

# Basel Committee on Banking Supervision

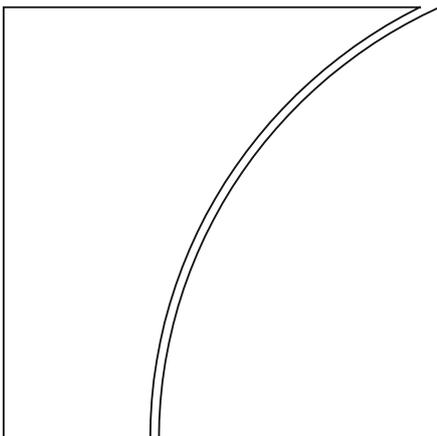
## Consultative Document

### Standards

#### Capital floors: the design of a framework based on standardised approaches

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## I. Executive summary

1. The Basel Committee is consulting on the design of a capital floor framework based on standardised approaches. This framework will replace the current transitional floor, which is based on the Basel I standard.<sup>1</sup> The revised capital floor framework will be based on the Basel II/III standardised approaches, and allows for a more coherent and integrated capital framework.

2. As noted in the Committee's recent report to the G20 Leaders, the Committee is taking steps to reduce the level of observed variation in capital ratios across banks.<sup>2</sup> This consultation paper on capital floors is part of a range of policy and supervisory measures being developed by the Committee that aim to enhance the reliability and comparability of risk-weighted capital ratios.

3. The Committee views the role of a capital floor as an integral component of the capital framework. The objectives of a capital floor are to: ensure that the level of capital across the banking system does not fall below a certain level; mitigate model risk and measurement error stemming from internally modelled approaches; address incentive-compatibility issues; and enhance the comparability of capital outcomes across banks. A capital floor complements the leverage ratio introduced as part of Basel III. Together, these measures aim to reinforce the risk-weighted capital framework and promote confidence in the regulatory capital framework.

4. This consultation paper covers design issues related to a capital floor framework, including the scope of aggregation, adjustments for differences in the treatment of provisions between the standardised and internally modelled approaches for credit risk, and the choice of the standardised approach.

5. Importantly, the calibration of the floor is outside the scope of this consultation. The Committee will consider the calibration of the floor alongside its work on finalising the revised standardised approaches to credit risk, market risk and operational risk, and its ongoing review of the capital framework and its balance of simplicity, comparability and risk sensitivity. The Committee will also undertake a Quantitative Impact Study (QIS) of the proposed floor framework next year.

6. The Committee welcomes feedback on the proposals in this paper. Comments on the proposals should be submitted by Friday 27 March 2015 using the following link: [www.bis.org/bcbs/commentupload.htm](http://www.bis.org/bcbs/commentupload.htm). All comments may be published on the website of the Bank for International Settlements unless a respondent specifically requests confidential treatment.

7. The Committee intends to publish the final standard, including its calibration and implementation arrangements, around the end of 2015.

<sup>1</sup> Basel Committee on Banking Supervision, *International convergence of capital measurement and capital standards: A revised framework comprehensive version*, June 2006, paragraphs 45–47.

<sup>2</sup> Basel Committee on Banking Supervision, *Reducing excessive variability in banks' regulatory capital ratios: A report to the G20*, November 2014.

## II. Introduction

8. The Basel II framework introduced a capital floor as part of the transitional arrangements for banks using the internal ratings-based (IRB) approach for credit risk and/or an advanced measurement approach (AMA) for operational risk.<sup>3</sup> The objective of the floor was to ensure capital requirements did not fall below a certain percentage of banks' capital requirements under the previous Basel I framework. In July 2009, the Committee agreed to keep in place the Basel I capital floor.<sup>4</sup>

9. The Committee has identified a number of reasons that warrant a review of the design of the existing floor. These include:

- *Basel I legacy systems:* the existing floor was originally introduced for banks moving directly from Basel I to Basel II. However, banks now moving from the credit risk standardised approach to an IRB approach may not have in place Basel I systems to calculate the floor. Requiring such banks to (re)introduce Basel I systems for the purpose of calculating a floor is difficult to justify.
- *Implementation of Basel I:* The implementation of the existing capital floor has differed among countries. Moreover, some jurisdictions have implemented Basel II/III without having implemented Basel I.
- *Scope of capital floor:* Basel 2.5/Basel III introduced additional capital charges that may not be fully captured in the existing capital floor (eg credit valuation adjustment). This renders the existing floor less effective in meeting its objectives.
- *Revised standardised approaches:* As noted in Box 1 below, the Committee is in the process of revising a number of standardised approaches across the capital framework. The existing capital floor does not reflect these important developments.

10. The proposed capital floor framework builds on previous work by the Committee. In its July 2013 discussion paper on balancing risk sensitivity, simplicity and comparability, the Committee noted the benefits of tying model-derived capital requirements more closely to the standardised calculations through the use of floors akin to the current Basel I floor.<sup>5</sup> This consultation paper builds on the analysis set out in the discussion paper, and aims to mitigate some of the concerns related to the reliability and comparability of risk-weighted capital ratios. The Committee's review of the capital framework and its balance of simplicity, comparability and risk-sensitivity is ongoing.

<sup>3</sup> Basel Committee on Banking Supervision, *International convergence of capital measurement and capital standards: A revised framework comprehensive version*, June 2006, paragraphs 45–47.

<sup>4</sup> Basel II capital framework enhancements announced by the Basel Committee, 13 July 2009.

<sup>5</sup> Basel Committee on Banking Supervision, *The regulatory framework: balancing risk sensitivity, simplicity and comparability*, July 2013.

### **Box 1: Basel Committee work on standardised approaches – an overview**

**Credit risk:** The Committee recently published a consultation paper on revisions to the standardised approach for credit risk. The proposals seek to reduce mechanistic reliance on external credit ratings, increase granularity, strengthen the link between the standardised and IRB approaches, and enhance comparability of capital requirements across banks.<sup>6</sup>

**Market risk:** As part of its fundamental review of the trading book, the Committee is designing a revised standardised approach to be appropriate for banks that do not make use of internally modelled approaches to market risk while still acting as a credible fallback to internal models.<sup>7</sup>

**Counterparty credit risk:** Earlier this year, the Committee finalised its standards for the new standardised approach for measuring counterparty credit risk exposures, which replaces both the current exposure method and the standardised method in the capital adequacy framework.<sup>8</sup>

**Operational risk:** The Committee is consulting on revisions to the standardised approach for measuring operational risk capital requirements. The revised standardised approach will replace the current non-model-based approach, comprising the Basic Indicator Approach, the Standardised Approach and the Alternative Standardised Approach.<sup>9</sup>

<sup>6</sup> Basel Committee on Banking Supervision, *Revisions to the Standardised Approach for credit risk*, December 2014.

<sup>7</sup> Basel Committee on Banking Supervision, *Fundamental review of the trading book: outstanding issues*, December 2014.

<sup>8</sup> Basel Committee on Banking Supervision, *The standardised approach for measuring counterparty credit risk exposures*, March 2014 (rev. April 2014).

<sup>9</sup> Basel Committee on Banking Supervision, *Operational risk – Revisions to the simpler approaches*, October 2014.

### III. Role and objectives of capital floors

#### Objectives

11. Capital floors are an integral component of the capital framework. The objectives of capital floors include:

- preventing undue optimism in bank modelling practices, thereby ensuring that modelled capital requirements do not fall below a prudent level;
- mitigating model risk due to such factors as incorrect model specification, measurement error, data limitations and structural changes that may not be captured in historical data;
- addressing incentive-compatibility issues, as banks face incentives to use overly optimistic internal models to reduce risk-weighted assets and thereby maximise return on equity;
- improving comparability by providing a standardised assessment of risk which can be compared against internal model-based outcomes; and
- constraining variation in model-derived risk-weighted assets (RWAs) that arises from differences in bank and supervisory practices, thereby improving the comparability of RWAs across banks and over time.

12. The capital framework includes an aggregate capital “Basel II transitional” floor and granular floors related to specific asset classes and parameters. The focus of this consultation paper is on the design of a permanent aggregate capital floor, which replaces the current Basel II transitional floor.

#### Capital floors and leverage ratios

13. The Committee views the role of a capital floor as complementing the leverage ratio introduced as part of Basel III. Each measure addresses different issues and offsets shortcomings of the other. A risk-weighted capital floor addresses the following:

- *RWA inconsistency and dispersion.* Excessive variation in RWAs for the same exposures raises level playing field concerns across internationally active banks and detracts from market confidence in the capital framework. Risk-weighted capital floors enforce greater consistency by narrowing the range of outcomes. In contrast, the leverage ratio does not directly address the inconsistent assignment of risk weights.
- *Low level of models-based RWAs.* Extremely low levels of internally modelled RWAs have been observed for some exposure categories. Even with a leverage ratio in place, there is still the risk that banks could face incentives to grow rapidly in businesses where the calibration of internally modelled capital requirements is low. After the models-based approaches of Basel II were introduced, significant reductions in bank-wide RWAs occurred in a number of jurisdictions. Risk-weighted capital floors are responsive to these issues.
- *Horizontal inequity in risk-weighted capital requirements.* Capital floors make for a more level playing field between standardised banks and banks using internal models for regulatory capital purposes.

14. The leverage ratio addresses the following issues:

- *Use of low RWAs to boost financial leverage.* In any risk-weighted capital framework, whether standardised or models-based, some exposures will receive lower risk weights than others. Banks can boost their financial leverage by increasing their exposures to low risk-weighted assets, increasing the fragility of their financing structures and the potential for subsequent problems if risk weights are mis-specified or risks are otherwise not captured. The leverage

ratio aims to directly guard against the risk of unsustainable growth of leverage in a way that risk-weighted capital floors do not.

- *Unexpectedly large losses in low-RWA portfolios.* When unexpectedly large losses materialise in low-RWA portfolios, the leverage ratio is likely to deliver more capital to cushion such losses than a capital floor that would have been applied to a perceived low risk exposure. A risk-weighted capital floor may not be an effective safeguard for banks or portfolios with low average risk weights. In contrast, the leverage ratio is less effective for banks or portfolios with relatively high average risk weights.
- *Lack of market confidence in RWAs.* During the recent crisis, market participants placed greater importance on banks' leverage ratios, as RWA ratios were seen to be less transparent, less reliable and less objective.

15. Together, capital floors and the leverage ratio aim to reinforce the risk-weighted capital framework and promote confidence in the regulatory capital framework. Table 1 outlines the complementary roles of a capital floor and a leverage ratio.

Issues addressed by capital floors and leverage ratios

Table 1

Issue	Addressed by risk-weighted capital floor	Addressed by the leverage ratio
<ul style="list-style-type: none"> <li>• Use of low RWAs to boost financial leverage</li> <li>• Unexpectedly large losses in low-RWA portfolios</li> <li>• Lack of market confidence in RWAs</li> </ul>	No	Yes
<ul style="list-style-type: none"> <li>• RWA inconsistency and dispersion</li> <li>• Low level of models-based RWAs</li> <li>• Horizontal inequity in risk-weighted capital</li> </ul>	Yes	No

## IV. Design of capital floor framework

16. This section outlines the key elements of the design of a capital floor based on the standardised approaches to serve as a replacement for the current Basel II transitional floor. The Committee views the design issues as separate from the issue of calibration. That is, it is possible to calibrate the floor to deliver a similar capital impact on average, irrespective of the floor's design.

### Level of aggregation of risk categories

17. In principle, a floor can be applied to each major risk category, such as credit risk, market risk and operational risk ("risk category-based floors"). Such an approach can be seen as setting a minimum average risk weight by risk category that is calibrated to a percentage of the respective standardised approaches. Alternatively, a floor can be based on total RWAs ("aggregate RWA-based floor").

18. Both types of floor meet the objectives outlined above. Risk category-based floors do not allow offsetting across risk types, as the floor amount would be the sum of the higher of the capital amount required under the floored standardised approach or the internally modelled approach for each risk category. In principle, this would generally be more binding than an aggregate RWA floor and would therefore need to be calibrated at a lower level than an aggregate RWA-based floor to deliver the same capital impact. Such floors would also be more meaningful where banks use models-based approaches for a single or limited number of risk categories. For example, a bank that applies the standardised approach for credit risk and uses internal models for market risk could benefit from a large reduction in market risk RWAs before an aggregate floor becomes effective. But an aggregate floor may be easier to communicate and interpret than a risk category-based floor.

19. The proposals in this paper form part of a broader suite of capital floor measures. As noted in its report to the G20 Leaders, the Committee is developing measures to constrain modelling at the exposure class level (eg for low-default portfolios). Floors based on exposures class could be applied for credit risk and would therefore be more granular than the risk-category based approach.

Q1. Assuming the respective floors were calibrated to achieve the same level of required capital, what are your views on the relative merits of a risk category-based floors and an aggregate RWA-based floor? What are your views on a floor based on exposure class?

### Adjustments for differences in the treatment of provisions

20. The regulatory treatment of the allowance for loan losses is different for banks depending on whether they use the IRB or the standardised approach for credit risk. Under the IRB approach, any shortfall between total eligible provisions and expected losses (EL) is deducted from Common Equity Tier 1 (CET1) capital, whereas any excess is added to Tier 2 capital, up to a limit of 0.6% of credit risk RWAs calculated under the IRB approach.<sup>10</sup> Under the standardised approach, banks may include the

<sup>10</sup> The Basel II framework defines "total eligible provisions" under the IRB approach as the sum of all provisions (eg specific provisions, partial write-offs, portfolio-specific general provisions or general provisions) that are attributed to exposures treated under the IRB approach.

general provisions in Tier 2 capital up to a limit of 1.25% of credit risk RWAs calculated under the standardised approach. The Committee is of the view that this differential treatment is sufficiently material to warrant an adjustment when calculating the capital floor, although it recognises that this will come at the expense of greater complexity.

21. One approach ("Option 1") to adjusting the floor for differences in the treatment of provisions would take the form of an adjustment to the numerator of the capital ratio. This would reverse the additions or deductions from the IRB approach to capital resources and apply the standardised approach treatment to provisioning. More specifically, this approach would require the following adjustments:

- adding back any deductions from CET1 capital (ie where total eligible provisions are less than EL);
- removing any additions to Tier 2 capital (ie where total eligible provisions are greater than EL but less than 0.6% of credit risk RWAs); and
- adding general provisions to Tier 2 capital (ie up to the limit of 1.25% of credit risk RWAs).<sup>11</sup>

22. By making these adjustments, the "IRB measure of capital" is effectively transformed into a "standardised approach measure of capital". The resulting measure of capital would therefore be the same as if the bank applied the standardised approach to credit risk. As this approach would result in standardised approach measures of capital (CET1, Tier 1 and total capital), the floor can be applied easily to all capital ratios. Under this approach, the bank would apply the lower of its capital ratio as calculated under the standardised approaches or the capital ratio as calculated under the internally modelled approaches.

23. An alternative approach for adjusting for differences in provisioning would be to adjust RWAs ("Option 2"). More specifically, the relevant provisions would be converted to a "RWA-equivalent" and be added to or removed from a bank's RWAs when calculating its capital floor. This approach avoids making any adjustment to the regulatory measure of capital, but would not distinguish between provisioning adjustments made to CET1 and Tier 2 capital.

24. An example of how the provisioning adjustment would work under each option is set out in Box 2.

<sup>11</sup> As set out in paragraphs 60, 61 and 73 of the Basel III standards.

**Box 2: Adjusting for differences in provisioning – stylised example**

Assume a bank has approval to use the IRB approach for credit risk. Table 1 sets out the banks' RWAs under the IRB and standardised approach. The bank is assumed to have CET1 capital resources of 100 and Tier 2 capital resources of 33. The example below focuses on the mechanics of the two provisioning adjustment options, and abstracts from the calibration of the floor.

**Table 1**

RWAs

	RWAs based on internal models (IRWA)	RWAs based on standardised approaches (SRWA)
Credit risk RWAs	800	1150

Capital resources

	CET1	Tier 2	Total eligible provisions	of which general provisions	Expected losses
Units	100	33	10	8	7

Under Option 1 above, the bank would adjust for differences in the treatment of provisions between the credit risk standardised and IRB approaches through its capital resources. In this example, the bank's total eligible provisions (10) exceed its expected losses (7). Under the IRB approach, the surplus provision ( $10 - 7 = 3$ ) can be included in Tier 2 capital up to 0.6% of its credit risk RWAs (in this case,  $0.6\% * 800 = 4.8$ ). When calculating its Tier 2 capital ratio for the purpose of the floor, the bank would deduct this addition. Under the credit risk standardised approach, the bank would be allowed to include its general provisions (8) in Tier 2 capital, up to a limit of 1.25% of credit risk RWAs (in this case,  $1.25\% * 1150 \approx 14$ ). The bank would add these general provisions when calculating its capital ratio for the purpose of calculating its capital ratios under the internally modelled and standardised approaches (ie its total capital resources would be  $100 + 33 - 3 + 8 = 138$ ). When calculating its capital ratio under the standardised approach, the bank's SRWAs would be multiplied by a "floor factor",  $f$ , to be calibrated by the Committee next year.

Under Option 2, the bank would adjust its IRB RWAs by:

- converting surplus provisions included in Tier 2 capital under the IRB approach to an "RWA equivalent". In the example above, the surplus provisions of 3 is multiplied by 12.5 to convert it to an RWA equivalent ( $3 * 12.5 = 37.5$ ). The RWA equivalent of 37.5 is deducted from the IRWA ( $800 - 37.5$ ) to obtain an Adjusted IRWA measure of 763.
- converting to an RWA equivalent general provisions that the bank would have been able to recognise in Tier 2 capital under the credit risk standardised approach. In this example, the credit risk standardised RWAs are adjusted by converting the general provisions of 8 into an RWA equivalent ( $8 * 12.5 = 100$ ). The RWA equivalent of 100 is deducted from the SRWA ( $1150 - 100$ ) to obtain an Adjusted SRWA measure of 1050.

When the Adjusted SRWA, multiplied by the floor factor  $f$ , is larger than the Adjusted IRWA, the difference would be added to the bank's IRWA when calculating its capital ratios. In addition, when calculating the capital ratio, the capital amount will not include any surplus provisions (ie Tier 2 capital would be  $33 - 3 = 30$ ), as this is adjusted in the RWAs under this approach.

Q2. What are your views on the relative merits of the two options for adjusting for differences in the treatment of provisioning for credit risk?

### Choice of the standardised approach

25. In using the standardised approach as a floor, a key design issue is which standardised approach should be used. Within the capital framework there are instances where:

- there is more than one standardised approach (eg the current operational risk framework);
- there are national discretions;
- the use of a particular treatment requires supervisory approval (eg some aspects of credit risk mitigation); and
- the standardised approach that is applied depends on other qualifying criteria (eg the hierarchy of approaches in the current securitisation framework).

26. The Committee is of the view that the standardised approach used by a bank when calculating the capital floor should be the one implemented by the jurisdiction in which it operates and in which it is subject to its regulatory framework. The Committee recognises that this may produce some variability due to national variations in the implementation of the standardised approaches. But the alternative – applying a prescriptive and uniform set of standardised approaches for the floor – may create variations between national implementations of the standardised approaches and the proposed standardised floor.

### Disclosure

27. To ensure that the floor is transparent and robust, banks would disclose the impact of the floor on capital ratios.<sup>12</sup>

Q3. Do you have any other comments regarding the design of the capital floor?

<sup>12</sup> The Committee is reviewing the Pillar 3 disclosure framework. The details relating to the disclosure of the capital floor will be developed as part of this work.