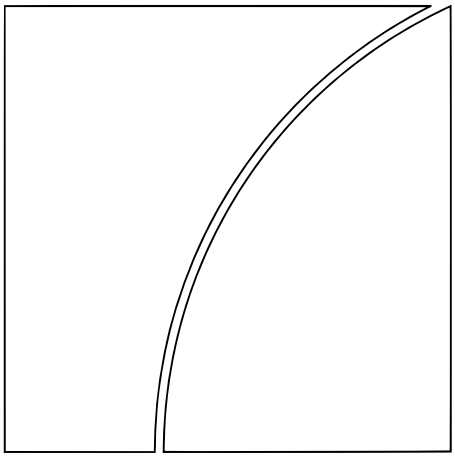
Basel Committee on Banking Supervision

RBC

Risk-based capital requirements

RBC20

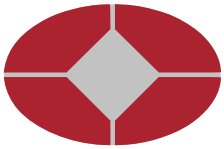


Calculation of minimum risk-based capital requirements

This chapter sets out the minimum regulatory capital requirements under the risk-based framework and how banks must calculate risk-weighted assets.

Version effective as of 01 January 2028

Paragraph CRE20.4(2) amended to remove reference to transitional provisions that expire by 1 January 2028 (as announced on 27 March 2020). Also, cross references to the securitisation chapters updated to include a reference to the chapter on NPL securitisations (CRE45) published on 26 November 2020.



BANK FOR INTERNATIONAL SETTLEMENTS

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Minimum risk-based capital requirements

20.1

Banks must meet the following requirements at all times:

1. Common Equity Tier 1 must be at least 4.5% of risk-weighted assets (RWA).
2. Tier 1 capital must be at least 6% of RWA.
3. Total capital must be at least 8.0% of RWA.[1]

1 Footnote

1 *In addition, a Common Equity Tier 1 capital conservation buffer is set at 2.5% of RWA for all banks. Banks may also be subject to a countercyclical capital buffer or higher loss absorbency requirements for systemically important banks. These buffers are described in RBC30 and RBC40.*

20.2

The components of capital referred to in RBC20.1 are defined in CAP10 and must be used net of regulatory adjustments (defined in CAP30) and subject to the transitional arrangements in CAP90. RWA are defined in RBC20.3 and RBC20.4.

Risk-weighted assets

20.3

The Basel framework describes how to calculate RWA for credit risk, market risk and operational risk. The requirements for calculating RWA for credit risk and market risk allow banks to use different approaches, some of which banks may only use with supervisory approval. The nominated approaches of a bank comprise all the approaches that the bank is using to calculate regulatory capital requirements, other than those approaches used solely for the purpose of the output floor calculation outlined below. The nominated approaches of a bank may include those that it has supervisory approval to use and those for which supervisory approval is not required.

20.4

The RWA that banks must use to determine compliance with the requirements set out in RBC20.1 (and the buffers in RBC30 and RBC40) is the higher of:

1. the sum of the following three elements, calculated using the bank's nominated approaches:
    1. RWA for credit risk (as calculated in RBC20.6 to RBC20.8);
    2. RWA for market risk (as calculated in RBC20.9); and
    3. RWA for operational risk (as calculated in RBC20.10); and
2. 72.5% of the sum of the elements listed in point (1) above, calculated using only the standardised approaches listed in RBC20.11. This element of this requirement is referred to as the output floor, and the RWA amount that is multiplied by 72.5% is referred to as the base of the output floor.

Banking book and trading book boundary

20.5

Before a bank can calculate RWA for credit risk and RWA for market risk, it must follow the requirements of RBC25 to identify the instruments that are in the trading book. The banking book comprises all instruments that are not in the trading book and all other assets of the bank (hereafter “banking book exposures”).

RWA for credit risk

20.6

RWA for credit risk (including counterparty credit risk) is calculated as the sum of the following:

1. Credit RWA for banking book exposures, except the RWA listed in (2) to (6) below, calculated using:
    1. The standardised approach, set out in CRE20 to CRE22; or
    2. The internal ratings-based (IRB) approach, set out in CRE30 to CRE36.
2. RWA for counterparty credit risk arising from banking book exposures and from trading book instruments (as specified in CRE55), except the exposures listed in (3) to (6) below, using the methods outlined in CRE51.
3. Credit RWA for equity investments in funds that are held in the banking book calculated using one or more of the approaches set out in CRE60:
    1. The look-through approach.
    2. The mandate-based approach.
    3. The fall-back approach.
4. RWA for securitisation exposures held in the banking book, calculated using one or more of the approaches set out in CRE40 to CRE45:
    1. Securitisation Standardised Approach (SEC-SA).
    2. Securitisation External Ratings-Based Approach (SEC-ERBA).
    3. Internal Assessment Approach (IAA).
    4. Securitisation Internal Ratings-Based Approach (SEC-IRBA).
    5. A risk weight of 1250% in cases where the bank cannot use (a) to (d) above.
5. RWA for exposures to central counterparties in the banking book and trading book, calculated using the approach set out in CRE54.
6. RWA for the risk posed by unsettled transactions and failed trades, where these transactions are in the banking book or trading book and are within scope of the rules set out in CRE70.

20.7

The approaches listed in RBC20.6 specify how banks must measure the size of their exposures (ie the exposure at default) and determine their RWA. Certain types of transactions in the banking book and trading book (such a derivatives and securities financing transactions) give rise to counterparty credit risk, for which the measurement of the size of the exposure can be complex. Therefore, the approaches listed in RBC20.6 include, or cross refer to, the following methods available to determine the size of counterparty credit risk exposures (see CRE51 for an overview of the counterparty credit risk requirements including the types of transactions to

which the methods below can be applied):

1. The standardised approach for measuring counterparty credit risk exposures (SA-CCR), set out in CRE52.
2. The comprehensive approach, set out in CRE22.40 to CRE22.65.
3. The value at risk (VaR) models approach, set out in CRE32.39 to CRE32.41.
4. The internal models method (IMM), set out in CRE53.

20.8

For banks that have supervisory approval to use IMM to calculate counterparty credit risk exposures, RWA for credit risk must be calculated as the higher of:

1. the sum of elements (1) to (6) in RBC20.6 calculated using IMM with current parameter calibrations; and
2. the sum of the elements in RBC20.6 using IMM with stressed parameter calibrations.

RWA for market risk

20.9

RWA for market risk is calculated as the sum of the following:

1. RWA for market risk for instruments in the trading book and for foreign exchange risk and commodities risk for exposures in the banking book, calculated using one or more of the following approaches:
    1. The standardised approach for market risk, set out in MAR20 to MAR23;
    2. The internal models approach (IMA) for market risk, set out in MAR30 to MAR33; or
    3. The simplified standardised approach for market risk, set out in MAR40.
2. RWA for credit valuation adjustment (CVA) risk in the banking and trading book, calculated using one of the following methods set out in MAR50:
    1. The basic approach to CVA risk (BA-CVA).
    2. The standardised approach to CVA risk (SA-CVA).
    3. 100% of the bank's RWA for counterparty credit risk, for banks that have exposures below a materiality threshold (see MAR50.9).

RWA for operational risk

20.10

RWA for operational risk is calculated using the standardised approach for operational risk, set out in OPE25.

Calculation of the output floor

20.11

To reduce excessive variability of RWA and to enhance the comparability of risk-based capital ratios, banks are subject to a floor requirement that is applied to RWA. The output floor ensures

that banks' capital requirements do not fall below a certain percentage of capital requirements derived under standardised approaches. The standardised approaches to be used to calculate the base of the output floor referenced in RBC20.4(2) are as follows:

1. The standardised approach for credit risk.
2. The bank's nominated approach for equity investments in funds.
3. For securitisation exposures in the banking book and when determining the default risk charge component for securitisation exposures in the trading book:
    1. if a bank does not use SEC-IRBA or SEC-IAA, its nominated approach; or
    2. if a bank does use SEC-IRBA or SEC-IAA, then the SEC-ERBA, SEC-SA or a risk-weight of 1250% as determined per the hierarchy of approaches.
4. For counterparty credit risk exposure measurement:
    1. if a bank does not use IMM or the VaR models approach, then its nominated approach; or
    2. if a bank does use IMM or the VaR models approach, then the SA-CCR or the comprehensive approach.
5. For market risk:
    1. If a bank uses the IMA for market risk, then the standardised approach for market risk; or
    2. If a bank does not use the IMA for market risk, then its nominated approach.
6. The bank's nominated approach for CVA risk.
7. The standardised approach for operational risk.

20.12

RBC20.11 above means that the following approaches are not permitted to be used, directly or by cross reference,[2] in the calculation of the base of the output floor:

1. IRB approach to credit risk;
2. SEC-IRBA;
3. the IMA for market risk;
4. the VaR models approach to counterparty credit risk; and
5. the IMM for counterparty credit risk.

1 Footnote

2 *As examples:*
-
Although the requirements for calculating exposures to central counterparties (CRE54) cross refer to IMM as a possible method for calculating exposure values, IMM may not be used when these rules are applied for calculating the base of the output floor.
-
For the look-through and mandate-based approaches for equity investments in funds, banks must use the standardised approach for credit risk when calculating the RWA of the underlying assets of the funds for the base of the output floor..
-
Although there is a cross reference in the standardised approach for market risk to the securitisation chapters of the credit risk standard (CRE40 to CRE45), SEC-IRBA may not be used when the standardised approach for market risk is calculated for the base of the output floor.

20.13

The table below provides a simple example of how the capital floor must be calculated.

Illustration of output floor calculation			Table 1
	Pre-floor RWAs	Standardised RWAs	72.5% of standardised RWAs
Credit risk	62	124	-
- of which Asset Class A	45	80	-
- of which Asset Class B	5	32	-
- of which Asset Class C (not modelled)	12	12	-
Market risk	2	4	-
Operational risk (not modelled)	12	12	-
Total RWA	76	140	101.5

As the floored RWAs (101.5) are higher than the pre-floor RWA (76) in this example, the bank would use the former to determine compliance with the requirements set out in RBC20.1 (and the buffers in RBC30 and RBC40).

Minimum standards and use of internal models

20.14

While the Basel framework permits the use of internally modelled approaches for certain risk categories, subject to supervisory approval, a jurisdiction which does not implement some or all of the internally modelled approaches but instead only implements the basic or standardised approaches is compliant with the Basel framework.