

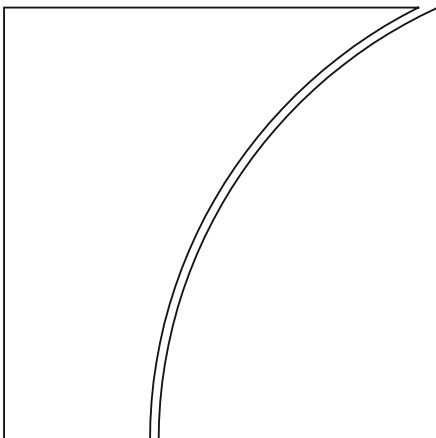
Basel Committee on Banking Supervision

Consultative Document

Reducing variation in credit risk-weighted assets – constraints on the use of internal model approaches

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1. Introduction

The Basel Committee on Banking Supervision is consulting on changes to the advanced internal ratings based approach (A-IRB) and the foundation internal ratings based approach (F-IRB). The IRB approaches permit banks to use internal models as inputs for determining their regulatory capital requirements for credit risk, subject to certain constraints. The proposed changes to the IRB approaches are a key element of the regulatory reform programme that the Basel Committee has committed to finalise by end-2016.¹

Summary of proposals

The proposed changes to the IRB approaches set out in this consultative document include a number of complementary measures that aim to: (i) reduce the complexity of the regulatory framework and improve comparability;² and (ii) address excessive variability in the capital requirements for credit risk.³ Specifically, the Basel Committee proposes to:

- remove the option to use the IRB approaches for certain exposures, where it is judged that the model parameters cannot be estimated sufficiently reliably for regulatory capital purposes (section 2);
- adopt exposure-level, model-parameter floors to ensure a minimum level of conservatism for portfolios where the IRB approaches remain available (section 3); and
- provide greater specification of parameter estimation practices to reduce variability in risk-weighted assets (RWA) for portfolios where the IRB approaches remain available (section 4).

Output floors

The Committee has previously consulted on the design of capital floors based on standardised approaches and is still considering the design and calibration.⁴ This would complement the proposed constraints discussed in this consultation paper.

In finalising this work, the Committee notes that: (i) the current capital floor is based on Basel I capital requirements and was designed as a transitional floor;⁵ (ii) the proposed revisions to the standardised approach for credit risk are not aimed at increasing overall standardised approach capital requirements;⁶ and (iii) the Committee is mindful of the relative calibration of the standardised and IRB approaches.

¹ In January 2016, the Basel Committee's oversight body, the Group of Central Bank Governors and Heads of Supervision, agreed that the Committee would complete its work to address the problem of excessive variability in risk-weighted assets by the end of 2016 (see <http://www.bis.org/press/p160111.htm>). An overview of the Basel Committee's reforms is set out in its most recent report to the G20 Leaders. See *Finalising post crisis reforms: an update (November 2015)*, available at www.bis.org/bcbs/publ/d344.pdf.

² See *The regulatory framework: balancing risk sensitivity, simplicity and comparability (July 2013)*, available at: www.bis.org/publ/bcbs258.pdf

³ See *Analysis of risk-weighted assets for credit risk in the banking book (July 2013)*, available at: www.bis.org/publ/bcbs256.pdf

⁴ The consultative document is available at www.bis.org/bcbs/publ/d306.pdf.

⁵ The Committee reaffirmed the continuation of the Basel I floor in June 2009 (see press release available at www.bis.org/press/p090713.htm).

⁶ As noted in the Committee's initial consultative document on the revisions to the standardised approach to credit risk (available at www.bis.org/bcbs/publ/d347.pdf).

To replace the Basel I floor, one option the Committee is considering is whether to have an aggregate output floor which could be calibrated in the range of 60% to 90%. An alternative could be to apply output floors at a more granular level, where appropriate. The final design and calibration will be informed by a comprehensive quantitative impact study and by the Committee's aim to not significantly increase overall capital requirements. Later in the process it will, therefore, return to this issue and consider the interactions of input floors, output floors and the leverage ratio when finalising its outstanding post-crisis reforms.

The Committee welcomes comments on the proposals described in this Consultative Document by 24 June 2016 using the following link: www.bis.org/bcbs/commentupload.htm. All comments will be published on the Bank for International Settlements' website unless a respondent specifically requests confidential treatment.

2. Scope of use of internal models

This section sets out the Committee's proposals to restrict the use of internal models in the calculation of regulatory capital requirements for credit risk.

2.1 Summary of proposals

One of the lessons from the financial crisis is that not all credit risk exposures are capable of being modelled sufficiently reliably or consistently for use in determining regulatory capital requirements. This is supported by various analyses conducted by the Basel Committee that show significant unwarranted variability in RWA calculated under the IRB approaches. In response, the Basel Committee proposes:

- To remove the IRB approaches for the following portfolios, which as a result will be subject to the standardised approach to credit risk:
 - banks and other financial institutions;
 - large corporates (defined as corporates belonging to consolidated groups with total assets exceeding EUR50bn); and
 - equities.
- To remove the option to use the A-IRB approach for exposures to corporates that are part of consolidated groups that have annual revenues greater than EUR200m.
- To remove the IRB approaches for specialised lending that use banks' estimates of model parameters, leaving only the standardised approach and the IRB supervisory slotting approach.
- To introduce a floor to the internal model method for counterparty credit risk (IMM-CCR) based on a percentage of the applicable standardised approach.

Furthermore, in July 2015 the Committee issued a consultative document on credit valuation adjustment risk (CVA risk) that included three methods: the internal models approach (IMA-CVA), the standardised approach (SA-CVA) and the basic approach (BA-CVA).⁷ The Committee has decided to eliminate from the proposed framework the IMA-CVA.⁸ The proposal for CVA risk continues to include the

⁷ The consultative document is available at www.bis.org/bcbs/publ/d325.htm.

⁸ As such, banks should no longer complete the IMA-CVA section of the ongoing CVA QIS.

SA-CVA and the BA-CVA. In finalising its reform agenda this year the Committee will consider the calibration of these remaining approaches.

The treatment of sovereign exposures is subject to an ongoing separate review, which is being conducted in a careful, gradual and holistic manner.

Regarding the use of internal models for calculating regulatory capital, jurisdictions will be considered compliant with the Basel framework if they do not implement any of the internally modelled approaches (ie they allow use of the standardised approaches only).

The above proposals, which are elaborated further in the sections below, are driven by the Committee’s judgement of the costs and benefits of permitting banks’ internal models to drive regulatory capital calculations, taking into account the substantial evidence of significant variability in RWA calculated using internal models. To determine whether a risk or portfolio is suitable for modelling, the Committee considered the criteria in the table below.

Criteria for assessing modellability		Table 1
Criterion	Description	
Data availability	The quantity and quality of relevant data available for the risk or portfolio	
Information advantage	Whether an individual bank has data not otherwise available to the broader market or has specific knowledge of the risk that will contribute to the reliability of the outcome (in other words, whether banks have an information advantage)	
Modelling techniques and validation	The availability of robust and generally accepted modelling techniques which are capable of validation	

2.2 Exposures to banks, other financial institutions and corporates

In July 2013, the Committee published the results of its initial analysis of RWA variability for banks that have adopted the IRB approach for credit risk. This included a hypothetical portfolio benchmarking exercise conducted for a portfolio of matching wholesale (ie sovereign, bank and corporate) credit exposures.

The study found a high degree of consistency in banks’ assessments of the relative riskiness of obligors. That is, there was a high correlation in how banks rank a portfolio of individual borrowers. But the study also revealed notable dispersion in the levels of estimated risk, as expressed in the probability of default (PD) and loss given default (LGD), that banks assigned to the same exposures. The low-default nature of the assessed portfolios, and the consequent lack of appropriate data for risk parameter estimation, was likely one of the key factors leading to differences across banks. A survey of bank practices for estimating exposure at default (EAD) also found significant differences.

It is difficult for banks to obtain reliable estimates of PD for low-default exposures. This is because the lower the likelihood of default the more observations a bank needs to produce a reliable estimate. This difficulty was evident in the range of PDs calculated for common exposures in the hypothetical portfolio benchmarking exercise. Moreover, given that each observation of an obligor will likely not result in a default event for low default exposures, obtaining reliable estimates of LGDs are even more challenging.

Banks, other financial institutions and large corporates are usually considered to be low-default exposures, which, as described above, makes reliable parameter estimation difficult. Furthermore, such exposures are usually highly rated by credit rating agencies and are the subject of significant market analysis. It is unlikely, therefore, that banks’ internal estimates of potential defaults or losses from such exposures will be any more reliable from a supervisory perspective than using estimates based on market data, on which the standardised approach to credit risk is based. As a result, the Committee proposes to

remove the IRB approaches for exposures to banks, other financials and large corporates. It also proposes to remove the use of the A-IRB approach for certain other corporates, where it is judged that there is typically insufficient data to estimate LGDs reliably. The specific proposals are as follows:

- Exposures to banks and other financial institutions (including insurance companies) will be subject to the standardised approach.
- Exposures to corporates belonging to consolidated groups with total assets exceeding EUR50bn would be subject to the standardised approach.
- Exposures to corporates belonging to consolidated groups with total assets less than or equal to EUR50bn and annual revenues greater than EUR200m would be eligible to apply the Foundation IRB approach.
- Exposures to corporates belonging to consolidated groups with total assets less than or equal to EUR50bn and annual revenue less than or equal to EUR200m would be eligible to apply the A-IRB approach.

To ensure objectivity and consistency, the total assets or total revenue numbers referred to above must be as reported in the audited financial statements of the corporates or their consolidated groups. To mitigate potential cliff effects, the Committee is considering basing the calculation of total assets and revenue on the average of the previous three years, or alternatively the amounts measured at the origination of the exposure and updated every three years by the bank.

Finally, the Committee proposes to remove the IRB approaches for specialised lending that use banks' estimates of model parameters. This reflects its expectation that banks are typically unlikely to have sufficient data to produce reliable estimates of PD and LGD. The Committee proposes to leave only the standardised approach and the current IRB supervisory slotting approach.

2.3 Equities

For many equities, particularly publicly traded equities, it is unlikely that banks will have specific knowledge concerning the issuer over and above public data. If all banks make their risk assessments based on the same data, it is difficult to justify capital requirements for these exposures varying between banks. Furthermore, the IRB credit risk capital requirement that applies to equities is only applicable for exposures in the banking book. Typically, such exposures only form a very small component of banks' balance sheets. Therefore, to improve simplicity, consistency and comparability, the Committee proposes that exposures to equities be subject to the standardised approach.

2.4 Counterparty credit risk and CVA

The Committee consulted on revisions to the CVA risk framework in July 2015.⁹ As part of that consultation, the Committee noted its reservations as to whether CVA can be effectively captured within an internal model designed to capture market risks in the trading book. In addition, CVA risk will be significantly reduced by a greater use of central clearing and margining for non-centrally cleared transactions. In this context, the Committee considers that the additional complexity of the IMA-CVA is not warranted, and so has decided to remove this option from the proposed CVA risk framework. Under the remaining proposals, banks will be required to use either the SA-CVA or the BA-CVA.

Regarding counterparty credit risk, the Committee notes that, on one hand, the IMM-CCR is more risk-sensitive than the standardised approaches, as it allows banks to take into account the specific

⁹ See *Review of the Credit Valuation Adjustment Risk Framework (July 2015)*, www.bis.org/bcbs/publ/d325.htm

composition of their exposures and the relevant risk factors, volatilities and correlations, supplemented by a back-testing requirement. On the other hand, a number of studies, including those conducted by the Committee, have found considerable variability in the outcome of counterparty credit risk models, which suggests that the opacity of the IMM and the degree of discretion provided to banks may be hindering the comparability of counterparty credit risk capital requirements across banks. As a result, the Committee proposes to retain IMM-CCR, but subject to a floor based on a percentage of the applicable standardised approach.¹⁰ In the case of derivatives exposures, the applicable approach is the standardised approach to counterparty credit risk (SA-CCR); in the case of securities financing transactions (such as repos), the applicable approach is the formula set out in paragraph 164 of the proposed new standardised approach to credit risk.¹¹

3. Parameter floors

This section sets out the Committee's proposals for exposure-level floors on the model parameters that banks use in the IRB approaches. The Committee proposes applying floors to PD, LGD and the credit conversion factors (CCF) used to determine EAD for off-balance sheet items. These floors will only affect the portfolios that remain eligible for use of the IRB approaches and are summarised in Table 2.

¹⁰ The proposals set out in this section to require the use of the standardised approach to calculate credit risk for exposures to certain counterparties, do not preclude the use of IMM to estimate the exposures to these counterparties.

¹¹ See *Revisions to the Standardised Approach for credit risk (December 2015)*, www.bis.org/bcbs/publ/d347.pdf

Proposed parameter floors

Table 2

	PD	LGD		EAD/CCF
		Unsecured	Secured	
Corporate	5bps	25%	Varying by collateral type: <ul style="list-style-type: none"> • 0% financial • 15% receivables • 15% commercial or residential real estate • 20% other physical 	EAD subject to a floor that is the sum of (i) the on balance sheet exposures; and (ii) 50% of the off balance sheet exposure using the applicable CCF in the standardised approach
Retail classes:				
Mortgages	5bps	N/A	10%	
QRRE transactors ¹²	5bps	50%	N/A	
QRRE revolvers	10bps	50%	N/A	
Other retail	5bps	30%	Varying by collateral type: <ul style="list-style-type: none"> • 0% financial • 15% receivables • 15% commercial or residential real estate • 20% other physical 	

The LGD and EAD floors are only applicable in A-IRB approaches. The EAD floors are for those exposures where EAD modelling is still permitted; see Section 4.3.

The LGD floors for secured exposures apply when the exposure is fully secured (ie the value of collateral after the application of haircuts exceeds the value of the exposure). The LGD floor for a partially secured exposure is calculated as a weighted average of the unsecured LGD floor for the unsecured portion and the secured LGD floor for the secured portion.

Although the floors set out in the table above provide a baseline proposal, the Committee intends to test certain alternative values in the QIS exercise that will be conducted during 2016. For example, the Committee will test a higher LGD floor for mortgage exposures. The Committee will also consider the appropriateness of the 0% LGD floor on exposures fully secured by eligible financial collateral (together with the corresponding zero exposure value that can be obtained under the standardised approach).

There are various trade-offs regarding the appropriate calibrations of the floors that the Committee has considered. Some factors support a relatively low-level calibration of the floors, while others support higher calibrations. These considerations include the following:

- **Reliability of model estimates.** Floors on individual model parameters can be applied in a targeted way to address concerns about the reliability of particular inputs for particular portfolios. For example, PD floors address the problem that in low-default portfolios, a large number of observations are needed to give confidence in the estimated PD.
- **Reduction in RWA variability.** Parameter floors can address RWA variability by narrowing the range of outcomes and eliminating outliers (on the low side). Excessive variation in model parameters, and hence in risk weights, for the same exposure reduces comparability and undermines confidence in the capital framework. However, parameter floors would need to be

¹² QRRE stands for qualifying revolving retail exposures. QRRE transactors are facilities such as credit cards and charge cards where the balance has always been repaid at each scheduled repayment date and that at least 6 months have passed since the facility was first used as a means of payment (the repayment date is typically the date after which interest charges come into effect on any balances carried forward). QRRE revolvers are all facilities that do not qualify as QRRE transactors, eg where balances have been carried forward past the scheduled repayment date.

set fairly high to achieve this aim for a portfolio as a whole; otherwise, they only address RWA variability in low-risk segments of a given portfolio.

- **National specificities.** Some products, particularly in the retail portfolios, may have specific national features that result in lower default rates and loss rates than similar products in other jurisdictions. High parameter floors risk unduly affecting such products.
- **Incentives.** Banks may be incentivised to shift their exposures to higher risk exposures to avoid the effect of the parameter floors.
- **Consistency with standardised approach and modelling incentives.** Floors that lead to minimum risk weights that are significantly higher than those used in the standardised approach would be inconsistent with the structure of the capital framework. Such floors could discourage banks from adopting the IRB approaches and the associated risk management standards.

4. Parameter estimation practices and fixed supervisory parameters

This section sets out the Basel Committee's proposals to limit the range of practices regarding the estimation of model parameter under the IRB approaches. These proposals aim to reduce unwarranted variability in RWA and to simplify the credit risk framework. The proposals cover: (i) PD; (ii) LGD; (iii) EAD, including CCF; (iv) maturity (M); and (v) credit risk mitigation (CRM).

4.1 Probability of default

The Committee proposes to increase the simplicity and comparability of the IRB approaches by limiting the range of practices that banks take to PD estimation. Specifically, the Committee proposes that the following requirements be introduced for the modelling of PD under the F-IRB and A-IRB approaches:

- **Rating systems** should be designed in such a way that assignments to rating categories generally remain stable over time and throughout business cycles. Migration from one category to another should generally be due to idiosyncratic or industry-specific changes rather than due to business cycles.
- **Data used to calculate PDs.** Modelled PD should be based on the observed historical average one-year default rate, which must include a representative mix of good and bad years, with a minimum weighting of data from downturn years of one in ten.
- **Granularity of PDs.** At a minimum, PD should be estimated for each rating grade.

In addition to the changes above, which will apply to corporate exposures and, where relevant, retail exposures, the Committee proposes to adjust the way in which seasoning is taken into account in the estimation of PDs for retail exposures. Currently, banks must adjust PD estimates upwards for anticipated seasoning effects. However, the Committee believes that instead of encouraging banks to adjust estimated PDs, they should instead be required to take account of seasoning as a risk factor in their models.

4.2 Loss given default

The Committee's proposals for the fixed supervisory-specified LGDs under the F-IRB approach and for floors on bank-modelled LGDs under the A-IRB approach are set out below.

4.2.1 F-IRB: Unsecured exposures (only relevant for exposures to corporates)

The Committee proposes to retain the existing 45% and 75% respectively for senior and subordinated unsecured exposures.

4.2.2 F-IRB: fully and partially secured exposures (only relevant for exposures to corporates)

Under the F-IRB approach, there are two approaches to the recognition of collateral. These depend on the nature of the collateral received. For exposures secured by eligible financial collateral, the current approach is set out in paragraph 291 of Basel II.¹³ For exposures secured by other collateral types (receivables, commercial real estate/residential real estate and other physical collateral), the current approach is set out in paragraph 295.

The Committee proposes that banks should use the following formula to determine downturn LGD for secured exposures (LGD*). The formula aims to give a uniform presentation of the two existing approaches to the recognition of collateral within the F-IRB approach. This simplifies the framework and so should lead to more consistent interpretation and implementation. The formula is a weighted average of an unsecured LGD and a secured LGD, with the weighting of unsecured LGD (secured LGD) being the proportion of the exposure that is unsecured (secured).

$$LGD^* = LGD_U \cdot \frac{E_U}{E \cdot (1 + H_E)} + LGD_S \cdot \frac{E_S}{E \cdot (1 + H_E)}$$

Where:

- E = the current value of the exposure.
- H_E = the percentage increase in exposure values that banks are required to assume when the formula is being used to calculate counterparty credit risk (see discussion below). When the bank is owed cash only, H_E is zero.
- E_S = the amount of the exposure that is collateralised, which is calculated as the value of the collateral after applying the supervisory prescribed haircut (capped at the value of $E \cdot (1 + H_E)$). The calibration of the haircuts attempts to reflect downturn conditions, and is considered further below.
- $E_U = E \cdot (1 + H_E) - E_S$. This is the exposure value (increased by $1 + H_E$ when the formula is being used to calculate counterparty credit risk), minus the amount of the exposure that is collateralised.
- LGD_U = the relevant supervisory-prescribed downturn LGD for unsecured exposures (see section 4.2.1 above).
- LGD_S = the supervisory-prescribed downturn LGD on a fully secured exposure. The prescribed amount(s) provide the floor on the overall downturn LGD for secured exposures and are discussed further below.

Although the formula above is largely a presentational change, there are some changes of substance:

- (i) *Increase in haircuts for non-financial collateral.* The F-IRB approach permits the recognition of the following collateral types: (i) eligible financial collateral; (ii) receivables; (iii) commercial and residential real estate (CRE/RRE); and (iv) other physical collateral. The supervisory haircuts applied to eligible financial collateral will continue to mirror those prescribed in the standardised

¹³ Paragraph references to Basel II in this consultation paper refer to the comprehensive version of Basel II that was published in June 2006 and is available at: www.bis.org/publ/bcbs128.pdf

approach. However, the Committee has some evidence that the realised value of other collateral types during stressed periods is significantly less than the carrying value of that collateral one year prior to default. As such, the Committee proposes to increase the current haircuts applied to receivables, CRE/RRE and other physical collateral to 50% (from the implied haircut levels in the current framework of 20% for receivables and 28.6% for CRE/RRE and other physical collateral).

- (ii) *Decrease in LGD_s for eligible non-financial collateral.* Partly reflecting the above higher supervisory collateral haircuts, the Committee proposes to adjust LGD_s, which is the LGD that applies to fully secured exposures. The table below sets out the current values and the proposed new values for exposures secured by each type of collateral:

Collateral type	Current value of LGD_s	Proposed new value of LGD_s
Eligible financial collateral	0%	0%
Receivables	35%	20%
CRE/RRE	35%	20%
Other physical collateral	40%	25%

The Committee will continue to consider the appropriateness of a 0% LGD for exposures fully secured by eligible financial collateral, and the related zero exposure value that can be achieved in the standardised approach for such exposures.

- (iii) *Removal of required minimum collateral.* The current framework for eligible IRB collateral includes a minimum collateralisation requirement. For example, if a bank has a corporate loan that is secured by CRE with a value equivalent to 25% of the loan, this falls below the minimum collateralisation requirement of 30% set out in paragraph 295 of Basel II. As a result, the CRE collateral receives no recognition as a credit risk mitigant and the corporate loan is treated as fully unsecured. In the proposed formula, the minimum collateralisation requirement has been removed to: (a) align the treatment with the recognition of financial collateral, where no such minimum collateral requirement exists; and (b) increase risk-sensitivity through greater recognition of the presence of collateral.
- (iv) *Grossing-up exposure values for securities lent or posted.* The current approach to the recognition of financial collateral is designed (i) to calculate the risk of secured loans; and (ii) to calculate counterparty credit risk when the bank has lent out non-cash items and taken collateral (ie in the case of securities financing transactions), or when the bank has posted collateral. When it is used to calculate counterparty credit risk, a bank must gross-up exposure values (ie multiply E by $1+H_E$, where H_E is a value that varies by exposure type). The gross-up requirement, however, does not currently apply to exposures secured by non-financial collateral. The Committee proposes to extend the application of the gross-up requirement to non-cash exposures secured by non-financial collateral for the following reasons:
- The gross-up requirement captures the potential future exposure that can occur if the non-cash item that has been lent or posted rises in value; and
 - The potential future exposure from any rise in value of the non-cash item lent or posted should be independent of whether the collateral received is in the form of financial collateral or non-financial collateral.

In addition to the changes outlined above, the Committee intends to clarify the F-IRB's treatment of general security agreements, and other forms of floating charge, that provide the lending bank with a registered claim over a company's assets. In cases where the registered claim includes both assets that are not eligible as collateral under the F-IRB and assets that are eligible as collateral under the F-IRB, the bank may recognise the latter. Recognition is conditional on the claims meeting the operational requirements set out in the F-IRB approach.

4.2.3 A-IRB: unsecured exposures (corporate and retail)

The calculation of downturn LGDs is a significant source of RWA variability. To address this, and to help improve comparability, the Committee proposes that banks must separately estimate for non-defaulted assets: (i) a long-run average LGD for each exposure; and (ii) an add-on to reflect the impact of downturn conditions. The LGD parameter will be the sum of these two components.

The downturn add-on component is inherently more subjective than the long-run average component. To limit the extent to which the component leads to undue variation in LGD estimates, the Committee will consider applying a floor to the downturn add-on. This floor would be in addition to the floor on the overall LGD set out in Section 3. As an alternative, the Committee is considering whether to use supervisor-specified add-ons for the downturn component.

4.2.4 A-IRB: fully and partially secured exposures (corporate and retail)

The Committee proposes that banks be permitted to directly estimate their downturn LGDs for fully and partially secured exposures, but that this estimate will be subject to a floor calculated using the following formula:

$$Floor = LGD_{U\ floor} \cdot \frac{E_U}{E} + LGD_{S\ floor} \cdot \frac{E_S}{E}$$

This supervisory-determined floor is calculated as a weighted average of the floor that applies for unsecured exposures ($LGD_{U\ floor}$) and a floor applicable for fully secured exposures ($LGD_{S\ floor}$), with the weightings being the proportion of the exposure that is unsecured and the proportion of the exposure that is secured respectively. The proposed calibration of the floors is covered in Section 3, which in the case of $LGD_{S\ floor}$ will vary with the type of collateral securing the exposure. E_U and E_S are calculated as set out in section 4.2.2 for corporate exposures and for exposures in the 'other retail' category (ie the collateral haircuts set out in 4.2.2(i) should also be used for other retail exposures). LGD_S and LGD_U are taken from table 2. The above formula does not apply to exposures in the residential mortgages portfolio.

4.2.5 Exposure A-IRB modelled and collateral not modelled

The Committee considered the case where a bank has a portfolio of unsecured exposures for which it is permitted to apply the A-IRB to model LGDs. If the bank takes collateral against one of these exposures, it may not be able to model the effects of the collateral (ie have enough data to model the effect of the collateral on recoveries). In such cases, the Committee proposes that banks be permitted to apply the formula for fully and partially secured exposures in the F-IRB (see section 4.2.2) to determine the collateral effect, with the exception that the LGD_U term would be modelled by the bank (according to the approach set out in section 4.2.3), rather than being fixed by supervisors. To adopt this treatment, the collateral must be eligible under the F-IRB and the bank's estimate of LGD_U must not take account of any effects of collateral recoveries.

4.3 Exposure at default and credit conversion factors

The Committee's analysis has found that practice-based differences in banks' estimates of CCFs for undrawn exposures contribute materially to RWA variation among IRB banks. These practice-based

differences arise from the difficulty with treating low-default exposures, vague legal concepts and other estimation issues.

To address this variability, the Committee proposes a combination of greater use of supervisory CCF estimates with additional constraints on estimation practices where CCF modelling is retained. Specifically, the Committee proposes the following for the determination of EAD:

- Banks using the F-IRB approach will be required to use the supervisory CCFs set out in the standardised approach.
- Banks using the A-IRB will be required to use the CCFs specified in the standardised approach for a larger range of exposures than is currently required. The standardised approach CCFs will be required for all commitments to counterparties for which the standardised approach to credit risk must be used under the proposal in section 2 of this consultation document (eg exposures to banks and other financial institutions), and all non-revolving commitments to other counterparties. The only exposures for which banks will be permitted to model EAD under the A-IRB approach are exposures that meet all of the following conditions: (i) the exposure is to a counterparty for which the IRB approach to credit risk is available (eg certain corporates and retail); (ii) the exposure is an undrawn revolving commitment to extend credit, purchase assets or issue credit substitutes; and (iii) the exposure is not subject to a CCF of 100% in the standardised approach.
- Where EAD modelling continues to be permitted, it will be subject to the following constraints on EAD estimation practices:
 - i. EAD/CCF estimates should be based on reference data that reflect the customer, product & bank management practice characteristics of the exposures to which the estimates are to be applied.
 - ii. A well-known feature of the commonly used undrawn limit factor approach to estimating CCFs is the region of instability associated with facilities close to being fully drawn at the reference date. Banks should ensure that their EAD/CCF estimates are effectively quarantined from the potential effects of this region of instability.
 - iii. EAD reference data should not be capped to the principal amount outstanding or facility limits. Interest payments due and limit excesses should be included in EAD/CCF reference data.
 - iv. Whatever approach a bank uses to estimate EAD, it should confirm that the basic downturn requirement of the framework is met, ie the bank's estimates represent (conservative) estimates of the long-run default-weighted average EAD for similar facilities.
 - v. EAD estimates must use a 12-month fixed horizon estimation approach.
- Regarding unconditionally cancellable commitments, the definition of 'commitment' will be clarified. Some banks currently treat facilities that are unconditionally cancellable as not being a commitment and thus deem them to fall outside the scope of the capital framework. In response, the Committee proposes the following definition of 'commitment' in both the standardised and IRB approaches:

commitment means any contractual arrangement that has been offered by the bank and accepted by the client to extend credit, purchase assets or issue credit substitutes. It includes any such arrangement that can be unconditionally cancelled by the bank at any time without prior notice to the obligor. It also includes any such arrangement that can be cancelled by the bank if the obligor fails to meet conditions set out in the facility documentation, including conditions that must be met by the obligor prior to any initial or subsequent drawdown under the arrangement.

As set out in section 3, the Committee proposes that, for the limited types of facility that may still be modelled under the A-IRB, the EAD will be subject to a floor.

4.4 Maturity

The Committee proposes that banks be required to determine the maturity parameter (M) under A-IRB based on the expiry date of a facility (ie the use of the repayment date of a current drawn amount would be explicitly prohibited).¹⁴ This would be a clarification of paragraph 320 of Basel II that already provides that M should be set to the maximum remaining time that a borrower is permitted to take to fully discharge its contractual obligations under the terms of the loan agreement (subject to a cap of 5 years). The Committee does not propose to change the fixed 2.5 year maturity parameter under F-IRB.

4.5 Credit risk mitigation

The Committee proposes to make the following amendments to the CRM framework:

- Under the F-IRB framework, when a bank wishes to recognise the effects of guarantees and credit derivatives, it has options as to how it does this. Specifically, regarding the covered portion of the exposure, the bank may replace the PD of the exposure with either (i) the PD appropriate to the guarantor's borrower grade (ie a full substitution approach); or (ii) some grade between the underlying obligor and the guarantor's borrow grade (see paragraph 303 of Basel II). The Committee proposes to remove the latter option, leaving only the full substitution approach.
- When certain credit derivatives and similar products are used as credit risk mitigants, banks using the IRB approaches may apply the double default treatment (paragraphs 284 and 307 of Basel II). This treatment adjusts assumptions in the capital requirements formula about the probability of both the underlying obligor and the protection provider defaulting. The Committee proposes to remove the double default approach due to its complexity and the lack of evidence of its use by banks.
- Under the A-IRB approach, conditional guarantees may be recognised if the bank can demonstrate their effectiveness (paragraph 484 of Basel II). The Committee proposes to amend this text to follow the standardised and F-IRB approach, which prohibits conditional guarantees. However, it will also clarify which types of guarantees are regarded as conditional. Specifically, guarantees that only cover loss remaining after the bank has first pursued the original obligor for payment and has completed the work-out process will be regarded as unconditional, as long as they do not contain any clause outside the direct control of the lending bank that could prevent the protection seller from being obliged to pay. These types of guarantees will therefore remain eligible credit risk mitigants.
- The current standardised approach permits banks under certain circumstances to use their own estimates of collateral haircuts when applying the comprehensive formula, which recognises the credit risk mitigation provided by collateral (see paragraphs 154 and 155 of the current standardised approach). This option is also available to banks applying the F-IRB approach. However, the proposed new standardised approach removes the option to use own estimates of haircuts, and the Committee also proposes to remove this option from the F-IRB approach.
- Banks applying the IRB approaches may still use the value-at-risk (VaR) model approach to determine their exposures subject to counterparty credit risk for securities financing transactions. The text outlining the VaR model approach was originally included in the standardised approach

¹⁴ This approach would also be required for banks using the F-IRB in jurisdictions where national discretion has been used to require M to be calculated for each facility in the same way as under the A-IRB approach (paragraph 318 of Basel II).

with a cross-reference permitting its use for banks applying the IRB approaches. However, as it has been removed from the proposed new standardised approach, the Committee proposes to reinsert it into the IRB section of the framework.

- The proposed standardised approach removes any recognition of CRM arising from first-to-default credit derivatives, and more generally nth-to-default credit derivatives. The Committee proposes to follow the same approach for banks applying F-IRB to the underlying exposure. For A-IRB banks, the Committee proposes that only the first-to-default credit derivatives will remain eligible.

5. Other issues

The proposals in this consultation document, in particular the proposals in Section 2 that put certain portfolios on the standardised approach, potentially give rise to additional consequential amendments that may be necessary to promote consistency in the framework. One issue that the Committee intends to consider further is the extent to which banks adopting the IRB approach should be required to apply it to all material asset classes for which the IRB approach remains available (see paragraphs 256 to 262 of Basel II). The Committee welcomes comments on this issue in light of its proposal to require the use of the standardised approach for exposures in certain asset classes.

The Committee plans to make various other amendments to the IRB text during the consultation period that aim to make the text clearer, including the addition of a mapping of IRB portfolio exposures to the standardised approach portfolios, which is intended to be purely presentational (see annex). The Committee welcomes proposals for any particular areas that it should clarify.

Annex: Mapping of IRB exposures to new standardised approach categories

Existing IRB category and definition	Proposed treatment	Mapping from IRB category to new SA		
<u>Sovereigns</u> <ul style="list-style-type: none"> Sovereigns & CBs PSEs treated as sovereigns under SA MDBs that meet criteria for 0% RW under SA Claims on BIS, IMF, ECB, ESM, EFSF & EC (receive 0% RW under SA) 	Under review	<ul style="list-style-type: none"> Sovereign & CBs PSE treated as a sovereign under SA Claims on BIS, IMF, ECB, ESM, EFSF and EC 	Sovereign category	
<u>Banks</u> <ul style="list-style-type: none"> Banks Securities firms subject to comparable supervision to banks Claims on domestic PSEs that are treated like banks under <u>current</u> SA MDBs that do not meet criteria for 0% RW under standardised approach 	SA	<ul style="list-style-type: none"> Banks Securities firms subject to comparable supervision to banks 	Senior exposures	Banks category
<u>Corporate exposures (excluding SL)</u> <ul style="list-style-type: none"> A debt obligation of a corporation, partnership, or proprietorship Exposures to SMEs or individuals not treated as retail under the IRB (eg where the aggregate exposure to the SME is more than EUR1m or where the loans are not managed as retail) Financial institutions not subject to comparable supervision to banks 	SA if a FI or corporate with assets > EUR50bn F-IRB if corporate with assets < EUR50bn & revenue > EUR200m	<ul style="list-style-type: none"> All exposures secured by real estate 	Real estate category	
		<ul style="list-style-type: none"> All subordinated debt or other capital instruments 	Subordinated debt, equity or other capital instruments category	
		<ul style="list-style-type: none"> SME exposures that meet the criteria to be classified as 'regulatory retail' in the SA 	Retail category	
		<ul style="list-style-type: none"> Non-SME exposures that are unsecured or secured by anything other than real estate SME exposures that do not meet the criteria to be classified as 'regulatory retail' in the SA 	Corporate category	

	All other A-IRB eligible		
<u>Specialised lending</u> <ul style="list-style-type: none"> • Project finance • Object finance • Commodities finance • IPRE • HVCRE 	SA or slotting	<ul style="list-style-type: none"> • Project finance • Object finance • Commodities finance 	Specialised lending category
		<ul style="list-style-type: none"> • IPRE • HVCRE 	Real estate category
<u>Retail exposures</u> <ul style="list-style-type: none"> • Exposures to individuals, owner-occupier in the case of mortgage • SME exposures where the aggregate exposure is less than EUR1m and managed as retail 	A-IRB	<ul style="list-style-type: none"> • Exposures secured by real estate 	Real estate category
		<ul style="list-style-type: none"> • Loans to SMEs that meet the criteria to be classified as 'regulatory retail' in the SA 	Retail category
		<ul style="list-style-type: none"> • Loans to SMEs that do not meet the criteria to be classified as 'regulatory retail' in the SA 	Corporate category
<u>Equity exposures</u> <ul style="list-style-type: none"> • Ownership interest in a commercial enterprise or unrelated FI that is irredeemable, embodies no obligation on the part of the issuer and conveys a residual claim • Instruments with the same structure as Tier 1 capital • Debt or other capital instruments with the economic substance of equity 	SA	<ul style="list-style-type: none"> • All exposures 	Subordinated debt, equity or other capital instruments category
<u>Eligible purchased receivable</u> <ul style="list-style-type: none"> • Receivables generated on an arms-length basis purchased from unrelated, third-party sellers 	A-IRB	<ul style="list-style-type: none"> • Purchased retail receivables 	Retail category
	A-IRB, F-IRB or SA according to treatment of obligor	<ul style="list-style-type: none"> • Purchased corporate receivables 	Corporate category