Guidance Note
Capital Requirements Directive
The IRB Approach

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1. Application, purpose and overview

1.1. This Guidance Note applies to all locally incorporated credit institutions and investment firms and details guidance for using the IRB approach to calculate credit risk for the purposes of Capital Adequacy Directive, comprising Directive 2006/48/EC and Directive 2006/49/EC which have been implemented in Gibraltar via the Banking (Capital Adequacy of Credit Institutions) Regulations, 2007 and Financial Services (Capital Adequacy of Investment Firms) Regulations 2007. The aim of the Guidance Note is to supplement the Regulations in setting the standards for the measurement of the IRB approach to credit risk and how firms must calculate this.

1.2. Other material on the IRB approach can be found in the Guidance Notes for Securitisation and for Financial Derivatives, SFTs and Long Settlement Transactions. Details of credit risk mitigation can be found in the Guidance note on Credit Risk.

1.3. The IRB approach is an alternative to the standardised approach for calculating a firm's credit risk capital requirements. It may be applied to all a firm's exposures or to some of them, subject to various limitations as set out in Section 2. Under the IRB approach capital requirements are based on a firm's own estimates of certain parameters together with other parameters set out in the Banking Consolidation Directive.

1.4. Exposures are divided into a number of distinct exposure classes. These are listed in 3.1. There is a special treatment for purchased receivables, although they do not form an exposure class on their own.

1.5. For exposures in the sovereign, institution and corporate IRB exposure class, there is a foundation IRB approach under which a firm provides its own estimates of PD and an advanced IRB approach under which a firm additionally provides its own estimates of LGD and conversion factors. The distinction between the foundation IRB approach and the advanced IRB approach only applies to this IRB exposure class.

1.6. For retail exposures, a firm provides its own estimates of PD, LGD and conversion factors.

1.7. For the corporate exposure class there is a separate sub-class of specialised lending exposure. A firm may calculate risk weights for these exposures, where it is able to do so, in the same way as it does for the rest of its corporate exposure class, i.e. using the foundation IRB approach or the advanced IRB approach. Where a firm is not able to use this approach it may calculate risk weights for specialised lending exposures by slotting them into predetermined risk weights.

1.8. For equity exposures there are two approaches based on market based measures and a third under which a firm uses its own estimates of PD only.

IRB permissions: general

1.9. A firm is not automatically allowed to use the IRB approach. A firm that wishes to use the IRB approach should therefore apply for permission to use the IRB approach. If that permission is granted its terms will be set out.

1.10. The FSC recognises that the nature of IRB approaches will vary between firms. The scope of and the requirements and conditions set out in an IRB permission may therefore differ in substance or detail from this Guidance Note in order to address individual circumstances adequately. However any differences will only be allowed if they are compliant with the Banking Consolidation Directive. An IRB permission will implement any such variation by modifying the relevant provisions of the Guidance Note. An IRB permission may also include additional conditions to meet the particular circumstances of the firm.

1.11.

1.11.1. The FSC will only grant an IRB permission if it is satisfied that the firm's systems for the management and rating of credit risk exposures are sound and implemented with

integrity and, in particular, that they meet the standards in 2.1 in accordance with the minimum IRB standards.

1.11.2. Under 2.10, a firm applying for an IRB permission is required to demonstrate that it has been using for the IRB exposure classes in question rating systems that were broadly in line with the minimum requirements set out in this Guidance Note for internal risk measurement and management purposes for at least three years prior to the date of its IRB permission.

1.11.3. Under 2.12, a firm applying for the use of own estimates of LGDs and/or conversion factors should demonstrate that it has been estimating and employing own estimates of LGDs and/or conversion factors in a manner that was broadly consistent with the minimum requirements for use of own estimates of those parameters set out in this Guidance Note for at least three years prior to qualification to use own estimates of LGDs and/or conversion factors.

Link to standard requirements: Incorporation of the IRB output into the capital calculation

1.12. An IRB permission will modify its credit risk capital requirement to the extent set out in the IRB permission, the calculation of the credit risk capital requirement in accordance with this Guidance Note and any other provisions of the Handbook relating to the IRB approach.

1.13. A firm must calculate its credit risk capital requirement as the sum of:

1.13.1. the credit risk capital component (for exposures to which the standardised approach is applied); and

1.13.2. for exposures to which the IRB approach is applied to which the standardised approach would otherwise apply in accordance with the Guidance Note on Credit risk, 8% of the total of the firm's risk weighted exposure amounts calculated in accordance with the IRB approach.

1.14. For exposures covered by an IRB permission, Schedule 8 of the BCACI Regulations is modified by Section 10.

1.15. Under Section 9 a firm is required to deal with securitisation positions under those provisions of the Guidance Note on Securitisation applicable to a firm using the IRB approach.

1.16. Exposures treated under the Guidance Note, on Financial Derivatives SFTs and Long Settlement Transactions, are required to be dealt with in accordance with the IRB approach to the extent set out in said Guidance Note.

1.17. By modifying its credit risk capital requirement the firm is allowed to use the IRB approach to calculate all or part of its risk weighted exposure amounts. The modification means that the provisions of these Guidance Notes relating to the IRB approach supersede the measures relating to the standardised approach for exposures coming within the scope of the IRB permission.

1.18. A reference to a provision of the IRB approach, in the case of a firm:

1.18.1. excludes any provision of the IRB approach that is not applied to that firm by its IRB permission;

1.18.2. includes any additional provision contained in the firm's IRB permission; and

1.18.3. takes into account any other amendments made to the provisions relating to the IRB approach made by the firm's IRB permission.

1.19. To the extent that a firm's IRB permission does not allow it to use a particular approach relating to the IRB approach the provision in question does not apply to the firm.

1.20. If a provision of this Guidance Notes says that a firm may do something if its IRB permission allows this a firm may do that thing unless its IRB permission expressly says that it may not do so except that:

1.20.1. Paragraphs 2.17 to 2.18 and 2.25 specifically 2.25.1 to 2.25.5, only apply to the extent set out in a firm's IRB permission;

1.20.2. a firm may not use the advanced IRB approach for the sovereign, institution and corporate IRB exposure class except to the extent set out in the firm's IRB permission;

1.20.3. if a firm uses its own estimates of LGD and conversion factors it may only take into account unfunded credit risk mitigation to reduce LGD in the manner set out in its IRB permission;

1.20.4. a firm must deal with equity exposures in the manner set out in its IRB permission; and

1.20.5. in the case of collateral that is only eligible for recognition under paragraph 21 of Part 1 of Annex VIII of the Banking Consolidation Directive (Other physical collateral) a firm may not recognise as eligible collateral an item of a type referred to in Section 10 unless that item is of a type specified as permitted in its IRB permission.

1.21. An IRB permission will set out firm-specific material. This will generally include:

1.21.1. details about the firm's methodology for carrying out the IRB approach, including the models and rating systems that a firm should use;

1.21.2. reporting requirements; and

1.21.3. requirements about internal control structure.

Compliance

1.22. If a firm ceases to comply with the requirements of the IRB approach, it must either present to the FSC a plan for a timely return to compliance or demonstrate that the effect of non-compliance is immaterial.

1.23. If a firm ceases to comply with the requirements of the IRB approach, the FSC may revoke the IRB permission or take other appropriate supervisory action.

1.24. If a provision of this Guidance Note allows a particular approach subject to compliance with 1.22, the judgment of what is immaterial under that paragraph must be made by reference to all instances in which the firm in question relies on 1.22.

2. High level material

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

General approach to granting an IRB permission

2.1. A firm's systems for the management and rating of credit risk exposures must be sound and implemented with integrity and, in particular, they must meet the following standards in accordance with the minimum IRB standards:

2.1.1. the firm’s rating systems provide for a meaningful assessment of obligor and transaction characteristics, a meaningful differentiation of risk and accurate and consistent quantitative estimates of risk;

2.1.2. internal ratings and default and loss estimates used in the calculation of capital requirements and associated systems and processes play an essential role in the risk management and decision-making process, and in the credit approval, internal capital allocation and corporate governance functions of the firm;

2.1.3. the firm has a credit risk control unit responsible for its rating systems that is appropriately independent and free from undue influence;

2.1.4. the firm collects and stores all relevant data to provide effective support to its credit risk measurement and management process; and

2.1.5. the firm documents its rating systems, the rationale for their design and validates its rating systems.

2.2. Where an EU parent credit institution and its subsidiary undertakings or an EU parent financial holding company and its subsidiary undertakings use the IRB approach on a unified basis, the question whether the minimum IRB standards are met is answered by considering the parent undertaking and its subsidiary undertakings together unless the firm's IRB permission specifies otherwise.

Outsourcing

2.3. This paragraph contains guidance on the basis on which a firm may rely upon a rating system or data provided by another member of its group.

2.3.1. A firm may do this if the following conditions are satisfied:

2.3.2. the firm only does so to the extent that it is appropriate, given the nature and scale of the firm's business and portfolios and the firm's position within the group;

2.3.3. the group is an EEA banking and investment group;

2.3.4. the integrity of the firm's systems and controls is not adversely affected;

2.3.5. the outsourcing of these functions meets regulatory requirements; and

2.3.6. (if the provision of the services in 2.3 is not carried out in Gibraltar or in the jurisdiction of the competent authority that is the lead regulator of the group) the firm can demonstrate to the FSC that the ability of the FSC and that lead regulator to carry out their responsibilities under the Banking Consolidation Directive and the Capital Requirements Directive are not adversely affected.

2.3.7. If a firm does use a rating system or data provided by another member of its group, the requirements in this Guidance Note continue to apply to that rating systems and data.

2.3.8. If a firm does use services provided by another group member as described in 2.3, the firm's governing body should formally delegate those functions to the persons or bodies that are to carry them out. Before doing so, however, the firm's governing body should have explicitly considered the arrangement and decided that it is appropriate and that it enables the firm to meet the conditions in this paragraph.

2.3.9. Taking the action in 2.3 does not relieve a firm of responsibility for complying with the requirements in this Guidance Note. A firm cannot absolve itself of the responsibility for complying with those requirements by claiming that any breach of those requirements is caused by the actions of a third party to whom the firm has delegated tasks. The rating system and data provision arrangements are still those of the firm, even though personnel elsewhere in the firm's group are carrying out these functions on its behalf. Thus any references in the Guidance Notes to what a firm, its personnel and its management should and should not do still apply.

Assessment and estimation

2.4. This paragraph provides guidance on 2.1 and in particular 2.1.1.

2.4.1. The information that a firm produces or uses for the purpose of the IRB approach should be reliable and take proper account of the different users of the information produced (customers, shareholders, regulators and other market participants).

2.4.2. A firm should establish quantified and documented targets for the purpose of testing the accuracy of data used in its rating systems by measuring them against demonstrable measures (tests).

2.4.3. Tests under 2.4.2 might include:

2.4.3.1. report and accounts reconciliation, including completeness in relation to 2.4.3.2;

2.4.3.2. whether every exposure has a PD, LGD and, if applicable, conversion factor for reporting purposes;

2.4.3.3. whether a firm's risk control environment has key risk indicators for the purpose of monitoring and ensuring data accuracy;

2.4.3.4. whether a firm has an adequate business and information technology infrastructure with fully documented processes;

2.4.3.5. whether a firm has clear and documented standards on ownership of data (including inputs and manipulation) and timeliness of current data (daily, monthly, real time); and

2.4.3.6. whether a firm has a comprehensive quantitative audit programme.

2.4.4. The reconciliation referred to in 2.4.3.1 should be reasonably fit for purpose. In particular it should meet the standards in 2.4.5 and 2.4.6.

2.4.5. For data inputs, testing for accuracy of data, including the reconciliation referred to in 2.4.3.1, should be sufficiently detailed so that, together with other available evidence, it gives reasonable assurance that data input into the rating system is accurate, complete and appropriate. Input data fails the required standard if it gives rise to a serious risk of material misstatement in the capital requirement either immediately or subsequently.

2.4.6. For data outputs, the firm, as part of the reconciliation referred to in 2.4.3.1, should be able to identify and explain material differences between the outputs produced under accounting standards and those produced under the requirements of the IRB approach, including in relation to areas that address similar concepts in different ways (for example expected loss on the one hand and accounting provisions on the other).

2.4.7. A firm should have clear and documented standards and policies about the use of data in practice (including information technology standards) which should in particular cover the firm's approach to the following:

2.4.7.1. data access and security;

2.4.7.2. data integrity, including the accuracy, completeness, appropriateness and testing of data; and

2.4.7.3. data availability.

Further requirements concerning the use test

2.5. If a firm uses separate models for the purpose of the IRB approach and for its internal purposes as referred to in 2.1.2 it must be able to demonstrate the reasonableness of any differences between those models.

2.6. This paragraph provides guidance on 2.1 and in particular 2.1.2. The IRB approach as applicable to a firm should be an integral part of its business and risk management processes and procedures to the extent that credit risk is relevant to them. It should also have a substantial influence on its decision-making and actions. In particular, the FSC would expect a firm to have regard to the following areas:

2.6.1. the use of the IRB approach in:

2.6.1.1. credit approval;

2.6.1.2. individual and portfolio limit setting;

2.6.1.3. reporting of credit risk information;

2.6.1.4. provisioning; and

2.6.1.5. the setting and use of the significant criteria by reference to which other decisions to incur or maintain credit risk are taken or by reference to which credit risk is otherwise assessed;

2.6.2. assessment of:

2.6.2.1. economic capital;

2.6.2.2. total capital requirements under the Guidance Notes so far as related to credit risk;

2.6.2.3. risk appetite;

2.6.2.4. strategy and acquisitions;

2.6.2.5. profitability and performance; and

2.6.2.6. performance-related remuneration;

2.6.3. the carrying out of the firm's obligations under the individual capital assessment; and

2.6.4. matters relating to the firm's infrastructure, including information technology, skills and resources and organisational culture.

2.7. This paragraph provides further guidance on paragraph 2.1 and in particular 2.1.2. In the FSC's view risk management has an essential role in informing risk decisions. However, an essential role does not necessarily mean that a firm's IRB approach system has an exclusive role or even necessarily always a primary role as there may be justifiable differences between the IRB approach and the firm's use of rating systems for its internal purposes as referred to in 2.1.2. For example, internal standards and policies may refer to estimates of PD and LGD for the length of the asset rather than to estimates based on a one-year period (in the case of PD estimates) or on an economic downturn (in the case of LGD estimates) required by the IRB approach.

2.8. If a firm uses scorecards for its internal credit approval process and the models it uses for the purpose of the IRB approach are fundamentally different from those scorecards, a firm's demonstration of how this is compatible with 2.1.2 might include demonstrating that estimates calculated under the IRB approach are used to change sanctioning decisions at an individual or portfolio level. Examples of this might include amending cut-offs, the application of policy rules, the revision of an existing scorecard or the introduction of a new one or taking strategic decisions on which segments of the market to target.

2.9. To the extent that a firm uses LGD estimates in its internal risk management processes that differ from the downturn LGDs used in the calculation of risk weighted assets (see paragraph 3.86), the reasons for the difference should be documented in accordance with paragraph 3.86.

Requirements concerning the experience requirement

2.10. A firm must be able to demonstrate that it has been using for the IRB exposure classes in question rating systems that were broadly in line with the minimum requirements set out in this Guidance Note for internal risk measurement and management purposes for at least three years prior to the date of its IRB permission.

2.11. In meeting the experience requirement under 2.10, the FSC would expect a firm to be:

2.11.1. operating an internal rating system with estimates of PD;

2.11.2. meeting the standards in this Guidance Note for senior management knowledge and reporting; and

2.11.3. meeting the standards in this Guidance Note relating to the use of rating systems in its business.

2.12. A firm that has applied for the use of own estimates of LGDs and/or conversion factors must be able to demonstrate to the FSC that it has been estimating and employing own estimates of LGDs and/or conversion factors in a manner that was broadly consistent with the minimum requirements for use of own estimates of those parameters set out in this Guidance Note for at least three years prior to the date of its IRB permission or of a variation of its IRB permission that, in either case, entitled the firm to use own estimates of LGDs and/or conversion factors.

2.13. In meeting the experience requirement under 2.12, the FSC would expect a firm to be:

2.13.1. operating an internal rating system with estimates of LGD and with conversion factors; and

2.13.2. be complying with 2.10 as applied to the advanced IRB approach.

2.14. In the FSC's view the standard required by 2.10 and 2.12 is for a rating system to be improved in the light of experience during the three year period so that it meets the minimum requirements more fully for the last year than for the two prior years, provided that the rating system has not changed so profoundly that experience from the first or second years becomes of marginal relevance in assessing the reliability of the changed rating system.

Implementation of the internal ratings based approach

2.15. A firm must comply with any requirements in its IRB permission relating to the matters described in paragraphs 2.16 to 2.34.

2.16. Without prejudice to paragraph 2.25, a firm and any parent undertaking and its subsidiary undertakings must implement the IRB approach for all exposures.

2.17. To the extent that a firm's IRB permission permits this, implementation may be carried out sequentially across the different IRB exposure classes, referred to in paragraph 3.1, within the same business unit, across different business units in the same group or for the use of own estimates of LGDs or conversion factors for the calculation of risk weights for the sovereign, institutional and corporate IRB exposure class.

2.18. In the case of the retail exposures, implementation may (but only to the extent provided for in the firm's IRB permission) be carried out sequentially across the categories of exposures to which the different correlations in paragraphs 6.41 to 6.45 correspond.

2.19.

2.19.1. Implementation of the IRB approach as referred to in paragraph 2.16 must be carried out within a reasonable period of time as set out in the IRB permission.

2.19.2. The implementation must be carried out subject to strict conditions determined by the FSC and set out in the IRB permission.

2.19.3. A firm must not use the flexibility under paragraph 2.17 selectively with the purpose of achieving reduced minimum capital requirements in respect of those IRB exposure classes or business units that are yet to be included in the IRB approach or in the use of own estimates of LGDs and conversion factors.

2.20.

2.20.1. A firm should achieve full roll-out of the IRB approach to all its exposures, subject to the exemptions outlined in 2.25, within the period specified in its IRB permission. A firm should not retain a permanent mix of portfolios on the standardised approach and the IRB approach, on the foundation IRB approach and the advanced IRB approach or on a mixture of all approaches with the exception of portfolios covered by those exemptions.

2.20.2. This paragraph and 2.19 apply to a move:

2.20.2.1. from the standardised approach to the IRB approach;

2.20.2.2. from the foundation IRB approach to the advanced IRB approach; and

2.20.2.3. from the transitional rules and guidance for this Guidance Note to the IRB approach.

2.20.3. The period referred to in paragraph 2.19.1 will generally be not more than three years of starting use of the IRB approach or the advanced IRB approach as applicable.

2.21. A firm using the IRB approach for any IRB exposure class must at the same time use the IRB approach for the equity exposure class.

2.22. Subject to paragraphs 2.16 to 2.19, 2.21 and 2.25, a firm that has an IRB permission must not use the standardised approach for the calculation of risk-weighted exposure amounts for the exposures to which the IRB approach applies under the IRB permission.

2.23. Subject to paragraphs 2.16 to 2.21 and 2.25, a firm whose IRB permission provides for the use of the advanced IRB approach for the calculation of LGDs and conversion factors for the sovereign, institution and corporate IRB exposure class must not use the LGD values and conversion factors applicable to the foundation IRB approach for the exposures to which the advanced IRB approach applies under the IRB permission.

2.24. The FSC will not agree to a firm's request to revoke or vary its IRB permission so as to permit the firm to revert to the standardised approach unless it has demonstrated good cause. Likewise, the FSC will not agree to a firm's request to revoke or vary its IRB permission so as to permit the firm to revert to the foundation IRB approach if the IRB permission provides for it to use the advanced IRB approach, unless it has demonstrated good cause.

Combined use of methodologies: Basic provisions

2.25.

2.25.1. To the extent that its IRB permission permits this, a firm permitted to use the IRB approach in the calculation of risk weighted exposure amounts and expected loss amounts for one or more IRB exposure classes may apply the standardised approach in accordance with this paragraph.

2.25.2. A firm may apply the standardised approach to the IRB exposure class referred to in 3.1.1 (sovereigns) where the number of material counterparties is limited and it would be unduly burdensome for the firm to implement a rating system for these counterparties. A firm may include in 2.25.2 an exposure of the type described in the Guidance Note for Credit Risk Standardised Approach, Section 4, exposures to churches or religious communities, that would fall within exposure to a regional government or local authority if those provisions had not been excluded.

2.25.3. A firm may apply the standardised approach to the IRB exposure class referred to in 3.1 (institutions), where the number of material counterparties is limited and it would be unduly burdensome for the firm to implement a rating system for these counterparties.

2.25.4. A firm may apply the standardised approach to exposures in non-significant business units as well as IRB exposure classes that are immaterial in terms of size and perceived risk profile.

2.25.5. A firm may apply the standardised approach to exposures to the Government of Gibraltar provided that:

2.25.5.1. there is no difference in risk between the exposures to the Government and those other exposures because of specific public arrangements; and

2.25.5.2. exposures to the Government are associated with a 0% risk weight under the standardised approach.

2.25.6. A firm may apply the standardised approach to exposures of a firm to a counterparty which is its parent undertaking, its subsidiary undertaking or a subsidiary undertaking of its parent undertaking provided that the counterparty is an institution, a financial holding company, a financial institution, an asset management company or an ancillary services undertaking subject to appropriate prudential requirements.

2.25.7. A firm may apply the standardised approach to equity exposures to entities whose credit obligations qualify for a zero risk weight under the standardised approach (including those publicly sponsored entities where a zero risk weight can be applied).

2.25.8. A firm may apply the standardised approach to equity exposures incurred under legislated programmes to promote specified sectors of the economy that provide significant subsidies for the investment to the firm and involve some form of government oversight and restrictions on the equity investments. This exclusion is limited to an aggregate of 10% of capital resources.

2.25.9. A firm may apply the standardised approach to the exposures identified in the guidance note for Credit Risk Standardised Approach meeting the conditions specified therein.

2.25.10. A firm may apply the standardised approach to state and state-reinsured guarantees pursuant to the Guidance Note on Financial Derivatives, SFTs and Long Settlement Transactions.

Combined use of methodologies: Documentation

2.26. As part of the application for an IRB permission, a firm should have a well documented policy explaining the basis on which exposures are to be selected for permanent exemption from the IRB approach and for treatment under the standardised approach. The firm's roll out plan should also contain provisions for the continuing application of that policy on a consistent basis over time.

Combined use of methodologies: Sovereign and institutional, exposures

2.27. A firm intending to make use of the provisions in paragraphs 2.25.2 or 2.25.3 should demonstrate to the FSC when applying for an IRB permission that it meets the requirements of those provisions with respect to its sovereign or, as the case may be, institutional, exposures.

Combined use of methodologies: Meaning of non-significance and immateriality

2.28. for the purposes of paragraph 2.25.4, the equity exposure IRB exposure class of a firm must be considered material if its aggregate value, excluding equity exposures incurred under legislative programmes as referred to in 2.25.8, exceeds, on average over the preceding year, 10% of the firm’s capital resources. If the number of those equity exposures is less than 10 individual holdings, that threshold is 5% of the firm’s capital resources.

2.29. This paragraph sets out what must be treated as being non-significant business or immaterial for the purposes of 2.25.4, so far as not covered by 2.28.

2.29.1. A firm may elect permanently to exclude exposures from the IRB approach and apply the standardised approach. However a firm may only make use of this exemption to the extent that:

2.29.1.1. the consolidated credit risk requirement (adjusted under paragraph 2.29.5) so far as it is attributable to the excluded exposures; would be no more than 15% of:

2.29.1.2. the consolidated credit risk requirement (adjusted under 2.29.5) with respect to all exposures (including the ones dealt with 2.29.1.1).

2.29.2. Exposures excluded under paragraphs 2.28 or 2.25.2, 2.25.3 and 2.25.5 to 2.25.8 must not be included in 2.29.1.1 or 2.29.1.2.

2.29.3. The calculation in 2.29.1.1 is based on the standardised approach.

2.29.4. The calculation in 2.29.1.2 is based on whichever of the standardised approach and the IRB approach would apply to the exposures referred to in paragraph 2.29.1.2 as at the time as of which the calculation is being made.

2.29.5. The consolidated credit risk requirement is adjusted for the purposes of this paragraph as follows:

2.29.5.1. the element based on the concentration risk capital component is excluded, with only the elements based on the credit risk capital component and the counterparty risk capital component being taken into account;

2.29.5.2. if a group with respect to which the calculation in this paragraph is being carried out is not subject to Consolidated capital adequacy requirements: requirement to maintain consolidated capital, the calculations in this paragraph must be carried out as if it were; and

2.29.5.3. the calculation is carried out with respect to the group of undertakings referred to in 2.16.

2.30. If a firm applies to use the advanced IRB approach for the sovereign, institution and corporate IRB exposure class 2.25.4 also applies with respect to exposures in that class. For these purposes and to the extent permitted in the firm's IRB permission:

2.30.1. a firm may exclude some exposures from the IRB approach and to use the foundation IRB approach for the other excluded exposures; and

2.30.2. the limit in 2.25.4 is a combined limit for excluded exposures remaining on the standardised approach and excluded exposures remaining on the foundation IRB approach.

2.31. Where 2.30 applies:

2.31.1. the 15% limit in 2.29.1 is a combined limit for excluded exposures remaining on the standardised approach and excluded exposures remaining on the foundation IRB approach; and

2.31.2. the calculation in 2.29.1.1 is carried out under whichever method of calculation would be applicable to the exposure in question.

Combined use of methodologies: Territorial aspects

2.32. This guidance sets out at what level the tests in paragraphs 2.29 to 2.31 will be applied in the case of a firm that is a member of a group that is part of a bigger group.

2.32.1. If an EEA banking and investment group for which the FSC is the lead regulator is part of a wider EEA banking and investment group for which the FSC is also lead regulator, the tests in paragraphs 2.29 to 2.31 apply with respect to that wider group.

2.32.2. If an EEA banking and investment group for which the FSC is the lead regulator is part of a wider EEA banking and investment group for which another competent authority is lead regulator then, the tests in 2.25.4 apply with respect to that wider group but the requirements of that lead regulator will generally apply in place of 2.29 – 2.31.

2.32.3. If an EEA banking and investment group for which the FSC is the lead regulator is part of a wider third-country banking and investment group that is subject to equivalent supervision by a regulatory authority outside the EEA the tests in 2.25.4

apply with respect to both that wider group and the sub-group of which the FSC is lead regulator. However the requirements of that third country regulator apply in place of paragraphs 2.29 to 2.31. The question of whether supervision is equivalent is decided in accordance with third country groups.

2.32.4. If an EEA banking and investment group for which the FSC is the lead regulator is part of a wider third-country banking and investment group that is not subject to equivalent supervision by a regulatory authority outside the EEA, 2.29 – 2.31 apply. They will apply to whole group if supervision by analogy applies. If alternative measures apply they will apply to the EEA banking and investment group.

2.32.5. In the case of a group described in 2.32.1 or 2.32.2 in respect of which the relevant approach is applied on a consolidated basis the tests in 2.25.4 apply with respect to that wider group. The detailed requirements that apply will be decided in accordance with that procedure.

Combined use of methodologies: Intra-group exposures

2.33.

2.33.1. Generally, the FSC will consider excluding, through a firm's IRB permission, exposures falling into 2.25.6 from the IRB approach. The degree to which this exclusion applies will be set out in the firm's IRB permission.

2.33.2. Exposures excluded under 2.33.1 will be eligible for a 0% risk weight under the standardised approach if they satisfy the conditions in the Guidance Note for Credit Risk Standardised A (0% risk weight for certain intra-group exposures).

2.33.3. Exposures to or holdings in any non-financial undertakings in a firm's group are not eligible for permanent exemption from the IRB approach under 2.25.6, as they are not subject to consolidated supervision. It is also the FSC's policy that exposures to or holdings in any insurance undertaking are also ineligible. Such exposures should remain on the IRB approach unless excluded under another part of 2.25.

2.33.4. If a firm uses the exemption in 2.33.1 it should have a policy that:

2.33.4.1. provides for the identification of connected counterparties excluded under 2.33.1;

2.33.4.2. identifies exposures that would be permanently exempted from the IRB approach under 2.33.1; and

2.33.4.3. identifies the connected counterparty exposures that are not permitted to be permanently exempted from the IRB approach under 2.33.1.

2.33.5. The policy in 2.33.4 should be consistently applied to all exposures excluded as described in 2.33.1.

Combined use of methodologies: Purchase of a new businesses

2.34. This paragraph deals with some possible effects of acquiring a major new business after the grant of an IRB permission.

2.34.1.1. A firm should if possible ensure that the exposures arising through the acquisition are dealt with in accordance with the firm's IRB permission.

2.34.1.2. If the acquisition is done during the currency of a roll out plan under paragraph 2.17. 2.34.1 ensures that the exposures are dealt with in accordance with that plan. For these purposes the existing and the acquired business should be considered together. The whole of the firm's business, including the newly acquired business, should be included in both the denominator and numerator of the fraction in paragraphs 2.29 and 2.30.

2.34.2. If a firm cannot comply with paragraph 2.34.1 the FSC is prepared to consider an application to vary the firm's IRB permission in order to deal with the acquisition. For example the FSC may agree to extend the time by which the roll out should be completed. However any such variation should be consistent with the provisions of Section 2 that would have applied if the acquisition had been included in the firm's original application for an IRB permission.

2.34.3. if the acquisition is done after a firm has completed its roll out under 2.17 the FSC will not in general agree to an application to treat an exposure:

2.34.3.1. under the standardised approach if it would otherwise be treated under the IRB approach; or

2.34.3.2. under the foundation IRB approach if it would otherwise be treated under the advanced IRB approach.

2.34.4. Any application to disapply the policy in paragraph 2.34.4 will be treated as an application under 2.24.

2.34.5. Paragraph 2.34.4 also applies while a roll out plan is in progress in relation to an exposure of a type for which the roll out has been completed if the period for completion of the roll out for those exposures under that plan has ended.

3. Provisions common to different exposure classes

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

Exposure classes

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

3.1.1.claims or contingent claims on central governments and central banks;

3.1.2.claims or contingent claims on institutions;

3.1.3.claims or contingent claims on corporates;

3.1.4.retail claims or contingent retail claims;

3.1.5.equity claims;

3.1.6.securitisation positions; and

3.1.7.non credit-obligation assets.

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

Calculation of risk weighted exposure amounts

3.3. The risk weighted exposure amounts for credit risk for exposures belonging to one of the exposure classes referred to in paragraphs 3.1.1 to 3.1.5 or 3.1.7 must, unless deducted from capital resources, be calculated in accordance with paragraphs 4.57 to 4.60, 5.8 to 5.10, 6.41 to 6.44, 7.5 to 7.6, 7.9 to 7.11, 7.14 to 7.16, 7.24 to 7.25, 8.16 to 8.21, 9.3, 9.6, 9.9 to 9.10.

3.4. 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 paragraphs 4.34, 4.42, 4.43, 4.64, 4.66 to 4.70, 6.49 to 6.54, 7.18, 7.20 to 7.22, 8.22 and 8.25 –to8.27.

Calculation of expected loss amounts

3.5. The expected loss amounts for exposures belonging to one of the IRB exposure classes referred to in paragraphs 3.1.1 to 3.1.5 must be calculated in accordance with the methods set out in paragraphs 4.61, 5.13 to 5.15, 6.47 to 6.48, 7.12, 7.17, 7.26 and 8.30.

3.6. The calculation of expected loss amounts in accordance with paragraphs 4.61, 5.13 to 5.15, 6.47 to 6.48, 7.12, 7.17, 7.26 and 8.30 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 this Guidance Note. For defaulted exposures, where a firm uses its own estimate of LGDs, EL shall be EL_{BE}, the firm's best estimate of expected loss for the defaulted exposure according to 3.116.

Treatment of expected loss amounts

3.7. The expected loss amounts calculated in accordance with paragraphs 4.61, 5.13 to 5.15, 6.47, 7.12, 7.17, 7.26 and 8.30 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 paragraph 4.71 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.

Corporate governance

3.8. 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.

3.9. 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.

3.10. 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.

3.11. Internal ratings-based analysis of the firm's credit risk profile must be an essential part of the management reporting required under paragraphs 3.8 to 3.11. 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 own estimates of LGDs and 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.

Credit risk control

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

3.13. The areas of responsibility for the credit risk control unit(s) must include the following.

3.13.1. testing and monitoring grades and pools;

3.13.2. production and analysis of summary reports from the firm's rating systems;

3.13.3. implementing procedures to verify that grade and pool definitions are consistently applied across departments and geographic areas;

3.13.4. reviewing and documenting any changes to the rating process, including the reasons for the changes;

3.13.5. 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);

3.13.6. active participation in the design or selection, implementation and validation of models used in the rating process;

3.13.7. oversight and supervision of models used in the rating process; and

3.13.8. ongoing review and alterations to models used in the rating process.

3.14. Notwithstanding 3.13, a firm using pooled data according to paragraph 3.87 to 3.89 may outsource the following tasks:

3.14.1. production of information relevant to testing and monitoring grades and pools;

3.14.2. production of summary reports from the firm's rating systems;

3.14.3. production of information relevant to review of the rating criteria to evaluate if they remain predictive of risk;

3.14.4. documentation of changes to the rating process, criteria or individual rating parameters; and

3.14.5. production of information relevant to ongoing review and alterations to models used in the rating process.

3.15. A firm making use of the provisions in paragraph 3.14 must ensure that the FSC 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 FSC may perform on-site examinations to the same extent as within the firm.

Documentation of rating systems

3.16. 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.

3.17. 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 FSC, or to make any class or description of them specified by the FSC available to the FSC, immediately on demand or within a short time thereafter.

3.18. 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 FSC. The organisation of rating assignment including the rating assignment process and the internal control structure must also be documented.

3.19. 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 in this Guidance Note.

3.20. 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.

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

3.21.1. 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;

3.21.2. establish a rigorous statistical process (including out-of-time and out-of-sample performance tests) for validating the model; and

3.21.3. indicate any circumstances under which the model does not work effectively.

Rating systems

3.22. 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.

3.23. 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.

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

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

Validation of internal estimates

3.26. 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. A firm must be able to demonstrate to the FSC that the internal validation process enables it to assess the performance of internal rating and risk estimation systems consistently and meaningfully.

3.27.

3.27.1. A firm must validate its rating systems. Its validation process must include, as a minimum, the elements set out in paragraphs 3.27.2 – 3.27.8.

3.27.2. 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.

3.27.3. 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.

3.27.4. 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 paragraphs 3.27.2 and 3.27.3.

3.27.5. 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.

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

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

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

3.27.9. The standards set under paragraphs 3.27.2 and 3.27.3 must meet the minimum IRB standards.

3.27.10. For the purpose of paragraph 3.27.5:

3.27.10.1. 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

3.27.10.2. 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.

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

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

3.30. 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 for the calculation of LGDs 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.

3.31. This paragraph sets out guidance on assessing the adequacy of a rating system's discriminative power (see paragraph 3.27 for the meaning of discriminative power).

3.31.1. 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:

3.31.1.1. the extent of any potential inaccuracy in these measures, caused in particular by small sample size; and

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

3.31.2. The assessment of discriminative power should include appropriate use of external benchmarks where available.

3.31.3. The FSC will, in assessing the firm's performance, take into consideration the sophistication of the measure of discrimination chosen.

3.31.4. 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 paragraph 3.31.1 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.

3.32. 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.

3.33. 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.

3.34. 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.

Internal audit

3.35. 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.

Stress tests used in assessment of capital adequacy

3.36. 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.

3.37.

3.37.1. 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

3.37.2. The stress test must be designed to assess the firm's ability to meet its capital requirements for credit risk during all stages of the economic cycle and during an economic recession such as might be experienced once in 25 years.

3.37.3. 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 4.79 must in particular consider the impact of protection providers falling outside the eligibility criteria.

3.37.4. 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.

3.37.5. 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.

3.37.6. A firm need not assume that the recession referred to in 3.37.2 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.

3.38. To the extent that the economic conditions assumed in the stress tests required under paragraphs 3.36 or 3.37 coincide with the conditions assumed in the production of economic downturn LGDs (see paragraph 3.97), the LGDs to be used might be expected to be similar.

Rating systems: Assignment to grades or pools

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

3.40. 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.

3.41. In meeting 3.40 a firm should have regard to its application to each rating system.

3.42. 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.

3.43. The criteria referred to in 3.39 must also be consistent with the firm's internal lending standards and its policies for handling troubled obligors and facilities.

3.44. 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.

Rating systems: General governance

3.45. This paragraph contains guidance on paragraph 3.39 and more general guidance about the governance of rating systems.

3.45.1. In determining the assignment referred to in 3.39, a firm should have regard to the sensitivity of the rating to movements in fundamental risk drivers.

3.45.2. A firm should, with respect to any rating system:

3.45.2.1. be able to demonstrate how it addresses appropriately any deficiencies caused by its not being sensitive to movements in fundamental risk drivers or for any other reason;

3.45.2.2. be able to demonstrate the appropriateness of its policy on periodic review and action in the light of such review;

3.45.2.3. the appropriateness of what it does by way of provision of appropriate internal guidance to staff to ensure consistency in its use, including the assignment of exposures or facilities to pools or grades;

3.45.2.4. the appropriateness of what it does in order to deal with potential strengths and weaknesses of the rating system;

3.45.2.5. the appropriateness of what it does to identify appropriate and inappropriate uses of the rating system and to act on that identification;

3.45.2.6. be able to demonstrate how it satisfies itself about the appropriateness of novel or narrow rating approaches; and

3.45.2.7. be able to demonstrate how it satisfies itself that the rating system has an appropriate level of stability over time.

Rating systems: Overrides

3.46. 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 that are 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.

Rating systems: Use of models

3.47. 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.

3.47.1. A firm must be able to demonstrate to the FSC that the model has good predictive power and that capital requirements are not distorted as a result of its use.

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

3.47.3. 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.

3.47.4. A firm must be able to demonstrate to the FSC that the data used to build the model is representative of the population of the firm's actual obligors or exposures.

3.47.5. 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.

3.47.6. 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.

3.47.7. 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 this Guidance Note or a firm's IRB permission for rating systems. A firm must be able to satisfy the FSC that all those requirements are satisfied if it uses such a model.

3.48. This paragraph contains guidance on 3.47.6.

3.48.1. Paragraph 3.47.6 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:

3.48.1.1. that is not necessary in order to meet the requirements this Guidance Note about the ability of the rating system to predict and to discriminate (as referred to in 3.28 (Validation of internal estimates); and

3.48.1.2. the outputs of the model are not designed to be supplemented by such a review.

3.49. This paragraph contains guidance on paragraph 3.47.

3.49.1. Paragraphs 3.47.1 to 3.47.7 also apply to mechanical methods to assign exposures or obligors to facility grades or pools and to a combination of models and mechanical methods. This paragraph applies the use of external models.

3.49.2. The standards required by this Guidance Note for an external model are at least as high as those for internal models.

3.49.3. The FSC 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.

3.49.4. 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.

3.49.5. 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 paragraph 3.48 and other provisions of the IRB approach are complied with on an ongoing basis.

3.49.6. If a firm uses an external model it should have regard to the following:

3.49.6.1. the adequacy of the information it has about the population on which the model is built;

3.49.6.2. the comparability of the population referred to in paragraph 3.49.6.1 to the exposures with respect to which it is using that model;

3.49.6.3. what the drivers of the model are and their relevance to the exposures with respect to which it is using the model; and

3.49.6.4. 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

3.50. A firm must collect and store data on aspects of its internal ratings.

Rating systems: IT systems

3.51. A firm should ensure that IT systems relevant to the operation of its rating systems are sound and robust. Its 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.

Risk quantification: Definition of default: Main provisions

3.52. 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:

3.52.1. 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

3.52.2. 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.

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

3.53.1. 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;

3.53.2. an advised limit means a limit which has been brought to the knowledge of the obligor;

3.53.3. days past due for credit cards commence on the minimum payment due date;

3.53.4. in the case of retail exposures and exposures to public sector entities the number of days past due is as set out in paragraphs 4.22 and 6.2; and

3.53.5. 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 following thresholds:

3.53.5.1. in the case of retail exposures, £100; and

3.53.5.2. in all other cases, £1,000.

Risk quantification: Definition of default: Identification of obligor

3.54. This paragraph contains guidance on the definition of default.

3.54.1. If:

3.54.1.1. 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

3.54.1.2. the firm does so in the case of a particular group;

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

3.54.3. The FSC would not expect a firm to treat an obligor as part of a single obligor under paragraph 3.54.1 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.

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

Risk quantification: Definition of default: Exclusion of administrative oversights

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

3.55.1. 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:

3.55.1.1. that failure is not associated with any increase in the risk referred to in paragraph 3.52.1; and

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

3.55.2. If a firm takes advantage of this provision it should have a policy about the circumstances in which it can apply the treatment in paragraph 3.55.1. That policy should be documented and consistently applied.

Risk quantification: Definition of default: Exclusion of small amounts

3.56.

3.56.1. 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 paragraphs 3.52.2 and 3.53.1.

3.56.2. A firm may set thresholds for materiality which are lower than those in paragraphs 3.53.5.1 to 3.53.5.2.

Risk quantification: Definition of default: Days past due

3.57. 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 this Guidance Note but should also consider all other indicators of unlikeliness to pay when assessing whether a default has occurred.

Risk quantification: Definition of default: Unlikeliness to pay

3.58. Elements to be taken as indications of unlikeliness to pay must include the items set out in this paragraph.

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

3.58.2. 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.

3.58.3. The firm selling the credit obligation at a material credit-related economic loss must be taken as an indication of unlikeliness to pay.

3.58.4. 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.

3.58.5. 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.

3.58.6. 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.

3.59. 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 paragraph 3.53. 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:

3.59.1. the order in which payments are applied against overdue payments; and

3.59.2. 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 the Guidance Notes 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.

3.60. This paragraph contains guidance on the adjustment referred to in paragraph 3.58.2.

3.60.1. An adjustment of that type need not necessarily be taken as an indication of unlikeliness to pay in the case of a retail exposure 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.

3.61. This paragraph contains guidance on the meaning of distressed restructuring referred to in 3.58.4.

3.61.1. An obligation should be considered a distressed restructuring if an independent third party, with expertise in the relevant area, would not be prepared to provide financing under substantially the same terms and conditions.

3.62. This paragraph contains guidance on additional circumstances that may be treated as indications of unlikeliness to pay for the purposes of the definition of default.

3.62.1. The realisation or forfeiture of collateral may be taken as an indication of unlikeliness to pay.

3.62.2. 3.62.1 may not apply:

3.62.2.1. 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

3.62.2.2. if the firm is able to demonstrate that for some other reason than that in paragraph 3.62.1 is not a meaningful indication of unlikeliness to pay.

3.63. If an obligor approach is being taken with respect to retail exposures 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 FSC, 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. The obligor approach refers to the application of the definition of default at an obligor level rather than at a facility level as described in paragraph 6.21.

3.64. The reason for 3.63 firms typically find that the PD of a residential mortgage is typically lower than the PD of an unsecured loan to the same borrower.

3.65. A firm may, but without prejudice to paragraphs 4.22 and 6.20, use additional, or stricter, indicators of unlikeliness to pay if it uses these indicators for internal purposes in accordance with paragraph 2.1.2 (Use tests) and if the disclosures are on this basis.

Risk quantification: Definition of default: Other provisions

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

3.67. 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.

3.68. 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

3.69. Paragraphs 3.70 to 3.124 apply to a firm's own estimates of risk parameters used in the IRB approach.

3.70. 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.

3.71. This paragraph provides guidance on paragraph 3.65.

3.71.1. Relevant data and information under 3.65 includes external data.

3.71.2. 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 the appropriateness of this data to its own experience and consider whether adjustments are necessary.

3.72.

3.72.1. 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.

3.72.2. The historical average rules means the requirements in this Guidance Note relating to the calculation of PD, LGD and conversion factors using historical averages (and in particular paragraphs 4.24, 4.30, 8.7, 8.8, 6.24, 6.27, 3.94 and 3.119.

3.73. A firm may carry out the adjustments under 3.65 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.

3.74. While the qualitative requirements in this Guidance Note 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.

3.75.

3.75.1. A firm must collect data on what it considers to be the main drivers of risk parameters (as referred to in 3.70) for each group of obligors or facilities.

3.75.2. A firm must document its identification of the main drivers of risk parameters under paragraphs 3.75.1 and 3.70. That identification must be capable of being demonstrated to be reasonable and appropriate.

3.75.3. A firm’s processes for carrying out the identification referred to in 3.75 and in 3.71 must include consideration of why the data sources chosen for the purposes described in 3.75.1 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 to materially improve the discriminative power and accuracy of its estimates of the risk parameter in question.

3.76. If a firm uses a rating model to assign exposures to the borrower or facility grades, it may reflect the data referred to in paragraph 3.75 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 referred to in paragraph 3.70.

3.77. 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 FSC that its estimates are representative of long-run experience.

3.78. Any changes in lending practice or the process for pursuing recoveries over the observation periods referred to in paragraphs 4.31, 6.28, 4.54, 6.33, 4.55 and 6.38 must be taken into account. A firm's estimates must reflect the implications of technical advances and new data and other information, as it becomes available. A firm must review its estimates when new information comes to light but at least on an annual basis.

3.79. 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 FSC that the economic or market conditions that underlie the data are relevant to current and foreseeable conditions.

3.80. It may be reasonable for a firm to treat "foreseeable" in paragraph 3.79 as referring to the most distant date to which it carries out detailed capital planning.

3.81. A firm should be able to demonstrate to the FSC:

3.81.1. how, with respect to each rating system, both assignment of ratings and estimates of PD, LGD and conversion factors are affected by:

3.81.1.1. movements in the economic cycle; and

3.81.1.2. 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

3.81.2. the level of conservatism inherent in its ratings, as provided for by this guidance notes.

3.82. The number of exposures in the sample and the data period used for quantification referred to in 3.80 must be sufficient to provide a firm with confidence in the accuracy and robustness of its estimates.

3.83. 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.

3.84. Estimation of PD through the use of a technique set out in the Guidance Notes 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.

3.85. 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 FSC the reasonableness of such estimates.

3.86. If a firm can demonstrate to the FSC 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 FSC may in the IRB permission allow the firm some flexibility in the application of the required standards for data.

Risk quantification: Overall requirements for estimation: Pooled data

3.87. If a firm uses data that is pooled across institutions it must be able to demonstrate to the FSC that:

3.87.1. the rating systems and criteria of other firms in the pool are similar to its own;

3.87.2. the pool is representative for the portfolio for which the pooled data is used; and

3.87.3. the pooled data is used consistently over time by the firm for its permanent estimates; and

3.88. Paragraph 3.88.1 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.

3.89. 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 FSC that it has sufficient in-house understanding of its rating systems, including effective ability to monitor and audit the rating process.

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

3.90.

3.90.1. If:

3.90.1.1. a firm's internal experience of exposures of a type covered by a model or other rating system is 20 defaults or fewer; and

in the firm's view, reliable estimates of PD cannot be derived from

3.90.1.2. external sources of default 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.

3.90.2. 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 3.84.

3.90.3. The techniques chosen for the purposes of 3.90.2 must take account, as a minimum, of the following modelling issues:

3.90.3.1. the number of defaults and number of obligor years in the sample;

3.90.3.2. the number of years from which the sample was drawn;

3.90.3.3. the interdependence between default events for individual obligors;

3.90.3.4. the interdependence between default rates for different years; and

3.90.3.5. the choice of the statistical estimators and the associated distributions and confidence intervals.

3.90.4. The firm must further adjust the statistical PD to the extent necessary to take account of the following:

3.90.4.1. 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 4.24 and 6.24; and

3.90.4.2. 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.

3.90.5. This rule is in addition to the other requirements in the Guidance Notes about the calculation of PD.

3.90.6. When a firm calculates whether it has 20 defaults or fewer under the calculation in 3.90.1.1, it must only take into account defaults that occurred during periods that are relevant to the validation under this Guidance Note of the model or other rating system in question.

3.91. A firm may if appropriate also choose to use the approach in paragraph 3.90 if the internal experience on exposures covered by a rating system is greater than 20 defaults.

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

3.92. Paragraphs 3.93 to 3.116 set out requirements specific to own-LGD estimates.

3.93. 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).

3.94. A firm must calculate the average referred to paragraph 3.93 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.

3.95.

3.95.1. A firm's estimates of LGDs must take into account:

3.95.1.1. data in respect of relevant incomplete workouts; and

3.95.1.2. the possibility that the proportion of defaulted exposures which fall within paragraph in 3.67 or are restructured (as referred to in 3.58.4 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.

3.95.2. An incomplete workout as referred to in 3.95.1.1 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.

3.96. The changes referred to in 3.95.1.2 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.

3.97. 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.

3.98.

3.98.1. A firm must have a rigorous and well documented process for:

3.98.1.1. assessing the effects, if any, of economic downturn conditions on recovery rates; and

3.98.1.2. producing LGD estimates consistent with downturn conditions as referred to in 3.98.

3.98.2. That process must include the following, which may be included in an integrated manner:

3.98.2.1. identification of appropriate downturn conditions for each IRB exposure class within each jurisdiction;

3.98.2.2. identification of adverse dependencies, if any, between default rates and recovery rates; and

3.98.2.3. 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 paragraph 3.97 relating to an economic downturn.

3.99. A firm may combine IRB exposure classes, jurisdictions or both for the purpose of 3.98.2.1 if it can demonstrate that the downturn conditions to which the portfolios are subject will be similar.

3.100. The FSC does not assume that the adverse dependencies referred to in 3.98.2.2 will always exist. However, if a firm uses LGDs that do not allow for such adverse dependencies, it should be able to justify its decision.

3.101. The FSC recognises that 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 3.97.

3.102. 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 3.97 to be able to demonstrate to the FSC (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.

3.103. A firm may, in accordance with 1.22 (Compliance), exclude defaulted exposures that have been cured (as referred to in 3.67) or restructured (as referred to in 3.58.4) 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 chapter or transitional rules and guidance in the Guidance Notes) are not reduced as a result of this approximation.

3.104. Irrespective of whether calculated on an economic downturn or long-run average basis (both as referred to in 3.97), each LGD estimate must be at least zero.

3.105. 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 3.111.

3.106. 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.

3.107. The uncertainty referred to in 3.106 can be addressed by adjusting cash flows to certainty-equivalents; by using a discount rate that embodies an appropriate risk premium; or a combination of the two.

3.108. 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.

3.109. 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.

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

3.111. 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.

3.112.

3.112.1. A firm may satisfy paragraph 3.111 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.

3.112.2. If collateral is used to reduce the LGD, a firm should be able to demonstrate how the risk in paragraph 3.111 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.

3.113. 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 Schedule 8 of the BCACI Regulations and Section 10 of this Guidance Note.

3.114. To the extent that a firm recognises collateral for determining the exposure value for counterparty credit risk, any amount expected to be recovered from the collateral must not be taken into account in the LGD estimates.

3.115. 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.

3.116. 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.

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

3.117. Paragraphs 3.118 to 3.124 set out requirements specific to own-conversion factor estimates.

3.118. 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).

3.119.

3.119.1. 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 and settlement exposures.

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

3.119.3. To the extent that a firm makes available multiple facilities, it should be able to demonstrate:

3.119.3.1. how it deals with the fact that exposures on one may become exposures under another on which the losses are ultimately incurred; and

3.119.3.2. the impact of its approach on its capital requirements.

3.120. 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 constant realised conversion factors 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.

3.121. A firm's estimates of conversion factor 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.

3.122. 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.

3.123. 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.

3.124. 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 FSC.

Risk quantification: Overall requirements for estimation: Comparability

3.125. This paragraph contains guidance about the interpretation of the requirements relating to comparability in paragraph 3.79. It is also relevant to the requirement for representative data in paragraph 3.47.4, to the references to comparability in the additional guidance in paragraph 3.49.6.2 and to the requirements for similarity in paragraph 3.87.

3.125.1. 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.

4. Exposures to corporates, institutions and sovereigns

4.1. This section applies with respect to the sovereign, institution and corporate IRB exposure class.

4.1.1. The sovereign, institution and corporate IRB exposure class includes specialised lending exposures.

4.1.2. Both Section 4 and Section 5 (specialised lending exposures) apply to specialised lending exposures. A firm may calculate risk weighted exposure amounts for a specialised lending exposure either:

4.1.2.1. (if it is able to do so) in accordance with Section 4; or

4.1.2.2. in accordance with Section 4 as modified by Section 5.

4.2. The following exposures must be treated as exposures to central governments and central banks:

4.2.1. exposures to regional governments, local authorities or public sector entities which are treated as exposures to central governments under the standardised approach; and

4.2.2. exposures to multilateral development banks and international organisations which attract a risk weight of 0% under the standardised approach.

4.3. The following exposures must be treated as exposures to institutions:

4.3.1. exposures to regional governments and local authorities which are not treated as exposures to central governments under the standardised approach;

4.3.2. exposures to public sector entities which are treated as exposures to institutions under the standardised approach;

4.3.3. exposures to multilateral development banks which do not attract a 0% risk weight under the standardised approach; and

4.3.4. without prejudice to the Guidance Note for Financial Derivatives, SFTs and long settlement transactions (Treatment of derivative instruments), exposures to recognized third-country investment firms and exposures incurred to recognized clearing houses and designated investment exchanges.

4.4. Any credit obligation not assigned to the IRB exposure classes referred to in paragraphs 3.1.1, 3.1.2 and 3.1.4 to 3.1.6 must be assigned to the corporate exposure class.

Rating system: Structure of rating system

4.5. Paragraphs 4.6 to 4.9 apply in addition to paragraphs 3.22 to 3.25 (rating systems).

4.6. A rating system must take into account obligor and transaction risk characteristics.

4.7. A rating system must have an obligor rating scale which reflects exclusively quantification of the risk of obligor default. The obligor rating scale must have a minimum of seven grades for non-defaulted obligors and one for defaulted obligors.

4.8. An obligor grade means for the purpose of this Guidance Note as it applies to the sovereign, institution and corporate IRB exposure class a risk category within a rating system's obligor rating scale, to which obligors are assigned on the basis of a specified and distinct set of rating criteria, from which estimates of PD are derived. A firm must document both 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.

4.9. A firm with portfolios concentrated in a particular market segment and range of default risk must have enough obligor grades within that range to avoid undue concentrations of obligors in a particular grade. Significant concentrations within a single grade must 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.

Rating system: Assignment to grades or pools

4.10. Material on assignment to grades or pools can be found in paragraphs 3.39 to 3.44.

Rating system: Assignment of exposures

4.11. Each obligor must be assigned to an obligor grade as part of the credit approval process.

4.12. Each separate legal entity to which a firm is exposed must be separately rated. A firm must be able to demonstrate to the FSC that it has acceptable policies regarding the treatment of individual obligor clients and groups of connected clients.

4.13. Separate exposures to the same obligor must be assigned to the same obligor grade, irrespective of any differences in the nature of each specific transaction. Exceptions, where separate exposures are allowed to result in multiple grades for the same obligor are:

4.13.1. country transfer risk, this being dependent on whether the exposures are denominated in local or foreign currency; and

4.13.2. where the treatment of associated guarantees to an exposure may be reflected in an adjusted assignment to an obligor grade.

4.13.3. where consumer protection, bank secrecy or other legislation prohibit the exchange of client data.

Rating system: Overrides

4.14. Material on overrides can be found in paragraph 3.46.

Rating system: Integrity of assignment process

4.15. Assignments and periodic reviews of assignments must be completed or approved by an independent party that does not directly benefit from decisions to extend the credit.

4.16. A firm must update assignments at least annually. High risk obligors and problem exposures must be subject to more frequent review. A firm must undertake a new assignment if material information on the obligor or exposure becomes available.

4.17. Although it will not usually be the case that facility ratings and conversion factors will have to be updated more frequently as referred to in paragraph 4.16, LGDs and exposure values are subject to more frequent recalculation due to their connection to drawn balances, which can vary on a daily basis.

4.18. A firm must have an effective process to obtain and update relevant information on obligor characteristics that affect PDs, and on transaction characteristics that affect LGDs and conversion factors.

Rating system: Use of models

4.19. Material on the use of models can be found in paragraphs 3.47 to 3.49.

Rating system: Documentation of rating systems

4.20. Material on the documentation of rating systems can be found in paragraphs 3.16 to 3.21.

Rating system: Data maintenance

4.21. In addition to complying with the material in paragraph 3.50 (data maintenance) a firm must collect and store:

4.21.1. complete rating histories on obligors and recognised guarantors;

4.21.2. the dates the ratings were assigned;

4.21.3. the key data and methodology used to derive the rating;

4.21.4. the person responsible for the rating assignment;

4.21.5. the identity of obligors and exposures that defaulted;

4.21.6. the date and circumstances of such defaults;

4.21.7. data on the PDs and realised default rates associated with rating grades and ratings migration; and

4.21.8. (in the case of a firm not using the advanced IRB approach in the calculation of LGDs and/or conversion factors) data on comparisons of realised LGDs to the values as set out in paragraphs 4.34 and 8.25 and realised conversion factors to the values as set out in paragraphs 4.37, 4.45 and 6.56.

Risk quantification: Definition of default

4.22. This paragraph, in accordance with paragraph 3.53.3 (Definition of default), sets the exact number of days past due that a firm should abide by in the case of exposures to PSEs.

4.22.1. For counterparts that are PSEs situated within Gibraltar the number of days past due is 90.

4.22.2. For counterparts that are PSEs situated in another EEA State the number of days past due is the lower of:

4.22.2.1. 90; and

4.22.2.2. the number of days past due fixed under the CRD implementation measure with respect to paragraph 48 of Part 4 of Annex VII of the Banking Consolidation Directive for that EEA State for such exposures.

4.22.3. For counterparts that are PSEs in a state outside the EEA the number of days past due is the lower of:

4.22.3.1. 180; and

4.22.3.2. if a number of days past due for such exposures has been fixed under any law of that state applicable to undertakings in the banking sector or the investment services sector that implements the IRB approach) that number.

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

4.23. Paragraphs 4.24 to 4.31 apply to both the foundation IRB approach and the advanced IRB approach.

4.24. A firm must estimate PDs by obligor grade from long run averages of one-year default rates.

4.25. A firm must use PD estimation techniques only with supporting analysis. A firm must recognise the importance of judgmental considerations in combining results of techniques and in making adjustments for limitations of techniques and information.

4.26. Where measures for PD estimation other than those listed in 4.25 (such as rating agency experience and the output of a statistical default model) are the primary component of PD estimation, a firm should consider whether it needs to make adjustments for other relevant information, such as internal experience, conservatism and cyclical effects. In making these adjustments, a firm should consider the extent to which it needs to take account of the potential for both under-recording of actual defaults experienced and divergence of actual experience from the true underlying average PD.

4.27. To the extent that a firm uses data on internal default experience for the estimation of PDs it must be able to demonstrate in its analysis that the estimates are 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, a firm must add a greater margin of conservatism in its estimate of PD.

4.28. To the extent that a firm 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 firm's grades, mappings must 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 must be avoided. The external organisation's criteria underlying the data used for quantification must be oriented to default risk only and not reflect transaction characteristics. The firm's analysis must include

a comparison of the default definitions used, subject to the requirements in paragraphs 3.52 to 3.67 and 4.22. The firm must document the basis for the mapping.

4.29. It is unlikely that a firm will be able to convince the FSC that it had considered all relevant and available information, as required by paragraph 3.70, if it used only date from one ECAI or similar organisation, where other relevant information is available.

4.30. To the extent that a firm uses statistical default prediction models it may estimate PDs as the simple average of default-probability estimates for individual obligors in a given grade. The firm's use of default probability models for this purpose must meet the standards specified in paragraph 3.47.

4.31. Irrespective of whether a firm 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 must 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 must be used. A firm not permitted to use own estimates of LGDs or conversion factors may have, when it implements the IRB approach, relevant data covering a period of two years. The period to be covered must increase by one year each year until relevant data cover a period of five years.

IRB foundation approach: General

4.32. Paragraphs 4.33 to 4.39 set out requirements specific to the foundation IRB approach.

4.33. Under the foundation IRB approach a firm must apply the LGD values set out in paragraphs 4.34 and 8.25 and the conversion factors set out in paragraph 3.33.

IRB foundation approach: LGDs

4.34. A firm must use the following LGD values:

4.34.1. senior exposures without eligible collateral, 45%;

4.34.2. subordinated exposures without eligible collateral, 75%;

4.34.3. a firm may recognise funded and unfunded credit protection in the LGD in accordance with Schedule 8 of the BCACI Regulations, and Section 10 of the Guidance Note;

4.34.4. covered bonds may be assigned an LGD value of 12.5%; and

4.34.5. for certain senior corporate exposure purchased receivables, for certain subordinated corporate exposure purchased receivables and for dilution risk of corporate purchased receivables the provisions of paragraph 8.25 (LGDs for corporate receivables) apply.

4.35. Until 31 December 2010, covered bonds as defined in the Guidance Note on Credit Risk Standardised Approach may be assigned an LGD value of 11.25% if:

4.35.1. assets as set out in the Guidance Note on Credit Risk Standardised Approach collateralising the covered bonds all qualify for credit quality assessment step one as set out in said Guidance Note.

4.35.2. where assets are used as collateral, the respective upper limits laid down in each of those points is 10% of the nominal amount of the outstanding issue;

4.35.3. assets are not used as collateral; or

4.35.4. the covered bonds are the subject of a credit assessment by a nominated ECAI, and the ECAI places them in the most favourable category of credit assessment that the ECAI could make in respect of covered bonds.

Foundation IRB approach: Exposure value and conversion factors

4.36. Paragraphs 4.37 to 4.39 apply in addition to paragraphs 4.71 to 4.78.

4.37.

4.37.1. The exposure value for the items set out in this paragraph must be calculated as the committed but undrawn amount multiplied by the applicable conversion factor set out in this paragraph.

4.37.2. For credit lines which are uncommitted, that are unconditionally cancellable at any time by the firm without prior notice, or that effectively provide for automatic cancellation due to deterioration in a borrower's credit worthiness, a conversion factor of 0 % applies. To apply a conversion factor of 0% a firm must actively monitor the financial condition of the obligor, and its internal control systems must enable it immediately to detect deterioration in the credit quality of the obligor.

4.37.3. For short-term letters of credit arising from the movement of goods, a conversion factor of 20% applies for both the issuing and confirming firms.

4.37.4. For other credit lines, note issuance facilities (NIFs), and revolving underwriting facilities (RUFs), a conversion factor of 75% applies.

4.37.5. For undrawn purchase commitments for revolving purchased receivables falling under paragraph 8.29, the conversion factor set out in that rule applies.

4.38. Where a commitment refers to the extension of another commitment, the lower of the two conversion factors associated with the individual commitment must be used.

4.39. For all off-balance sheet items other than mentioned in paragraphs 4.37, 4.73 to 4.78, 4.8.28 and 8.29, the exposure value must be the following percentage of its value:

4.39.1. 100% if it is a full risk item;

4.39.2. 50% if it is a medium risk item;

4.39.3. 20% if it is a medium/low risk item; and

4.39.4. 0% if it is a low risk item.

For the purposes of this rule the off-balance sheet items must be assigned to risk categories as indicated in the Guidance Note on Credit Risk Standardised approach, Section 6.

Advanced IRB approach: General

4.40. Paragraph 4.41 to 4.55 set out requirements specific to the advanced IRB approach.

4.41. Under the advanced IRB approach a firm must use its own estimates of LGDs and conversion factors in accordance with this Guidance Note.

Advanced IRB approach: LGDs and PDs

4.42. A firm using own LGD estimates under the advanced IRB approach may recognise unfunded credit protection by adjusting PDs subject to 4.43.

4.43. Notwithstanding paragraphs 4.34 and 8.25, if a firm's IRB permission permits it to use own LGD estimates under the advanced IRB approach for exposures to which this Guidance Note applies and permits it to use the approach in this rule, unfunded credit protection may be recognised by adjusting PD and/or LGD estimates subject to the minimum IRB standards. A firm must not assign guaranteed exposures an adjusted PD or LGD such that the adjusted risk weight would be lower than that of a comparable, direct exposure to the guarantor.

4.44. A firm using the advanced IRB approach may only recognise unfunded credit protection in accordance with 4.43. The other methods for recognising unfunded credit risk mitigation under the standardised approach and foundation IRB approach are not available to a firm on the advanced IRB approach.

Advanced IRB approach: Conversion factors

4.45. If a firm uses its own estimates of conversion factors under the advanced IRB approach it must calculate the exposure value of off balance sheet exposures calculated with the use of conversion factors by using its own estimates of conversion factors across different product types as mentioned in paragraph 4.37.

4.46. Under 4.45, a firm may calculate exposure values by calculating the amount expected to be claimed, instead of the maximum possible amount of the potential claim. The figure for the amount expected to be claimed should not be less than the current outstandings from time to time.

Advanced IRB approach: Structure of the rating system

4.47. Paragraphs 4.48 to 4.50 are in addition to paragraphs 3.22 to 3.25 and 4.6 to 4.9.

4.48. If a firm's IRB permission provides for it to use the advanced IRB approach for the calculation of LGDs, its rating system must incorporate a distinct facility rating scale which exclusively reflects LGD related transaction characteristics.

4.49. A facility grade means for the purpose of the advanced IRB approach a risk category within a rating system's facility scale to which exposures are assigned on the basis of a specified and distinct set of rating criteria from which own estimates of LGDs are derived. The grade definition must 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.

4.50. Significant concentrations within a single facility grade must be supported by convincing empirical evidence that the facility grade covers a reasonably narrow LGD band, and that the risk posed by all exposures in the grade falls within that band.

Advanced IRB approach: Assignment of exposures

4.51. For a firm permitted to use own estimates of LGDs or conversion factors under the advanced IRB approach, each exposure must be assigned to a facility grade as part of the credit approval process. This is in addition to the requirements in paragraphs 4.11 to 4.13.

4.52. Paragraphs 4.50 and 4.51 should be read in the light of paragraph 3.25.

Advanced IRB approach: Data maintenance

4.53. As well as complying with paragraph 3.50 and 4.21, a firm using own estimates of LGDs and/or conversion factors under the advanced IRB approach must collect and store:

4.53.1. complete histories of data on the facility ratings and LGD and conversion factor estimates associated with each rating scale;

4.53.2. the dates the ratings were assigned and the estimates were done;

4.53.3. the key data and methodology used to derive the facility ratings and LGD and conversion factor estimates;

4.53.4. the person who assigned the facility rating and the person who provided LGD and conversion factor estimates;

4.53.5. data on the estimated and realised LGDs and conversion factors associated with each defaulted exposure;

4.53.6. data on the LGD of the exposure before and after evaluation of the effects of a guarantee or credit derivative, for a firm that reflects the credit risk mitigating effects of guarantees or credit derivatives through LGD; and

4.53.7. data on the components of loss for each defaulted exposure.

Advanced IRB approach: Requirements specific to own-LGD estimates

4.54. In addition to the requirements in paragraphs 3.69 to 3.89 (General requirements about risk quantification) and paragraphs 3.92 to 3.116 (requirements for risk quantification specific to own-LGD estimates), estimates of LGD must 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 must be used.

Advanced IRB approach: Requirements specific to own-conversion factor estimates

4.55. In addition to the requirements in paragraphs 3.117 to 3.124 (requirements specific to own-conversion factor estimates), estimates of conversion factors must 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 must be used.

Calculations: General

4.56. The remainder of this section applies to both the foundation IRB approach and the advanced IRB approach.

Calculations: Risk-weighted exposure amounts

4.57. Subject to paragraphs 4.58, 4.59, 5.8 to 5.10, 5.12, 8.16, 8.17 and 9.3, risk weighted exposure amounts must be calculated according to the formulas in the table in 4.58 and the adjustment formula at 4.79.

4.58. Table: Formulae for the calculation of risk weighted exposure amounts.

Correlation (R)	$0.12 \times (1 - EXP(-50*PD))/(1-EXP(-50)) + 0.24*$ $[1-(1-EXP(-50*PD))/(1-EXP(-50))]$
Maturity factor (b)	$(0.11852-0.05478*1n(PD))^2$
Risk weight (RW)	$(LGD*N[(1-R)-0.^5*G(_JPD)+(R/(1-R))^0.^5 *G(0.999)]-PD*LGD)*$ $(1-1.5*b)-^1*(1+(M-2.5)*b)*12.5*1.06$
N(x)	denotes the cumulative distribution function for a standard normal random variable (i.e. the probability that a normal random variable with mean zero and variance of one is less than or equal to x). G(z) denotes the inverse cumulative distribution function for a standard normal random variable (i.e. the value x such that N(x) = z).
Risk-weighted exposure amount	equals RW*exposure value

PD = 0	For PD = 0, RW shall be: 0	
PD = 1	For PD = 1:	
	(i)	for defaulted exposures where a firm applies the LGD values set out in [4.32 and 8.25 RW shall be: 0;
	(ii)	for defaulted exposures where a firm uses its own estimates of LGDs, RW shall be: Max{0, 12.5 *(LGD- EL_{BE})};
	where EL_{BE} must be the firm's best estimate of expected loss for the defaulted exposure according to [Part 4, paragraph 79 of this Annex; 3.84].	

4.59. For exposures to companies where the total annual sales for the consolidated group of which the firm is a part is less than EUR 50 million a firm may use the following correlation formula for the calculation of risk weights for corporate exposures. In this formula S is expressed as total annual sales in millions of Euros with EUR 5 million < = S < = EUR 50 million. Reported sales of less than EUR 5 million must be treated as if they were equivalent to EUR 5 million. In accordance with paragraph 8.21, for purchased receivables the total annual sales are the weighted average by individual exposures of the pool. The formula for the calculation of correlation (R) is:

4.59.1. 0.12×(1-EXP(-50*PD))/(1-EXP(-50))+ 0.24*

4.59.2. [1-(EXP(-50*PD))/(1-EXP(-50))]

4.59.3. -0.04*(1-(S-5)/45)

4.60. A firm must for the purpose of paragraph 4.59 substitute total assets of the consolidated group for total annual sales when total annual sales are not a meaningful indicator of firm size and total assets are a more meaningful indicator than total annual sales.

Calculations: Expected loss amounts

4.61. Expected loss amounts must be calculated according to the formulae in the table in 4.62.

4.62. Table: Formulae for the calculation of expected loss amounts.

Expected loss (EL)	Equals PD x LGD
Expected loss amount	Equals EL x exposure value
For defaulted exposures (PD = 1) where a firm uses its own estimates of LGDs, EL must be EL_{BE} the firm's best estimate of expected loss for the defaulted exposure according to [Part 4, paragraph 79 of this Annex; 3.84].	
For exposures subject to the treatment set out in [Part 1, paragraph 3a; 4.57] EL must be 0.	

Calculations: PD

4.63. A firm must provide its own estimates of PDs in accordance with paragraphs 1.22, 1.23 (Compliance), 2.1, 2.2 (General approach to granting an IRB permission), 2.10 (Requirements concerning the experience requirement), 4.2.12 (Requirements concerning the experience requirement) and the minimum IRB standards.

4.64. The PD of a corporate exposure or an exposure in the IRB exposure class referred to in paragraph 3.1.2 (institutions) must be at least 0.03%.

4.65. The PD of obligors in default must be 100%.

4.66. Subject to paragraph 4.42 (Advanced IRB approach: LGDs and PDs) a firm may recognise unfunded credit protection in the PD in accordance with the provisions of Schedule 8 of the BCACI Regulations, and Section 10. For dilution risk, however, a firm may also recognise unfunded credit protection providers which are specified in its IRB permission. in addition to those indicated in Schedule 8 of the BCACI Regulations.

Calculations: Maturity

4.67.

4.67.1. A firm must calculate maturity (M) for each of the exposures referred to in this rule in accordance with this rule and subject to paragraphs 4.68 and 4.69. In all cases, M must be no greater than 5 years.

4.67.2. For an instrument subject to a cash flow schedule M must be calculated according to the following formula:

M = MAX{1; MIN{^ t*CF_t/^ CF_t ;5}}

where CF_t denotes the cash flows (principal, interest payments and fees) contractually payable by the obligor in period t.

4.67.3. For derivatives subject to a master netting agreement M must be the weighted average remaining maturity of the exposure, where M must be at least 1 year. The notional amount of each exposure must be used for weighting the maturity.

4.67.4. For exposures arising from fully or nearly-fully collateralised financial derivative instruments transactions and fully or nearly-fully collateralised margin lending transactions which are subject to a master netting agreement M must be the weighted average remaining maturity of the transactions where M must be at least 10 days. The notional amount of each transaction must be used for weighting the maturity.

4.67.5. If a firm is permitted under its IRB permission to use own PD estimates for corporate exposure purchased receivables, for drawn amounts M must equal the purchased receivables exposure weighted average maturity, where M must be at least 90 days. This same value of M must also be used for undrawn amounts under a committed purchase facility provided the facility contains effective covenants, early amortisation triggers, or other features that protect the purchasing firm against a significant deterioration in the quality of the future receivables it is required to purchase over the facility's term. Absent such effective protections, M for undrawn amounts must be calculated as the sum of the longest-dated potential receivable under the purchase agreement and the remaining maturity of the purchase facility, where M must be at least 90 days.

4.67.6. For any other instrument than mentioned in this rule or when a firm is not in a position to calculate M as set out in paragraph 4.67.2, M must be the maximum remaining time (in years) that the obligor is permitted to take fully to discharge its contractual obligations, where M must be at least 1 year.

4.67.7. Where a firm uses the CCR internal model method to calculate the exposure values, M must be calculated for exposures to which a firm applies this method and for which the maturity of the longest-dated contract contained in the netting set is greater than one year according to the formula in the BCACI Regulations, Schedule 7, part 2, paragraph 13(f).

4.68. Notwithstanding Paragraphs 4.67.2 to 4.67.4 and 4.67.6, M must be at least one-day for:

4.68.1. fully or nearly-fully collateralised financial derivative instruments;

4.68.2. fully or nearly-fully collateralised margin lending transactions; and

4.68.3. repurchase transactions, securities or commodities lending or borrowing transactions,

provided the documentation requires daily remargining and daily revaluation and includes provisions that allow for the prompt liquidation or setoff of collateral in the event of default or failure to re-margin.

4.69. The last part of paragraph 13 of Part 2 of Annex VII of the Banking Consolidation Directive states: "In addition, for other short-term exposures specified by the competent authorities which are not part of the credit institution's ongoing financing of the obligor, M shall be at least one-day. A careful review of the particular circumstances shall be made in each case." The FSC has not specified any such short term exposure.

4.70. Maturity mismatches must be treated as specified in Section 10 of this Guidance Note and Schedule 8 of the BCACI Regulations.

Calculations: Exposure value

4.71. Unless provided otherwise in this Guidance Note the exposure value of on-balance sheet exposures must be measured gross of value adjustments. This also applies to assets purchased at a price different than the amount owed. For purchased assets, the difference between the amount owed and the net value recorded on the balance-sheet of the firm is denoted discount if the amount owed is larger, and premium if it is smaller.

4.72. A firm must not treat the exposure value of a facility as being less than current drawings under it. Interest accrued to date on an exposure under a facility must be included in current drawings or else an allowance for it must be built into the conversion factor.

4.73. Where a firm uses master netting agreements in relation to repurchase transactions or securities or commodities lending or borrowing transactions the exposure value must be calculated in accordance with Schedule 8 of the BCACI Regulations, and Section 8 of the Guidance Note Financial Derivatives, SFTs and Long settlement transactions.

4.74. For on-balance sheet netting of loans and deposits a firm must apply for the calculation of the exposure value the methods set out in Section 10 of this Guidance Note and Schedule 8 of the BCACI Regulations.

4.75. The exposure value for leases must be the discounted minimum lease payments. Minimum lease payments are the payments over the lease term that the lessee is or can be required to make and any bargain option (i.e. option the exercise of which is reasonably certain). Any guaranteed residual value fulfilling the set of conditions in Schedule 8 of the BCACI Regulations, as applied by 10.38 and 10.39 (Unfunded credit protection: Eligibility of providers) regarding the eligibility of protection providers as well as the minimum requirements for recognising other types of guarantees provided in Schedule 8 of the BCACI Regulations should also be included in the minimum lease payments.

4.76. Where an exposure takes the form of securities or commodities sold, posted or lent under repurchase transactions or securities or commodities lending or borrowing transactions, long settlement transactions and margin lending transactions, the exposure value must be the value of the securities or commodities determined. Where the financial collateral

comprehensive method is used, the exposure value must be increased by the volatility adjustment appropriate to such securities or commodities as set out in Section 10 and Schedule 8 of the BCACI Regulations. The exposure value of repurchase transactions, securities or commodities lending or borrowing transactions, long settlements transactions and margin lending transactions must be determined in accordance with Section 8 of the Guidance Note: The Calculation of Exposure Values for Financial Derivatives, SFTs and Long Settlement Transactions.

4.77. Notwithstanding 4.76, the exposure value of credit risk exposures outstanding, as determined by the firm, with a central counterparty must be determined in accordance the Guidance Note on Financial Derivatives, SFTs and Long Settlement Transactions, provided that the central counterparty's CCR exposures with all participants in its arrangements are fully collateralised on a daily basis.

4.78. In the case of any financial derivative instrument, the exposure value must be determined by the methods set out in the Guidance Note: on Financial Derivatives, Securities Financing Transactions and Long Settlement Transactions.

Double default

4.79. The risk weighted exposure amount for each exposure which meets the requirements set out in paragraphs 4.83 and 4.85 (Double default) may be adjusted according to the following formula:

4.79.1. Risk weighted exposure amount = RW *exposure value * (0.15 + 160*PDpp)]

4.79.2. PDpp = PD of the protection provider

4.79.3. RW must be calculated using the relevant risk weight formula set out in paragraph 4.56 for the exposure, the PD of the obligor and the LGD of a comparable direct exposure to the protection provider. The maturity factor 4.79.2 must be calculated using the lower of the PD of the protection provider and the PD of the obligor.

4.80. Notwithstanding paragraphs 4.34 and 4.43, for the purposes of paragraph 4.79, the LGD of a comparable direct exposure to the protection provider shall either be the LGD associated with an unhedged facility to the guarantor or the unhedged facility of the obligor, depending upon whether in the event both the guarantor and the obligor default during the life of the hedged transaction available evidence and the structure of the guarantee indicate that the amount recovered would depend on the financial condition of the guarantor or obligor, respectively

4.81. For the purposes of 4.79, M must be the effective maturity of the credit protection but at least 1 year.

4.82. Paragraph 4.83 applies to the eligibility of protection providers under the IRB approach which qualify for the treatment set out in 4.79.

4.83. An institution, an insurance undertaking (including an insurance undertaking that carries out reinsurance) or an export credit agency which fulfils the following conditions may be recognised as an eligible provider of unfunded credit protection which qualifies for the treatment set out in 4.79:

4.83.1. the protection provider has sufficient expertise in providing unfunded credit protection;

4.83.2. the protection provider is regulated in a manner equivalent to the rules laid down in the Banking Consolidation Directive or had, at the time the credit protection was provided, a credit assessment by a recognised ECAI in accordance with the risk weighting of exposures to corporates under the standardised approach;

4.83.3. the protection provider had, at the time the credit protection was provided, or for any period of time thereafter, an internal rating with a PD equivalent to or lower

than that associated with credit quality step two or above under the rules for the risk weighting of exposures to corporates under the standardised approach;

4.83.4. the protection provider has an internal rating with a PD equivalent to or lower than that associated with credit quality step three or above under the rules for the risk weighting of exposures to corporates under the standardised approach;

For the purpose of this rule, credit protection provided by an export credit agency must not benefit from any explicit central government counter-guarantee.

4.84. Paragraph 4.85 applies to the requirements to qualify for the treatment set out in 4.79.

4.85. To be eligible for the treatment set out in 4.79, credit protection deriving from a guarantee or credit derivative must meet the following conditions:

4.85.1. the underlying obligation must be to:

4.85.1.1. a corporate exposure as defined in paragraphs 3.1 and 4.4, excluding an exposure to an insurance undertaking (including an insurance undertaking that carries out reinsurance); or

4.85.1.2. an exposure to a regional government, local authority or public sector entity which is not treated as an exposure to a central government or a central bank according to paragraph 4.2; or

4.85.1.3. an exposure to retail SME, classified as a retail exposure according to 6.2;

4.85.2. the underlying obligors must not be members of the same group as the protection provider;

4.85.3. the exposure must be hedged by one of the following instruments:

4.85.3.1. single name unfunded credit derivatives or single name guarantees;

4.85.3.2. first to default basket products, with these the treatment must be applied to the asset within the basket with the lowest risk weighted exposure amount;

4.85.3.3. n^{th} to default basket products, with these the protection obtained is only eligible for consideration under this framework if eligible $(n-1)^{th}$ default protection has also been obtained or where (n-1) of the assets within the basket has/have already defaulted and where this is the case the treatment must be applied to the asset within the basket with the lowest risk weighted exposure amount;

4.85.4. the credit protection must meet the requirements set out in Schedule 8 of the BCACI Regulations;

4.85.5. the risk weight that is associated with the exposure prior to the application of the framework does not already factor in any aspect of the credit protection;

4.85.6. a firm must have the right and expectation to receive payment from the protection provider without having to take legal action in order to pursue the counterparty for payment;

4.85.7. the purchased credit protection must absorb all credit losses incurred on the hedged portion of an exposure that arise due to the credit events outlined in the contract;

4.85.8. if the payout structure provides for physical settlement, then there must be legal certainty with respect to the deliverability of a loan, bond or contingent liability and if a firm intends to deliver an obligation other than the underlying exposure, it must ensure that the deliverable obligation is sufficiently liquid so that the firm would have the ability to purchase it for delivery in accordance with the contract;

4.85.9. the terms and conditions of credit protection arrangements must be legally confirmed in writing by both the protection provider and the firm;

4.85.10. a firm must have a process in place to detect excessive correlation between the creditworthiness of a protection provider and the obligor of the underlying exposure due to their performance being dependent on common factors beyond the systematic risk factor;

4.85.11. in the case of protection against dilution risk, the seller of purchased receivables must not be a member of the same group as the protection provider; and

4.85.12. with reference to 4.85.6, to the extent possible, a firm must take steps to satisfy itself that the protection provider is willing to pay promptly should a credit event occur.

5. Specialised lending exposures

5.1. This section applies with respect to the exposures referred to in paragraph 5.3.

5.2. Except for paragraphs 5.1 and 5.3, Section 5 only applies to the extent that a firm applies the method in paragraph 5.8 (slotting).

Definition of specialised lending

5.3. Within the corporate exposure IRB exposure class, a firm must separately identify as specialised lending exposures, exposures which possess the following characteristics:

5.3.1. the exposure is to an entity which was created specifically to finance and/or operate physical assets;

5.3.2. the contractual arrangements give the lender a substantial degree of control over the assets and the income that they generate; and

5.3.3. the primary source of repayment of the obligation is the income generated by the assets being financed, rather than the independent capacity of a broader commercial enterprise.

Treatment of specialised lending

5.4. If a firm is using or is applying to use the advanced IRB approach for some or all of its exposures in the sovereign, institution and corporate IRB exposure class, then specialised lending exposures treated under paragraph 5.8 must be treated as being dealt with under the advanced IRB approach for the purposes of the calculations in paragraphs 2.29 and 2.30. If a firm is not using or applying to use the advanced IRB approach for any of its exposures in the sovereign, institution and corporate IRB exposure class, in the cases in which it is necessary to distinguish between the advanced IRB approach and the foundation IRB approach, then specialised lending exposures treated under paragraph 5.8 must be treated as being dealt with under the foundation IRB approach for the purposes of the calculations in paragraphs 2.29 and 2.30.

Structure of rating system

5.5. A firm using the methods set out in paragraph 5.8 for assigning risk weights for specialised lending exposures is exempt from the requirement to have an obligor rating scale which reflects exclusively quantification of the risk of obligor default for these exposures. Notwithstanding paragraph 4.7 (Seven grades for exposures to sovereigns, institutions and corporates), a firm must have for these exposures four grades for non-defaulted obligors and one grade for defaulted obligors.

Assignment of exposures

5.6.

5.6.1. A firm using the methods set out in paragraph 5.8 for assigning risk weights for specialised lending exposures must assign each of these exposures to a grade in

accordance with Annex IV of the document "International Convergence of Capital Measurement and Capital Standards"(ICMS) dated June 2004 issued by the Basel Committee of Banking Supervision.

5.6.2. For these purposes a firm must slot exposures into the five columns in the tables in 5.9 and 5.14 as follows:

5.6.2.1. a firm must slot an exposure categorised as strong, under the ICMS document referred to in 5.6.1 into column 1;

5.6.2.2. a firm must slot an exposure categorised as good, under the ICMS document in 5.6.1 into column 2;

5.6.2.3. a firm must slot an exposure categorised as satisfactory, under the document referred to in 5.6.1 into column 3;

5.6.2.4. a firm must slot an exposure categorised as weak, under the ICMS document referred to in 5.6.1 into column 4;

5.6.2.5. in accordance with 5.5 a firm must slot an exposure in default into column 5.

Calculation of risk-weighted exposure amounts

5.7. Notwithstanding paragraph 3.4 (Use of relevant parameters for calculating risk weighted exposure amounts), the calculation of risk weighted exposure amounts for credit risk for specialised lending exposures may be calculated in accordance with 5.8.

5.8. For specialised lending exposures with respect to which a firm cannot demonstrate that its PD estimates meet the minimum IRB standards it must assign risk weights to these exposures according to the table in 5.9.

5.9. Table: Risk weights for specialised lending

Remaining maturity	Category1 1(Strong)	Category 2 (Good)	Category 3 (Satisfactory)	Category 4 (Weak)	Category 5
Less than 2.5 years	50%	70%	115%	250%	0%
Equal or more than 2.5 years	70%	90%	115%	250%	0%
The coverage of each of the categories is set out in 5.6					

5.10. A firm may generally assign preferential risk weights of 50% to exposures in category 1, and a 70% risk weight to exposures in category 2 if:

5.10.1. its IRB permission allows this; and

5.10.2. the firm’s underwriting characteristics and other risk characteristics are substantially strong for the relevant category.

5.11.

5.11.1. If a firm applies for an IRB permission or for a variation of an IRB permission that permits the treatment in paragraph 5.10 it should demonstrate that its standards exceed those of the slotting criteria provided for in Section 5 and result in ratings that are stronger than the benchmarks referred to in 5.11.3.

5.11.2. If a firm has an IRB permission that permits the treatment in paragraph 5.10 it should be able to demonstrate the matters in 5.11.1 to the FSC if asked.

5.11.3. Although a firm should map its internal ratings to the supervisory categories set out in the table in 5.9 using the slotting criteria provided in paragraph 5.6, each supervisory category broadly corresponds to a range of external credit assessments of BBB- or better, BB+ or BB, BB- or B+ and B to C- (or their equivalents). The fifth category covers default.

5.12. In assigning risk weights to specialised lending exposures a firm must take into account the following factors:

5.12.1. financial strength;

5.12.2. political and legal environment,

5.12.3. transaction and/or asset characteristics;

5.12.4. strength of the sponsor and developer including any public private partnership income stream; and

5.12.5. security package.

Calculation of expected loss amounts

5.13. The EL values for specialised lending exposures where a firm uses the methods set out in paragraph 5.8 for assigning risk weights must be assigned according to the table in 5.14.

5.14. Table: Expected loss values for specialised lending.

Remaining maturity	Category 1 (Strong)	Category 2 (Good)	Category 3 (Satisfactory)	Category 4 (Weak)	Category 5
Less than 2.5 years	0%	0.4%	2.8%	8%	50%
Equal or more than 2.5 years	0.4%	0.8%	2.8%	8%	50%
The coverage of each of the categories is set out in 5.6.					

5.15. Where a firm's IRB permission authorises it generally to assign preferential risk weights as outlined in 5.10 of 50% to exposures in category 1, and 70% to exposures in category 2, the EL value for exposures in category 1 must be 0%, and for exposures in category 2 must be 0.4%.

6. Retail exposures

6.1. This section applies with respect to the exposures referred to in 6.2.

Definition of retail exposures

6.2. To be eligible to be treated as a retail exposure, exposures must meet the following criteria:

6.2.1. they must be either to an individual person or persons, or to a small or medium sized entity, provided in the latter case that the total amount owed to the firm and parent

undertaking and its subsidiary undertakings, including any past due exposure, by the obligor client or group of connected clients, but excluding claims or contingent claims secured on residential real estate collateral, must not, to the knowledge of the firm, which must have taken reasonable steps to confirm the situation, exceed EUR 1 million;

6.2.2. they are treated by the firm in its risk management consistently over time and in a similar manner;

6.2.3. they are not managed just as individually as exposures in the corporate exposure IRB exposure class; and

6.2.4. they each represent one of a significant number of similarly managed exposures.

6.3. The present value of retail minimum lease payments is eligible to be treated as a retail exposure.

6.4. This paragraph sets out guidance in respect of 6.2 so far as it relates to the boundary between retail exposures and corporate exposures.

6.4.1. In deciding what steps are reasonable for the purposes of 6.2.1, a firm may take into account complexity and cost, as well as the materiality of the impact upon its capital calculation. A firm should be able to explain to the FSC, if asked, why its actions in this regard can be considered reasonable.

6.4.2. An exposure to an owner of a retail SME in his personal capacity (other than a claim or contingent claim secured on residential real estate collateral) should be aggregated with an exposure to the retail SME. In deciding what steps are reasonable for the purposes of 6.2.1, in the case of this aggregation a firm may take into account the materiality of that personal exposure. A firm should be able to demonstrate to the FSC, if asked, that its policy on materiality in this context is reasonable.

6.4.3. The definition of group of connected clients refers to persons who are to be regarded as constituting a single risk because they are so interconnected that, if one of them were to experience financial problems, the other or all of the others would be likely to encounter repayment difficulties. That requires the interconnection to be reciprocal.

6.4.4. A firm should have its own documented policy on the types of exposures that, in accordance with this Section, qualify as retail SME exposures. The FSC would not expect that a definition based on the EUR 1m exposure limit would be adequate on its own.

6.4.5. The purpose of the definition of retail exposure is to separate a non-granular retail and small and medium sized business portfolio from other business so that a separate capital calculation may be applied to that portfolio that takes into account its non-granularity. Where retail exposures are assigned to pools it is the statistical characteristics of these pools which are used to derive the IRB approach estimates. Therefore pools should be reasonably homogenous and subject to consistent risk management practices.

6.4.6. A firm should have sufficient controls to ensure that any inadvertent assignment of non-eligible exposures to the retail exposure IRB exposure class is sufficiently immaterial that it does not result in any significant distortion of the overall statistical characteristics of the sub-sets of that IRB exposure class which arise when the exposures are assigned to grades or pools. Cost considerations do not justify inclusion of non-eligible exposures if the effect would be material. Sample testing could be one method of demonstrating that the impact would be immaterial.

6.4.7. If an exposure to a small or medium sized business crosses the retail exposure size boundary it should be treated as a corporate exposure, unless, the excess is immaterial because of its size or because it is temporary.

6.4.8. Paragraph 6.2 does not require that exposures to retail SMEs should never be individually managed. In deciding whether the frequency and extent of individual management does or does not make exposures ineligible for the retail exposure IRB exposure class, a firm should consider whether that individual management is:

6.4.8.1. sufficiently insignificant not to disrupt the homogeneity of the pool;

6.4.8.2. consistent with the management of other exposures in the same retail exposure pool; and

6.4.8.3. significantly different in extent from the individual management that occurs for corporate exposures, looked at as a whole.

6.4.9. Where an exposure is denominated in other currencies, a firm may calculate the Euro equivalent for the purposes of paragraph 6.2.1 using any appropriate set of exchange rates provided its choice has no obvious bias and that the firm is consistent in its approach to choosing rates.

6.4.10. A firm may monitor compliance with the €1m threshold in paragraph 6.2.1 on the basis of approved limits provided that it has internal control procedures that are sufficient to ensure that amounts owed cannot diverge from those approved limits to such an extent as to give rise to a breach of the €1m threshold or, if the firm is relying on provisions relating to reasonable steps in 6.2.1, any material breach of that threshold.

Rating system: Structure of rating system

6.5. Further material on the structure of rating systems can be found in paragraphs 3.22 to 3.25.

Rating system: Assignment to grades or pools

6.6. Rating systems must reflect both obligor and transaction risk, and must capture all relevant obligor and transaction characteristics.

6.7. The level of risk differentiation must 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 must be such as to avoid excessive concentrations.

6.8. This paragraph contains guidance on the level of differentiation referred to in 6.7.

6.8.1. It is important that a firm achieves adequate segmentation to deliver robust estimates of LGD and conversion factors, as well as PD. Whether the focus should be more on exposure size or collateral type is a question of fact for the particular circumstances in which the assignment of exposures to grades or pools occurs. Typically the FSC would expect both to be important.

6.8.2. A firm may allocate retail exposures to pools based on direct estimates of PD, LGD and conversion factors as well as using an approach under which the firm segments first and attributes PD, LGD and conversion factors afterwards. However the result should in either case be that the pools are sufficiently homogenous.

6.8.3. The number and size of pools should be determined in relation to the objective of establishing homogeneous risk. Pools should be of sufficient size to permit the production of robust risk estimates but should not be so large as to obscure variations in quality.

6.9. A firm must be able to demonstrate to the FSC that the process of assigning exposures to grades or pools provides for a meaningful differentiation of risk, provides for a grouping of sufficiently homogenous exposures, and allows for accurate and consistent estimation of loss characteristics at grade or pool level.

6.10. Section 8 contains material about assignment to grades or pools, in respect of purchased receivables.

6.11.

6.11.1. A firm must consider the following risk drivers when assigning exposures to grades or pools:

6.11.1.1. obligor risk characteristics;

6.11.1.2. transaction risk characteristics, including product or collateral types or both; and

6.11.1.3. delinquency.

6.11.2. In the case of 6.11.1.2 a firm must explicitly address cases where several exposures benefit from the same collateral.

6.11.3. However:

6.11.3.1. a firm need not consider delinquency if this is compatible with its IRB permission; and

6.11.3.2. (in the case of a firm with an IRB permission that permits the firm not to consider delinquency) it should be able to demonstrate to the FSC that delinquency is not a material driver of risk for the exposures treated in this way.

Rating system: Assignment of exposures

6.12. Each exposure must be assigned to a grade or a pool as part of the credit approval process.

Rating system: Overrides

6.13. Material on overrides can be found in paragraph 3.46.

Rating system: Integrity of assignment process

6.14. A firm must at least annually update obligor and facility assignments or review the loss characteristics and delinquency status of each identified risk pool whichever is applicable. A firm must 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.

6.15. Annual rescoring is one method of meeting the requirement in 6.14. However a firm need not carry out this update by means of a full rerun of a credit scoring model if it is able to demonstrate that the method is appropriate to the materiality of the portfolio and its impact on its capital requirements and that the firm still meets the minimum IRB standards.

Rating system: Use of models

6.16. Material on the use of models can be found in paragraphs 3.47 to 3.49.

Rating system: Documentation

6.17. Material on documentation can be found in paragraphs 3.16 to 3.21.

Rating system: Data maintenance

6.18. In addition to complying with paragraph 3.50 (Data maintenance) a firm must collect and store:

6.18.1. data used in the process of allocating exposures to grades or pools;

6.18.2. data on the estimated PDs, LGDs and conversion factors associated with grades or pools of exposures;

6.18.3. the identity of obligors and exposures that defaulted;

6.18.4. 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; and

6.18.5. data on loss rates for qualifying revolving retail exposures.

Risk quantification: Definition of default

6.19. Material on the definition of default can be found in paragraphs 3.52 to 3.68.

6.20.

6.20.1. This paragraph, in accordance with paragraph 3.53.4 (Definition of default), sets the exact number of days past due that a firm must abide by in the case of retail exposures.

6.20.2. For retail exposures to counterparts situated within Gibraltar the number of days past due is 90 days with the exception of retail SME exposures.

6.20.3. For retail exposures to counterparts situated in another EEA State the number of days past due is the lower of:

6.20.3.1. 180; and

6.20.3.2. the number of days past due fixed under the CRD implementation measure in that EEA State with respect to paragraph 48 of Part 4 of Annex VII of the Banking Consolidation Directive for such exposures.

6.20.4. For retail exposures to counterparts in a state outside the EEA the number of days past due is the lower of:

6.20.4.1. 180; and

6.20.4.2. (if a number of days past due for such exposures has been fixed under any national law of that state applicable to undertakings in the banking sector or the investment services sector that implements the IRB approach) that number.

6.21. A firm may apply the definition of default at a facility level.

6.22. Where the approach in 6.21 is being used and a customer has defaulted on a facility, then default on that facility should influence the PD assigned to that customer on other facilities.

Risk quantification: Overall requirements for estimation

6.23. Material on the overall requirements for estimation can be found in paragraphs 3.69 to 3.89.

Risk quantification: Requirements specific to PD estimation

6.24. A firm must estimate PDs by obligor grade or pool from long run averages of one-year default rates.

6.25. Notwithstanding 6.24, PD estimates may also be derived from realised losses and appropriate estimates of LGDs.

6.26. A firm must regard internal data for assigning exposures to grades or pools as the primary source of information for estimating loss characteristics. A firm may use external data (including pooled data) or statistical models for quantification provided a strong link can be demonstrated between:

6.26.1. the firm's process of assigning exposures to grades or pools and the process used by the external data source; and

6.26.2. the firm's internal risk profile and the composition of the external data.

6.27. If a firm 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 must meet the IRB minimum standards for estimation of PD and LGD, and the outcome must be consistent with the concept of LGD as set out in paragraph 3.93.

6.28. Irrespective of whether a firm is using external, internal, pooled data sources or a combination of the three, for its estimation of loss characteristics, the length of the underlying historical observation period used must 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 must be used. However:

6.28.1. a firm need not give equal importance to historic data if this is compatible with its IRB permission; and

6.28.2. (in the case of a firm with an IRB permission that permits this treatment of historic data) the firm must demonstrate to the FSC that more recent data is a better predictor of loss rates.

6.29. A firm may have, when implementing the IRB approach, relevant data covering a period of two years. The period to be covered must increase by one year each year until relevant data cover a period of five years.

6.30. A firm must identify and analyse expected changes of risk parameters over the life of credit exposures (seasoning effects).

Risk quantification: Requirements specific to own-LGD estimation

6.31. Notwithstanding paragraph 3.93 (default weighted average), LGD estimates may be derived from realised losses and appropriate estimates of PDs.

6.32. Notwithstanding paragraph 3.121 (additional drawings), a firm may reflect future drawings either in its conversion factor or in its LGD estimates.

6.33. Estimates of LGD must be based on data over a minimum of five years. Notwithstanding paragraph 3.93 (default weighted average):

6.33.1. a firm need not give equal importance to historic data if this is permitted by its IRB permission; and

6.33.2. (in the case of a firm with an IRB permission that permits this treatment of historic data) the firm must be able to convince the FSC that more recent data is a better predictor of loss rates.

6.34. A firm may have, when it implements the IRB approach, relevant data covering a period of two years. The period to be covered must increase by one year each year until relevant data cover a period of five years.

6.35. The FSC will not assume that all portfolios are sensitive to downturns. The FSC will also accept that for some portfolios, particularly in unsecured lending, the impact of the material drivers on LGD may be weak. Notwithstanding these points, the burden is on the firm to demonstrate that its models are appropriate for the circumstances in which they are applied.

6.36. Additional material on requirements specific to own-LGD estimation can be found in paragraphs 3.93 to 3.116.

Risk quantification: Requirements specific to own-conversion factor estimates

6.37. Notwithstanding paragraph 3.121 (additional drawings), a firm may reflect future drawings either in its conversion factors or in its LGD estimates.

6.38. Estimates of conversion factors must be based on data over a minimum of five years. Notwithstanding paragraph 3.118:

6.38.1. a firm need not give equal importance to historic data if this is permitted by its IRB permission; and

6.38.2. (in the case of a firm with an IRB permission that permits this treatment of historic data) the firm must be able to convince the FSC if asked that more recent data is a better predictor of loss rates.

6.39. A firm may have, when it implements the IRB approach, relevant data covering a period of two years. The period to be covered must increase by one year each year until relevant data cover a period of five years.

6.40. Additional material on requirements specific to own-conversion factor estimation can be found in paragraphs 3.118 to 3.124.

Calculation of risk weighted exposure amounts for retail exposures: General

6.41. Subject to paragraphs 6.43 and 6.44, the risk weighted exposure amounts for retail exposures must be calculated according to the formulae in the table in 6.42 and the formula at 6.41.

6.42. Table: Risk weighted exposure amounts for retail exposures

Correlation(R)	0.03 × (1 - EXP(-35*PD))/(1-EXP(-35)) + 0.16* [1-(1-EXP(-35*PD))/(1-EXP(-35))]
Risk Weight (RW)	(LGD*N[(1-R)-0.^{5}*G($_{J}$PD)+(R/(1-R))^{0}.^{5} *G(0.999)]-PD*LGD)* 12.5*1.06
N(x)	denotes the cumulative distribution function for a standard normal random variable (i.e. the probability that a normal random variable with mean zero and variance of one is less than or equal to x).
G(z)	denotes the inverse cumulative distribution function for a standard normal random variable (i.e. the value x such that N(x) = z).
Risk weighted exposure amount	equals RW*exposure value
PD = 1	For PD = 1 (defaulted exposure), RW must be: Max {0, 12.5 *(LGD- EL_{BE})} where EL_{BE} must be the firm's best estimate of expected loss for the defaulted exposure according to [Part 4, paragraph 79 of this Annex; 3.84].

Calculation of risk weighted exposure amounts for retail exposures: Retail mortgages.

6.43. For retail exposures secured by real estate collateral a correlation (R) of 0.15 must replace the correlation formula in the table in 6.42.

Calculation of risk weighted exposure amounts for retail exposures: Qualifying revolving retail exposures

6.44.

6.44.1. For qualifying revolving retail exposures a correlation (R) of 0.04 must replace the correlation formula in the table in 6.42.

6.44.2. Retail exposures qualify as qualifying revolving retail exposures if they meet the following conditions:

6.44.2.1. the IRB permission of the firm in question does not disapply this paragraph;

6.44.2.2. the exposures are to individuals;

6.44.2.3. the exposures are revolving, unsecured, and, to the extent they are not drawn, immediately and unconditionally cancellable by the firm;

6.44.2.4. the maximum exposure to a single individual in the sub-portfolio is EUR 100,000 or less;

6.44.2.5. the firm is able to demonstrate to the FSC that the use of the correlation formula in this paragraph is constrained to portfolios that have exhibited low volatility of loss rates, relative to their average level of loss rates, especially within the low PD bands; and

6.44.2.6. the firm is able to demonstrate to the FSC that treatment as a qualifying revolving retail exposure is consistent with the underlying risk characteristics of the sub-portfolio.

6.44.3. In the context of this rule revolving exposures are defined as those where customers' outstanding balances are permitted to fluctuate based on their decisions to borrow and repay, up to a limit established by the firm in question. Undrawn commitments may be considered as unconditionally cancellable if the terms permit the firm to cancel them to the full extent allowable under consumer protection and related legislation.

6.45. A firm should be able to demonstrate the low volatility of loss rates mentioned in 6.44.2.5 at the time of the initial application for an IRB permission and thereafter at any time on request. The benchmark level should be the volatility of loss rates for the qualifying revolving retail exposure portfolio relative to the volatilities of loss rates of other relevant types of retail exposures. A firm should demonstrate low volatility by reference to data on the mean and standard deviation of loss rates over a time period that can be regarded as representative of the long-run performance of the portfolios concerned.

6.46. In the FSC's view a sub-portfolio consisting of credit card or overdraft obligations will usually meet the condition in 6.44.2.6. In the FSC's view it is unlikely that any other type of retail exposure will do so. If a firm wishes to apply the treatment in 6.44.1 to product types other than credit card or overdraft obligations it should first discuss this with the FSC.

Calculation of expected loss amounts

6.47. Expected loss amounts must be calculated according to the formulae in the table in 6.48.

6.48. Table: Formulae for the calculation of expected loss amounts

Expected loss (EL)	Equals PD x LGD
Expected loss amount	Equals EL x exposure value
For defaulted exposures (PD = 1) where a. firm uses its own estimates of LGDs, EL	
	must be $EL_{BE,}$ the firm's best estimate of expected loss for the defaulted exposure according to [Part 4, paragraph 79 of this Annex; 3.85R]. For exposures subject to the treatment set out in [Part 1, paragraph 3a; 4.57R] EL must be 0.

Calculation of PDs

6.49. A firm must provide its own estimates of PDs in accordance with this Guidance Note and with its IRB permission.

6.50. The PD of an exposure must be at least 0.03%.

6.51. The PD of obligors in default must be 100%. If a firm is using the facility level approach described in paragraph 6.21, the PD of an exposure in default must be 100%.

6.52. Unfunded credit protection may be recognised by adjusting PDs subject to 6.48. For dilution risk, where a firm does not use its own estimates of LGDs, this must be subject to compliance with the Guidance Note or Schedule 8 of the BCACI Regulations and Section 10 of this Guidance Note and, for this purpose, a firm may recognise unfunded credit protection providers other than those indicated in Schedule 8 of the BCACI Regulations provided the firm is able to demonstrate that the unfunded protection provider giving the undertaking is sufficiently reliable and that the protection agreement is legally effective in accordance with Schedule 8 of the BCACI Regulations.

Calculation of LGDs

6.53. A firm must provide own estimates of LGDs in accordance with this Guidance Note and its IRB permission.

6.54. Unfunded credit protection may be recognised by adjusting PD or LGD estimates subject to the minimum IRB standards as specified in paragraphs 10.40.2, 10.41 to 10.48 and in accordance with the IRB permission either in support of an individual exposure or a pool of exposures. A firm must not assign guaranteed exposures an adjusted PD or LGD such that the adjusted risk weight would be lower than that of a comparable, direct exposure to the guarantor.

Calculation of exposure values and own conversion factors

6.55. Except where otherwise specified paragraphs 4.37 to 4.39, 4.45 and 4.71 to 4.78 (Calculation of exposure values for sovereigns, institutions and corporates) also apply to retail exposures.

6.56. A firm must provide its own estimates of conversion factors in accordance with this Guidance Note.

Double default

6.57. The risk weighted exposure amount for each exposure to retail SME as defined in paragraph 6.2 which meets the requirements set out in Schedule 8 of the BCACI Regulations may be calculated according to 4.79.

6.58. Notwithstanding paragraph 6.54 for the purposes of 6.57 the LGD of a comparable direct exposure to the protection provider must either be the LGD associated with an unhedged facility to the guarantor or the unhedged facility of the obligor, depending upon whether in the event both the guarantor and obligor default during the life of the hedged transaction available evidence and the structure of the guarantee indicate that the amount recovered would depend on the financial condition of the guarantor or obligor, respectively.

7. Equity exposures

7.1. This section applies with respect to the exposures referred to in 7.2.

Definition of equity exposures

7.2. The following exposures must be classed as equity exposures:

7.2.1. non-debt exposures conveying a subordinated, residual claim on the assets or income of the issuer; and

7.2.2. debt exposures the economic substance of which is similar to the exposures specified in 7.2.1.

Calculation of risk-weighted exposure amounts

7.3. Notwithstanding paragraph 3.4 (relevant parameters), the calculation of risk weighted exposure amounts for credit risk for all exposures belonging to the equity exposure IRB exposure class must be calculated in accordance with one of the following ways:

7.3.1. the simple risk weight approach (see paragraph 7.8);

7.3.2. the PD/LGD approach (see paragraph 7.13); and

7.3.3. the internal models approach (see paragraph 7.23);

in accordance with this section and subject to the firm's IRB permission.

7.4. Even if a firm's IRB permission would otherwise permit the use of the internal models approach as referred to in 7.3.3, it may only use that approach if it meets the minimum requirements in paragraphs 7.27 to 7.35.

7.5. A firm may employ different approaches to different portfolios where the firm itself uses different approaches internally. If it does this a firm must able to demonstrate to the FSC that the choice is made consistently and is not determined by regulatory arbitrage considerations.

7.6. Notwithstanding 7.5 a firm may, if its IRB permission permits it to do so, attribute the risk weighted exposure amounts for equity exposures to ancillary services undertakings according to the treatment of non credit-obligation assets.

Exposure value

7.7. The exposure value must be the value presented in the financial statements. Admissible equity exposure measures are the following:

7.7.1. for investments held at fair value with changes in value flowing directly through income and into capital resources, the exposure value is the fair value presented in the balance sheet;

7.7.2. for investments held at fair value with changes in value not flowing through income but into a tax-adjusted separate component of equity, the exposure value is the fair value presented in the balance sheet; and

7.7.3. for investments held at cost or at the lower of cost or market value, the exposure value is the cost or market value presented in the balance sheet.

The calculation of risk-weighted exposure amounts for equity exposures: The simple risk weight approach: Introduction

7.8. Paragraphs 7.9 to 7.12 set out the simple risk weight approach for calculating the risk weighted exposure amounts for equity exposures as referred to in paragraph 7.3.1.

The calculation of risk-weighted exposure amounts for equity exposures: The simple risk weight approach: Risk weighted exposure amounts

7.9. The risk weighted exposure amounts must be calculated according to the following formula:

risk-weighted exposure amount = RW * exposure value;

where:

7.9.1. risk weight (RW) = 190% for private equity exposures in sufficiently diversified portfolios;

7.9.2. risk weight (RW) = 290% for exchange traded equity exposures; and

7.9.3. risk weight (RW) = 370% for all other equity exposures.

7.10. Short cash positions and derivative instruments held in the non-trading book are permitted to offset long positions in the same individual stocks provided that these instruments have been explicitly designated as hedges of specific equity exposures and that they provide a hedge for at least another year. Other short positions must be treated as if they are long positions with the relevant risk weight applied to the absolute value of each position. In the context of maturity mismatched positions, the method is that for corporate exposures.

7.11. A firm may recognise unfunded credit protection obtained on an equity exposure in accordance with the methods set out in Schedule 8 of the BCACI Regulations and Section 10 of this Guidance Note.

The calculation of risk-weighted exposure amounts for equity exposures: The simple risk weight approach: Expected loss

7.12. The expected loss amounts for equity exposures must be calculated according to the following formula:

7.12.1. expected loss amount = EL × exposure value; and

7.12.2. the EL values must be the following:

7.12.2.1. expected loss (EL) = 0.8% for private equity exposures in sufficiently diversified portfolios;

7.12.2.2. expected loss (EL) = 0.8% for exchange traded equity exposures; and

7.12.2.3. expected loss (EL) = 2.4% for all other equity exposures.

The calculation of risk-weighted exposure amounts for equity exposures: The PD/LGD approach: Introduction

7.13. Paragraphs 7.14 to 7.22 set out the PD/LGD approach for calculating the risk weighted exposure amounts for equity exposures.

The calculation of risk-weighted exposure amounts for equity exposures: The PD/LGD approach: Risk weighted exposure amounts

7.14. The risk weighted exposure amounts must be calculated according to the formulas in paragraph 4.58 (risk weighted exposure amounts for sovereigns, institutions and corporates). If a firm does not have sufficient information to use the definition of default a scaling factor of 1.5 must be applied to the risk weights.

7.15. At the individual exposure level the sum of the expected loss amount multiplied by 12.5 and the risk weighted exposure amount must not exceed the exposure value multiplied by 12.5.

7.16. A firm may recognise unfunded credit protection obtained on an equity exposure in accordance with the methods set out in Schedule 8 of the BCACI Regulations and Section 10 of this Guidance Note. This must be subject to an LGD of 90% on the exposure to the provider of the hedge. For private equity exposures in sufficiently diversified portfolios an LGD of 65% may be used.

The calculation of risk-weighted exposure amounts for equity exposures: The PD/LGD approach: Calculation of expected loss amounts

7.17. The expected loss amounts for equity exposures must be calculated according to the following formulas:

7.17.1. expected loss (EL) = PD × LGD; and

7.17.2. expected loss amount = EL × exposure value.

The calculation of risk-weighted exposure amounts for equity exposures: The PD/LGD approach: PDs

7.18. PDs must be determined according to the methods for corporate exposures. The following minimum PDs must be applied:

7.18.1. 0.09% for exchange traded equity exposures where the investment is part of a long-term customer relationship;

7.18.2. 0.09% for non-exchange traded equity exposures where the returns on the investment are based on regular and periodic cash flows not derived from capital gains;

7.18.3. 0.40% for exchange traded equity exposures including other short positions as set out in 7.10; and

7.18.4. 1.25% for all other equity exposures including other short positions as set out in 7.10.

7.19. Paragraph 4.29 (five year observation period) applies to the PD/LGD approach.

The calculation of risk-weighted exposure amounts for equity exposures: The PD/LGD approach: LGDs

7.20. Private equity exposures in sufficiently diversified portfolios may be assigned an LGD of 65 %.

7.21. All other exposures must be assigned an LGD of 90%.

The calculation of risk-weighted exposure amounts for equity exposures: The PD/LGD approach: Maturity

7.22. M (maturity) assigned to all exposures must be 5 years.

The calculation of risk-weighted exposure amounts for equity exposures: The internal models approach: Introduction

7.23. Paragraphs 7.24 to 7.35 set out the internal models approach for calculating the risk weighted exposure amounts for equity exposures as referred to in paragraph 7.3.3.

The calculation of risk-weighted exposure amounts for equity exposures: The internal models approach: Risk weighted exposure amounts

7.24. The risk weighted exposure amounts is the potential loss on the firm's equity exposures as derived using internal value-at-risk models subject to the 99th percentile, one-tailed confidence interval of the difference between quarterly returns and an appropriate risk-free rate computed over a long-term sample period, multiplied by 12.5. The risk weighted exposure amounts at the individual exposure level must not be less than the sum of minimum risk weighted exposure amounts required under the PD/LGD approach and the corresponding expected loss amounts multiplied by 12.5 and calculated on the basis of the PD values set out in paragraph 7.18.1 and the corresponding LGD values set out in paragraphs 7.20 and 7.21.

7.25. A firm may recognise unfunded credit protection obtained on an equity position.

The calculation of risk weighted exposure amounts for equity exposures: The internal models approach: Expected loss amounts

7.26. The expected loss amounts for equity exposures must be 0%.

The calculation of risk weighted exposure amounts for equity exposures: The internal models approach: Capital requirements and risk quantification

7.27.

7.27.1. A firm must meet the standards set out in paragraphs 7.27.2 to 7.27.9 for the purpose of calculating capital requirements.

7.27.2. The estimate of potential loss must be robust to adverse market movements relevant to the long-term risk profile of the firm's specific holdings. The data used to represent return distributions must reflect the longest sample period for which data is available and be meaningful in representing the risk profile of the firm's specific equity exposures. The data used must be sufficient to provide conservative, statistically reliable and robust loss estimates that are not based purely on subjective or judgmental considerations. A firm must be able to demonstrate to the FSC that the shock employed provides a conservative estimate of potential losses over a relevant long-term market or business cycle.

7.27.3. A firm must 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, a firm 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 must be applied conservatively and consistently over time. Where only limited relevant data is available a firm must add appropriate margins of conservatism.

7.27.4. The models used must be able to capture adequately all of the material risks embodied in equity returns including both the general market risk and specific risk exposure of the firm's equity exposure portfolio. The internal models must 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 must be closely matched to or at least comparable with those of the firm's equity exposures.

7.27.5. The internal model must be appropriate for the risk profile and complexity of a firm's equity exposure portfolio. Where a firm has material holdings with values that are highly non-linear in nature the internal models must be designed to capture appropriately the risks associated with such instruments.

7.27.6. Mapping of individual positions to proxies, market indices, and risk factors must be plausible, intuitive, and conceptually sound.

7.27.7. A firm must be able to demonstrate to the FSC through empirical analyses the appropriateness of risk factors, including their ability to cover both general market risk and specific risk.

7.27.8. The estimates of the return volatility of equity exposures must incorporate relevant and available data, information, and methods. Independently reviewed internal data or data from external sources (including pooled data) must be used.

7.27.9. A rigorous and comprehensive stress-testing programme must be in place.

The calculation of risk-weighted exposure amounts for equity exposures: The internal models approach: Risk management and controls

7.28.

7.28.1. With regard to the development and use of internal models for capital requirement purposes, a firm must establish policies, procedures, and controls to ensure the integrity of the model and modelling process. These policies, procedures, and controls must include the ones set out in the rest of this paragraph.

7.28.2. There must be full integration of the internal model into the overall management information systems of the firm and in the management of the non-trading book equity exposure portfolio. In particular they must be used in:

7.28.2.1. measuring and assessing equity exposure portfolio performance (including the risk adjusted performance);

7.28.2.2. allocating economic capital to equity exposures; and

7.28.2.3. evaluating overall capital adequacy and the investment management process.

7.28.3. A firm must have 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 must 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 maybe conducted by an internal independent unit, or by an independent external third party.

7.28.4. There must be adequate systems and procedures for monitoring investment limits and the risk exposures of equity exposures.

7.28.5. The units responsible for the design and application of the model must be functionally independent from the units responsible for managing individual investments.

7.28.6. Parties responsible for any aspect of the modelling process must be adequately qualified. Management must allocate sufficient skilled and competent resources to the modelling function.

The calculation of risk-weighted exposure amounts for equity exposures: The internal models approach: Validation and documentation

7.29. A firm must have a robust system in place to validate the accuracy and consistency of its internal models and modelling processes. All material elements of the internal models and the modelling process and validation must be documented.

7.30. A firm must use the internal validation process to assess the performance of its internal models and processes in a consistent and meaningful way.

7.31. 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.

7.32. A firm must regularly compare actual equity exposure returns (computed using realised and unrealised gains and losses) with modelled estimates. Such comparisons must make use of historical data that is over 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.

7.33. A firm must make use of other quantitative validation tools and comparisons with external data sources. The analysis must be based on data that are appropriate to the portfolio, are updated regularly, and cover a relevant observation period. A firm's internal assessments of the performance of its models must be based on as long a period as possible.

7.34. A firm must have sound internal standards for situations where comparison of actual equity exposure returns with the models' estimates calls the validity of the estimates or of the models as such into question. These standards must take account of business cycles and similar systematic variability in equity exposure returns. All adjustments made to internal models in response to model reviews must be documented and consistent with the firm's model review standards.

7.35. The internal model and the modelling process must be documented, including the responsibilities of parties involved in the modelling, and the model approval and model review processes.

8. Purchased receivables

8.1. This Section applies with respect to purchased receivables.

8.2. Purchased receivables do not form an IRB exposure class on their own. For any purchased receivable, the provisions of the relevant sections of this Guidance Note that deal with the IRB exposure class to which it belongs also apply, as modified by this section.

Structure of rating systems

8.3. For retail exposures that are purchased receivables, the grouping referred to in paragraph 6.9 must reflect the seller's underwriting practices and the heterogeneity of their customers.

Risk quantification: Overall requirements for estimation: General

8.4. Further general material about the requirements for estimation can be found in paragraphs 3.69 to 4.3.89.

8.5. The estimates for determining the risk parameters PD, LGD, conversion factor and EL must reflect all relevant information available to the purchasing firm regarding the quality of the underlying receivables, including data for similar pools provided by the seller, by the purchasing firm, or by external sources. The purchasing firm must evaluate any data relied upon from the seller.

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

8.6. With respect to paragraph 6.26 (internal data for retail exposures) a firm may use external and internal reference data for PD estimation. A firm must use all relevant data sources as points of comparison.

8.7. For corporate exposure purchased receivables a firm may estimate ELs by obligor grade from long run averages of one-year realised default rates.

8.8. If a firm derives long run average estimates of PDs and LGDs for corporate exposure purchased receivables from an estimate of EL, and an appropriate estimate of PD or LGD, the process for estimating total losses must meet the overall standards for estimation of PD and LGD set out in the IRB minimum standards, and the outcome must be consistent with the concept of LGD as set out in paragraph 3.93.

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

8.9. A firm may use external and internal reference data for its LGD estimates in the case of retail exposures that are purchased receivables.

Risk quantification: Overall requirements for estimation: Minimum requirements for purchased receivables: General

8.10. Paragraphs 8.11 to 8.14 set out minimum requirements specific to the treatment of purchased receivables under the IRB approach.

Risk quantification: Overall requirements for estimation: Minimum requirements for purchased receivables: Legal certainty

8.11. The structure of the facility must ensure that under all foreseeable circumstances a firm has effective ownership and control of all cash remittances from the receivables. When the obligor makes payments directly to a seller or servicer a firm must verify regularly that payments are forwarded completely and within the contractually agreed terms. Servicer means an entity that manages a pool of purchased receivables or the underlying credit exposures on a day-to-day basis. A firm must 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.

Risk quantification: Overall requirements for estimation: Minimum requirements for purchased receivables: Effectiveness of monitoring systems

8.12.

8.12.1. A firm must monitor both the quality of the purchased receivables and the financial condition of the seller and servicer. In particular a firm must comply with the remaining provisions of this paragraph.

8.12.2. A firm must 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 such contingencies, including the assignment of an internal risk rating for each seller and servicer.

8.12.3. A firm must have clear and effective policies and procedures for determining seller and servicer eligibility. A firm or its agent must 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 must be documented.

8.12.4. A firm must assess the characteristics of the purchased receivables pools including:

8.12.4.1. over-advances;

8.12.4.2. history of the seller's arrears, bad debts, and bad debt allowances;

8.12.4.3. payment terms;

8.12.4.4. and potential contra accounts.

8.12.5. A firm must have effective policies and procedures for monitoring on an aggregate basis single-obligor concentrations both within and across purchased receivables pools.

8.12.6. A firm must ensure that it receives from the servicer timely and sufficiently detailed reports of receivables ageings and dilutions to ensure compliance with the firm'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.

Risk quantification: Overall requirements for estimation: Minimum requirements for purchased receivables: Effectiveness of work-out systems

8.13. A firm must 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 proactively. In particular a firm must 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.

Risk quantification: Overall requirements for estimation: Minimum requirements for purchased receivables: Effectiveness of systems for controlling collateral, credit availability and cash

8.14. A firm must have clear and effective policies and procedures governing the control of purchased receivables, credit, and cash. In particular, written internal policies must 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 must take appropriate account of all relevant and material factors, including the seller's 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 must ensure that funds are advanced only against specified supporting collateral and documentation.

Risk quantification: Overall requirements for estimation: Minimum requirements for purchased receivables: Compliance with the firm's internal policies and procedures

8.15. A firm must have an effective internal process for assessing compliance with all internal policies and procedures. The process must include regular audits of all critical phases of the firm'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.

Calculation of risk-weighted asset amounts: Eligibility for different treatments: Corporate exposures

8.16. For its purchased corporate exposure receivables a firm must comply with the minimum requirements set out in paragraphs 8.11 to 8.15. For purchased corporate exposure receivables that comply in addition with the conditions set out in paragraph 8.18, and where it would be unduly burdensome for a firm to use the risk quantification standards for corporate exposures as set out in the minimum IRB standards for these receivables, the risk quantification standards for retail exposures as set out in the minimum IRB standards may be used.

8.17. For purchased corporate exposure receivables, refundable purchase discounts, collateral or partial guarantees that provide first-loss protection for default losses, dilution losses, or both, may be treated as first-loss positions under the provisions in the Guidance Note on Securitisation about the IRB approach.

Calculation of risk weighted asset amounts: Eligibility for different treatments: Retail exposures

8.18. To be eligible for the retail exposure treatment purchased receivables must comply with the minimum requirements set out in paragraphs 8.11 to 8.15 and the following conditions:

8.18.1. the firm has purchased the receivables from unrelated, third party sellers, and its exposure to the obligor of the receivable does not include any exposures that are directly or indirectly originated by the firm itself;

8.18.2. the purchased receivables must be generated on an arm's-length basis between the seller and the obligor (and as such, intercompany accounts receivables and receivables subject to contra-accounts between firms that buy and sell to each other are ineligible);

8.18.3. the purchasing firm has a claim on all proceeds from the purchased receivables or a pro-rata interest in the proceeds; and

8.18.4. the portfolio of purchased receivables is sufficiently diversified.

8.19. With respect to retail exposures, for purchased receivables, refundable purchase discounts, collateral or partial guarantees that provide first-loss protection for default losses, dilution losses, or both, may be treated as first-loss positions under the provisions in the Guidance Note for Securitisation about the IRB approach.

8.20. For hybrid pools of purchased retail exposure receivables where the purchasing firm cannot separate exposures secured by real estate collateral and qualifying revolving retail exposures from other retail exposures, the retail risk weight function producing the highest capital requirements for those exposures must apply.

Calculation of risk weighted asset amounts for dilution risk

8.21. The risk weights for dilution risk for purchased receivables (both corporate exposures and retail exposures) must be calculated according to this rule. The risk weights must be calculated according to the formula in paragraph 4.58. However, for the purposes of that formula, the total annual sales referred to in paragraph 4.59 are the weighted average by individual exposures of the pool. The input parameters PD and LGD and the exposure value must be determined under the applicable provisions of this Guidance Note as modified by this section. M (maturity) must be 1 year. However:

8.21.1. a firm need not recognise dilution risk if its IRB permission permits this; and

8.21.2. (in the case of a firm with an IRB permission that permits the treatment of dilution risk in 8.21.1) the firm must be able to convince the FSC that dilution risk is immaterial.

Calculation of risk weighted exposure amounts: PDs

8.22. For purchased corporate exposure receivables in respect of which a firm cannot demonstrate that its PD estimates meet the minimum IRB standards, the PDs for these exposures must be determined according to the following methods:

8.22.1. for senior claims on purchased corporate exposure receivables PD must be the firm's estimate of EL divided by LGD for these receivables;

8.22.2. for subordinated claims on purchased corporate exposure receivables PD must be the firm's estimate of EL; and

8.22.3. if a firm is under its IRB permission using the advanced IRB approach for LGD estimates for corporate exposures and it can decompose its EL estimates for purchased corporate exposure receivables into PDs and LGDs in a reliable manner, the LGD estimate may be used.

8.23. In the case of corporate exposures, for dilution risk of purchased receivables PD must be set equal to EL estimate for dilution risk. If a firm is under its IRB permission using the advanced IRB approach for LGD estimates for corporate exposures and it can decompose its EL estimates for dilution risk of purchased corporate exposure receivables into PDs and LGDs in a reliable manner, the PD estimate may be used. A firm may recognise unfunded credit protection in the PD in accordance with the provisions of the Guidance Note on Securitisation and Schedule 8 of the BCACI Regulations and Section 10 of this Guidance Note. A firm may recognise those unfunded credit protection providers set out in its IRB permission in addition to those indicated in Schedule 8 of the BCACI Regulations. Where a firm's IRB permission allows it to use its own LGD estimates for dilution risk of purchased corporate receivables, the firm may recognise unfunded credit protection by adjusting PDs subject to the provisions of paragraph 4.43.

8.24. In the case of retail exposures, for dilution risk of purchased receivables PD must be set equal to EL estimates for dilution risk. If a firm can decompose its EL estimates for dilution risk of purchased receivables into PDs and LGDs in a reliable manner, the PD estimate may be used.

Calculation of risk weighted asset amounts: LGDs: Corporate exposures

8.25. The following LGD values apply for purchased corporate exposure receivables:

8.25.1. for senior purchased corporate exposure receivables exposures where a firm cannot demonstrate that its PD estimates meet the minimum IRB standards, the value is 45%;

8.25.2. for subordinated purchased corporate exposure receivables exposures where a firm cannot demonstrate that its PD estimates meet the minimum IRB standards, the value is 100%; and

8.25.3. for dilution risk of purchased corporate exposure receivables, the value is 75%.

8.26. Notwithstanding paragraphs 4.34 and 8.25, for dilution risk and default risk if a firm is under its IRB permission using the advanced IRB approach for LGD estimates for corporate exposures and it can decompose its EL estimates for purchased corporate exposure receivables into PDs and LGDs in a reliable manner, the LGD estimate for purchased corporate exposure receivables may be used.

Calculation of risk weighted asset amounts: LGDs: Retail exposures

8.27. For dilution risk of purchased retail exposure receivables a LGD value of 75% must be used. If a firm can decompose its EL estimates for dilution risk of purchased receivables into PDs and LGDs in a reliable manner, the LGD estimate may be used.

Calculation of risk weighted asset amounts: Exposure value

8.28. The exposure value for the calculation of risk weighted exposure amounts of purchased receivables must be the outstanding amount minus the capital requirements for dilution risk prior to credit risk mitigation.

8.29.

8.29.1. The exposure value for the items in 8.29.2 must be calculated as the committed but undrawn amount multiplied by a conversion factor.

8.29.2. For undrawn purchase commitments for revolving purchased receivables that are unconditionally cancellable or that effectively provide for automatic cancellation at any time by the firm without prior notice, a conversion factor of 0% applies. To apply a conversion factor of 0%, a firm must actively monitor the financial condition of the obligor, and its internal control systems must enable it immediately to detect deterioration in the credit quality of the obligor.

Calculation of expected loss amounts

8.30. The expected loss amounts for dilution risk of purchased receivables must be calculated according to the following formula:

8.30.1. expected loss (EL) = PD × LGD; and

8.30.2. expected loss amount = EL × exposure value.

9. Securitisation, non-credit obligations assets and CIUs

9.1. This section applies with respect to securitisation exposures, non credit-obligation assets and exposures to CIUs.

Securitisation exposures

9.2. The following must be calculated in accordance with the Guidance Note for Securitisation:

9.2.1. risk-weighted exposure amounts for securitised exposures and for exposures belonging to the IRB exposure class referred to in paragraph 3.1.6 (securitisation positions); and

9.2.2. the expected loss amounts for securitised exposures.

Provision of credit protection

9.3. Where a firm provides credit protection for a number of exposures under terms that the nth default among the exposures shall trigger payment and that this credit event shall terminate the contract, if the product has an external credit assessment from an eligible ECAI the risk weights set out in the Guidance Note for Securitisation must be applied. If the product is not rated by an eligible ECAI, the risk weights of the exposures included in the basket must be aggregated, excluding n-1 exposures where the sum of the expected loss amount multiplied by 12.5 and the risk weighted exposure amount must not exceed the nominal amount of the protection provided by the credit derivative multiplied by 12.5. The n-1 exposures to be excluded from the aggregation must be determined on the basis that they must include those exposures each of which produces a lower risk weighted exposure amount than the risk weighted exposure amount of any of the exposures included in the aggregation.

Non credit obligation assets: Introduction

9.4. Paragraphs 9.5 to 9.8 apply to non credit-obligation assets.

Non credit obligation assets: Inclusion of residual value of leases

9.5. The non credit obligation assets IRB exposure class includes the residual value of leased properties, if not included in the lease exposure as defined in paragraph 4.75.

Non credit obligation assets: Risk weighted exposure amount

9.6. The risk weighted exposure amounts must be calculated according to the formula:

Risk-weighted exposure amount = 100% * exposure value except for when the exposure is a residual value in which case it should be provisioned for each year and will be calculated as follows:

1/t * 100% * exposure value;

where t is the number of years of the lease contract term.

9.7. Where a firm has full recourse in respect of purchased receivables for default risk and for dilution risk, to the seller of the purchased receivables, paragraph 8.21 and sent] 8.30 need not be applied. The exposure may instead be treated as a collateralised exposure.

Non credit obligation assets: Exposure value

9.8. The exposure value of non credit-obligation assets must be the value presented in the financial statements.

Other non credit obligation assets: Expected loss amounts

9.9. The expected loss amount must be zero.

Collective investment undertakings

9.10.

9.10.1. Where exposures in the form of a CIU meet the criteria set out in the Guidance Note on Credit Risk Standardised Approach and the firm is aware of all of the underlying exposures of the CIU, the firm must look through to those underlying exposures in order to calculate risk weighted exposure amounts and expected loss amounts in accordance with the methods set out in this Guidance Note.

9.10.2. Where 9.10.1 applies but a firm does not meet the conditions for using the methods set out in this Guidance Note, risk weighted exposure amounts and expected loss amounts must be calculated in accordance with the following approaches.

9.10.3. For equity exposures the approach set out in paragraphs 7.9 to 7.12 (Simple risk weights) must be used. If, for those purposes, the firm is unable to differentiate between private equity, exchange-traded and other equity exposures, it must treat the exposures concerned as other equity exposures.

9.10.4. For all other underlying exposures, the standardised approach must be used, subject to the following modifications:

9.10.4.1. the exposures are assigned to the appropriate exposure class under the standardised approach and attributed the risk weight of the credit quality step immediately above the credit quality step that would normally be assigned to the exposure; and

9.10.4.2. exposures assigned to the higher credit quality steps, to which a risk weight of 150% would normally be attributed, are assigned a risk weight of 200%.

9.11.

9.11.1. Where exposures in the form of a CIU do not meet the criteria set out in the Guidance Notes on Credit Risk Standardised Approach or the firm is not aware of all of the underlying exposures of the CIU, a firm must look through to the underlying exposures and calculate risk weighted exposure amounts and expected loss amounts in accordance with the approach set out in paragraph 7.9 to 7.12 (Simple risk weights). If, for those purposes, the firm is unable to differentiate between private equity, exchange-traded and other equity exposures, it must treat the exposures concerned as other equity exposures. For these purposes, non-equity exposures must be assigned to one of the classes (private equity, exchange traded equity or other equity) set out in paragraph 7.9 (Simple risk weight approach) and unknown exposures must be assigned to the other equity class.

9.11.2. Alternatively to the method described in 9.11.1, a firm may calculate itself or rely on a third party to calculate and report the average risk weighted exposure amounts based on the CIU's underlying exposures and calculated in accordance with the remaining provisions of this paragraph, provided that the correctness of the calculation and the report is adequately ensured.

9.11.3. For exposures belonging to the equity exposure IRB exposure class, the approach set out in paragraphs 7.9 to 7.12 (Simple risk weight approach) must be used. If, for those purposes, a firm is unable to differentiate between private equity, exchange-traded and other equity exposures, it must treat the exposures concerned as other equity exposures.

9.11.4. For all other underlying exposures, the standardised approach must be used, subject to the following modifications:

9.11.4.1. the exposures must be assigned to the appropriate exposure class under the standardised approach and attributed the risk weight of the credit

quality step immediately above the credit quality step that would normally be assigned to the exposure; and

9.11.4.2. exposures assigned to the higher credit quality steps, to which a risk weight of 150% would normally be attributed, must be assigned a risk weight of 200%.

9.12. The expected loss amounts for exposures referred to in paragraphs 9.10 to 9.11 must be calculated in accordance with the methods set out in 4.61, 5.13 to 5.15, 6.41 to 6.42, 7.12, 7.17 and 7.2.

10. Credit risk mitigation

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

10.2. This section sets out additional guidance modifications to Schedule 8 of the BCACI Regulations for those exposures for which the IRB approach is being used.

General

10.3. A firm using the IRB approach, but not using its own estimates of LGD and conversion factors, may recognise credit risk mitigation in accordance with Schedule 8 of the BCACI Regulations in the calculation of risk-weighted exposure amounts for the purposes of the calculation of the credit risk capital component or as relevant expected loss amounts.

10.4.

10.4.1. Where the requirements of Schedule 8 of the BCACI Regulations are met, the calculation of risk weighted exposure amounts, and, as relevant, expected loss amounts, may be applied in accordance with this Section.

10.4.2. No exposure in respect of which credit risk mitigation is obtained must produce a higher risk weighted exposure amount or expected loss amount than an otherwise identical exposure in respect of which there is no credit risk mitigation.

10.4.3. Where the risk weighted exposure amount already takes account of credit protection under the IRB approach the calculation of the credit protection must not be further recognised.

10.4.4. Subject to Schedule 8 of the BCACI Regulations, where the CRM eligibility conditions and the CRM minimum requirements are satisfied, the calculation of risk-weighted exposure amounts and expected loss amounts under the IRB approach may be modified in accordance with the provisions of this Section.

Eligibility of funded credit protection: General

10.5. In addition to the collateral set out in Schedule 8 of the BCACI Regulations the provisions of paragraphs 10.6 to 10.12, 10.14, 10.16 and 10.19 apply where a firm calculates risk weighted exposure amounts and expected loss amounts under the IRB approach.

Real estate collateral: Types of eligible collateral: General

10.6.

10.6.1. Residential real estate property which is or will be occupied or let by the owner or the beneficial owner in the case of personal investment companies and commercial real estate property (i.e. offices and other commercial premises) may be recognised as eligible collateral where the conditions set out in the remaining provisions of this paragraph are met.

10.6.2. The value of the property must not materially depend upon the credit quality of the obligor. This requirement does not preclude situations where purely macro-

economic factors affect both the value of the property and the performance of the borrower.

10.6.3. The risk of the borrower must not materially depend upon the performance of the underlying property or project, but rather on the underlying capacity of the borrower to repay the debt from other sources. As such, repayment of the facility must not materially depend on any cash flow generated by the underlying property serving as collateral.

10.7. The condition in 10.6.3 does not apply to exposures secured by residential real estate property situated within Gibraltar.

10.8.

10.8.1. Under paragraph 16 of Part 1 of Annex VIII of the Banking Consolidation Directive, a competent authority may only disapply the condition in paragraph 10.6.3 if the competent authority has evidence that the relevant market is well-developed and long-established with loss-rates which are sufficiently low to justify such action.

10.8.2. If the evidence were to change so that the action was no longer justified the FSC would expect to revoke 10.7.

10.9.

10.9.1. The condition in 10.6.3 does not apply for exposures secured by residential real estate property situated within the territory of another EEA State.

10.9.2. However 10.9.1 only applies if and to the extent that the CRD implementation measures for that EEA State in relation to the IRB approach implement the option set out in paragraph 16 of Part 1 of Annex VIII of the Banking Consolidation Directive (waiver for residential real estate property) with respect to residential real estate property situated within that EEA State. Therefore 10.9.1 does not apply if the eligibility to use this treatment under those measures ceases as contemplated under paragraph 18 of Part 1 of Annex VIII of the Banking Consolidation Directive (suspension of alternative treatment).

10.10.

10.10.1. The condition in 10.6.3 does not apply for commercial real estate property situated within the territory of another EEA State.

10.10.2. However 10.10.1 only applies if and to the extent that the CRD implementation measures for that EEA State in relation to the IRB approach implement the option set out in paragraph 17 of Part 1 of Annex VIII of the Banking Consolidation Directive (waiver for commercial real estate property) with respect to commercial real estate property situated within that EEA State. Therefore 10.10.1 does not apply if the eligibility to use this treatment under those measures ceases as contemplated under paragraph 18 of Part 1 of Annex VIII of the Banking Consolidation Directive(suspension of alternative treatment).

Real estate collateral: Types of eligible collateral: Finnish housing legislation

10.11. A firm may also recognise as eligible collateral shares in Finnish residential housing companies operating in accordance with the Finnish Housing Company Act of 1991 or subsequent equivalent legislation in respect of residential property which is or will be occupied or let by the owner, as residential real estate collateral, provided that the conditions in paragraph 10.6 are met.

10.12. A firm may also recognise as eligible collateral shares in Finnish housing companies operating in accordance with the Finnish Housing Company Act of 1991 or subsequent equivalent legislation as commercial real estate collateral, provided that the conditions in paragraph 10.6 are met.

Real estate collateral: Minimum requirements for recognition

10.13. For the recognition of real estate collateral the minimum requirements in Section 4 of the Guidance Note, on credit risk: Standardised Approach, must be met with the following adjustments:

10.13.1. those provisions apply to all real estate collateral eligible under this Section; and

10.13.2. the minimum frequency of valuation as referred to in Section 4 of the Guidance Note, Credit Risk Standardised Approach, is once every year for commercial real estate.

Receivables: Types of eligible collateral

10.14. Amounts receivable linked to a commercial transaction or transactions with an original maturity of less than or equal to one year may be recognised as eligible collateral. Eligible receivables do not include those associated with securitisations, sub-participations or credit derivatives or amounts owed by affiliated parties.

Receivables: Minimum requirements for recognition

10.15.

10.15.1. For the recognition of receivables the requirements in this paragraph must be met.

10.15.2. The legal mechanism by which the collateral is provided must be robust and effective and ensure that the lender has clear rights over the proceeds.

10.15.3. A firm must take all steps necessary to fulfil local requirements in respect of the enforceability of security interests. There must be a framework which allows the lender to have a first priority claim over the collateral subject to any claims of preferential creditors provided for in applicable insolvency law.

10.15.4. A firm must have conducted sufficient legal review confirming the enforceability of the collateral arrangements in all relevant jurisdictions.

10.15.5. The collateral arrangements must be properly documented, with a clear and robust procedure for the timely collection of collateral. A firm's procedures must ensure that any legal conditions required for declaring the default of the borrower and timely collection of collateral are observed. In the event of the obligor's financial distress or default, a firm must have legal authority to sell or assign the receivables to other parties without consent of the receivables obligors.

10.15.6. A firm must have a sound process for determining the credit risk associated with the receivables. Such a process must include, among other things, analyses of the obligor's business and industry and the types of customers with whom the obligor does business. Where a firm relies on the obligor to ascertain the credit risk of the customers, the firm must review the obligor's credit practices to ascertain their soundness and credibility.

10.15.7. The margin between the amount of the exposure and the value of the receivables must reflect all appropriate factors, including the cost of collection, concentration within the receivables pool pledged by an individual obligor, and potential concentration risk within the firm's total exposures beyond that controlled by the firm's general methodology. A firm must maintain a continuous monitoring process appropriate to the receivables. Additionally, compliance with loan covenants, environmental restrictions, and other legal requirements must be reviewed on a regular basis.

10.15.8. The receivables pledged by an obligor must be diversified and not be unduly correlated with the obligor. Where there is material positive correlation, the

attendant risks must be taken into account in the setting of margins for the collateral pool as a whole.

10.15.9. Receivables from affiliates of the obligor (including subsidiary undertakings and employees) must not be recognised as risk mitigants.

10.15.10. A firm must have a documented process for collecting receivable payments in distressed situations. The requisite facilities for collection must be in place, even when the firm normally looks to the obligor for collections.

Other physical collateral: Types of eligible collateral

10.16. A firm may recognise as eligible collateral a physical item of a type other than those types indicated in paragraphs 10.6 to 10.12 if its IRB permission provides that the firm may treat collateral of that type as eligible and if the firm is able to demonstrate the following:

10.16.1. the existence of liquid markets for disposal of the collateral in an expeditious and economically efficient manner;

10.16.2. the existence of well-established, publicly available market prices for the collateral; and

10.16.3. there is no evidence that the net prices it receives when collateral is realised deviates significantly from the market prices referred to in 10.16.2.

10.17. If a firm wishes to recognise other types of collateral in accordance with 10.16 (whether as part of its application for an IRB permission or under a variation of its IRB permission) it should demonstrate to the FSC how the criteria in 10.16.1 to 10.16.3 have been met with respect to that type of collateral.

Other physical collateral: Minimum requirements for recognition

10.18.

10.18.1. If a type of other physical collateral referred to in 10.16 is potentially eligible under a firm's IRB permission a firm must only recognise it as eligible if the minimum requirements in 10.18.2 to 10.18.10 are met.

10.18.2. The collateral arrangement must be legally effective and enforceable in all relevant jurisdictions and must enable the firm to realise the value of the property within a reasonable timeframe.

10.18.3. With the sole exception of permissible prior claims referred to in 10.15.3, only first liens on, or charges over, collateral must be permissible. As such, the firm must have priority over all other lenders to the realised proceeds of the collateral.

10.18.4. The value of the property must be monitored on a frequent basis and at a minimum once every year. More frequent monitoring must be carried out where the market is subject to significant changes in conditions.

10.18.5. The loan agreement (or other agreement documenting the exposure) must include detailed descriptions of the collateral plus detailed specifications of the manner and frequency of revaluation.

10.18.6. The types of physical collateral accepted by the firm and policies and practices in respect of the appropriate amount of each type of collateral relative to the exposure amount must be clearly documented in internal credit policies and procedures available for examination.

10.18.7. The firm’s credit policies with regard to the transaction structure must address appropriate collateral requirements relative to the exposure amount, the ability to liquidate the collateral readily, the ability to establish objectively a price or market value, the frequency with which the value can readily be obtained (including a

professional appraisal or valuation), and the volatility or a proxy of the volatility of the value of the collateral.

10.18.8. Both initial valuation and revaluation must take fully into account any deterioration or obsolescence of the collateral. Particular attention must be paid in valuation and revaluation to the effects of the passage of time on fashion- or date-sensitive collateral.

10.18.9. The firm must have the right to inspect the property physically. It must have policies and procedures addressing its exercise of the right to physical inspection.

10.18.10. The firm must have procedures to monitor that the property taken as protection is adequately insured against damage.

Leasing: Types of eligible transactions and conditions of eligibility

10.19.

10.19.1. Where the requirements set out in this paragraph are met, exposures arising from transactions whereby a firm leases property to a third party must be treated the same as loans collateralised by the type of property leased.

10.19.2. For the exposures arising from leasing transactions to be treated as collateralised by the type of property leased, the following conditions must be met:

10.19.2.1. the conditions set out or referred to in 10.13 or 10.18 as appropriate for the recognition as collateral of the type of property leased are met;

10.19.2.2. there is robust risk management on the part of the lessor with respect to the use to which the leased asset is put, its age, and planned duration of use, including appropriate monitoring of the value of the security;

10.19.2.3. there is in place a robust legal framework establishing the lessor's legal ownership of the asset and its ability to exercise its rights as owner in a timely fashion; and

10.19.2.4. where this has not already been ascertained in calculating the LGD level, the difference between value of the unamortised amount and the market value of the security must not be so large as to overstate the credit risk mitigation attributed to the leased assets.

Calculating risk-weighted exposure amounts and expected loss amounts for funded credit risk mitigation: Introduction

10.20. Paragraphs10.21 to 10.37 and 10.49 set out how the calculation of risk weighted exposure amounts and expected loss amounts under Sections 1 to 9 be modified to take into account credit risk mitigation that is eligible and meets the minimum requirements in Schedule 8 of the BCACI Regulations and this Section.

Calculating risk weighted exposure amounts and expected loss amounts for funded credit risk mitigation: Valuation: Receivables

10.21. The value of receivables for the purpose of calculating the effect of credit risk mitigation must be the amount receivable.

Calculating risk weighted exposure amounts and expected loss amounts for funded credit risk mitigation: Valuation: Other physical collateral

10.22. Physical collateral recognised as eligible as described in 10.16 must be valued for the purpose of calculating the effect of credit risk mitigation at its market value. Market value is the estimated amount for which the property would exchange on the

date of valuation between a willing buyer and a willing seller in an arm's-length transaction.

Calculating risk weighted exposure amounts and expected loss amounts: General treatment

10.23. Paragraphs 10.24 to 10.29 apply to collateral in the form of real estate collateral, receivables, other physical collateral and leasing permitted by Section 10 and exposures secured by such collateral.

10.24. LGD* (the effective loss given default) calculated as set out in paragraphs 10.25-to10.28 must be taken as the LGD.

10.25. Where the ratio of the value of the collateral (C) to the exposure value (E) is below a threshold level of C* (the required minimum collateralisation level for the exposure) as laid down in 10.28, LGD* must be the LGD laid down in the other sections of this Guidance Note for uncollateralised exposures to the counterparty.

10.26. Where the ratio of the value of the collateral to the exposure value exceeds a second, higher threshold level of C** (i.e. the required level of collateralisation to receive full LGD recognition) as laid down in 10.28, LGD* must be that prescribed in that table.

10.27. For the purposes of paragraphs 10.24 to10.26, where the required level of collateralisation C** is not achieved in respect of the exposure as a whole, the exposure must be considered to be two exposures – that part in respect of which the required level of collateralisation C** is achieved, and the remainder.

10.28. Table: Minimum LGD for secured portion of exposures

This table belongs to paragraphs 10.24 to 10.27

	LGD* for senior claims or contingent claims	LGD* for subordinated claims or contingent claims	Required minimum collateralisation level of the exposure (C*)	Required minimum collateralisation level of the exposure (C**)
Receivables	35%	65%	0%	125%
Residential real estate /commercial real estate	35%	65%	30%	140%
Other collateral	40%	70%	30%	140%

Calculating risk weighted exposure amounts and expected loss amounts for funded credit risk mitigation: Alternative treatment for real estate collateral

10.29.

10.29.1. A firm may apply the treatment in paragraph 74 of Part 3 of Annex VIII of the Banking Consolidation Directive (50% risk weight for exposures secured by real estate) in respect of exposures collateralised by:

10.29.1.1. residential real estate property; or

10.29.1.2. commercial real estate property;

located in the territory of another EEA State.

10.29.2. However 10.29.1.1 or 10.29.1.2 applies if the CRD implementing measures for that EEA State with respect to the IRB approach have implemented the option set out in the provision of the Banking Consolidation Directive referred to in 10.29.1.1 with respect to the relevant category of real estate property situated within that EEA State.

10.29.3. The use of the treatment in 10.29.1 with respect to property in another EEA State must be subject to the same conditions as apply under the relevant CRD implementation measures for that EEA State.

Calculating risk weighted exposure amounts and expected loss amounts: Mixed pools of collateral

10.30.

10.30.1. Where:

10.30.1.1. risk weighted exposure amounts and expected loss amounts are calculated under the IRB approach; and

10.30.1.2. an exposure is collateralised by both financial collateral and other eligible collateral;

LGD* (the effective loss given default) to be taken as the LGD for the purposes of the IRB approach must be calculated in accordance with this rule.

10.30.2. A firm must subdivide the volatility-adjusted value of the exposure (i.e. the value after the application of the volatility adjustment as set out in Schedule 8 of the BCACI into portions each covered by only one type of collateral. That is, the firm must divide the exposure into the portion covered by eligible financial collateral, the portion covered by receivables, the portions covered by commercial real estate property collateral and/or residential real estate property collateral, the portion covered by other eligible collateral, and the unsecured portion, as relevant.

10.30.3. LGD* for each portion of exposure must be calculated separately in accordance with the relevant provisions of this Section and Schedule 8 of the BCACI Regulations.

Calculating risk weighted exposure amounts and expected loss amounts for funded credit risk mitigation: Other modifications of the rules on credit risk mitigation: Financial collateral simple method

10.31. The financial collateral simple method must not be used under the IRB approach.

Calculating risk weighted exposure amounts and expected loss amounts for funded credit risk mitigation: Other modifications of the rules on credit risk mitigation: Master netting agreements

10.32.

10.32.1. This paragraph sets out how the calculations under Schedule 8 of the BCACI Regulations (Using the supervisory volatility adjustments or the own estimates volatility adjustments approaches to master netting agreements covering repurchase transactions and/or securities or commodities lending or borrowing transactions and/or other capital market driven transactions) must be modified.

10.32.2. Where risk weighted exposure amounts and expected loss amounts are calculated under the IRB approach, E is the exposure value for each separate

exposure under the agreement referred to in the provisions listed in 10.32.1 that would apply in the absence of the credit protection.

10.33.

10.33.1. This paragraph sets out how the calculations under Schedule 8 of the BCACI Regulations (Using the internal models approach to master netting agreements covering repurchase transactions and/or securities or commodities lending or borrowing transactions and/or other capital market driven transactions) should be applied.

10.33.2. Where risk weighted exposure amounts and expected loss amounts are calculated under the IRB approach E is the exposure value for each separate exposure under the agreement referred to in the provisions listed in 10.33.1 that would apply in the absence of the credit protection.

10.34. This paragraph sets out how the calculations under Schedule 8 of the BCACI Regulations (Calculating risk-weighted exposure amounts and expected loss amounts for master netting agreements covering repurchase transactions and/or securities or commodities lending or borrowing transactions and/or other capital market driven transactions) should be applied.

10.34.1. E* must be taken as the exposure value of the exposure to the counterparty arising from the transactions subject to the master netting agreement referred to in the provisions listed in 10.34 for the purposes of this Guidance Note.

Calculating risk weighted exposure amounts and expected loss amounts for funded credit risk mitigation: Other modifications of the rules on credit risk mitigation: Financial collateral comprehensive method

10.35.

10.35.1. This paragraph sets out how the calculations under Schedule 8 of the BCACI Regulations (Calculating adjusted values under the financial collateral comprehensive method) should be applied.

10.35.2. E as referred to in the provisions listed in 10.35.1 is the exposure value as would be determined under the IRB approach if the exposure was not collateralised. For this purpose, where a firm calculates risk weighted exposure amounts under the IRB approach, the exposure value of the items listed in paragraphs 4.37, 4.39, 4.45, 6.44.3 and 8.29 must be calculated using a conversion factor of 100% rather than the conversion factors or percentages indicated in paragraphs 4.37, 4.39R, 4.45, 6.44.3 and 8.29.

10.36. This paragraph sets out how the calculations under Schedule 8 of the BCACI Regulations [Provisions implementing paragraph 62 of Part 3 of Annex VIII of the Banking Consolidation Directive] (Calculating risk weighted exposure amounts and expected loss amounts under the financial collateral comprehensive method) must be modified.

10.36.1. LGD* (the effective loss given default) calculated as set out in this paragraph must be taken as the LGD for the purposes of this Guidance Note.

10.36.2. $LGD^* = LGD \times (E^*/E)$ where:

10.36.2.1. LGD is the loss given default that would apply to the exposure under the IRB approach if the exposure was not collateralised;

10.36.2.2. E is the exposure value as calculated under Schedule 8 of the BCACI Regulations; and

10.36.2.3. E* is as calculated under Schedule 8 of the BCACI Regulations (Calculation of adjusted values under the financial collateral comprehensive method).

10.37.

10.37.1. In the case of a firm using the IRB approach to calculating risk-weighted exposure amounts and expected loss amounts, the persons in 10.37.2 are added to Schedule 8 of the BCACI Regulations (Conditions for applying a 0% volatility adjustment).

10.37.2. The persons referred to in 10.37.1 are other financial companies (including insurance companies) exposures for which do not have a credit assessment by an eligible ECAI and are internally rated as having a probability of default equivalent to that associated with the credit assessments of ECAIs that are associated with credit quality step two or above.

Unfunded credit protection: Eligibility of providers

10.38.

10.38.1. In the case of a firm using the IRB approach in calculating risk weighted exposure amounts and expected loss amounts, the persons in 10.38.2 are added to Schedule 8 of the BCACI Regulations (List of eligible providers of unfunded credit protection).

10.38.2. The persons referred to in 10.38.1 are other corporate entities, including parent undertakings, subsidiary undertakings and affiliate corporate entities of the firm, that do not have a credit assessment by an eligible ECAI and are internally rated as having a probability of default equivalent to that associated with the credit assessments of ECAIs that are associated with credit quality step two or above.

10.39. Where risk weighted exposure amounts and expected loss amounts are calculated under the IRB approach, to be eligible a guarantor must be internally rated by a firm in accordance with the provisions of the minimum IRB standards.

Unfunded credit protection: Minimum requirements for assessing the effect of guarantees and credit derivatives: Introduction

10.40. Paragraphs 10.41 to 10.48 set out the minimum requirements for assessing the effect of guarantees and credit derivatives for:

10.40.1. exposures in the sovereign, institutional and corporate IRB exposure class where the advanced IRB approach is being used to calculate LGDs; and

10.40.2. retail exposures; and

10.40.3. additionally, in the case of retail exposure guarantees, to the assignment of exposures to grades or pools, and the estimation of PD.

10.41. The requirements in paragraphs 10.40.2 and 10.42 to10.48 do not apply for guarantees provided by institutions and central governments and central banks if the firm has received approval under Section 2 to apply the standardised approach for exposures to such entities. In this case the requirements of Schedule 8 of the BCACI Regulations apply.

Unfunded credit protection: Minimum requirements for assessing the effect of guarantees and credit derivatives: Eligible guarantors and guarantees

10.42. A firm must have clearly specified criteria for the types of guarantors it recognises for the calculation of risk weighted exposure amounts.

10.43. For recognised guarantors the same requirements as for obligors as set out in paragraphs 3.40 to 3.45, 4.11 to 4.17, 4.51, 5.6, 6.11 and 6.14 apply.

10.44. The guarantee must 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. Guarantees prescribing conditions under which the guarantor may not be obliged to perform (conditional guarantees) may be recognised if the IRB permission permits this. A firm must (in the case of a firm with an IRB permission that permits conditional guarantees) be able to demonstrate to the FSC that the assignment criteria adequately address any potential reduction in the risk mitigation effect.

Unfunded credit protection: Minimum requirements for assessing the effect of guarantees and credit derivatives: Adjustment criteria

10.45. A firm must have clearly specified criteria for adjusting grades, pools or LGD estimates, and in the case of retail exposures 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 must comply with the minimum requirements referred to in 10.43.

10.46. The criteria in 10.45 must be plausible and intuitive. They must 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.

Unfunded credit protection: Minimum requirements for assessing the effect of guarantees and credit derivatives: Credit derivatives

10.47. The minimum requirements for guarantees set out in this Section also apply 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 Schedule 8 of the BCACI Regulations (Mismatches and credit derivatives) apply. For retail exposures and eligible purchased receivables, this paragraph applies to the process of allocating exposures to grades or pools.

10.48. The criteria applied by 10.47 must address the payout structure of the credit derivative and conservatively assess the impact this has on the level and timing of recoveries. A firm must consider the extent to which other forms of residual risk remain.

Unfunded credit protection: Minimum requirements for assessing the effect of guarantees and credit derivatives: Calculating risk weighted exposure amounts and expected loss amounts

10.49.

10.49.1. This rule relates to the calculation of risk-weighted exposure amounts and expected loss amounts in the case of unfunded credit protection.

10.49.2. Schedule 8 of the BCACI Regulations (tranching) applies for the purpose in 10.49.1.

10.49.3. The provisions in 10.49.4 replace those in Schedule 8 of the BCACI Regulations (Calculating risk weighted exposure amounts).

10.49.4. For the covered portion of the exposure (based on the adjusted value of the credit protection G_A), the PD for the purposes of this Guidance Note may be the PD of the protection provider, or a PD between that of the obligor and that of the guarantor if a full substitution is deemed not to be warranted. In the case of subordinated exposures and non-subordinated unfunded protection, the LGD to

be applied for the purposes of this Guidance Note may be that associated with senior claims.

10.49.5. For any uncovered portion of the exposure the PD must be that of the obligor and the LGD must be that of the underlying exposure.

10.49.6. G_A is the value of G* as calculated under Schedule 8 of the BCACI Regulations (Valuation of unfunded credit protection) further adjusted for any maturity mismatch as laid down in Schedule 8 of the BCACI Regulations (Maturity mismatches).

Definition of Core market participant

10.50. An undertaking which, in the case of a firm calculating risk-weighted exposure amounts and expected loss amounts under the IRB approach, do not have a credit assessment by an eligible ECAI and are internally rated as having a probability of default equivalent to that associated with the credit assessments of ECAIs associated with credit quality step 2 or above under the rules for the risk weighting of exposures to corporates under the standardised approach is treated as a financial company under Schedule 8 of the BCACI Regulations.

Maturity mismatches

10.51. In addition to Schedule 8 of the BCACI Regulations, where there is a maturity mismatch the credit protection must not be recognised where the exposure is a short term exposure specified in the firm's IRB permission as being subject to a one-day floor rather than a one-year in respect of the maturity value (M) under paragraph 4.68.

10.52. G_A ,as calculated under Schedule 8 of the BCACI Regulations, is then taken as the value of the protection for the purposes of calculating the effects of unfunded credit protection under the IRB approach.