) In the case of a portfolio for which there is insufficient default experience to provide any confidence in statistical measures of discriminative power a firm need not carry out the procedure in (2) and may instead use other methods. For example, it may make use of comparison with an external measurement approach by analysing whether the firm’s rating systems and the external approach rank common obligors in broadly similar ways. A firm should be able to explain the methodology it uses and the rationale for its use.

A firm must also use other appropriate quantitative validation tools and comparisons with relevant external data sources. The analysis must be based on data that is appropriate to the portfolio, is updated regularly, and covers a relevant observation period. A firm’s internal assessments of the performance of its rating systems must be based on as long a period as possible.

[Note: BCD Annex VII Part 4 point 112]

The methods and data used for quantitative validation must be consistent through time. Changes in estimation and validation methods and data (both data sources and periods covered) must be documented.

[Note: BCD Annex VII Part 4 point 113]

A firm must have sound internal standards for situations where deviations in realised PDs, LGDs, conversion factors and, where EL is used, total losses, from expectations become significant enough to call the validity of the estimates into question. These standards must take account of business cycles and similar systematic variability in default and loss experience. Where realised values continue to be higher than expected values, a firm must revise estimates upward to reflect its default and loss experience.

[Note: BCD Annex VII Part 4 point 114]
### Internal audit

4.3.38 Internal audit or another comparable independent auditing unit must review at least annually the firm’s rating systems and its operations, including the operations of the firm and the estimation of PDs, LGDs, ELs and conversion factors. Areas of review must include adherence to all applicable minimum requirements.

[Note: BCD Annex VII Part 4 point 131]

### Stress tests used in assessment of capital adequacy

4.3.39 A firm must have in place sound stress testing processes for use in the assessment of its capital adequacy. Stress testing must involve identifying possible events or future changes in economic conditions that could have unfavourable effects on the firm’s credit exposures and assessment of the firm’s ability to withstand such changes.

[Note: BCD Annex VII Part 4 point 40]

4.3.39A The appropriate regulator expects that firms will routinely make use of stress testing and scenario analysis as a tool in the calibration and/or validation of their IRB approach parameters in order to increase the accuracy or, at least, the conservatism of the estimates. Stress testing should include a thorough exploration of various outturns different to the firm’s normal expectations in order to give the firm a clear view of the potential for the forward-looking estimate to be different from that indicated by the primary data source(s). Firms should consider this as an integral part of their quantification process, and should have clear standards for how the results of the stress tests affect the final estimates used for the IRB approach parameters.

4.3.40 (1) A firm must 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 to be employed must be one chosen by the firm. The test to be employed must be meaningful and reasonably conservative. Stressed portfolios must contain the vast majority of a firm’s total exposures covered by the IRB approach.

(2) The stress test must be designed to assess the firm’s ability to meet its capital requirements for credit risk under GENPRU 2.1 during all stages of the economic cycle and during an economic downturn scenario based on forward looking hypothetical events calibrated against the most adverse movements in individual risk drivers experienced over a long historical period.

(3) In particular the stress test must address the impact (including by ratings migration) of changes in the credit quality of its credit risk counterparties including its protection providers. A firm using the treatment set out in BIPRU 4.4.79 R must in particular consider the impact of protection providers falling outside the eligibility criteria.

(4) The stress test must be conducted on the basis of the firm’s exposures (on- and off-balance sheet) as they stand at the time of the stress test.

(5) The stress test must be carried out at least annually and also in the event of a significant change in the state of the economy.
(6) A **firm** need not assume that the recession referred to in (2) will occur in the 12 months immediately following the stress test. Instead, the stress test must incorporate a plausible time horizon for the occurrence of the cyclical deterioration of the severity tested for. A **firm** need not assume that the downturn will occur for all portfolios in all jurisdictions simultaneously.

[Note: BCD Annex VII Part 4 points 41 and 42]

4.3.41 G To the extent that the economic conditions assumed in the stress tests required under ■ BIPRU 4.3.39 R or ■ BIPRU 4.3.40 R coincide with the conditions assumed in the production of economic downturn **LGDs** (see ■ BIPRU 4.3.103 R), the **LGDs** to be used might be expected to be similar.

4.3.42 G The requirement in ■ BIPRU 4.3.40 R (2) is to identify, in a forward-looking manner, severe but plausible downturn conditions relevant to business lines and jurisdictions and to determine the likely impact of those conditions on a **firm’s** credit risk regulatory capital requirements. The description of the economic recession contained in ■ BIPRU 4.3.40 R (2) should not be taken as stipulating one approach (e.g. statistical) over other approaches (e.g. scenario analysis) in the identification of the relevant recessionary circumstances.

**Rating systems: Assignment to grades or pools**

4.3.43 R A **firm** must have specific definitions, processes and criteria for assigning **exposures** to grades or pools within a **rating system**.

[Note: BCD Annex VII Part 4 point 17 (part)]

4.3.44 R The grade or pool definitions and criteria must be sufficiently detailed to allow those charged with assigning ratings consistently to assign obligors or facilities posing similar risk to the same grade or pool. This consistency must exist across lines of business, departments and geographic locations within each **rating system**.

[Note: BCD Annex VII Part 4 point 17 (part)]

4.3.45 G In meeting ■ BIPRU 4.3.44 R a **firm** should have regard to its application to each **rating system**.

4.3.46 R The documentation of the rating process must 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.

[Note: BCD Annex VII Part 4 point 17 (part)]

4.3.47 R The criteria referred to in ■ BIPRU 4.3.43 R must also be consistent with the **firm’s** internal lending standards and its policies for handling troubled obligors and facilities.

[Note: BCD Annex VII Part 4 point 17 (part)]
A firm must take all relevant information into account in assigning obligors and facilities to grades or pools. Information must be current and must enable the firm to forecast the future performance of the exposure. The less information a firm has, the more conservative must be its assignments of exposures to obligor and facility grades or pools. If a firm uses an external rating as a primary factor determining an internal rating assignment, the firm must ensure that it considers other relevant information.

[Note: BCD Annex VII Part 4 point 18]

Rating systems: General governance

(1) This paragraph contains guidance on BIPRU 4.3.43 R and more general guidance about the governance of rating systems.

(2) In determining the assignment referred to in BIPRU 4.3.43 R, a firm should have regard to the sensitivity of the rating to movements in fundamental risk drivers.

(3) A firm should, for any rating system, be able to demonstrate that it acts appropriately or has an appropriate policy, as applicable, with respect to:

(a) any deficiencies caused by its not being sensitive to movements in fundamental risk drivers or for any other reason;

(b) periodic review and action in the light of such review;

(c) provision of appropriate internal guidance to staff to ensure consistency in the use of the rating system, including the assignment of exposures or facilities to pools or grades;

(d) dealing with potential weaknesses of the rating system;

(e) identifying appropriate and inappropriate uses of the rating system and acting on that identification;

(f) novel or narrow rating approaches; and

(g) ensuring the appropriate level of stability over time of the rating system.

Rating systems: Overrides

For grade and pool assignments a firm must 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. A firm must document these overrides and the personnel responsible. A firm must analyse the performance of the exposures whose assignments have been overridden. This analysis must include assessment of the performance of exposures whose rating has been overridden by a particular person, accounting for all the responsible personnel.

[Note: BCD Annex VII Part 4 point 25]

Rating systems: Use of models

(1) This paragraph applies to the use of statistical models and/or other mechanical methods to assign exposures to obligor grades, obligor pools, facility grades or facility pools.
(2) A firm must be able to demonstrate to the appropriate regulator that the model has good predictive power and that capital requirements are not distorted as a result of its use.

(3) The input variables to the model must form a reasonable and effective basis for the resulting predictions. The model must not have material biases.

(4) A firm must 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.

(5) A firm must be able to demonstrate to the appropriate regulator that the data used to build the model is representative of the population of the firm’s actual obligors or exposures.

(6) A firm must 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.

(7) A firm must 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 must aim at finding and limiting errors associated with model weaknesses. Human judgements must take into account all relevant information not considered by the model. A firm must document how human judgement and model results are to be combined.

(8) Use of a model obtained from a third-party vendor that claims proprietary technology is not a justification for exemption from documentation or any other of the requirements in BIPRU 4 or a firm’s IRB permission for rating systems. A firm must be able to satisfy the appropriate regulator that all those requirements are satisfied if it uses such a model.

[Note: BCD Annex VII Part 4 points 30 and 35 (part)]

4.3.52  
(1) This paragraph contains guidance on BIPRU 4.3.51 R (7).

(2) BIPRU 4.3.51 R (7) does not require that each individual assignment of an exposure to a pool or grade should be the subject of an open-ended review by reference to factors not covered by the model if:

(a) that is not necessary in order to meet the requirements of BIPRU 4 about the ability of the rating system to predict and to discriminate (as referred to in BIPRU 4.3.29 R to BIPRU 4.3.30 R (Validation of internal estimates)); and

(b) the outputs of the model are not designed to be supplemented by such a review.

4.3.53  
(1) This paragraph contains guidance on BIPRU 4.3.51 R for the use of external models.

(2) BIPRU 4.3.51 R (2) - BIPRU 4.3.51 R (8) also apply to mechanical methods to assign exposures or obligors to facility grades or pools and to a combination of models and mechanical methods.
(3) The standards which a firm applies to an external model should not be lower than those for internal models.

(4) The appropriate regulator will not accredit any individual model or vendor. The burden is on a firm to satisfy itself that external models are fit for purpose and meet the relevant requirements of the IRB approach.

(5) Notwithstanding that commercial confidentiality may limit the willingness of vendors of external models to disclose all details, a firm should ensure that it is able to obtain sufficiently detailed information to be able to satisfy the requirements of the IRB approach.

(6) A firm should have a clear understanding of responsibilities for support and maintenance of external models. This should include how new developments will be brought in and what entitlement the firm has to receive and/or request specific enhancements. A firm should ensure that the requirements of BIPRU 4.3.51 R and other provisions of the IRB approach are complied with on an ongoing basis.

(7) If a firm uses an external model it should have regard to the following:

(a) the adequacy of the information it has about the population on which the model is built;

(b) the comparability of the population referred to in (a) to the exposures with respect to which it is using that model;

(c) what the drivers of the model are and their relevance to the exposures with respect to which it is using the model; and

(d) how the firm satisfies itself that the standards required by the IRB approach for an internal model are met by the external model.

Rating systems: Data maintenance

A firm must collect and store data on aspects of its internal ratings as required under BIPRU 11 (Disclosure).

[Note: BCD Annex VII Part 4 point 36]

Rating systems: IT systems

A firm should ensure that IT systems relevant to the operation of its rating systems are sound and robust. A firm’s IT systems should provide rapid availability of databases and appropriate archiving. Adequate controls should be in place to prevent unauthorised changes to data being made. Contingency processes and plans should be in place to deal with events of system failure. A firm should document work-flows and procedures related to data collection and storage.

Definition of default: Main provisions

A default must be considered to have occurred with regard to a particular obligor when either or both of the two following events has taken place:
(1) the firm considers that the obligor is unlikely to pay its credit obligations to the firm, the parent undertaking or any of its subsidiary undertakings in full, without recourse by the firm to actions such as realising security (if held); and

(2) the obligor is past due more than 90 days on any material credit obligation to the firm, the parent undertaking or any of its subsidiary undertakings.

[Note: BCD Annex VII Part 4 point 44 (part)]

4.3.57 The following provisions also apply with respect to the definition of default:

(1) 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;

(2) an advised limit means a limit which has been brought to the knowledge of the obligor;

(3) days past due for credit cards commence on the minimum payment due date;

(4) in the case of retail exposures and exposures to public sector entities the number of days past due is as set out in BIPRU 4.4.22 R and BIPRU 4.6.20 R; and

(5) in all cases for the purposes of the definition of default, a credit obligation or, for overdrafts, the underlying amount, is material if, when added to the other exposures of the obligor, the total exceeds the amount which the firm treats as a material default for its internal risk measurement and management purposes.

[Note: BCD Annex VII Part 4 point 44 (part)]

Definition of default: Materiality

4.3.58 Where a firm applies the definition of default at facility level in accordance with BIPRU 4.6.21 R, it should define materiality for the purposes of BIPRU 4.3.57 R (5) by reference to the facility amount only, disregarding other exposures of the obligor.

4.3.59 A firm must have a policy which sets out how it will determine whether a credit obligation or, for overdrafts, the underlying amount, is material for the purposes of the definition of default in BIPRU 4.3.56 R (2) and BIPRU 4.3.57 R (5).

Definition of default: Identification of obligor

4.3.60 (1) This paragraph contains guidance on the definition of default.

(2) If:
(a) a firm ordinarily assigns exposures in the sovereign, institution and corporate IRB exposure class to a member of a group substantially on the basis of membership of that group and a common group rating; and

(b) the firm does so in the case of a particular group;

(3) the firm should consider whether members of that group should be treated as a single obligor for the purpose of the definition of default.

(4) The appropriate regulator would not expect a firm to treat an obligor as part of a single obligor under (2) if the firm rates its exposures on a stand alone basis or if its rating is notched. A rating is notched if it takes into account individual risk factors or otherwise reflects risk factors that are not applied on a common group basis.

(5) Accordingly if a group has two members who are separately rated the default of one does not necessarily imply the default of the other.

Definition of default: Days past due

(1) This paragraph contains guidance on the meaning of days past due for the purposes of the definition of default.

(2) If an amount is overdue by the relevant number of days past due because of administrative oversight on the part of the obligor or the firm, a firm with sufficient information may, retrospectively if necessary, treat that as not involving a default if:

(a) that failure is not associated with any increase in the risk referred to in BIPRU 4.3.56 R (1); and

(b) treating it as not being in default is consistent with the way that the firm treated the failure in its relationship with the obligor.

(3) If a firm takes advantage of this provision it should have a policy about the circumstances in which it can apply the treatment in (2). That policy should be documented and consistently applied.

Days past due is only one part of the definition of default and should be treated as a back-stop. A firm should not rely solely on the number of days past due set by BIPRU 4 but should also consider all other indicators of unlikeliness to pay when assessing whether a default has occurred.

Definition of default: Unlikeliness to pay

(1) Elements to be taken as indications of unlikeliness to pay must include the items set out in this rule.

(2) The firm putting the credit obligation on non-accrued status must be taken as an indication of unlikeliness to pay.

(3) The firm making a value adjustment resulting from a significant perceived decline in credit quality subsequent to the firm taking on the exposure must be taken as an indication of unlikeliness to pay.
(4) The firm selling the credit obligation at a material credit-related economic loss must be taken as an indication of unlikeliness to pay.

(5) The firm consenting to a distressed restructuring of the credit obligation must be taken as an indication of unlikeliness to pay 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.

(6) The firm having filed for the obligor’s bankruptcy or a similar order in respect of an obligor’s credit obligation to the firm, the parent undertaking or any of its subsidiary undertakings must be taken as an indication of unlikeliness to pay.

(7) The obligor seeking or having been placed in bankruptcy or similar protection where this would avoid or delay repayment of a credit obligation to the firm, the parent undertaking or any of its subsidiary undertakings must be taken as an indication of unlikeliness to pay.

[Note: BCD Annex VII Part 4 point 45]

4.3.64 A firm may use the amount overdue as an additional indication of unlikeliness to pay. If a firm uses this approach, the days past due element of the definition of default continues to apply, including the provisions relating to the fixed number of days past due referred to in BIPRU 4.3.57 R (4). A firm might make the use of a definition of default that takes into account the amount overdue consistent with the days past due element of the definition by setting the amount overdue at such a level that, taking into account:

(1) the order in which payments are applied against overdue payments; and

(2) the number of payment dates, the time between them, the amount of the overdue payments that results in a default under the definition used by the firm and other relevant factors;

it is not possible for any payment to be past due by a number of days exceeding the maximum amount specified in BIPRU for the purposes of the definition of default without there being a default under the part of the definition of default based on the amount overdue.

4.3.65 In the case of a retail exposure, a value adjustment resulting from significant perceived decline in credit quality falling within BIPRU 4.3.63 R (3) need not necessarily be taken as an indication of unlikeliness to pay if a firm employs formulaic portfolio provisioning based on a number of days overdue for its retail exposures. However, if such an exposure reaches the compulsory days past due indicator for the purposes of the definition of default it should automatically be deemed to be in default, regardless of the provisioning situation.

4.3.66 An obligation should be considered a distressed restructuring under BIPRU 4.3.63 R (5) if an independent third party, with expertise in the
relevant area, would not be prepared to provide financing on substantially the same terms and conditions.

4.3.67  
(1) The realisation or forfeiture of collateral may be taken as an indication of unlikeliness to pay for the purposes of the definition of default.

(2) However, the realisation or forfeiture of collateral may not indicate unlikeliness to pay:

(a) in the case of an exposure in a market (such as one that involves retail exposures involving margin lending) in which it is established practice for collateral to be sold if its value falls below a certain percentage of the exposure and the obligor does not restore the margin (but this exception does not apply if the value of the collateral has fallen below the amount outstanding); or

(b) if the firm is able to demonstrate that for some other reason the realisation or forfeiture of collateral is not a meaningful indication of unlikeliness to pay.

4.3.68  
(1) If an obligor approach is being taken with respect to retail exposures (that is, the application of the definition of default at an obligor level rather than at a facility level as set out in BIPRU 4.6.21 R,) a firm should ensure that the PD associated with unsecured exposures is not understated as a result of the presence of any collateralised exposures. A firm should be able to explain to the appropriate regulator, if asked, how it has ensured that its estimate of PD is appropriate for both secured and unsecured exposures covered by an obligor rating approach.

(2) In the view of the appropriate regulator, firms typically find that the PD of a residential mortgage is lower than the PD of an unsecured loan to the same borrower.

4.3.69  
A firm may, but without prejudice to BIPRU 4.4.22 R and BIPRU 4.6.20 R (Fixed numbers of days past due), use additional, or stricter, indicators of unlikeliness to pay if it uses these indicators for internal purposes in accordance with BIPRU 4.2.2 R (2) (Use tests) and if the disclosures under BIPRU 11 (Disclosure) are on this basis.

Risk quantification: Definition of default: Other provisions

4.3.70  
A firm must (if it uses external data that is not itself consistent with the definition of default) be able to demonstrate to the appropriate regulator that appropriate adjustments have been made that achieve broad equivalence with the definition of default.

[Note: BCD Annex VII Part 4 point 46]

4.3.71  
If a firm considers that a previously defaulted exposure is such that no trigger of default continues to apply, the firm must rate the obligor or facility as it would for a non-defaulted exposure. Should the definition of
default subsequently be triggered, another default must be deemed to have occurred.

[Note: BCD Annex VII Part 4 point 47]

4.3.72 G

A firm should have a clear and documented policy for determining whether an exposure that has been in default should subsequently be returned to performing status.

Risk quantification: Overall requirements for estimation:
General

4.3.73 R

■ BIPRU 4.3.74 R to ■ BIPRU 4.3.131 R apply to a firm's own estimates of risk parameters used in the IRB approach.

[Note: BCD Annex VII Part 4 point 43]

4.3.74 R

A firm's own estimates of the risk parameters PD, LGD, conversion factor and EL must incorporate all relevant data, information and methods. The estimates must be derived using both historical experience and empirical evidence, and must not be based purely on judgemental considerations. The estimates must be plausible and intuitive and must be based on the material drivers of the respective risk parameters. The less data a firm has, the more conservative it must be in its estimation.

[Note: BCD Annex VII Part 4 point 49]

4.3.75 G

(1) This paragraph provides guidance on ■ BIPRU 4.3.73 R.

(2) Relevant data and information under ■ BIPRU 4.3.73 R includes external data.

(3) Where internal default and loss experience is scarce, a firm should consider using material relevant external information. When using external information such as industry averages when determining LGD or conversion factors, a firm should consider whether this data is appropriate to its own experience and whether adjustments are necessary.

4.3.76 R

(1) In calculating estimates of PD, LGD and conversion factors a firm must adjust the averages of historical experience referred to in the historical averages rules in order to ensure that those estimates are accurate estimates of the default rate, loss rate or conversion factor over the long-run.


4.3.77 G

Where a firm is able to demonstrate that the effect is immaterial in accordance with ■ BIPRU 4.1.25 R (Compliance), it may estimate average LGDs and conversion factors under the historical average rules in a way that does
not strictly comply with BIPRU 4.3.94 R (Default weighted average), provided the final estimates of \( LGD \) and conversion factors following the adjustments to averages of historical experience are made on the basis of default weighted averages for the facility grade or pool in question.

4.3.78 G A firm may carry out the adjustments under BIPRU 4.3.76 R (Adjustments to averages of historical experience) by adjusting the data from which estimates are made rather than by adjusting the estimates themselves if it can demonstrate that capital requirements are not underestimated as a result.

4.3.79 G While the qualitative requirements in BIPRU 4 are important for all portfolios, they are of even greater importance in those cases where a firm lacks sufficient historical data to calibrate or validate its estimates of \( PD \), \( LGD \) or conversion factors on the basis of proven statistical significance, sometimes referred to as low default portfolios.

4.3.80 R (1) A firm must collect data on what it considers to be the main drivers of the risk parameters \( PD \), \( LGD \), conversion factor and \( EL \) for each group of obligors or facilities.

(2) A firm must document its identification of the main drivers of risk parameters.

(3) A firm must be able to demonstrate that its process of identification is reasonable and appropriate.

4.3.81 R In its processes for identifying the main drivers of risk parameters, a firm must set out its reasons for concluding that the data sources chosen provide in themselves sufficient discriminative power and accuracy and why additional potential data sources do not provide relevant and reliable information that would be expected materially to improve the discriminative power and accuracy of its estimates of the risk parameter in question. This does not require an intensive analysis of all factors.

4.3.82 G If a firm uses a rating model to assign exposures to the borrower or facility grades, it may reflect the data on main drivers of risk parameters by its inclusion in the model as a risk driver or as part of a subsequent process that adjusts the output of that model to calculate the risk parameters \( PD \), \( LGD \), conversion factor and \( EL \).

4.3.83 R A firm must 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. A firm must be able to demonstrate to the appropriate regulator that its estimates are representative of long-run experience.

[Note: BCD Annex VII Part 4 point 50]

4.3.84 R Any changes in lending practice or the process for pursuing recoveries over the observation periods referred to in BIPRU 4.4.31 R (Observation period for sovereigns, institutions and corporates for PDs), BIPRU 4.6.28 R (Observation...
The population of exposures represented in the data used for estimation, the lending standards used when the data was generated and other relevant characteristics must be comparable with those of a firm's exposures and standards. A firm must also be able to demonstrate to the appropriate regulator that the economic or market conditions that underlie the data are relevant to current and foreseeable conditions. The number of exposures in the sample and the data period used for quantification must be sufficient to provide a firm with confidence in the accuracy and robustness of its estimates.

[Note: BCD Annex VII Part 4 point 52]

It may be reasonable for a firm to treat foreseeable in BIPRU 4.3.85 R as referring to the most distant date to which it carries out detailed capital planning.

A firm should be able to demonstrate to the appropriate regulator:

(1) how, with respect to each rating system, both assignment of ratings and estimates of PD, LGD and conversion factors are affected by:
   (a) movements in the economic cycle; and
   (b) other cyclical effects which are material to levels of default, loss or the amount of exposures at default for the exposures covered by the rating system; and

(2) the level of conservatism inherent in its ratings, as provided for by BIPRU.

A firm must add to its estimates a margin of conservatism that is related to the expected range of estimation errors. Where methods and data are less satisfactory and the expected range of errors is larger, the margin of conservatism must be larger.

[Note: BCD Annex VII Part 4 point 54]

Estimation of PD through the use of a technique set out in BIPRU does not remove the need to make conservative adjustments, where necessary, related to the expected range of estimation errors so that capital requirements produced by the relevant model or other rating system are not understated.
4.3.90 If a firm uses different estimates for the calculation of risk weights and internal purposes it must be documented. The firm must be able to demonstrate to the appropriate regulator the reasonableness of such estimates.

[Note: BCD Annex VII Part 4 point 55]

4.3.91 If a firm can demonstrate to the appropriate regulator that for data that has been collected prior to 31 December 2006, appropriate adjustments have been made to achieve broad equivalence with the definitions of default or loss, the appropriate regulator may in the IRB permission allow the firm some flexibility in the application of the required standards for data.

[Note: BCD Annex VII Part 4 point 56]

Risk quantification: Overall requirements for estimation:
Pooled data

4.3.92 If a firm uses data that is pooled across institutions it must be able to demonstrate to the appropriate regulator that:

1. the rating systems and criteria of other firms in the pool are similar to its own;
2. the pool is representative of the portfolio for which the pooled data is used; and
3. the pooled data is used consistently over time by the firm for its permanent estimates.

[Note: BCD Annex VII Part 4 point 57]

4.3.93 BIPRU 4.3.92 R (1) is intended to ensure that data entering a pool is consistent and does not contain distortions as a result of different contributors' practices. It is not intended to constrain the use of pooled data by one firm that is contributed by a second firm where the differences do not affect the data being contributed.

4.3.94 If a firm uses data that is pooled across institutions it remains responsible for the integrity of its rating systems. If a firm uses such data it must be able to demonstrate to the appropriate regulator that it has sufficient in-house understanding of its rating systems, including effective ability to monitor and audit the rating process.

[Note: BCD Annex VII Part 4 point 58]

Risk quantification: Overall requirements for estimation:
Requirements specific to PD estimates

4.3.95 (1) If:

(a) a firm's internal experience of exposures of a type covered by a model or other rating system is 20 defaults or fewer; and
(b) in the firm's view, reliable estimates of PD cannot be derived from external sources of default data, including the use of
market price related data, for all the exposures covered by the rating system;
the firm must estimate PD for exposures covered by that rating system in accordance with this rule.

(2) A firm must use a statistical technique to derive the distribution of defaults implied by the firm’s experience, estimating PDs (the "statistical PD") from the upper bound of a confidence interval set by the firm in order to produce conservative estimates of PDs in accordance with § BIPRU 4.3.88 R.

(3) The techniques chosen for the purposes of (2) must take account, as a minimum, of the following modelling issues:
(a) the number of defaults and number of obligor years in the sample;
(b) the number of years from which the sample was drawn;
(c) the interdependence between default events for individual obligors;
(d) the interdependence between default rates for different years; and
(e) the choice of the statistical estimators and the associated distributions and confidence intervals.

(4) The firm must further adjust the statistical PD to the extent necessary to take account of the following:
(a) any likely differences between the observed default rates over the period covered by the firm’s default experience and the long-run PD for each grade in accordance with § BIPRU 4.4.24 R and § BIPRU 4.6.24 R; and
(b) any other information that indicates (taking into account the robustness and cogency of that information) that the statistical PD is likely to be an inaccurate estimate of PD.

(5) This rule is in addition to the other requirements in BIPRU about the calculation of PD.

(6) When a firm calculates whether it has 20 defaults or fewer under the calculation in (1)(a), it must only take into account defaults that occurred during periods that are relevant to the validation under § BIPRU 4 of the model or other rating system in question.

4.3.96 G A firm may if appropriate also choose to use the approach in § BIPRU 4.3.91 G if the internal experience on exposures covered by a rating system is greater than 20 defaults.

4.3.97 G If a firm excludes defaulted exposures that have been cured (as referred to in § BIPRU 4.3.71 R) or restructured (as referred to in § BIPRU 4.3.63 R (5)) from estimates of LGD in accordance with § BIPRU 4.3.110 G, it may also exclude cures from estimates of PD for these exposures.
Risk quantification: Overall requirements for estimation: Requirements specific to own-LGD estimates

4.3.98
BIPRU 4.3.98 R to BIPRU 4.3.123 R set out requirements specific to own-LGD estimates.

4.3.99
A firm must 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).

[Note: BCD Annex VII Part 4 point 73]

4.3.100
A firm must calculate the default weighted average on the basis of the number of defaults included in the calculations made under the historical average rules so far as they relate to the calculation of PDs and must not be weighted by the size of exposures.

4.3.101
(1) A firm’s estimates of LGDs must take into account:
(a) data in respect of relevant incomplete workouts; and
(b) the possibility that the proportion of defaulted exposures which are cured (as referred to in BIPRU 4.3.71 R) or restructured (as referred to in BIPRU 4.3.63 R (5)) or the length of the period over which a firm makes recoveries under a defaulted exposure may be different from the firm’s observed historic experience.

(2) An incomplete workout as referred to in (1)(a) means a defaulted exposure included in the data set on which the firm’s LGD estimates are based, but for which the recovery process is still in progress, with the result that the final realised losses in respect of that exposure are not yet certain.

4.3.102
The changes referred to in BIPRU 4.3.101 R (1)(b) may be caused by external factors, such as the economic environment, as well as factors specific to the obligor, the transaction or the policies of the firm.

4.3.103
A firm must 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 constant realised LGDs by grade or pool over time, a firm must make adjustments to its estimates of risk parameters by grade or pool to limit the capital impact of an economic downturn.

[Note: BCD Annex VII Part 4 point 74]

4.3.104
(1) A firm must have a rigorous and well documented process for:
(a) assessing the effects, if any, of economic downturn conditions on recovery rates; and
(b) producing LGD estimates consistent with downturn conditions as referred to in BIPRU 4.3.103 R.
(2) That process must include the following, which may be included in an integrated manner:

(a) identification of appropriate downturn conditions for each IRB exposure class within each jurisdiction;

(b) identification of adverse dependencies, if any, between default rates and recovery rates; and

(c) incorporation of adverse dependencies, if identified, between default rates and recovery rates in the firm’s estimates of LGD in a manner that meets the requirements in § BIPRU 4.3.103 relating to an economic downturn.

4.3.105 A firm may derive the LGD in accordance with § BIPRU 4.3.104 (2)(c) either by directly assigning to the facility grade or pool an estimate of LGD appropriate for downturn conditions, or alternatively by estimating a default weighted average LGD in accordance with § BIPRU 4.3.99 and § BIPRU 4.3.76 and converting it into an LGD appropriate for downturn conditions by the use of a formula. It should be able to demonstrate that that formula produces well-founded estimates of LGDs consistent with downturn conditions for the exposures in question.

4.3.106 A firm may combine IRB exposure classes, jurisdictions or both for the purpose of § BIPRU 4.3.104 (2)(a) if it can demonstrate that the downturn conditions to which the portfolios are subject will be similar.

4.3.107 The adverse dependencies referred to in § BIPRU 4.3.104 (2)(b) will not always exist. However, if a firm uses LGDs that do not allow for such adverse dependencies, it should be able to justify its decision.

4.3.108 Data relating to economic downturn conditions is likely to be scarce. Accordingly, a firm should use internal data, external data or a combination of data sources in order to produce appropriate downturn LGD estimates in accordance with § BIPRU 4.3.103.

4.3.109 A firm must retain sufficient data on both LGDs calculated on a economic downturn basis and calculated on a long-run average basis (as referred to in § BIPRU 4.3.103) to be able to demonstrate to the appropriate regulator (if asked) that its estimates based on an economic downturn are no less conservative than the long-run average as referred to in that rule.

4.3.110 Where a firm is able to demonstrate that the effect is immaterial in accordance with § BIPRU 4.1.25 (Compliance), it may exclude defaulted exposures that have been cured (as referred to in § BIPRU 4.3.67 G (1)) or restructured (as referred to in § BIPRU 4.3.63 R (5)) from the data about default and loss experience on which LGDs are calculated provided it can demonstrate that its calculation of capital requirements (including capital requirements resulting from the application of capital floors under the transitional rules and guidance in BIPRU) are not reduced as a result of this approximation.
Irrespective of whether calculated on an economic downturn or long-run average basis, each LGD estimate must be at least zero.

In order to support an LGD estimate which is very low or zero, a firm should be able to demonstrate that the estimate adequately reflects the expected experience on a default weighted average basis or in a downturn as appropriate, taking into account the costs and discount rate associated with realisations and the operation of BIPRU 4.3.118 R.

The methods that a firm uses for discounting cash flows for the purposes of estimating LGDs must take account of the uncertainties associated with the receipt of recoveries with respect to a defaulted exposure. If a firm intends to use a discount rate that does not take full account of the uncertainty in recoveries, it must be able to explain by what other process it has taken into account that uncertainty for the purposes of calculating LGDs.

The uncertainty referred to in BIPRU 4.3.113 R can be addressed by adjusting cash flows to certainty-equivalents or by using a discount rate that embodies an appropriate risk premium; or by a combination of the two.

A firm may exclude from its calculation of loss indirect costs that it incurs for the purpose of making recoveries with respect to a defaulted exposure if it would also have incurred those costs if there had not been a default.

A firm must consider the extent of any dependence between the risk of the obligor with that of the collateral or collateral provider. Cases where there is a significant degree of dependence must be addressed in a conservative manner.

Currency mismatches between the underlying obligation and the collateral must be treated conservatively in the firm's assessment of LGD.

To the extent that LGD estimates take into account the existence of collateral, these estimates must not solely be based on the collateral's estimated market value. LGD estimates must take into account the effect of the potential inability of the firm expeditiously to gain control of its collateral and liquidate it.

(1) A firm may comply with BIPRU 4.3.118 R by reducing the amount of the collateral taken into account for the purposes of calculating LGD (applying a haircut to the collateral), basing that reduction on validated realisation experience and using conservatism to reflect the uncertainties.
(2) If collateral is used to reduce the LGD, a firm should be able to demonstrate how the risk in [BIPRU 4.3.118 R has been accounted for. To the extent that it is adequately accounted for in that way it need not be reflected again as part of the residual risk in relation to collateral under the overall Pillar 2 rule.

4.3.120 To the extent that LGD estimates take into account the existence of collateral, a firm must establish internal requirements for collateral management, legal certainty and risk management that are generally consistent with those set out in [BIPRU 5 (Credit risk mitigation) as modified by [BIPRU 4.10.]

[Note: BCD Annex VII Part 4 point 78]

4.3.121 To the extent that a firm recognises collateral for determining the exposure value for counterparty credit risk according to the CCR standardised method or the CCR internal model method, any amount expected to be recovered from the collateral must not be taken into account in the LGD estimates.

[Note: BCD Annex VII Part 4 point 79]

4.3.122 For the specific case of exposures already in default, a firm must use the sum of its best estimate of expected loss for each exposure given current economic circumstances and exposure status and the possibility of additional unexpected losses during the recovery period.

[Note: BCD Annex VII Part 4 point 80]

4.3.123 To the extent that unpaid late fees have been capitalised in a firm’s income statement, they must be added to the firm’s measure of exposure and loss.

[Note: BCD Annex VII Part 4 point 81]

Risk quantification: Overall requirements for estimation: Requirements specific to own-conversion factor estimates

4.3.124 [BIPRU 4.3.125 R - BIPRU 4.3.131 R set out requirements specific to own-conversion factor estimates.

4.3.125 A firm must estimate conversion factors by facility grade or pool on the basis of the average expected conversion factors by facility grade or pool using all observed defaults within the data sources (default weighted average).

[Note: BCD Annex VII Part 4 point 87]

4.3.126 (1) A firm using own estimates of conversion factors should take into account all facility types that may result in an exposure when an obligor defaults, including uncommitted facilities.

(2) A firm should treat a facility as an exposure from the earliest date at which a customer is able to make drawings under it.

(3) To the extent that a firm makes available multiple facilities, it should be able to demonstrate:
(a) how it deals with the fact that exposures on one may become exposures under another on which the losses are ultimately incurred; and

(b) the impact of its approach on its capital requirements.

4.3.127 A firm must 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, a firm must make adjustments to its estimates of risk parameters by grade or pool to limit the capital impact of an economic downturn.

[Note: BCD Annex VII Part 4 point 88]

4.3.128 A firm’s estimates of conversion factors must reflect the possibility of additional drawings by the obligor up to and after the time a default event is triggered. The conversion factor estimate must 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.

[Note: BCD Annex VII Part 4 point 89]

4.3.129 In arriving at estimates of conversion factors a firm must consider its specific policies and strategies adopted in respect of account monitoring and payment processing. A firm must also consider its ability and willingness to prevent further drawings in circumstances short of payment default, such as covenant violations or other technical default events.

[Note: BCD Annex VII Part 4 point 90]

4.3.130 A firm must 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. A firm must be able to monitor outstanding balances on a daily basis.

[Note: BCD Annex VII Part 4 point 91]

4.3.131 If a firm uses different estimates of conversion factors for the calculation of risk weighted exposure amounts and internal purposes it must be documented. The firm must be able to demonstrate their reasonableness to the appropriate regulator.

[Note: BCD Annex VII Part 4 point 92]

Risk quantification: Overall requirements for estimation:

Comparability

(1) This paragraph contains guidance about the interpretation of the requirements relating to comparability in BIPRU 4.3.85 R. It is also relevant to the requirement for representative data in BIPRU 4.3.51 R (5), to the references to comparability in the additional guidance in BIPRU 4.3.53 G (7)(b) and to the requirements for similarity in BIPRU 4.3.92 R.
(2) In general, comparability should be based on analyses of the population of exposures represented in the data, the lending standards used when the data was generated (where relevant) and other relevant characteristics in relation to the corresponding properties of the firm’s own portfolio. Other relevant characteristics could include the distribution of the obligors across industries, the size distribution of the exposures and similarity with respect to the geographic or demographic distribution of the exposures.