Reserve Bank of New Zealand
Te Pūtea Matua

BPR130

Credit Risk RWAs Overview

Purpose of document

This document sets out the high-level framework for calculating the value of total risk-weighted assets (**RWAs**) for **credit risk**. **Credit risk RWAs** is a component in the calculation of capital ratios, as defined in BPR100, which a bank must carry out to determine its compliance with minimum regulatory capital requirements. This document applies to both standardised and **IRB banks**, and refers to documents BPR131, BPR132, BPR133 and BPR160 for the details of the calculations, which vary between standardised and **IRB banks**.

Document version history

1 July 2021	First issue date
1 October2023	Updated for technical changes
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Conditions of registration

The Banking (Prudential Supervision) Act 1989 (the **Act**) permits the Reserve Bank to impose conditions of registration (conditions) on **registered banks**[1].

This document BPR130: Credit Risk RWAs Overview forms part of the requirements for the following conditions:*

- A New Zealand-incorporated **registered bank** is normally subject to a condition requiring it to maintain capital ratios above specified minimum levels, and also to a condition imposing restrictions on its dividend payments when its **prudential capital buffer ratio** falls below specified levels[2]. This document sets out the calculation framework for **credit risk RWAs** that will be needed by such a bank to allow it to calculate its day-to-day values for the capital ratios and the capital buffer ratio, and hence monitor its compliance with these capital adequacy conditions.

* All of the material set out in this document forms part of the requirements of the applicable condition, except material that is expressly identified as guidance by being included in a shaded box like this.

[1] The conditions can relate to any of the matters referred to in sections 73 – 73B, 78 and 81. The standard conditions are contained in Appendix 1 of document BS1: Statement of Principles.
[2] These conditions of registration relate to the matter referred to in: section 78(1)(c) (capital in relation to the size and nature of the business).

BPR130: Credit Risk RWAs Overview

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Part A: Overview of credit risk RWA calculation

A1 Components of calculation methodology

A1.1 Availability of standardised and IRB approaches

1. This document explains how a bank must calculate the value of total risk-weighted assets (**RWAs**) for **credit risk**, which is needed to calculate the capital ratios defined in BPR 100.

2. There are two different methodologies for determining **RWA**s for **credit risk**: the standardised approach and the internal-ratings based (**IRB**) approach.

3. However, a bank may only use the **IRB approach** if the Reserve Bank has accredited it to do so, and only for the purpose of calculating **RWA**s for credit exposures within specified exposure categories and belonging to a portfolio for which the bank is accredited to use an **IRB** model, as provided in section C1.2(1).

4. A New Zealand-incorporated **registered bank** is referred to as an **IRB bank** if it has been accredited to use the **IRB approach**, and is otherwise referred to as a **standardised bank**.

> Guidance: In summary, the **IRB approach** adopted by the **RBNZ** broadly implements the Basel Committee's Advanced **IRB approach**. The Basel Committee's Foundation **IRB approach** is not available in New Zealand.
>
> The main difference between the standardised and **IRB approaches** is that under the standardised approach **credit risk** is measured in a standardised manner, supported by external credit assessments, while under the **IRB approach**, banks are able to use "own internal estimates" for the purposes of calculating the credit risk components **PD**, **LGD**, **EAD**, and **M**, subject to satisfying the requirements imposed by the **RBNZ**. Each of those risk components must be calculated in accordance with BPR133, as appropriate.

A1.2 Summary of credit risk RWA calculation

Each bank must calculate its **total credit risk RWAs** in accordance with–

a. Part B, if the bank is a **standardised bank**; or

b. Part C, if the bank is an **IRB bank**.

A1.3 Scope of credit risk RWA calculation

1. Subject to subsections (2) to (4), the bank must calculate total **credit risk RWAs** using whichever scope of consolidation specified in sections B2.3 and B2.4 of BPR100 is applicable to the purpose for which it is carrying out the capital ratio calculation.

> Guidance: A bank is typically required to calculate capital ratios on a **banking group** basis for the purpose of meeting minimum capital ratios, and is required to calculate solo capital ratios for disclosure purposes. The scope of calculation specified in BPR100 includes any adjustments required to reflect BPR160.

2. In relation to the balance sheet for the scope of consolidation specified in subsection (1), the following items are within the scope of the calculation of total **credit risk** **RWAs**:

   a. all credit exposures on the balance sheet; and

   b. all other credit exposures defined by the calculation methodology that arise from business carried on by entities within the scope of consolidation; and

   c. all other assets on the balance sheet not caught elsewhere.

> Guidance: The risk-weighting methodology includes measurement of credit exposure amounts that are not recognised on the balance sheet, including potential future credit exposure on **derivatives**, credit exposures arising from contingent liabilities (such as commitments and guarantees), and the Credit Valuation Adjustment. The scope also extends to other assets on the balance sheet that do not give risk to **credit risk**, such as property, plant, and equipment.

3. If the bank has a loan, or commitment to lend, that satisfies the conditions for a "clean transfer" in Part D of BPR160, the bank may exclude the corresponding **credit risk** exposure from the scope of calculation specified in this section.

4. Any item or portion of an item that is required to be deducted from **CET1**, **AT1**, or Tier 2 capital under any requirements of BPR110 must be excluded from the calculation of total **credit risk** **RWAs**.

A1.4 Navigating credit risk RWA methodology

The requirements relating to the various components of **credit risk** are set out in separate documents. In addition to this document, the following documents are relevant:

   a. BPR131: Standardised credit risk RWAs:

   b. BPR132: Credit risk mitigation:

   c. BPR133: IRB credit risk RWAs:

   d. BPR134: IRB minimum system requirements:

   e. BPR160: Insurance, securitisation, and loan transfers.

> Guidance: A full list of the BPR documents setting out the capital adequacy framework, and their applicability to standardised and **IRB banks**, are set out in section A1.3 of BPR100.

Part B: Calculation of credit risk RWAs by standardised banks

B1 Overview

B1.1 Calculation of credit risk RWAs and application of credit risk mitigation

1. A bank that has not been accredited to use the **IRB** modelling approach for **credit risk** must calculate total **credit risk** **RWAs** using the calculation methodology set out in BPR 131.

2. In calculating the total in subsection (1) for the capital ratio calculation under the applicable scope of calculation, the bank must apply the methodology in BPR131 to all items falling within the scope defined in section A1.3 of this document.

3. However, despite the requirements referred to in subsection (1), a bank may recognise **credit risk** mitigation that it holds against any **credit risk** exposure by adjusting the **RWA** calculation. The eligibility criteria for different types of **credit risk** mitigant, and the adjusted calculation methods, are set out in BPR 132.

Guidance: Under the standardised approach, **RWAs** are calculated by multiplying a standardised risk weight for each counterparty by the total **credit risk** exposure amount for that counterparty. For **residential mortgage loans**, the risk weighting categories take into account loan-to-value ratios at time of origination and lender's mortgage insurance arrangements. For other types of counterparty, risk weights are derived from standardised rating grades, which in turn are based on external ratings from independent credit rating agencies.

Total exposure to a given counterparty is calculated by summing the direct on-balance credit exposure and the credit-equivalent amount (**CEA**) of other forms of credit exposure. For off-balance sheet exposures arising from instruments such as lending commitments or guarantees provided by the bank, the **CEA** is calculated as the notional amount of the instrument multiplied by a specified credit conversion factor (**CCF**). For the counterparty credit risk exposure arising from a **derivative** for with a counterparty, the **CEA** is calculated using the "current exposure method". Under that method, a bank may net the potential future exposure amounts arising on several **derivatives** with a given counterparty, subject to it meeting specified conditions and using a specified approach.

Separate rules apply for determining the risk-weight and the **CEA** for **derivatives** that are settled via a central counterparty (**CCP**) rather than being settled bilaterally.

For further detail on the above, see BPR131.

In addition to the off-balance sheet netting referred to above, the following **credit risk** mitigants are recognised under this framework:

(a) collateral posted by a counterparty or by a **third party** on behalf of the counterparty:

(b) on-balance sheet netting of loans and deposits:

(c) guarantees: and

(d) **credit derivatives**.

However, **credit risk** mitigants are recognised only if they meet the documentation and all other requirements set out in BPR132, and only the specified forms of **credit risk** mitigation (**CRM**) may be taken into account in determining the risk weight for an exposure. Further, no transaction in which **CRM** is recognised should receive a higher capital requirement than the same transaction where no **CRM** is recognised.

Collateral may be recognised for **CRM** purposes using either the simple or comprehensive approach. In the simple method, the risk weight of collateral is substituted for the risk weight of the counterparty for the collateralised portion of an exposure, generally subject to a risk weight floor of 20%. The comprehensive method allows fuller offset of collateral against exposures by effectively reducing the exposure amount by the value ascribed to the collateral.

On-balance sheet netting is recognised by reducing the exposure amount. In the case of guarantees and **credit derivatives**, the risk weight of the protection provider is substituted for that of the underlying counterparty.

For all eligible forms of collateral, various adjustments are required for features such as mismatches between the currency or the maturity of the underlying exposure and the mitigant.

Part C: Calculation of credit risk RWAs by IRB banks

C1 Overview

C1.1 Accreditation to use IRB approach

1. A bank may apply to the Reserve Bank for accreditation to use the **IRB** modelling approach for calculating its **credit risk** capital requirements.

> Guidance: The application process is described in BPR120.

2. If a bank is successful in its application, it is then accredited to use the **IRB approach** for calculating internal estimates of risk-weighted credit exposures for specified portfolios of credit exposures.

> Guidance: To be accredited to use **IRB** **credit risk** models, a bank must satisfy all of the internal process standards set out in BPR 134.

3. Following accreditation, an **IRB bank** is subject to the standard condition of registration specified in section C1.5 of BPR100 which, in relation to **credit risk**, requires it to–

   a. at all times meet all the internal process standards set out in BPR 134; and

   b. follow the process in BPR120 for obtaining Reserve Bank approval for any changes to any of its **IRB** **credit risk** models; and

   c. maintain a compendium of approved models with the Reserve Bank.

C1.2 Components of credit risk RWA calculation for IRB banks

1. Except in the situation described in subsection (2)(c), an **IRB bank** must use the **IRB** calculation methodology set out in BPR133–

   a. to calculate the **RWA** for any credit exposure that falls within a **modelled exposure class** (as defined in section C1.5) and for which the bank has been accredited to use an **IRB** model; and

> Guidance: The **IRB** methodology includes the supervisory slotting calculation method in subpart C9 of BPR133. The bank must use that method for any corporate specialised lending (SL) exposures for which it has been accredited to do so.

   b. to recognise the benefit of any type of **credit risk** mitigation (**CRM**) in calculating that **RWA**.

> Guidance: In some cases, the **CRM** method for the **IRB** calculation is the same as that used under the standardised approach. In such cases, cross-references are provided from BPR 133 to relevant sections of BPR132, as appropriate.

2. An **IRB bank** must use the standardised calculation methodology set out in BPR131 to calculate–

   a. the **RWA** for any credit, or other, exposure that falls within a **non-modelled exposure class** (as defined in section C1.5); and

   b. the **RWA** for any credit exposure–

      i. that falls within a **modelled exposure class**; but

      ii. for which the bank has not been accredited to use an **IRB** model; and

   c. the **RWA** for any credit exposure–

      i. that falls within a **modelled exposure class** and for which the bank has been accredited to use an **IRB** model; but

      ii. for which the bank intends to recognise the benefit of a guarantee or **credit derivative** provided by a credit protection provider that is not a modelled exposure for the bank.

3. The bank must use the standardised **CRM** approach set out in BPR132 to recognise the benefit of **CRM** in calculating the **RWA** for any exposure for which it uses the standardised **RWA** calculation methodology under subsection (2).

C1.3 Additional components of credit risk RWA calculation applying on and after 1 January 2022

1. On and after 1 January 2022, an **IRB bank** must also use the standardised calculation methodology set out in BPR131 to calculate the standardised equivalent **RWA** for each credit exposure subject to the IRB calculation methodology under section C1.2(1).

2. Section C1.2(3) applies to such calculations.

3. To avoid doubt, the requirements of this section are in addition to, not in place of, the requirements of section C1.2.

C1.4 Calculation of total credit risk RWAs by IRB banks

1. An **IRB bank** must calculate total **credit risk RWAs** in accordance with subsections (2) to (4).

> Guidance: From 1 January 2022, an **IRB bank**'s **IRB RWAs** (after multiplying by the 1.06 scalar) are subject to a floor equal to 85% of the value of those **RWAs** re-calculated using the standardised methodology. From 1 October 2022, the scalar increases to 1.2, but only applies to the bank's **RWAs** calculated on an **IRB** basis.

2. On and before 31 December 2021, the calculation is the sum of–

   a. 1.06 x total **RWA**s calculated using the **IRB approach** on all credit exposures falling under section C1.2(1); and

   b. 1.06 x total **RWA**s calculated using the standardised approach on all credit and other exposures falling under section C1.2(2).

3. On and after 1 January 2022 and on and before 30 September 2022, the calculation is the sum of–

a. the greater of–

i. 1.06 x total **RWA**s calculated using the **IRB approach** on all credit exposures falling under subsection C1.2(1); and

ii. 0.85 x total standardised equivalent **RWA**s calculated in accordance with section C1.3; and

b. 1.06 x total **RWA**s calculated using the standardised approach on all credit and other exposures falling under section C1.2(2).

4. On and after 1 October 2022, the calculation is the sum of–

a. the greater of–

i. 1.2 x total **RWA**s calculated using the **IRB approach** on all credit exposures falling under subsection C1.2(1); and

ii. 0.85 x total standardised equivalent **RWA**s calculated in accordance with section C1.3; and

b. 1 x total **RWA**s calculated using the standardised approach on all credit and other exposures falling under section C1.2(2).

Guidance: Under the **IRB** modelling approach, **credit risk** exposures enter the overall capital adequacy calculation by two different routes.

The **RWA** calculated for a **credit risk** exposure using an approved **IRB** model is deemed to protect a bank against the unexpected loss (**UL**) on the exposure. **Credit risk RWA**s using the **IRB approach** are included in total **credit risk RWA**s under section C1.4, and form part of the denominator in the capital ratio calculation.

The bank must also calculate expected loss (**EL**) from **credit risk** exposures within a **modelled exposure class**. The calculation method for **EL** is set out in Part F of BPR 133 and applies a different formula to some of the same components used in the **UL** calculation of **RWA**s. The calculated **EL** amount is reflected in the bank's capital adequacy ratios by increasing or decreasing total capital (see section F1.5 of BPR 133). Capital is the numerator in the capital ratio calculation.

C1.5 Definition of modelled and non-modelled exposure classes

1. An **IRB bank** must categorise its credit exposures and other assets within the scope of the **credit risk RWA** calculation into one of the following exposure classes (which are defined in Part B of BPR133):

a. Sovereign exposure class:

b. Bank exposure class:

c. Corporate exposures:

d. Retail exposures:

e. Equity exposures:

f. Other exposures.

2. The bank must further categorise these exposure classes as either modelled or **non-modelled exposure classes**, in accordance with subsections (3) and (4).

3. On and before 31 December 2021, the modelled and **non-modelled exposure classes** are as specified in table C1.5A.

Table C1.5A

Modelled and non-modelled exposure classes on and before 31 December 2021

Modelled exposure classes	Non-modelled exposure classes
Sovereign	**Equity**
Bank	**Reverse RMLs**
Corporate	Other
Retail (excluding **reverse RMLs**)	

4. On and after 1 January 2022, the **modelled** and **non-modelled exposure classes** are as specified in table C1.5B.

Table C1.5B

Modelled and non-modelled exposure classes on and after 1 January 2022

Modelled exposure classes	Non-modelled exposure classes
Corporate	**Sovereign**
Retail (excluding **reverse RMLs**)	Bank
	Equity
	Reverse RMLs
	Other

Guidance: Part C of BPR133 sets out the **RWA** calculation methodology for the corporate, **sovereign** and bank exposure classes, and Part D sets out the methodology for the retail exposure class. With effect from 1 January 2022, the methodology in Part C of BPR133 is no longer available for exposures in the **sovereign** or bank exposure classes, and **RWA**s must be calculated for those exposure classes using BPR131.

C1.6 Alignment of non-modelled exposure classes to standardised approach

1. This section sets out how the **non-modelled exposure classes** referred to in section C1.5 are to be aligned with the standardised approach.

2. The same definition of **equity** applies to both the **IRB** and the standardised approaches, and exposures within the **IRB** equity exposure class are subject to the standardised treatment for **equity**, as set out in sections C2.13 and C2.14 of BPR131.

3. The same definition of reverse residential mortgage loan applies to both the **IRB** and the standardised approach, and the standardised risk-weighting in section C3.10 of BPR131 applies.

4. To calculate total standardised **RWA**s for the "other" **non-modelled exposure class**, an **IRB bank** must calculate **RWA**s for the following amounts (which are summarised in subpart A1 "Overview" of BPR131):

   a. the "all other asset" **RWA**s summarised in section A1.6 of BPR131; and

   b. the **RWA** amount for the **CVA** capital charge referred to in section A1.7 of BPR131; and

   c. the counterparty **credit risk RWA**s arising from trades settled on a central counterparty in the different circumstances summarised in section A1.8 of BPR131, except where the risk-weighting requires an **IRB** model approach.

5. For the **IRB** exposure classes that will be non-modelled on and after 1 January 2022, the corresponding standardised risk-weighting categories and risk-weighting approach are as shown in Table C1.6.

Table C1.6

IRB exposure classes that map to standardised treatment

IRB exposure class	IRB exposure class sub-category	Standardised RWA treatment
Sovereign exposure class	Sovereigns	Sovereigns (section C2.2 of BPR 131)
	Lowest-risk MDBs and supranationals	**Lowest-risk MDBs and supranationals** (section C2.4(1) of BPR131)
Bank exposure class	**Other development banks**	**Other development banks** (section C2.4(2) of BPR131)
	Public sector entities	**Public sector entities** (section C2.3 of BPR131)
	IRB bank exposure subclass (including **banks** and **NBDTs**)	**Banks** (sections C2.5, C2.6, and C2.9 to C2.11 of BPR131)
		NBDTs are treated as corporates in the standardised approach (sections C2.7 to C2.10 of BPR131)

Guidance: The standardised treatment for exposures to **banks** is only applicable to banks, and if an **IRB bank** has included any **NBDTs** within an accredited model for the **IRB** bank exposure subclass, those **NBDT** exposures must be treated as corporates under the standardised approach from 1 January 2022.

C1.7 Standardised equivalents to IRB corporate and retail exposure classes

1. This section applies to the calculation under section C1.3 of the standardised equivalent **RWA** of an exposure falling within an **IRB bank**'s modelled exposure classes on and after 1 January 2022.

2. Subject to subsection (3), an **IRB bank** must allocate an exposure referred to in subsection (1) to the standardised risk-weighting category that is most applicable to the exposure.

3. The definitions of **residential mortgage loan** (**RML**) and of the sub-categories of **RML** set out in sections C3.2 to C3.4 of BPR131 apply equally to the standardised and **IRB** risk-weighting approaches, and accordingly an **IRB bank** must apply the standardised **RML** **RWA** approach in subpart C3 of BPR131 to any exposure that qualifies as an **RML**.

Guidance: Under the **IRB approach**, an **RML** must also meet the general criteria for retail exposures to be given the **IRB** risk-weighting approach for **RML**s. Subsection (3) means that if an **IRB bank** has an exposure that meets the specific criteria for an **RML** but not for the **IRB** retail exposure class, it will not be risk-weighted as an **RML** for **IRB** purposes, but must be risk-weighted as an **RML** for calculating standardised equivalent **RWA**s.

Apart from the common **RML** definitions, there is no exact map from the **IRB** corporate and retail exposure classes to corresponding standardised risk weight treatments. For example, an **SME** exposure may be treated within an **IRB bank**'s retail **SME** exposure class, but would fall within the corporate category under the standardised approach (unless it also qualifies as an **RML**).