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Deposit Takers (Internal Models) Standard 2027

This standard is made under section 72 of the Deposit Takers Act 2023 by the Reserve Bank of New Zealand after—

- complying with section 75(1) of that Act; and
- being satisfied of the matter set out in section 72(1) of that Act; and
- the board of the Reserve Bank of New Zealand having regard to the matter set out in section 49(1) of the Reserve Bank of New Zealand Act 2021.

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Standard

1 Title

This is the Deposit Takers (Internal Models) Standard 2027.

2 Commencement

This standard comes into force on 1 July 2028.

Part 1 Preliminary provisions

3 Overview

(1) This standard sets out—

- (a) the minimum operational requirements that a deposit taker must meet to use the internal models approach to determine its capital requirements;
- (b) the methods that an approved deposit taker (an **internal models deposit taker**) must use to classify its credit risk exposures in the modelled exposure classes;
- (c) the calculation methods for—
 - (i) risk-weighted assets (**RWAs**) as part of the calculation of credit risk RWAs; and
 - (ii) expected losses on those credit risk exposures;
- (d) the formulas that an internal models deposit taker must use to measure its credit risk for exposures falling within a modelled exposure class.

(2) The methods and calculations in this standard underpin the capital ratio that an internal models deposit taker must establish to comply with minimum regulatory capital requirements.

4 Application

This standard applies—

- (a) to a deposit taker that is—
 - (i) incorporated in New Zealand; and
 - (ii) approved by the Bank to use the internal models approach in calculating its RWAs; and

- (b) in relation to the exposures of the deposit taker falling within in the modelled exposure classes.

5 Use of standardised approach

- (1) Subclause (2) applies if either or both of the following are met:
 - (a) a deposit taker does not meet either or both of the requirements of clause 4(a):
 - (b) an exposure of the deposit taker falls outside the requirements of clause 4(b).
- (2) The deposit taker must use the standardised approach to measuring credit risk set out in the Deposit Takers (Capital) Standard 2027 in relation to the exposure.

6 Interpretation

In this standard, unless the context otherwise requires,—

Act means the Deposit Takers Act 2023

asset value correlation means the variable specified or estimated under the internal models approach that reflects the dependency between the value of an obligor's assets and systematic risk factors

Bank means the Reserve Bank of New Zealand

cashflow schedule means a document setting out the expected timing and amount of contractual and projected cash inflows and outflows associated with an exposure

central counterparty means an institution that sits between counterparties to a transaction, acting as the buyer to every seller and the seller to every buyer, for the purpose of clearing transactions

collateral means an asset or right pledged, assigned, or otherwise provided by a counterparty to secure an obligation and reduce the credit risk associated with an exposure

committed facility means a contractual arrangement under which a deposit taker is obliged to extend credit up to a specified amount, subject only to conditions set out in the agreement

commodities finance, for specialised lending, means a structured short-term loan to finance reserves, inventories, or receivables of exchange-traded commodities when the exposure is repaid from the proceeds of the sale of the commodity, and the borrower has no independent capacity to repay the exposure

compendium of models means the complete inventory of credit risk, counterparty credit risk, and capital models used by a deposit taker for internal model purposes, including documentation of model purpose, methodology, governance, and validation status

contingent liability means a potential obligation that becomes an actual obligation only upon the occurrence of a specified future event

corporate purchased receivables mean a pool of receivables that a deposit taker has purchased in which the underlying receivables in the pool meet the definition of corporate exposure in clause 28

counterparty means the person or entity that is the obligor with respect to a credit exposure or financial transaction

counterparty credit risk means the risk that a counterparty to a derivative, securities financing transaction, or long settlement transaction will default before final settlement of the transaction's cashflows

credit conversion factor means a percentage figure applied to an off-balance-sheet exposure to convert it into an on-balance-sheet credit exposure for regulatory capital purposes

credit risk has the same meaning as in NZ IFRS7

default has the meaning set out in Schedule 3 and, for the purposes of internal modelling, means that either or both of the following events has occurred:

- (a) the deposit taker considers that the obligor is unlikely to pay its credit obligations in full, without recourse by the deposit taker to actions such as realising any security; and
- (b) the obligor is past due more than 90 days on a material credit obligation

default grade means an obligor rating grade or a facility rating grade assigned to exposures that meet the definition of *default*

derivative has the same meaning as in section 8(4) of the Financial Markets Conduct Act 2013

dilution risk means the possibility that the total amount of purchased receivables is reduced through cash or non-cash credits to the receivables' obligors

EAD has the meaning set out in clause 53

facility rating grade means a discrete risk grade assigned to an individual credit facility to reflect facility-specific credit risk characteristics, including structure, seniority, and collateral

farm lending exposure means an exposure to a borrower that is classified under the subdivision A-1 Agriculture in the *Australian and New Zealand Standard Industrial Classification 2006*, published by Statistics New Zealand

firm-size adjustment means the adjustment applied under the internal models approach to reflect the reduced systematic risk associated with exposures to smaller firms

impairment allowance means the amount recognised in the deposit taker's financial statements to reflect expected credit losses on financial assets

income-producing real estate, for specialised lending, means a particular method of providing funding to real estate in which the prospects for repayment and recovery on the exposure depend primarily on the cashflows generated by the asset

internal obligor rating grade means a credit risk grade assigned to an obligor under a deposit taker's internal rating system

internal models approach has the meaning set out in the Deposit Takers (Capital) Standard 2027

internal models deposit taker has the meaning set out in the Deposit Takers (Capital) Standard 2027

LGD has the meaning set out in clause 0

loss means economic loss realised by a deposit taker because of an event referred to in the definition of default, and includes principal, interest, fees, and recovery costs

M means remaining effective maturity

master netting agreement means an agreement that provides for the set-off of mutual obligations upon default or termination, resulting in a single net payable or receivable amount

migration across rating grades means the movement of obligors or facilities between rating grades over time, including transitions to and from default grades

modelled exposure class has the meaning set out in the Deposit Takers (Capital) Standard 2027

netting means the legally enforceable reduction of multiple obligations to a single net obligation

object finance, for specialised lending, means a particular method of funding the acquisition of physical assets in which the repayment of the exposure is dependent on the cashflows generated by the specific assets that have been financed by and pledged or assigned to the lender

obligor rating grade means a discrete risk grade assigned to an obligor under a deposit taker's internal rating system to reflect the obligor's relative credit risk

PD has the meaning set out in clause 43

project finance, for specialised lending, means a particular method of funding in which the revenues generated by a single project act as the primary source of both the repayment and the security for the exposure

R means correlation, which is a parameter that captures the sensitivity of an obligor's asset value to systematic risk factors

rating assignment horizon means the time horizon over which an obligor rating or facility rating is intended to be valid and over which default risk is assessed, consistent with the 1-year probability of default framework

rating definitions means the documented qualitative and quantitative criteria that define each rating grade and distinguish risk levels between grades within a rating system

regulated financial institution—

- (a) means a parent and its subsidiaries where any substantial legal entity in the consolidated group is supervised by a regulator that imposes prudential requirements consistent with international norms; and
- (b) includes, but is not limited to, prudentially regulated insurance companies, broker-dealers, and banks

regulatory capital requirements means the minimum capital requirements applicable to a deposit taker under prudential standards

residential mortgage loan has the meaning set out in the Deposit Takers (Capital) Standard 2027

retail purchased receivables mean a pool of receivables that a deposit taker has purchased where the underlying receivables in the pool meet the definition of retail exposure in clause 29

reverse residential mortgage loan has the meaning set out in the Deposit Takers (Capital) Standard 2027

risk driver means the key quantitative and qualitative factors that influence the credit risk of an obligor or facility and are used in assigning internal ratings or estimating risk parameters

risk-rating system has the meaning set out in clause 8

RWA means risk-weighted asset

seasoning effects means the effects resulting from the length of time an exposure remains on a deposit taker's books and how the elapsed time affects observed risk behaviour and model estimates

securities financing transaction has the meaning set out in the Deposit Takers (Capital) Standard 2027

standardised approach has the meaning set out in the Deposit Takers (Capital) Standard 2027

supervisory rating category means a regulatory risk category prescribed in this standard for the purpose of assigning supervisory risk weights, including categories applicable under supervisory slotting approaches

supervisory slotting approach means the approach under which specialised lending exposures are assigned to supervisory risk categories with prescribed risk weights

top-down approach means a method of estimating credit risk parameters based on portfolio-level data rather than individual obligor data

unregulated financial institution means a legal entity that does not meet the definition of regulated financial institution, and whose main business includes the management of financial assets, lending, factoring, leasing, the provision of credit enhancements, securitisation, investments, financial custody, central counterparty services, proprietary trading, or other financial services activities

work out system means the policies, processes, and systems used by a deposit taker to manage, recover, and resolve exposures that are in default or credit distress.

Part 2 General requirements

7 Overview

- (1) This Part and Schedules 1 to 4 set out the general requirements for the use of an internal-ratings based or internal models approach for measuring credit risk.

- (2) Subpart 1 provides the operational requirements for rating systems and processes and subpart 2 contains the internal-ratings based requirements relating to—
 - (a) applications for approval; and
 - (b) the categorisation of exposures; and
 - (c) an overview of calculation methodologies and processes.
- (3) Schedules 1 to 4 set out the minimum operational requirements that a deposit taker must meet to use an internal model to determine its capital requirements. They provide the detailed rules for—
 - (a) rating systems operations (*see* Schedule 1):
 - (b) process requirements for risk quantification (*see* Schedule 2):
 - (c) definition of default (*see* Schedule 3):
 - (d) validation and governance (*see* Schedule 4).

Subpart 1—Operational requirements

Rating systems and processes

8 Meaning of risk-rating system

A deposit taker’s risk-rating system comprises all the methods, processes, controls, data collection, and systems that support an internal risk measurement and management process, including—

- (a) an assessment of the credit risk to which the deposit taker is exposed:
- (b) the assignment of internal risk ratings to the deposit taker’s exposures:
- (c) the quantification of the associated default and loss estimates.

9 Basis of risk-rating systems design

- (1) A risk-rating system is based on—
 - (a) rating dimensions (*see* clauses 3 to 8 of Schedule 1):
 - (b) rating structures (*see* clauses 9 to 13 of Schedule 1):
 - (c) rating criteria (*see* clauses 14 to 18 of Schedule 1):
 - (d) rating assignment horizons (*see* clauses 19 and 20 of Schedule 1).
- (2) Particular requirements for the design of the model and the documentation of the system design are set out in clauses 21 to 23 of Schedule 1.

10 Review of rating process

- (1) A deposit taker must review rating criteria and procedures on a regular basis to determine their continued appropriateness.
- (2) The deposit taker must—
 - (a) document the history of the major changes in its credit risk rating process; and

- (b) provide justification for those changes.

11 General operational requirements

- (1) A risk-rating system must enable a deposit taker to rank and quantify risk in a consistent, reliable, and valid fashion.
- (2) Rating and risk estimation systems and processes must provide—
 - (a) meaningful assessments of the characteristics of obligors and transactions; and
 - (b) a meaningful differentiation of risk; and
 - (c) accurate and consistent quantitative estimates of risk.
- (3) A deposit taker must—
 - (a) base its systems and processes on data and analysis that are rigorous, well established, and plausible; and
 - (b) incorporate an appropriate degree of conservatism into its estimates if the scope or quality of information and data is limited; and
 - (c) clearly document and retain the data and analysis.

12 Wider use of internal models approach

- (1) In addition to determining a deposit taker's regulatory capital requirements, the internal ratings and risk estimates produced by a risk-rating system must have an important role in the deposit taker's credit approval, risk management, internal capital allocations, and corporate governance functions.
- (2) If a deposit taker does not use the same credit risk estimates in its regulatory capital calculations as for all other internal purposes, the deposit taker must be able to reconcile its internal model estimates with its other credit risk estimates in a way that demonstrates the reasonableness of the differences.

13 Compendium of models

- (1) An internal models deposit taker must maintain a compendium of models, and may not, unless the Bank approves otherwise, use a model for regulatory capital purposes if it is not listed in the compendium.
- (2) The deposit taker must—
 - (a) review the compendium and update the relevant sections at least once in a 12-month period and at intervals of no more than 15 months; and
 - (b) update the compendium as soon as practicable after a model change has been approved by the Bank; and
 - (c) provide the Bank with a copy of its model compendium after each review and whenever it has been updated.
- (3) The compendium must include—
 - (a) basic model-related information; and

- (b) information from the most recent annual validation report on RWAs and EAD; and
- (c) the validation date; and
- (d) the model outlook; and
- (e) any other model-related information required by the Bank.

14 General documentation requirements

- (1) A deposit taker must document the design and operational details of its rating systems.
- (2) In its documentation, the deposit taker must—
 - (a) provide evidence that the deposit taker meets the minimum requirements; and
 - (b) address all relevant topics, including—
 - (i) portfolio differentiation; and
 - (ii) rating criteria; and
 - (iii) the responsibilities of parties that rate obligors and facilities; and
 - (iv) a definition of what constitutes a rating exception; and
 - (v) the persons that have authority to approve exceptions; and
 - (vi) the frequency of rating reviews; and
 - (vii) management oversight of the rating process.
- (3) The deposit taker must—
 - (a) be able to demonstrate that the rating criteria and procedures used result in ratings that meaningfully differentiate risk; and
 - (b) document—
 - (i) the rationale for its choice of internal rating criteria; and
 - (ii) the organisational structure for assigning ratings, including its internal control structure.

15 Use of statistical models or mechanical methods

- (1) A deposit taker using statistical models or mechanical methods in its rating process must document the methodologies it uses.
- (2) In its documentation, the deposit taker must—
 - (a) provide a detailed outline of the theory, assumptions, and mathematical and empirical basis for the assignment of estimates to grades, individual obligors, exposures, or pools, and the data sources used to make estimations; and
 - (b) set out the statistical process, including out-of-time and out-of-sample performance tests, for validating a model; and
 - (c) indicate the circumstances in which a model does not, or is not expected to, work effectively.

- (3) If a deposit taker obtains a model from a third-party vendor that claims proprietary technology is being used, the deposit taker must still meet the documentation requirements of this clause.

Risk quantification

16 Risk quantification requirements

- (1) The process requirements for deriving internal estimates of PD, LGD, and EAD are set out in Schedule 2.
- (2) A deposit taker must estimate PD for each obligor rating grade for corporate exposures and for each pool of retail exposures. The PD estimate must be the long-run average of 1-year default rates for obligors in the grade.
- (3) A deposit taker must estimate an appropriate long-run default-weighted LGD and EAD for each obligor rating grade and for each retail pool.

17 Drivers of internal estimates

- (1) A deposit taker deriving internal estimates of PD, LGD, and EAD must incorporate all relevant, material, and available data, information, and methods in the estimation.
- (2) The deposit taker may use both internal and external data for estimation.
- (3) The deposit taker must—
 - (a) ensure that the resulting estimates are representative of long-run default and loss experience;
 - (b) base its estimates on historical experience and empirical evidence;
 - (c) update its estimation methods from time to time, as needed to reflect—
 - (i) any changes in its lending or collection practices; and
 - (ii) the implications of technical advances and new data and other information, as those become available.
- (4) The deposit taker must also review its estimates and methods of estimation at least once in a 12-month period.

18 Sample data anchored to actual conditions

- (1) The economic or market conditions underlying the data that a deposit taker uses for estimation must be relevant to current and reasonably conceivable future conditions.
- (2) The sample population of exposures used for estimation in use when the data was generated must closely match, or be comparable to, the deposit taker's current exposures.
- (3) Similarly, the lending standards and other relevant characteristics of the lending process in use when the data was generated must closely match, or be comparable to, the deposit taker's current lending standards.
- (4) The deposit taker must have sufficient data, in terms of both number of exposures and length of sample period, to derive accurate estimates of LGD and EAD.

- (5) The estimation technique must perform well in out-of-sample tests.

19 Conservative approach

A deposit taker must add a margin of conservatism to its estimates of PD, LGD, and EAD proportionate to the likely range of errors.

Definition of default

20 Definition of default

- (1) The definition of default, which a deposit taker must use for all credit exposures in its modelled exposure classes, is set out in Schedule 3.
- (2) The deposit taker must record an actual default on any exposure in a modelled exposure class using that definition of default.
- (3) The deposit taker must also use the definition of default to estimate PD, LGD, and EAD across all its modelled exposure classes. For this purpose, the deposit taker—
- (a) may, subject to the requirements set out in clause 3 of Schedule 2, use external data that are inconsistent with the definition of default; but
 - (b) must adjust the data to achieve broad equivalence with the definition of default.

21 Documentation requirements

The deposit taker must document the definitions of default and loss that it uses internally, and those definitions must be consistent with the definitions in this standard.

Validation and governance

22 Validation of accuracy and consistency of rating system

- (1) A deposit taker must have a robust system to validate the accuracy and consistency of its rating systems and processes, and its estimation of risk components.
- (2) The deposit taker's internal validation process must enable it to assess the performance of its internal rating and risk estimation systems in a consistent manner.
- (3) Schedule 4 contains the rules relating to the validation processes and governance requirements.

Subpart 2—General internal ratings-based requirements

23 Applications for approval

- (1) To become an internal models deposit taker, a deposit taker incorporated in New Zealand must apply to the Bank for—
- (a) approval to use the internal models approach to calculate its capital requirements; and
 - (b) approval of the business models it uses to measure its credit risk.
- (2) When deciding whether to give its approval and any conditions of that approval, the Bank must be satisfied that—

- (a) the deposit taker's use of an internal model is embedded in a robust governance framework that includes clear documentation and oversight of model risks by the board of the deposit taker:
 - (b) the deposit taker's systems, data, and infrastructure are capable of running an internal model based reliably on high-quality granular data:
 - (c) the deposit taker's use of ratings-based modelling materially improves its risk measurement and management with models that produce risk weights aligned with underlying credit risk:
 - (d) the deposit taker's business models are suitable for wider use by the deposit taker beyond the calculation of the capital requirements, and that use includes internal risk management such as credit origination, pricing, or provisioning.
- (3) For the purposes of subclause (1)(b), the business models that require approval do not include stress-testing or provisioning models.

24 Contents of application

- (1) A deposit taker must apply for approval under clause 23(1)(a) in the manner prescribed by the Bank.
- (2) In its application, the deposit taker must—
- (a) specify the scope of its application, including the approaches and business lines covered:
 - (b) provide a breakdown of the value of its portfolios:
 - (c) provide a self-assessment against the relevant minimum requirements set out in this Part and Schedules 1 to 4:
 - (d) give a summary of its governance structures for credit risk:
 - (e) provide a description of how it meets the information requirements:
 - (f) provide a compendium of models that it uses for measuring its credit risk.
- (3) If successful in its application, the deposit taker must use the internal models approach for making internal estimates of risk-weighted assets for exposures in the specified portfolios.

25 Categorisation of exposures

An internal models deposit taker using an internal models approach to measure credit risk must categorise all its credit exposures and any other assets that are in scope into 1 of the following modelled exposure classes:

- (a) the corporate exposure class:
- (b) the retail exposure class.

26 Calculation process

- (1) In calculating RWAs using the internal models approach, an internal models deposit taker must follow the process summarised in subclause (2).
- (2) Credit risk RWAs are calculated as the sum of RWAs for the following items:

- (a) each credit exposure in the corporate exposure class in an approved business model, calculated using the formula in clause 41, other than a corporate exposure categorised as specialised lending subject to the slotting approach referred to in paragraph (b); and
- (b) each credit exposure in the corporate exposure class categorised as specialised lending subject to the slotting approach calculated by—
 - (i) applying the risk-weights in clause 71 to the exposure amount; or
 - (ii) for an exposure that is not covered by an approved business model, using the formula in clause 44; and
- (c) each standard non-defaulted residential mortgage loan in an approved business model, calculated for each loan under clause 87; and
- (d) each non-defaulted exposure in the retail exposure class in an approved business model, other than a residential mortgage loan, calculated under clause 88; and
- (e) each defaulted exposure in the retail exposure class in an approved business model calculated under clause 89; and
- (f) each pool of retail purchased receivables calculated under clause 93, taking account of the requirements in clauses 94 and 98 and the treatment of retail exposures in Part 5; and
- (g) each pool of corporate purchased receivables where the exposures in the pool are treated as individual exposures, calculated under clause 96(4), taking account of the treatment of corporate exposures in Part 4; and
- (h) each pool of corporate purchased receivables measured using the top-down approach calculated under clause 99; and
- (i) the dilution risk on retail purchased receivables and corporate purchased receivables, calculated under clauses 105 and 106; and
- (j) an amount referred to in clause 113 (amounts arising through involvement with central counterparties).

Part 3

Exposure categories for internal assessment

Preliminary provisions

27 Overview

This Part provides the exposure categories that an internal models deposit taker must use to calculate RWAs for credit exposures. The categories are the corporate exposure class and the retail exposure class.

28 Corporate exposures

- (1) A **corporate exposure** is a debt obligation that—
 - (a) is owed by a corporation, partnership, or proprietorship; and
 - (b) does not meet the requirements for a retail exposure.

- (2) The corporate exposure class has the following 2 subclasses that a deposit taker must specify for an exposure if it meets the requirements of clause 30 or 31, as applicable:
- (a) specialised lending;
 - (b) farm lending.

29 Retail exposures

- (1) A **retail exposure** is—
- (a) a debt obligation of—
 - (i) a natural person; or
 - (ii) a small or medium enterprise; and
 - (b) 1 of a pool of exposures sharing similar risk characteristics; and
 - (c) an obligation managed on a pooled basis.
- (2) The retail exposure class has the following 3 subclasses:
- (a) a residential mortgage loan, other than a reverse residential mortgage loan;
 - (b) a reverse residential mortgage loan;
 - (c) small business loans.

Corporate exposure class

30 Specialised lending

- (1) A specialised lending exposure has the following characteristics, either in legal form or in economic substance:
- (a) it is an exposure of a deposit taker by way of a loan to an entity that—
 - (i) exists specifically to finance or operate physical assets, or both; and
 - (ii) is a borrowing entity with no other material assets or activities, with little or no independent capacity to repay the obligation, apart from income that it receives from the financing; and
 - (b) its terms give the deposit taker a substantial degree of control over the assets and the income generated; and
 - (c) the primary source of repayment of the obligation is the income generated by the assets rather than the independent capacity of a broader commercial enterprise.
- (2) The 4 subclasses of specialised lending are—
- (a) project finance;
 - (b) object finance;
 - (c) commodities finance;
 - (d) income-producing real estate.

31 Farm lending

A farm lending exposure is, in legal form or economic substance, an exposure of a deposit taker by way of a loan to a borrower that is engaged primarily in agricultural or pastoral production activities under the subdivision A01 Agriculture in the *Australian and New Zealand Standard Industrial Classification 2006*, published by Statistics New Zealand.

Retail exposure class

32 Coverage of retail exposure class

- (1) The retail exposure class is made up of exposures that meet—
 - (a) the general criteria in subclause (2); and
 - (b) the criteria specific to 1 of the retail exposure subclasses set out in clauses 33 and 34.
- (2) A retail exposure must be—
 - (a) an exposure to an individual or to a small or medium enterprise; or
 - (b) 1 of a pool of exposures sharing similar risk characteristics that are managed by the deposit taker on a pooled basis.

33 Residential mortgage loans

- (1) An internal models deposit taker may use the retail exposure risk-weighting approach for—
 - (a) a standard residential mortgage loan, irrespective of exposure size;
 - (b) a property investment residential mortgage loan but only if the loan also meets the general criteria for the retail exposure class referred to in clause 32(2).
- (2) The deposit taker must use the standardised approach under Part 5 of the Deposit Takers (Capital) Standard 2027 for—
 - (a) a residential mortgage loan if the loan does not meet the general criteria for the retail exposure class referred to in clause 32(2)(b):
 - (b) a reverse residential mortgage loan.

34 Loans to small businesses

- (1) This clause applies when an internal models deposit taker has a loan that—
 - (a) is an exposure to a small business and managed as a retail exposure; and
 - (b) does not qualify as a residential mortgage loan.
- (2) The deposit taker may treat the loan as a retail exposure if its group's total business-related exposure to the borrowing enterprise, on a consolidated basis, is less than \$2 million.

Part 4

Corporate exposure calculations

Preliminary provisions

35 Overview

- (1) This Part sets out the method of calculating the minimum capital requirement (**K**) for unexpected loss for the corporate exposure class, excluding specialised lending.
- (2) Together with Parts 5 and 6, this Part provides the rules for the estimation of the loss components and the calculations for maturity, correlation, and the capital requirement that underpin the internal models approach.
- (3) For the minimum operational requirements and process standards applying to the derivation of an internal models deposit taker's estimates and calculations, *see* clauses 16 to 19 and Schedule 2.

36 Corporate RWA calculations

- (1) An internal models deposit taker must use the formulas provided in clauses 39 to 41 to calculate—
 - (a) **K** for non-defaulted and defaulted exposures; and
 - (b) corresponding RWAs, using the values of the components determined as described in subclause (2).
- (2) The components that are the variable inputs in the risk-weight calculations for corporate exposures are—
 - (a) **PD**: probability of default (*see* subpart 2); and
 - (b) **LGD**: loss given default (*see* subpart 3); and
 - (c) the adjustments to **PD** and **LGD** required to reflect the credit risk mitigation provided by a guarantee or derivative (*see* Part 7); and
 - (d) **EAD**: exposure at default (*see* subpart 4); and
 - (e) **M**: maturity (*see* subpart 5); and
 - (f) **R**: correlation (*see* subpart 6).

Subpart 1—Calculation of **K**

37 Calculations and estimations for corporate exposures

- (1) This subpart sets out the formulas that an internal models deposit taker must use for calculating—
 - (a) **K** for a corporate exposure; and
 - (b) the RWA value of the exposure for unexpected losses.
- (2) When inserting values into the formulas, an internal models deposit taker must express—

- (a) PD and LGD percentages as decimals; and
- (b) EAD in New Zealand dollars.

38 Meaning of K

K represents the capital requirement for unexpected loss, expressed as a proportion of exposure at default.

39 K for non-defaulted exposures

- (1) For a non-defaulted corporate exposure of an internal models deposit taker, K is calculated using the following formula:

$$\left[LGD \times N \left[\left(\frac{1}{\sqrt{1-R}} \right) \times G(PD) + \left(\sqrt{\frac{R}{1-R}} \right) \times G(0.999) \right] - (PD \times LGD) \right] \times \frac{1 + b \times (M - 2.5)}{1 - (1.5 \times b)}$$

- (2) In the formula, b is $(0.11852 - (0.05478 \times \ln(PD)))^2$.

40 K for defaulted exposures

For a defaulted corporate exposure of an internal models deposit taker, K for unexpected losses is equal to the greater of—

- (a) zero; and
- (b) the amount by which the estimate of LGD, expressed as a percentage, is more than the deposit taker's best estimate of expected losses, expressed as a percentage of EAD, taking into consideration current economic circumstances and the status of the facility.

41 Calculation of RWAs

For both non-defaulted and defaulted corporate exposures, RWAs for unexpected losses are calculated using the following formula:

$$K \times 12.5 \times EAD$$

42 Estimation and calculation rules for variables in formulas

Subparts 2 to 6 set out the requirements for estimating the values of PD, LGD, and EAD, and calculating the values of M and R which are required, as applicable, to find the value of K for clauses 39 and 40.

Subpart 2—Estimation of PD

43 Meaning of PD

PD refers to obligor strength and is the 1-year probability that an obligor will default, as estimated by the deposit taker. It is associated with the internal obligor rating grade to which the exposure is assigned.

44 Estimation of PD

- (1) An internal models deposit taker must estimate PD for—
 - (a) each internal obligor rating grade of its corporate exposures; and
 - (b) each pool of its retail exposures.
- (2) Despite subclause (1), the deposit taker is not required to produce estimates of PD for specialised lending exposures subject to the supervisory slotting approach.
- (3) For a corporate exposure, PD is the greater of—
 - (a) the 1-year PD associated with the internal obligor rating grade to which the exposure is assigned; and
 - (b) 0.03%.
- (4) The deposit taker must assign a 100% PD to default grades.
- (5) If the deposit taker has an eligible guarantee or credit derivative to mitigate the credit risk of all or part of an exposure, it may adjust the calculation of PD for the exposure (*see* clause 115).

Subpart 3—Estimation of LGD

45 Meaning of LGD

LGD refers to loss given default and is the proportion of the exposure that is expected to be lost if default occurs, after accounting for recoveries, collateral, and recovery costs.

46 Estimation of LGD

The deposit taker must estimate an appropriate long-run default-weighted LGD for—

- (a) each corporate exposure; and
- (b) each retail pool.

47 Measurement of LGD

An LGD estimate is measured as a percentage of EAD.

48 LGD estimates for exposures secured by mortgage over residential property

- (1) When an internal models deposit taker has a corporate exposure secured by mortgage over residential property, it must use the value of LGD that corresponds to the relevant loan-to-value ratio in the first column of the table below.
- (2) The deposit taker may apply to the Bank for approval to use its LGD estimates instead of using the valuation method referred to in subclause (1).
- (3) When deciding whether to give its approval and any conditions of that approval, the Bank must be satisfied that—
 - (a) the deposit taker has shown that its modelled LGD estimates materially improve risk measurement and management and produce risk weights that accurately reflect risk; and

- (b) the deposit taker has high-quality granular data sufficient to produce their LGD estimates.

Minimum LGD for residential mortgage loans		
Loan-to-value ratio	LGD	LGD
	<i>Non-property investment residential mortgage loan</i>	<i>Property investment residential mortgage loan</i>
90% and over	38.00%	40.00%
80–89%	33.25%	35.50%
70–79%	28.50%	31.00%
60–69%	19.00%	21.50%
Under 60%	10.00%	12.50%

49 LGD estimates for farm lending exposures

- (1) An internal models deposit taker’s estimate of LGD for farm lending exposures must be greater than or equal to the minimum values that correspond to the different levels of loan-to-value ratio in the table below.
- (2) For the purposes of this clause,—
- (a) **loan-to-value ratio** means the current loan balance as a percentage of the value of the security at its most recent valuation:
- (b) the **current loan balance** includes the EAD amount of any off-balance-sheet exposures calculated under subpart 4.

Minimum LGD for farm lending exposures	
Loan-to-value ratio	LGD
70% and over	42.5%
60–69%	40.0%
50–59%	32.5%
40–49%	22.5%
30–39%	15.0%
Under 30%	10.0%

50 LGD estimates for exposures with Crown guarantee

- (1) This clause applies to a corporate exposure of an internal models deposit taker in relation to which a deed of indemnity from the Crown covers at least 80% of any losses incurred by the deposit taker in association with the lending.
- (2) When the exposure is a farm lending exposure, the deposit taker may choose to apply—
- (a) the relevant minimum LGD set out in the table in clause 49; or
- (b) an LGD of 8.5%.
- (3) When the exposure is a corporate exposure other than a farm lending exposure, the deposit taker may apply—

- (a) their internal LGD estimate under clause 51; or
- (b) if the estimate referred to in paragraph (a) is greater than 12%, an LGD of 12%.

51 Recognition of credit risk mitigation in LGD

- (1) If an internal models deposit taker holds collateral against an exposure other than a counterparty exposure arising in relation to a derivative or securities financing transaction, the deposit taker may recognise the credit risk mitigation benefit of the collateral in its estimate of LGD subject to the minimum LGDs applying in the cases referred to in clauses 48 to 50.
- (2) If the deposit taker holds collateral against the credit risk exposure arising in relation to 1 or more derivatives or securities financing transactions with a counterparty, the deposit taker may only recognise the benefit of the collateral by adjusting EAD as provided for in clause 110.
- (3) To avoid doubt, the deposit taker may use its LGD estimate for the equivalent unsecured exposure amount arising in relation to a derivative or securities financing transaction with a counterparty after adjusting the exposure for collateral under subclause (2).
- (4) If the deposit taker holds an eligible guarantee or credit derivative to mitigate the credit risk of all or part of an exposure, the deposit taker may adjust the estimation of LGD for the exposure as described in clause 115.

52 Guarantees and credit derivatives

- (1) An internal models deposit taker may reflect the effect of a guarantee or credit derivative through an adjustment to PD or LGD if the provider of the credit protection also uses the internal models approach.
- (2) The general provisions applying to the recognition of guarantees and credit derivatives for deposit takers using the internal models approach are set out in subpart 6 of Part 6 of the Deposit Takers (Capital) Standard 2027 (treatment of guarantees, indemnities, and credit derivatives: internal models approach) which includes cross-references to Part 5 of that standard, which applies to deposit takers using the standardised approach.

Subpart 4—Estimation of EAD

53 Meaning of EAD

EAD refers to exposure at default and is the expected exposure of a facility on default by the obligor (that is, the amount legally owed to the deposit taker by the defaulting obligor).

54 Estimation of EAD

- (1) An internal models deposit taker must estimate an appropriate long-run default-weighted EAD for—
 - (a) each corporate exposure; and
 - (b) each retail pool.
- (2) The deposit taker may use its estimate of EAD for on-balance-sheet credit exposures and for off-balance-sheet credit exposures arising from contingent liabilities.

55 Estimates of EAD

- (1) A deposit taker may use its internal estimates of EAD if—
 - (a) the values are determined using the deposit taker’s methodologies; and
 - (b) the Bank has approved the methodologies under clause 23.
- (2) The deposit taker must estimate EAD for each exposure, both on- and off-balance-sheet, gross of allowances for impairment and partial write-offs.

56 On-balance-sheet credit exposures

- (1) An internal models deposit taker’s estimated EAD on a drawn amount (that is, an on-balance-sheet exposure) must be not less than—
 - (a) the contractual amount owed by the obligor at the time of default; and
 - (b) the sum of—
 - (i) the amount by which tier 1 capital would be reduced if the exposure were fully written off; and
 - (ii) an associated allowance for impairment and partial write-offs.
- (2) If the difference between the estimated EAD and the sum of the amounts described in subclause (1)(b)(i) and (ii) is positive, the deposit taker may not use the amount of the difference as a discount in calculating its RWAs.
- (3) Despite subclause (2), in the calculation of K, the deposit taker may include the discount in measuring its total eligible allowances for impairment for the purpose of offsetting expected losses set out in clause 120.

57 Netting

An internal models deposit taker may use on-balance-sheet netting of its loans to and deposits from a corporate counterparty if the deposit taker uses the internal models approach and meets the conditions set out in subpart 4 of Part 6 of the Deposit Takers (Capital) Standard 2027 (on-balance-sheet netting).

58 Contingent liabilities

- (1) An internal models deposit taker must reflect a credit exposure arising from a transaction of a type described in this clause in its credit risk RWAs.
- (2) For the following types of transaction, the deposit taker must use a credit conversion factor of 100%:
 - (a) an asset sale with recourse:
 - (b) a forward asset purchase:
 - (c) a direct credit substitute:
 - (d) a commitment with certain draw-down:
 - (e) a placement of forward deposit.
- (3) For a transaction of a type specified in the first column of the table below, the deposit taker must—

- (a) produce its internal estimate of the credit conversion factor; or
- (b) use the minimum credit conversion factor applicable to the transaction in the second column of the following table:

Credit conversion factors	
<i>Type of transaction</i>	<i>Credit conversion factor (%)</i>
Note issuance facility	75
Revolving underwriting facility	75
Performance-related contingency	50
Trade-related contingent item	20
Other commitment where original maturity is more than 1 year	50
Other commitment where original maturity is less than or equal to 1 year	20
Other commitment that cancels automatically when the credit worthiness of the counterparty deteriorates or which can be cancelled unconditionally at any time without prior notice	0

- (4) For the types of transaction referred to in subclause (2)(a) and (b), the deposit taker must use the RWA calculation methodology that—
 - (a) is applicable to the type of asset; or
 - (b) for an asset that is a security, is applicable to the issuer of the security rather than to the transaction counterparty.
- (5) The value of EAD in subclause (4) must feed into the applicable RWA methodology. For all other transaction types listed in subclauses (2) and (3), the deposit taker must include estimated EAD as part of the total EAD estimated for the counterparty under this subpart.
- (6) To estimate the value of EAD for the transaction types listed in subclauses (2) and (3), the deposit taker must calculate the equivalent exposure amount by multiplying the notional exposure amount by a credit conversion factor.
- (7) For the calculation in subclause (6), the deposit taker must use a notional exposure amount that—
 - (a) is the gross exposure before taking account of any provision for expected credit losses or partial write-offs; and
 - (b) in the case of a commitment, is the undrawn amount on the commitment.

Subpart 5—Calculation of M

59 Meaning of M

M refers to remaining effective maturity and is the remaining effective maturity of an exposure, measured as the weighted-average time to receipt of contractual cashflows, expressed in years.

60 Calculation of M

- (1) An internal models deposit taker must calculate the value of M for a corporate exposure using the calculation rules set out in clauses 61 to 63.
- (2) However, the calculation is subject to—
 - (a) the floor described in subclause (3); and
 - (b) the ceiling described in subclause (4).
- (3) The value of M must be the greater of 1 year and the figure derived from the effective maturity calculation in clause 61 unless the exposure—
 - (a) meets the requirements for a short-term exposure exemption in clause 64 or 65, in which case M may be less than 1 year, as provided for in those clauses; or
 - (b) is a farm lending exposure, in which case the deposit taker must set M at—
 - (i) the greater of 2.5 years and the figure derived from the effective maturity calculation; or
 - (ii) 2.5 years.
- (4) The value of M must be the lesser of 5 years and the figure derived from the effective maturity calculation in clause 61.

61 Corporate exposures with cashflow schedules

- (1) For a corporate exposure subject to a specified cash flow schedule, an internal models deposit taker must calculate the value of M using the following formula:

$$M = \sum_t \left(t \cdot \frac{CF_t}{TCF} \right)$$

- (2) In the formula,—
 - (a) CF_t denotes the cashflow contractually payable by the obligor at time t ; and
 - (b) t is time expressed in years; and
 - (c) TCF is the total amount payable across the whole cashflow schedule.
- (3) If the deposit taker cannot calculate the value of M using the formula, it may use a more conservative measure of M that is not less than the maximum remaining time for the obligor to fully discharge its contractual obligations under the terms of the facility agreement.

62 Amounts drawn under committed facilities

- (1) This clause applies when—

- (a) an obligor draws an amount under a committed facility; and
 - (b) the maturity of the drawn amount is less than the maturity of the facility.
- (2) The maturity of the facility must be used for the value of M up to a maximum of 5 years.

63 Netted derivatives

- (1) When calculating the value of M for derivatives that give rise to counterparty credit risk under clause 110 and that are subject to a master netting agreement, an internal models deposit taker must use the weighted average maturity of the derivatives.
- (2) The deposit taker must use the notional amount of each derivative transaction to determine the weighted maturity.

64 Exemptions from 1-year floor for capital market transactions

- (1) Derivatives and securities financing transactions are exempt from the 1-year maturity floor if—
- (a) they have an original maturity of less than 1 year; and
 - (b) the relevant documentation—
 - (i) contains daily re-margining clauses; and
 - (ii) requires daily revaluation; and
 - (iii) allows for the prompt liquidation or offsetting of collateral in the event of default or failure to re-margin.
- (2) For a transaction that is exempt under this clause and is not subject to a master netting agreement, an internal models deposit taker must calculate M for the transaction as the greater of 1 day and the effective maturity under clause 61.
- (3) Subclause (4) applies if—
- (a) an internal models deposit taker has more than 1 transaction that meets the requirements of subclause (1); and
 - (b) the transactions are subject to a master netting agreement.
- (4) The deposit taker must calculate M as the weighted average of the effective maturities of the transactions by—
- (a) calculating M for each transaction included in the netting agreement under clause 61; and
 - (b) determining the weighted average maturity using the notional amount of each transaction; and
 - (c) calculating the resulting value of M for netted derivatives subject to a floor of 10 business days; and
 - (d) calculating the resulting value of M for netted securities financing transactions subject to a floor of 5 business days; and
 - (e) applying a floor of 10 business days if the netting set includes both derivatives and securities financing transactions.

65 Other exemptions from 1-year floor

- (1) The following additional transaction types are exempt from the 1-year floor referred to in clause 60:
 - (a) accounting for short-term self-liquidating trade transactions, import and export letters of credit and similar transactions at their actual remaining maturity;
 - (b) exposures arising from settling securities purchases and sales, including overdrafts arising from failed securities settlements when the overdrafts do not continue for more than 5 consecutive business days;
 - (c) exposures arising from cash settlements by wire transfer, including overdrafts arising from failed transfers when the overdrafts do not continue for more than 3 consecutive business days;
 - (d) exposures to deposit takers arising from failed foreign exchange settlements;
 - (e) exposures arising from overnight placements with a deposit taker's ultimate parent deposit taker;
 - (f) a balance that a deposit taker holds in its exchange settlement account system at the Bank.
- (2) An internal models deposit taker may calculate M for a transaction type referred to in subclause (1) as the greater of—
 - (a) 1 day; and
 - (b) the effective maturity calculated under clause 61.
- (3) Other short-term transactions with an original maturity of less than 1 year that are not part of the deposit taker's ongoing financing of an obligor may be exempt from the 1-year floor if—
 - (a) the deposit taker has policies detailing the transactions for which the 1-day maturity floor is appropriate; and
the Bank has approved those policies on the basis that the deposit taker has demonstrated that the exempt transaction is part of a robust governance framework that has been clearly documented.

Subpart 6—Calculation of R

66 Meaning of R

R refers to correlation and is the asset correlation parameter that reflects the degree to which an obligor's asset value is correlated with a systematic risk factor.

67 Calculation of R

- (1) Alternative formulas are available to an internal models deposit taker to calculate the value of R for a corporate counterparty.
- (2) In all cases, R depends on the value of PD that the deposit taker has estimated for the counterparty, including any adjustment to take account of guarantees or credit derivatives (*see* clause 115).

68 Standard correlation formula

- (1) An internal models deposit taker must calculate the value of R using the following formula:

$$0.12 \times \left(\frac{1 - e^{-50 \times PD}}{1 - e^{-50}} \right) + 0.24 \times \left(1 - \left(\frac{1 - e^{-50 \times PD}}{1 - e^{-50}} \right) \right)$$

- (2) However, if the exposure is of a kind referred to in clause (2) or 70, the deposit taker must adjust the formula as provided for in those clauses.

69 Adjustment for asset value correlation multiplier

- (1) This clause applies when an internal models deposit taker has an exposure to a financial institution that meets either of the following requirements:

- (a) the exposure is to a regulated financial institution whose total assets are greater than or equal to \$120 billion, as disclosed in its most recent audited consolidated financial statements;
- (b) the exposure is to an unregulated financial institution, regardless of size.

- (2) The deposit taker must multiply the figure derived from the standard formula for R by an asset value correlation multiplier of 1.25.

- (3) The value of R for the asset value correlation multiplier is calculated using the following formula:

$$1.25 \times \left[0.12 \times \left(\frac{1 - e^{-50 \times PD}}{1 - e^{-50}} \right) + 0.24 \times \left(1 - \left(\frac{1 - e^{-50 \times PD}}{1 - e^{-50}} \right) \right) \right]$$

70 Adjustment for firm size

- (1) An internal models deposit taker must make a firm-size adjustment to the value of R for a corporate exposure if—

- (a) the counterparty is part of a consolidated group, and the consolidated group meets the size test in subclause (2); and
- (b) the exposure is not a farm lending exposure.

- (2) A consolidated group meets the size test if—

- (a) the reported consolidated annual sales of the group are less than \$50 million; or
- (b) when the value of total sales is not a meaningful indicator of the group's size, the reported total assets of the group are less than \$50 million.

- (3) The value of R for firm-size adjustment is calculated using the following formula:

$$0.12 \times \left(\frac{1 - e^{-50 \times PD}}{1 - e^{-50}} \right) + 0.24 \times \left(1 - \left(\frac{1 - e^{-50 \times PD}}{1 - e^{-50}} \right) \right) - 0.04 \times \left(1 - \frac{S - 5}{45} \right)$$

- (4) In the formula,—

- (a) S is Max (size indicator, 5); and

- (b) **size indicator** is group total sales or group total assets, depending on which decides the size test in subclause (2), expressed as a multiple of \$1 million.

Subpart 7—Slotting approach for corporate specialised lending exposures

71 Slotting categories

- (1) This clause applies for a corporate exposure that is a specialised lending exposure when an internal models deposit taker—
- (a) has approval to use an internal models approach that requires it to use the supervisory slotting approach to measure the credit risk associated with the exposure; or
 - (b) does not have approval to use an approved business model to risk-weight the exposure using the general corporate risk-weighting function as described in clause 35(3).
- (2) The deposit taker must use the supervisory slotting approach to measure the credit risk associated with the corporate exposures classified as project finance, object finance, commodities finance, or income-producing real estate exposures.
- (3) The deposit taker must map its internal obligor rating grades for each exposure onto 1 of the following 5 supervisory slotting categories, which correspond to the external ratings set out in the table below:
- (a) strong:
 - (b) good:
 - (c) satisfactory:
 - (d) weak:
 - (e) default.
- (4) The deposit taker must base the mapping process on the criteria set out in Schedule 5, (supervisory slotting).
- (5) When an internal models deposit taker uses the supervisory slotting approach, it must use it for calculating both—
- (a) RWAs for unexpected losses; and
 - (b) expected losses.

Supervisory slotting category	External rating equivalent
Strong	BBB– or better
Good	BB+ or BB
Satisfactory	BB– or B+
Weak	B to C–
Default	NA

72 Determination of credit risk

- (1) When an internal models deposit taker has approval to use an internal models approach that requires it to use the supervisory slotting approach to measure credit risk and the approval includes an EAD methodology, it must use the EAD method as the risk-weighting calculation.
- (2) If the deposit taker does not have an approved EAD method for a slotting exposure, it must calculate the total credit equivalent amount of the exposure to reflect both on-balance-sheet and off-balance-sheet exposures, as follows:
 - (a) for an exposure recognised on a balance sheet, other than a derivative or securities financing transaction, the measure is the book value of the exposure before deducting any credit impairment allowance; and
 - (b) to calculate the credit equivalent amount of an off-balance-sheet credit exposure arising from a contingent liability of 1 of the types listed in clauses 0(2) and 84(b)(2), the deposit taker must use the methodology in clause 0, using the credit conversion factors set out in the table in that clause; and
 - (c) to calculate the credit equivalent amount of the counterparty risk arising from a derivative or securities financing transaction, the deposit taker must use the standardised approach in subpart 7 of Part 5 of the Deposit Takers (Capital) Standard 2027 (counterparty credit risk).

73 RWAs for unexpected losses

An internal models deposit taker must calculate RWAs on an exposure subject to the supervisory slotting approach by multiplying the exposure amount determined under clause 72 by the unexpected loss risk weight in the table below for the slotting category of the exposure.

Unexpected loss (UL) risk weights for slotting categories					
Supervisory category	Strong	Good	Satisfactory	Weak	Default
UL risk weight	70%	90%	115%	250%	0%

74 Expected losses

An internal models deposit taker must calculate the expected loss on an exposure subject to the supervisory slotting approach as 8% of the exposure amount determined under clause 72, multiplied by the expected loss risk weight in the table below for the slotting category of the exposure.

Expected loss (EL) risk weights for slotting categories					
Supervisory category	Strong	Good	Satisfactory	Weak	Default
EL risk weight	5%	10%	35%	100%	625%

Part 5 Retail exposure calculations

75 Overview

For the retail exposure class, an internal models deposit taker must provide its estimates of PD, LGD, and EAD for each identified pool of retail exposures. There is no explicit maturity (M) adjustment for the retail exposure class.

Estimation of PD

76 Estimation of PD

- (1) The value of PD assigned to each pool of retail exposures is the greater of—
 - (a) 0.03%; and
 - (b) the long-run average 1-year PD associated with the internal obligor rating grade to which the pool of retail exposures is assigned.
- (2) A deposit taker must assign a PD of 100% to default grades.

Estimation of LGD

77 Estimation of LGD

- (1) An internal models deposit taker must measure LGD estimates as a percentage of EAD.
- (2) The deposit taker’s estimates of LGD may be used for retail exposures, but only with the approval of the Bank given on the basis that the Bank is satisfied that the deposit taker has shown that their modelled LGD estimates materially improve risk measurement and management and produce risk weights that accurately reflect risk.
- (3) The deposit taker must, if it does not do so through its estimation of EAD, reflect in LGD the likelihood of future drawdown on retail exposures with uncertain future drawdown (*see* clause 84(b)(4)(b)).
- (4) However, if the deposit taker has not obtained the Bank’s approval to use its estimates of LGD for exposures secured by mortgage over residential property, it must apply the minimum LGD requirements that correspond to the different levels of loan-to-value ratio in the table below.

Minimum LGD for residential mortgage loans		
<i>Loan-to-value ratio</i>	<i>LGD</i>	
	<i>Non-property investment residential mortgage loan</i>	<i>Property investment residential mortgage loan</i>
90% and over	38.00%	40.00%
80–89%	33.25%	35.50%
70–79%	28.50%	31.00%
60–69%	19.00%	21.50%
Under 60%	10.00%	12.50%

78 Calculation of loan-to-value ratio

- (1) The loan-to-value ratio for a residential mortgage loan is calculated using the following formula:

$$\text{Loan-to-valuation ratio} = \frac{\text{loan value}}{\text{property value}} \times 100$$

- (2) In the formula,—
- (a) **loan value** is the total current amount of—
- (i) all claims secured by first ranking mortgage over residential property; and
 - (ii) the EAD amount of any off-balance-sheet exposures secured by first ranking mortgage over residential property and consistent with clause 84(b)(5):
- (b) **property value**, for a standard residential mortgage loan, is the total value of the residential property that is security for the loan determined, when the loan is originated, under a residential property valuation policy that meets the requirements of clause 79.
- (3) If the property value for a residential mortgage loan is not determined under subclause (1), the loan-to-value ratio of the loan must, for the purposes of clause 77, be treated as 150%.

79 Requirements for residential property valuation policies

- (1) For use in calculating loan-to-value ratios, an internal models deposit taker's residential property valuation policy must—
- (a) be approved by its board of directors; and
 - (b) require that, for the purposes of calculating the loan-to-value ratio for a loan secured by a mortgage over a residential property, the deposit taker uses 1 of the following methods of valuation:
 - (i) the purchase price of the property; or
 - (ii) a property valuation provided by a valuer who meets the requirements of clause 80 and who is not associated with a person who has an interest in the property; or
 - (iii) a property valuation that is provided by a professional valuation service that meets the requirements of clause 80(1)(c)(ii); and
 - (c) include guidance on—
 - (i) the appropriate credit risk-related use of different valuation products; and
 - (ii) the use of the purchase price of a residential property; and
 - (iii) the determination of the origination date; and

- (d) have provisions that ensure that its application is unaffected by the direction of the movement of residential property prices.

80 Requirements for property valuers

- (1) For the purposes of clause 79(1)(b)(ii), the valuer must be—
 - (a) a registered valuer, as defined in the Valuers Act 1948; or
 - (b) a person approved to provide valuation services by rules made under the Rating Valuations Act 1998; or
 - (c) a person who meets the definition of valuer under the laws of another country but only if both the following conditions are met:
 - (i) the Bank is satisfied that the laws of the other country are at least as satisfactory as the requirements under the Valuers Act 1948; and
 - (ii) the Bank approves the deposit taker’s reliance on a valuation provided by the person.

81 Valuation provided by professional valuation service

For the purposes of clause 79(1)(b)(iii), a property valuation provided by a professional valuation service must be—

- (a) a statistical or modelled valuation based on market sales price data; or
- (b) a valuation carried out by an appropriately qualified valuation person overseen by a valuer who—
 - (i) meets the requirements of clause 80; and
 - (ii) is not associated with a person who has an interest in the property.

Estimation of EAD

82 Measurement of EAD

An internal models deposit taker must measure EAD for each retail exposure, both on- and off-balance-sheet, gross of allowances for impairment and partial write-offs.

83 On-balance-sheet exposures

An internal models deposit taker must estimate EAD for on-balance-sheet retail exposures using the same methodology that applies to the corporate exposure class under clause 56.

84 Netting

When estimating EAD for a retail customer, an internal models deposit taker may net loans to, and deposits from, the customer, if the deposit taker—

- (a) uses the internal models approach; and
- (b) meets the requirements, for on-balance-sheet netting in subpart 4 of Part 6 of the Deposit Takers (Capital) Standard 2027 (on-balance sheet-netting).

85 Contingent liabilities

- (1) An internal models deposit taker must estimate the value of EAD for the off-balance-sheet exposure arising in relation to a contingent liability as the notional amount of the exposure multiplied by a credit conversion factor.
- (2) For the purposes of subclause (1), the deposit taker must use a notional exposure amount that—
 - (a) is the gross exposure before taking account of any provisions for expected credit losses or partial write-offs; and
 - (b) in the case of a commitment, is the undrawn amount on the commitment.
- (3) The deposit taker may, subject to meeting the minimum requirements of subpart 3 of Schedule 2, use its estimates of credit conversion factors for off-balance-sheet retail exposures.
- (4) For retail exposures with uncertain future drawdown, the deposit taker must,—
 - (a) in the overall calibration of loss estimates, take account of the history of, and expectations of, additional drawings prior to default; and
 - (b) reflect the likelihood of additional drawings on undrawn lines prior to default—
 - (i) in its EAD estimates using credit conversion factors; or
 - (ii) in its LGD estimates.
- (5) The deposit taker must ensure regulatory capital continues to be held against any undrawn balances related to the exposures using the internal models approach when the drawn balances of retail exposures are securitised and given off-balance-sheet treatment for capital adequacy purposes.

RWAs for retail exposure class

86 RWAs for retail exposure class

- (1) Clauses 87 to 89 specify the separate risk weight functions for the retail exposure subclasses, namely—
 - (a) the residential mortgage exposure subclass, other than a reverse residential mortgage loan;
 - (b) the non-mortgage retail exposure subclass, including—
 - (i) retail exposures to small or medium enterprises; and
 - (ii) retail purchased receivables.
- (2) For the purposes of clauses 87 to 89,—
 - (a) PD and LGD are measured as decimals; and
 - (b) EAD is measured in New Zealand dollars.

87 Residential mortgage exposures

- (1) An internal models deposit taker must calculate the RWA for a non-defaulted standard residential mortgage loan using the following formula:

$$LGD \times N \left[\left(\frac{1}{\sqrt{1-R}} \times G(PD) \right) + \sqrt{\left(\frac{R}{1-R} \right)} \times G(0.999) \right] - (PD \times LGD)$$

- (2) In subclause (1), R is determined by the applicable loan-to-value ratio of the residential mortgage exposure in the table below.

Correlation for residential mortgage loans		
Loan-to-value ratio	R	
	<i>Non-property investment residential mortgage loan</i>	<i>Property investment residential mortgage loan</i>
90% and over	0.21	0.24
80–89%	0.20	0.23
Under 80%	0.15	0.17

88 Other non-defaulted retail exposures

- (1) An internal models deposit taker must calculate the RWA for all other non-defaulted retail exposures under this Part, using the following formula:

$$K \times 12.5 \times EAD$$

- (2) In the formula,—

- (a) **K** is—

$$LGD \times N \left[\left(\frac{1}{\sqrt{1-R}} \times G(PD) \right) + \sqrt{\left(\frac{R}{1-R} \right)} \times G(0.999) \right] - (PD \times LGD)$$

- (b) **R** is—

$$0.03 \times \left(\frac{1-e^{-35 \times PD}}{1-e^{-35}} \right) + 0.16 \times \left(1 - \left(\frac{1-e^{-35 \times PD}}{1-e^{-35}} \right) \right)$$

89 Defaulted exposures

- (1) An internal models deposit taker must calculate the RWA for unexpected losses for a defaulted retail exposure using the following formula:

$$K \times 12.5 \times EAD$$

- (2) In the formula, K is equal to the greater of—

- (a) zero; and
- (b) the amount by which the internal models deposit taker's estimate of LGD, expressed in percentage terms, is more than its best estimate of expected loss, expressed as a percentage of EAD, taking into consideration the economic circumstances and the facility's status.

Part 6

Purchased receivables

90 Overview

Purchased receivables fall into the following 2 exposure classes:

- (a) the retail exposure class when the underlying receivables meet the requirements for a retail exposure in Part 5; and
- (b) the corporate exposure class when the underlying receivables meet the requirements for a corporate exposure in Part 4.

Subpart 1—Pooling requirements

91 Pooling requirements for purchased receivables

- (1) A purchasing deposit taker must group the receivables purchased into pools that are sufficiently homogeneous to enable it to determine accurate and consistent estimates of—
 - (a) PD and LGD for default losses;
 - (b) expected losses if PD and LGD are not separately estimated;
 - (c) expected losses for dilution risk.
- (2) The deposit taker may segment the pools, and the segmentation process must reflect—
 - (a) the seller’s underwriting practices; and
 - (b) the heterogeneity of its obligors; and
 - (c) any material differences in credit risk relevant to the estimation of PD, LGD, or expected losses.

92 Estimation methods

- (1) The methods for estimating PD, LGD, and expected losses must comply with the standards for retail exposures in Part 5 and Schedule 2 (risk quantification).
- (2) Risk quantification must reflect all information available to the deposit taker regarding the quality of the underlying receivables, including information for similar pools provided by the seller, by the deposit taker, or by external sources.
- (3) A purchasing deposit taker must determine whether the information provided by the seller is consistent with expectations agreed by both parties concerning, for example, the type, volume, and ongoing quality of receivables purchased. If the information is not consistent with expectations, the deposit taker must obtain and rely upon more relevant information.

93 Calculation of K for retail purchased receivables

The calculation of K for retail purchased receivables is the same as that for the general retail exposure class.

94 Estimation of PD and LGD for retail purchased receivables

- (1) When estimating PD and LGD for retail purchased receivables, an internal models deposit taker may use external or internal reference information.
- (2) However, for each of the homogeneous risk buckets into which a pool is segmented, the deposit taker must determine the estimates on a stand-alone basis, without regard to any assumption of recourse to, or guarantees from, the seller or other parties.

95 Treatment of hybrid pools

For hybrid pools containing receivables belonging to more than 1 retail exposure subclass when the exposures cannot be separated by type, an internal models deposit taker must use the risk-weight function that produces the highest minimum value of K at each PD level.

Subpart 2—Top-down approach for corporate receivables

96 Alternative approaches for corporate purchased receivables

- (1) Two approaches are available to an internal models deposit taker to calculate RWAs for corporate purchased receivables. They are—
 - (a) the top-down approach; and
 - (b) the individual exposure approach.
- (2) The deposit taker may use a top-down approach to calculate RWAs for corporate purchased receivables if the minimum criteria in subclause (3) are met. Otherwise, the deposit taker must use the approach in subclause (4).
- (3) The requirements for use of the top-down approach are as follows:
 - (a) the pool of receivables must meet the minimum criteria set out in this subpart; and
 - (b) the deposit taker must meet the minimum operational requirements set out in Schedule 2 subpart 4.
- (4) If the top-down approach is not available, the deposit taker must calculate the credit risk RWAs for each corporate obligor in the pool using the general treatment for corporate exposures.

97 Limits on use of top-down approach

The use of the top-down approach—

- (a) applies in situations where it would place an undue burden on an internal models deposit taker to be subject to the minimum requirements for the internal models approach that would otherwise apply; and
- (b) is limited to corporate receivables that are purchased for inclusion in asset-backed securitisation structures; and
- (c) is subject to approval by the Bank which must be satisfied that the deposit taker has shown how the use of the approach that would otherwise apply would place an undue burden on them, supported by documentation and evidence.

98 Eligibility for top-down treatment

- (1) For top-down treatment, the corporate purchased receivables must meet the following requirements:
 - (a) the purchase was from an unrelated third-party seller; and
 - (b) the deposit taker was not involved, directly or indirectly, in originating the receivables; and
 - (c) an arms-length basis between the seller and the obligor applies; and
 - (d) the deposit taker has—
 - (i) a claim on all proceeds from the pool of receivables; or
 - (ii) a pro rata interest in the proceeds commensurate with its exposure to the pool; and
 - (e) the maximum size of individual exposures in the pool is less than \$100,000.
- (2) The existence of full or partial recourse to the seller does not automatically disqualify the use of a top-down approach if the cashflow from the purchased receivables is the primary protection against credit risk.

99 Methodology for top-down approach

- (1) An internal models deposit taker must calculate K for each pool of corporate purchased receivables under Part 4 subpart 1.
- (2) The RWAs for unexpected losses for each pool of corporate purchased receivables using the top-down approach is calculated using the following formula:

$$K \times 12.5 \times \text{EAD}.$$

100 Estimation of PD and LGD

- (1) An internal models deposit taker must estimate PD and LGD for each pool of corporate purchased receivables.
- (2) If, for a given pool, the deposit taker is only able to reliably estimate 1 of either average PD or default-weighted average LGD, the deposit taker may base the other required credit risk component on an estimate of the expected long-run average 1-year loss rate of the segmented pool.
- (3) For the purposes of subclause (2), the deposit taker must—
 - (a) estimate the loss rate of the pool on a stand-alone basis; and
 - (b) express the loss rate as a percentage of the total EAD for all obligors in the pool.
- (4) On the basis that the expected loss rate equals $\text{PD} \times \text{LGD}$, the deposit taker may—
 - (a) use its PD estimate to infer the value of LGD; or
 - (b) use its LGD estimate to infer the value of PD.
- (5) However, in either case, LGD must not be less than the long-run default-weighted average LGD.

101 Estimation of EAD

- (1) An internal models deposit taker must calculate EAD for each pool as the gross exposure amount referred to in subclause (2), less the RWAs for dilution risk for the pool calculated under subpart 4.
- (2) The gross exposure amount referred to in subclause (1) is—
 - (a) the amount outstanding for the pool; or
 - (b) for a revolving purchase facility, the sum of the current receivables purchased plus 75% of any undrawn purchase commitments.

102 Calculation of M

- (1) An internal models deposit taker must calculate M for drawn amounts in a pool as the pool's exposure-weighted average effective maturity under subpart 5 of Part 4.
- (2) The deposit taker may also use the method in subclause (1) to calculate M for any undrawn amounts under a committed purchase facility subject to subclause (3).
- (3) Subclause (2) applies only if the facility contains effective covenants, early amortisation triggers, or other features that protect the deposit taker against a significant deterioration in the quality of the receivables it is required to purchase over the facility's term.
- (4) If a committed purchase facility does not meet the condition in subclause (3), the deposit taker must calculate M for undrawn amounts under the facility as the sum of—
 - (a) the longest-dated potential receivable under the purchase agreement; and
 - (b) the remaining maturity of the purchase facility.

103 Calculation of R

- (1) If the requirements in subclause (2) are met, an internal models deposit taker may calculate R using the firm-size adjusted R in clause 70. If not, the deposit taker must use the standard formula for R in clause 68.
- (2) The deposit taker may use the firm-size adjusted R only if—
 - (a) it has sufficient information to enable it to calculate the risk-weighted average of the relevant size measures across the individual exposures in the pool; and
 - (b) that average meets the requirement for the firm-size adjustment.

Subpart 3—Dilution risk

104 Meaning of dilution risk

Dilution risk refers to the possibility that the total amount of purchased receivables is reduced through cash or non-cash credits to the receivables' obligors.

105 K for dilution risk

Unless the dilution risk is immaterial, the deposit taker must calculate K for dilution risk for purchased receivables, regardless of whether—

- (a) the underlying exposures are retail or corporate; and
- (b) the deposit taker uses the top-down approach or the individual exposure approach for corporate purchased receivables.

106 Calculation of K for dilution risk (K_{dilution})

- (1) This clause applies in relation to—
 - (a) a segmented pool of purchased receivables; or
 - (b) an individual receivable belonging to a pool of corporate purchased receivables.
- (2) An internal models deposit taker must calculate K for dilution risk (K_{dilution}) under clause 107(2), using the variables determined under subclauses (3) and (4).
- (3) The deposit taker must—
 - (a) set PD at its estimate of the expected long-run average 1-year loss rate for dilution risk and, in relation to that loss rate, the deposit taker—
 - (i) may use external or internal reference data to estimate the loss rate; and
 - (ii) must estimate the loss rate on a stand-alone basis; and
 - (iii) must express the loss rate as a percentage of the total EAD for all obligors in the pool, or for the individual exposure, as applicable; and
 - (b) set LGD to 100%; and
 - (c) subject to subclause (4), use an appropriate value for M; and
 - (d) calculate R under clause 68.
- (4) Despite subclause (3)(c), the Bank may approve the use of a 1-year effective maturity assumption.
- (5) When deciding whether to give its approval and any conditions of that approval, the Bank must be satisfied that—
 - (a) the deposit taker is monitoring and managing the dilution risk in such a way that it can resolve the risk within 1 year of acquiring the purchased receivables; and
 - (b) the deposit taker has provided adequate evidence of the governance processes in place for monitoring and managing the risk.

107 Estimation of EAD and RWAs for dilution risk

- (1) In the calculation of RWAs for dilution risk, an internal models deposit taker must estimate EAD as follows:
 - (a) for retail purchased receivables, the deposit taker must use the EAD applicable under clauses 82 to 84(b); and
 - (b) for corporate purchased receivables on the stand-alone approach as described in clause 100(3), the deposit taker must use the EAD applicable under subpart 4 of Part 4; and
 - (c) for a pool of corporate purchased receivables under the top-down approach, the deposit taker must use the gross exposure amount referred to in clause 100(5).

- (2) The deposit taker must calculate RWAs for dilution risk using the following formula:

$$: 12.5 \times \text{EAD} \times K_{\text{dilution}}$$

Part 7 Adjustments

108 Overview

This Part provides the rules related to the recognition of the benefit of collateral that a deposit taker holds against an exposure, and the recognition of the risk-mitigating effect of a guarantee or credit derivative of the deposit taker.

Subpart 1—Credit risk mitigation

109 Recognising benefit of collateral

- (1) This clause applies when an internal models deposit taker holds collateral against an exposure.
- (2) For an exposure other than a counterparty exposure arising in relation to a derivative, the deposit taker may recognise the benefit of the collateral in its estimate of LGD, subject to the minimum values applying in the cases referred to in clauses 48 to 49.
- (3) When the exposure arises in relation to 1 or more derivatives or securities financing transaction with a counterparty, the deposit taker may recognise the benefit of the collateral only by adjusting EAD.
- (4) To avoid doubt, the deposit taker may use its LGD estimate for the equivalent unsecured exposure amount arising in relation to a derivative or securities financing transaction with a counterparty after adjusting the exposure for collateral under subclause (3).

110 Measuring counterparty credit risk for corporate exposures

- (1) In estimating EAD for a counterparty, an internal models deposit taker must include an exposure amount that reflects the credit risk arising from a transaction with the counterparty.
- (2) When the deposit taker calculates the exposure amount using the standardised approach, the deposit taker must calculate the RWA amount using the following formula:

$$\text{CEA} \times \text{risk weight for the counterparty}$$

- (3) In the formula,—
 - (a) **CEA** is the credit equivalent amount calculated under subpart 7 of Part 5 of the Deposit Takers (Capital) Standard 2027 (counterparty credit risk):
 - (b) **risk weight for the counterparty** is the risk weight specified in Part 4 for the counterparty.

- (4) An internal models deposit taker must add the credit equivalent amount to the EAD for the counterparty as part of the calculation of credit risk RWAs for the counterparty under subpart 4 of Part 4 and clauses 86 to 89 of Part 5.
- (5) The transactions subject to the credit equivalent amount calculation methodology referred to in subpart 7 of Part 5 of the Deposit Takers (Capital) Standard 2027 (counterparty credit risk) are—
 - (a) a derivative that gives rise to counterparty credit risk, arising from contracted future payment flows with an identified counterparty that are based on market variables; and
 - (b) a securities financing transaction.

111 Measuring counterparty credit risk for retail exposures

- (1) An internal models deposit taker must estimate EAD for counterparty credit risk on a derivative or securities financing transaction with a retail counterparty.
- (2) However, the deposit taker must estimate EAD for an exposure to counterparty credit risk arising in relation to a derivative or securities financing transaction using the credit equivalent amount from the standardised approach in clause 72.

112 Treatment of residential mortgage loans

Despite clauses 110 and 111, if an internal models deposit taker is subject to the minimum LGD for a residential mortgage loan under clause 77(4), it must not directly recognise any other collateral, guarantee, or credit derivative in estimating LGD.

113 Amounts arising through involvement with central counterparties

- (1) In addition to the sum of RWAs set out in clause 26, an internal models deposit taker must include an amount arising from its involvement with a qualifying or non-qualifying central counterparty from trades settled on the central counterparty or from its membership of the central counterparty when—
 - (a) the involvement falls into 1 of the situations set out in subpart 9 of Part 5 of the Deposit Takers (Capital) Standard 2027 (derivative transactions and SFTs settled via central counterparties) that specifies that the internal models deposit taker must calculate RWAs using the approach it is required to use for a bilateral exposure to the counterparty; and
 - (b) the exposure is one for which the deposit taker uses the internal models approach to calculate RWAs.
- (2) The deposit taker must calculate the RWA for the amount arising under subclause (1) using the applicable calculation methodology set out in Part 4.
- (3) For other provisions relating to central counterparties, *see* subpart 9 of Part 5 of the Deposit Takers (Capital) Standard 2027 (derivative transactions and SFTs settled via central counterparties).

114 Treatment of lease financing

- (1) This clause applies when an internal models deposit taker has provided lease financing to a counterparty in the corporate exposure class or the retail exposure class.

- (2) The deposit taker must calculate RWAs using the method in Part 4 or 5, treating the lease as an exposure to the lessee secured by the relevant collateral.
- (3) However, if the deposit taker is exposed to residual value risk, subclause (2) does not apply and the deposit taker as lessor must treat any lease that exposes it to residual value risk as follows:
 - (a) it must risk-weight the discounted lease payment stream according to the values of PD and LGD assigned to the lessee; and
 - (b) the residual value is—
 - (i) subject to the standardised risk-weighting treatment under clause 140 of the Deposit Takers (Capital) Standard 2027; and
 - (ii) risk-weighted at 100%.
- (4) For the purposes of this clause, residual value risk is the deposit taker's exposure to potential loss due to the fair value of the equipment declining below its residual estimate at lease inception.

Subpart 2—Guarantees

115 Recognition of guarantees and credit derivatives: retail exposures

- (1) An internal models deposit taker may reflect the risk-mitigating effect of a guarantee or credit derivative, in support of an individual retail obligation or a pool of retail exposures, through an adjustment to PD or LGD, when the provider of the credit protection also uses the internal models approach to measure its credit risk.
- (2) If the deposit taker holds an eligible guarantee or credit derivative to mitigate the credit risk of all or part of an exposure, the deposit taker may adjust the estimate of LGD for the exposure.
- (3) The general provisions applying to the recognition of guarantees and credit derivatives for deposit takers using the internal models approach are set out in subpart 6 of Part 6 of the Deposit Takers (Capital) Standard 2027 (treatment of guarantees, indemnities, and credit derivatives: standardised approach).

116 Recognition of guarantees: purchased receivables

In calculating K for purchased receivables, an internal models deposit taker may recognise the benefit of a guarantee in the same manner as it would for a guarantee applying to other exposures under the internal models approach.

117 Guarantees covering credit risk or dilution risk

- (1) An internal models deposit taker may apply the internal models calculation methodology for the recognition of guarantees to a guarantee provided by the seller or a third party, regardless of whether the guarantee covers credit risk, dilution risk, or both.
- (2) If a guarantee covers a pool's credit risk and dilution risk, the deposit taker may substitute the risk weight for an exposure to the guarantor in place of the relevant pool's total risk weight for default and dilution risks.

- (3) If the guarantee covers only 1 of either credit risk or dilution risk, the deposit taker—
 - (a) may substitute the risk weight for an exposure to the guarantor in place of the relevant pool's risk weight for the corresponding risk component; and
 - (b) add K for the non-guaranteed component.
- (4) If a guarantee covers only a portion of the default or dilution risk of a relevant pool, the deposit taker must treat the uncovered portion using the rules for proportional or tranching cover.

Part 8

Expected loss and eligible allowances

118 Overview

- (1) This Part sets out—
 - (a) the method an internal models deposit taker must use to measure expected loss; and
 - (b) a definition of eligible impairment allowances that the deposit taker must apply to all its exposures in a modelled exposure class.
- (2) Despite subclause (1), the treatment of expected loss and eligible impairment allowances does not apply to—
 - (a) non-modelled exposure classes; or
 - (b) securitisation exposures; or
 - (c) any exposures subject to the standardised approach.
- (3) To determine its eligible allowances, the deposit taker must exclude a part of its collective credit impairment allowance in proportion to the amount of exposures that it risk-weights using the standardised approach, as described in clause 121.
- (4) The deposit taker must use the figure for expected loss, offset by the eligible impairment allowances, to adjust regulatory capital as described in clause 121(4).

119 Calculation of expected losses

- (1) An internal models deposit taker must calculate expected loss for an exposure in a modelled exposure class using—
 - (a) for a non-defaulted exposure, the following formula:

$$PD \times LGD \times EAD$$
 - (b) for a defaulted exposure, the deposit taker's best estimate of expected loss taking into consideration the economic circumstances and the facility's status.
- (2) For a corporate specialised lending exposure subject to the supervisory slotting approach, whether defaulted or non-defaulted, the deposit taker must calculate expected loss under subpart 7 of Part 4.

120 Eligible allowances for impairment

For an exposure in a modelled exposure class, including a specialised lending exposure, the total eligible allowances for impairment associated with the exposure are—

- (a) a credit-related allowance for impairment; and
- (b) a partial write-off; and
- (c) a discount on a defaulted exposure.

121 Removal of allowances on standardised exposures

- (1) An internal models deposit taker must use the method set out in subclauses (2) to (4) to—
 - (a) attribute part of its collective credit impairment allowances to the credit exposures risk weighted using the standardised approach; and
 - (b) exclude the part of its collective credit impairment allowances from eligible allowances.
- (2) The deposit taker must attribute its total collective credit impairment allowance to standardised credit exposures on a pro-rata basis, according to the proportion of its total credit risk RWAs subject to the standardised approach.
- (3) However, when the standardised approach for credit risk RWAs is used exclusively by an entity in the banking group, the collective credit impairment allowances for the entity must be attributed to the standardised approach.
- (4) The collective credit impairment allowances for an entity in a banking group that exclusively uses the internal models approach to calculate RWAs qualify in full as eligible allowances for impairment for the purposes of clause 120.

122 Adjustments to regulatory capital

- (1) An internal models deposit taker must deduct each of the following amounts, if positive, from tier 1 capital:
 - (a) expected loss minus eligible allowances, across all non-defaulted exposures; and
 - (b) expected loss minus eligible allowances, across all defaulted exposures.
- (2) The amount of the difference that the deposit taker is required to deduct under subclause (1) is the full amount of the difference, not reduced by any tax effects that might be expected to occur.
- (3) The deposit taker may add the amount in subclause (4), if positive, to tier 2 capital, subject to the limit in subclause (5).
- (4) The amount is eligible allowances minus expected loss, calculated across all non-defaulted exposures.
- (5) The maximum amount that the deposit taker may add to tier 2 capital under this clause is 0.6% of the total of credit risk RWAs calculated using the internal models approach.

Schedule 1

Rating systems design and operations

Rating systems design

1 Overview

- (1) This Schedule sets out the basis of rating systems design, rating system operations and integrity, the requirements for data maintenance, and stress testing processes.
- (2) The Schedule is divided as follows:
 - (a) rating dimensions, clauses 3 to 8:
 - (b) rating structures, clauses 9 to 13:
 - (c) rating criteria, clauses 14 to 18:
 - (d) rating assignment horizons, clauses 19 and 20:
 - (e) design of models, clauses 21 to 23:
 - (f) risk-rating systems operations, clauses 24 and 25:
 - (g) integrity of ratings process, clauses 26 to 28:
 - (h) data maintenance, clauses 29 to 33:
 - (i) stress-testing processes, clauses 34 and 35.

2 Use of multiple rating systems

- (1) If a deposit taker uses more than 1 rating methodology or system for an exposure class, it must—
 - (a) document the reasoning for the assignment of ratings; and
 - (b) apply the rationale in a manner that best reflects the risk level of the obligor.
- (2) Each rating system used for internal assessment purposes must meet the minimum requirements.

Rating dimensions

3 General requirements for corporate exposures

A deposit taker's rating system must have the following 2 separate and distinct dimensions:

- (a) the risk of default by the obligor, that is, the obligor rating grade, *see* clause 4 of this Schedule; and
- (b) transaction-specific factors, that is, the facility rating grade, *see* clause 5 of this Schedule.

4 Obligor rating grades for corporate exposures

- (1) An obligor rating grade for a corporate exposure represents a deposit taker's assessment of the risk of default by an obligor. The grade is based on a set of rating criteria from which the deposit taker derives its estimate of PD.
- (2) The definition of an obligor rating grade must include a description of—
 - (a) the degree of credit risk typical for obligors assigned to the grade; and
 - (b) details of the criteria used to identify that level of credit risk.
- (3) The deposit taker must articulate the level of risk implied by each obligor rating grade, and in articulating the risk, the deposit taker must describe—
 - (a) the level of PD typical for obligors assigned to a grade; and
 - (b) the criteria used to distinguish the levels of credit risk.
- (4) Obligor rating grades must show perceived and measured risk increases as credit quality declines from one grade to the next.

5 Facility rating grades for corporate exposures

- (1) A deposit taker's facility rating grades must—
 - (a) reflect—
 - (i) transaction-specific factors such as collateral, seniority, and product type;
 - (ii) the level of LGD;
 - (b) take account of the factors that influence LGD including the type of collateral, product, industry, and purpose.
- (2) The deposit taker may include obligor characteristics as LGD rating criteria, but only to the extent to which they help predict LGD.

6 Consistency of ratings

- (1) A deposit taker must ordinarily assign the same obligor rating grade to separate exposures to a particular obligor, irrespective of differences in the characteristics of specific transactions.
- (2) Despite subclause (1), the deposit taker may—
 - (a) assign a different obligor rating grade according to whether a facility is denominated in local or foreign currency to account for risks related to country transfers; and
 - (b) reflect a facility's associated guarantees by making an adjustment to a grade.

7 Exception for supervisory slotting approach

- (1) The 2-dimensional requirement in clauses 4 and 5 of this Schedule does not apply to a specialised lending exposure subject to the supervisory slotting approach.
- (2) A deposit taker may use a single rating dimension that reflects expected loss by incorporating both PD and LGD considerations.

8 General requirements for retail exposures

- (1) A deposit taker's rating system for retail exposures must—
 - (a) account for risks for both obligors and transactions; and
 - (b) capture all relevant obligor and transaction characteristics.
- (2) The deposit taker must assign each exposure that meets the definition of a retail exposure set out in clause 29 to a particular pool to—
 - (a) provide a meaningful differentiation of risk; and
 - (b) group together sufficiently homogenous exposures; and
 - (c) allow for accurate and consistent estimations of PD, LGD, and EAD at pool level.
- (3) In assigning exposures to a pool, the deposit taker must—
 - (a) estimate the value of PD, LGD, and EAD for each pool, although different pools may share the same PD, LGD and EAD estimates; and
 - (b) take into consideration the following risk drivers:
 - (i) the risk characteristics associated with obligors; and
 - (ii) the risk characteristics associated with transactions, including product and collateral types, and cross-collateral provisions as applicable.

Rating structures

9 Distribution of corporate exposures across grades

A deposit taker must have a meaningful distribution of corporate exposures across grades, with no excessive concentrations in either its obligor rating grade or facility rating grade. Clauses 10 to 13 of this Schedule expand on what is meant by meaningful distribution.

10 Obligor rating grades

- (1) For its corporate exposures, a deposit taker must have—
 - (a) at least 7 obligor rating grades for non-defaulted obligors; and
 - (b) 1 grade for defaulted obligors.
- (2) If a loan portfolio is concentrated in a particular market segment and range of credit risk, a deposit taker must ensure it has sufficient grades to avoid undue concentrations of obligors.
- (3) The deposit taker must support significant concentrations by providing convincing empirical evidence that—
 - (a) the grade or grades cover reasonably narrow PD bands; and
 - (b) the credit risk posed by each obligor in a grade is within the band.

11 Facility rating grades

A deposit taker must have enough facility rating grades to ensure that no single grade contains facilities with a wide variation of LGDs.

12 Rating grades for supervisory slotting approach

For a specialised lending exposure subject to the supervisory slotting approach, a deposit taker must have—

- (a) have at least 4 grades for non-defaulted obligors; and
- (b) 1 grade for defaulted obligors.

13 Distribution of retail exposures across pools

- (1) For each pool of retail exposures, a deposit taker must calculate quantitative measures of loss characteristics (that is, PD, LGD, and EAD).
- (2) The deposit taker must have enough exposures in each pool to ensure a meaningful quantification and validation of loss characteristics at the pool level.
- (3) No single pool may include an undue concentration of the deposit taker's total retail exposure.

Rating criteria

14 Meaningful and consistent rating criteria

- (1) A deposit taker must use specific rating definitions, processes, and criteria to assign exposures to grades within a rating system. The definitions and criteria must result in a meaningful differentiation of risk.
- (2) Rating grade descriptions and criteria must enable the deposit taker to assign obligors or facilities that pose similar risk consistently to the same rating grade.
- (3) If rating criteria and procedures differ across different types of obligors or facilities, the deposit taker must monitor rating outcomes for possible inconsistencies and must alter rating criteria to improve consistency as appropriate.

15 Documentation of rating definitions

A deposit taker must document its rating definitions in a way that allows a third party such as internal audit to—

- (a) understand the assignment of ratings;
- (b) replicate the rating assignments;
- (c) evaluate the appropriateness of the assignments.

16 Consistency with internal standards and policies

A deposit taker's rating criteria must be consistent with—

- (a) its internal lending standards; and
- (b) its policies for managing obligors and facilities that have deteriorated in credit quality.

17 Consideration of information

- (1) A deposit taker must consider all relevant, up-to-date, and material information when obligor and facility rating grades are assigned.

- (2) The less information the deposit taker has, the more conservative it must be in assigning exposures to obligor and facility rating grades or pools.

18 Supervisory rating categories

- (1) A deposit taker that has a specialised lending exposure subject to the supervisory slotting approach must assign the exposure to an internal rating grade based on its own criteria, systems, and processes, subject to meeting the minimum requirements outlined in this standard.
- (2) The deposit taker must map its internal obligor rating grades into the 5 supervisory rating categories identified in subpart 7 of Part 4.

Rating assignment horizons

19 Assignment of obligor rating grades

A deposit taker must use a time horizon longer than 1 year to assign obligor rating grades.

20 Assessments of obligor rating grades

- (1) An obligor rating grade represents a deposit taker's assessment of the obligor's ability and willingness to comply with contractual obligations, even in the face of adverse economic conditions or unexpected events.
- (2) The deposit taker must consider a range of economic conditions when making an assessment consistent with—
 - (a) current conditions; and
 - (b) conditions that are likely to occur over a business cycle in the industry and geographic region.
- (3) The deposit taker must take a conservative view when assessing the implications of projected information.
- (4) Obligor ratings for highly leveraged financial institutions, or borrowers whose assets are mainly traded assets, must reflect the performance of the underlying assets based on periods of stressed market volatilities.

Design of models

21 Requirement for human judgement and oversight

- (1) When a deposit taker uses a credit rating model or a mechanical procedure for making a ratings assignment, it must supplement the outcome with human judgement and human oversight to ensure that—
 - (a) all relevant and material information is considered; and
 - (b) the model or procedure is used appropriately.
- (2) The deposit taker's review of a model-based assignment should focus on finding and limiting errors associated with known weaknesses and include credible ongoing efforts to improve the model's performance.

- (3) The deposit taker must document how human judgement and model results are to be combined.

22 Control of model overrides

- (1) A deposit taker must clearly document the situations in which an officer may override an output of the rating process based on their expert judgement.
- (2) In its documentation, the deposit taker must specify—
- (a) the individuals who have permission to carry out an override; and
 - (b) the nature and extent to which they are permitted to override the outputs of the rating process.
- (3) The deposit taker must have guidelines and processes in place for monitoring, individually, any case in which—
- (a) human judgement is used to override a model-based rating; or
 - (b) variables are excluded from a model; or
 - (c) inputs to a model are altered.

23 Other requirements applying to model design

- (1) A model or procedure, and the variables used in it, must have good predictive power and their use must not distort regulatory capital requirements.
- (2) The model or procedure must—
- (a) be accurate on average across the range of obligors or facilities to which the deposit taker is exposed; and
 - (b) have no known material biases.
- (3) A deposit taker must have a process for vetting data inputs into a statistical default or loss prediction model, and the process must include an assessment of the accuracy, completeness, and appropriateness of the data specific to the assignment of a rating grade.
- (4) The data that the deposit taker uses to build a model must represent the population of the deposit taker’s actual obligors and facilities.
- (5) The deposit taker must have a regular cycle of model validation (*see* Schedule 4).

Risk-rating system operations

24 Assignment of rating grades

- (1) Under its loan approval process for a corporate exposure subject to the internal models approach, a deposit taker must—
- (a) assign an obligor rating grade to—
 - (i) the borrower; and
 - (ii) an eligible guarantor or credit protection provider; and
 - (b) assign a facility rating grade to the exposure.

- (2) Under its loan approval process for a retail exposure, a deposit taker must assign the exposure to a pool.

25 Treatment of entities

- (1) A deposit taker must rate separately each separate legal entity to which it has exposure.
- (2) The deposit taker must have a policy for its treatment of individual entities in a connected group to identify the circumstances in which it may or may not assign the same rating to all or some of the related entities.
- (3) The policy must include a process for the identification of specific wrong-way risk.

Integrity of rating process

26 Rating assignments for corporate exposures

- (1) For its corporate exposures, a deposit taker must ensure that its rating assignments and periodic rating reviews are completed or approved by a person who does not directly stand to benefit from an extension of credit.
- (2) The deposit taker must—
 - (a) document its operational processes underlying its rating assignments in its credit policies;
 - (b) review its obligor rating grades and facility rating grades at least once in a 12-month period;
 - (c) document and monitor instances in which rating grades have not been reviewed within that period;
 - (d) have procedures to minimise the number of overdue ratings.
- (3) The deposit taker must review its overdue ratings within 1 month of their becoming overdue. It must review credits more frequently if appropriate, especially for, but not limited to, higher risk obligors or problem exposures.

27 Changes to information for corporate exposures

- (1) A deposit taker must have a process to obtain and update relevant and material information in relation to—
 - (a) an obligor's financial condition; and
 - (b) the facility characteristics that affect estimates of LGD and EAD; and
 - (c) any other characteristics that affect estimates of PD, LGD, and EAD.
- (2) If new, relevant, and material information about an obligor or facility comes to light, a deposit taker must—
 - (a) have a procedure for updating the obligor's rating grade in a timely fashion;
 - (b) initiate a rating review.

28 Annual reviews of retail exposures

A deposit taker must, at least once in a 12-month period, review the loss characteristics and performance of each identified risk pool of retail exposures.

Data maintenance

29 Data collection for corporate and retail exposures

- (1) A deposit taker must collect data on the important characteristics of obligors and facilities to—
 - (a) support the internal credit risk measurement and management process; and
 - (b) meet the requirements of this standard.
- (2) The data must have sufficient detail to allow retrospective re-allocation of obligors and facilities to rating grades.

30 Data maintenance related to obligors

- (1) A deposit taker must maintain a rating history of each obligor and eligible guarantor.
- (2) Each history must include—
 - (a) the rating grades assigned to a borrower and guarantor since they were first assigned an internal grade; and
 - (b) the dates on which the rating grades were assigned; and
 - (c) the methodology and key data used to derive the rating; and
 - (d) the person or model responsible for making each assignment.
- (3) The deposit taker must retain information on—
 - (a) the identity of each obligor or facility that defaults; and
 - (b) the timing and circumstances of the default; and
 - (c) for its obligor rating grades, the associated PD estimates, migration across rating grades, and realised default rates.

31 Data maintenance related to facilities

- (1) A deposit taker must collect and retain—
 - (a) a complete history of data on the LGD and EAD estimates associated with each of its facilities; and
 - (b) data on the estimated and realised LGDs and EADs associated with each defaulted facility.
- (2) For the purposes of subclause (1)(a), the deposit taker must include, for each facility,—
 - (a) the key data and methodology used to derive the estimate; and
 - (b) the person or model responsible for making the estimate.

- (3) If the deposit taker reflects the risk-mitigating effects of guarantees or credit derivatives through its LGD estimates, it must retain data on the LGD of the facility before and after evaluation of the effects of the guarantee or credit derivative.
- (4) The deposit taker must retain information about the components of loss or recovery for each defaulted exposure, including the identity of the defaulting party.

32 Exposures subject to supervisory slotting approach

A deposit taker that has a specialised lending exposure subject to the supervisory slotting approach must retain all relevant data, including data on realised losses.

33 Data maintenance for retail exposures

- (1) A deposit taker must retain data—
 - (a) used in the process of allocating retail exposures to pools; and
 - (b) on the estimates of PD, LGD, and EAD associated with its pools of retail exposures.
- (2) For a defaulted exposure, the deposit taker must retain data on—
 - (a) the pools to which the exposure was assigned in the year before default; and
 - (b) the realised outcomes for LGD and EAD.

Stress-testing processes

34 Stress-testing processes

- (1) A deposit taker must have sound stress-testing processes that involve—
 - (a) identifying possible events or future changes in economic conditions that could have an unfavourable effect on exposures; and
 - (b) assessing the deposit taker's ability to withstand those changes.
- (2) The deposit taker must perform 1 or more credit risk stress tests in a 12-month period to assess the effects of certain specific scenarios on its regulatory capital position. The tests must be meaningful and reasonably conservative.
- (3) Whatever stress-testing method is used, as part of the test, the deposit taker must consider the effects on its regulatory capital position of—
 - (a) credit impairment losses; and
 - (b) a deterioration in the credit quality of its obligors; and
 - (c) migration across rating grades.

35 Sources of information for stress testing

A deposit taker must consider the following sources of information in undertaking each stress test:

- (a) its current and historical data on its own credit exposures; and
- (b) relevant external data, for example,—

- (i) historical credit losses in other deposit takers and countries; and
- (ii) migrations in external ratings during previous credit stress events.

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Schedule 2

Process requirements for risk quantification

Subpart 1—Risk quantification requirements for PD estimates

1 Combining techniques for PD estimates for corporate exposures

- (1) In estimating the average PD for a rating grade, a deposit taker may emphasise a primary technique and use other techniques for comparison, and as a basis for an adjustment. However, the deposit taker must not rely on the mechanical application of a technique without supporting analysis.
- (2) The deposit taker must exercise judgement in combining the results of different techniques, and in making adjustments, for the limitations both of mechanical risk quantification techniques and of the information used.

2 Internal use of obligor default experience for corporate exposures

- (1) A deposit taker may estimate PD for corporate exposures using its own experience of default by obligors, but the estimates must reflect—
 - (a) underwriting standards; and
 - (b) any differences between the rating system that generated the data and the current rating system.
- (2) If only limited data is available, or when the deposit taker’s underwriting standards or rating systems have changed, the deposit taker must add an appropriate margin of conservatism to its estimate of PD.
- (3) The deposit taker may also estimate PD using data pooled across other deposit takers that have internal rating systems and criteria similar to its own.

3 Mapping to external data for corporate exposures

- (1) For corporate exposures, a deposit taker may—
 - (a) associate its internal grades with the scale used by an external credit rating agency; or
 - (b) map its internal grades to that scale.
- (2) In either case referred to in subclause (1), the deposit taker may then attribute the observed default rates for the rating agency’s grades to its internal grades.
- (3) The deposit taker must—
 - (a) document the mapping, and base it on comparisons between—
 - (i) the deposit taker’s internal rating criteria and those of the rating agency; and
 - (ii) the definition of default used internally and that used by the rating agency; and

- (iii) the internal and external ratings of any obligors common to the deposit taker's data and the external institution's data; and
 - (b) avoid biases or inconsistencies in the mapping approach or underlying data.
- (4) The external institution's rating criteria underlying the data must reflect the risk of obligors and not transaction characteristics.

4 Statistical default models for corporate exposures

- (1) For corporate exposures, a deposit taker may, when estimates are drawn from statistical default prediction models, use a simple average of default-probability estimates for individual obligors in a particular grade.
- (2) The use of default probability models for the purpose set out in subclause (1) must meet the requirements in clauses 21 to 23 of Schedule 1.

5 Long-run experience for corporate exposures

- (1) For an estimate of the average PD for a rating grade for a corporate exposure, a deposit taker must use information and techniques that take appropriate account of long-run experience.
- (2) Whatever combination of internal, external, and pooled data the deposit taker uses for PD estimation, the deposit taker must use at least 1 data source for which at least 5 years of observations are available.
- (3) If relevant and material data are available for a source over a period that is longer than 5 years, the deposit taker must use the longer period.

6 Primary source of information for retail exposures

- (1) The primary source of information that a deposit taker must use for estimating loss characteristics for retail exposures is internal data.
- (2) The deposit taker may also use external data or statistical models if evidence exists of a reliable relationship between the loss characteristics of the deposit taker's portfolio and those of the external data or model.
- (3) The deposit taker must use all relevant and material data sources as points of comparison.

7 Expected long-run loss rate for retail exposures

- (1) For retail exposures, a deposit taker may use an estimate of the expected long-run loss rate to derive its estimates of PD and LGD (*see* clause 11 of this Schedule).
- (2) In particular, the deposit taker may use—
 - (a) an appropriate PD estimate to infer the long-run default-weighted average LGD; or
 - (b) a long-run default-weighted average LGD to infer the appropriate PD.
- (3) In either case referred to in subclause (2), LGD for the capital calculation must—
 - (a) be greater than, or equal to, the long-run default-weighted average LGD; and

(b) be consistent with the concepts set out in subpart 2 of this Schedule.

8 Observation periods for retail exposures

- (1) Whatever combination of internal, external, and pooled data a deposit taker uses for its estimates of loss characteristics for retail exposures, the length of the underlying historical observation period used must be at least 5 years.
- (2) If relevant and material data are available for any source over a period that is longer than 5 years, the deposit taker must use the longer period.
- (3) The deposit taker may give greater weight to more recent data, and commensurately less weight to older data, when more recent data is better able to predict loss rates.

9 Seasoning effects on long-term retail exposures

- (1) Long-term retail exposures may be characterised by seasoning effects that peak several years after origination.
- (2) In the face of growth in exposures, a deposit taker must take steps to ensure that—
 - (a) estimation techniques remain accurate; and
 - (b) the current capital level and earnings and funding prospects are sufficient for future capital needs.
- (3) The deposit taker must adjust PD estimates upward in a consistent manner over time to anticipate seasoning effects.

Subpart 2—Risk quantification requirements for LGD estimates

10 Meaning of loss for LGD purposes

- (1) For the purposes of the estimation of LGD, **loss** means economic loss.
- (2) When measuring loss, a deposit taker must consider all relevant factors, including—
 - (a) material discount effects; and
 - (b) material direct and indirect costs associated with collecting on the exposure.
- (3) The deposit taker must not measure loss simply as the loss recorded in accounting records, although it must be able to reconcile accounting and economic losses.
- (4) The deposit taker must reflect its own work out and collection expertise in its LGD estimates. Adjustments to estimates for this expertise must be conservative until the deposit taker has sufficient internal empirical evidence of the impact of the degree of expertise.

11 Reflecting economic downturns

- (1) A deposit taker must estimate LGD for a facility in a way that reflects economic downturn conditions.
- (2) A deposit taker's estimate of LGD must be no less than the long-run default-weighted average rate of loss given default that is calculated using the average economic loss for all observed defaults in the data source for the particular type of facility.

- (3) In estimating LGD, the deposit taker must also consider the possibility that the LGD of a facility could be higher than the default-weighted average during periods of higher-than-average credit losses, including variations in LGD over the business cycle.
- (4) If the deposit taker has approval to use its estimates of LGD for residential mortgage exposures, it must assume that the downturn conditions include a fall in average house prices of 30%.

12 Collateral with correlated risk or currency mismatch

When a deposit taker holds collateral against an exposure, it must estimate LGD in a way that reflects conservatively—

- (a) a significant interdependence between the risk of the obligor and that of the collateral or collateral provider; and
- (b) a currency mismatch between the underlying obligation and the collateral.

13 Collateral management for exposures

- (1) In estimating LGD, a deposit taker—
 - (a) must have regard to historical recovery rates; and
 - (b) must not base its LGD estimates solely on the estimated market value of the relevant collateral.
- (2) If the deposit taker's LGD estimates reflect the existence of collateral, it must have established internal processes and operational procedures for collateral management and associated risk-management that are consistent with those required for the standardised treatment of collateral, *see* clauses 190 and 194 of the Deposit Takers (Capital) Standard 2027.

14 Estimates of LGD for defaulted exposures

- (1) The LGD estimate for a defaulted exposure should reflect the risk of additional, unexpected losses during the recovery period.
- (2) A deposit taker must base its estimate of expected loss on a defaulted exposure on current economic circumstances and facility status, as set out in Part 8.
- (3) A deposit taker must set the capital requirement for a defaulted exposure on a risk-sensitive basis. For this purpose, K is equal to any excess of LGD over the best estimate of expected loss, as provided for in clauses 40 and 89.
- (4) The deposit taker must be able to justify a case in which the best estimate of expected loss on a defaulted exposure is less than the sum of allowances for impairment and partial charge-offs on the exposure.

15 Data observation period: additional requirements for corporate exposures

- (1) A deposit taker must base its estimates of LGD for corporate exposures on a data observation period of at least 1 complete economic cycle, if possible and in any event, for a period of at least 7 years from at least 1 data source.
- (2) If relevant and material data are available over a longer period for a source, the deposit taker must use the longer period.

16 Data observation period: additional requirements for retail exposures

- (1) A deposit taker must base its estimates of LGD for retail exposures on at least 5 years of data observations.
- (2) The deposit taker may give greater weight to more recent data and commensurately, less weight to older data, when more recent data is better able to predict loss rates.

Subpart 3—Risk quantification requirements for EAD estimates

17 Criteria for EAD estimates

- (1) A deposit taker must derive its EAD estimates from criteria that—
 - (a) are plausible and intuitive; and
 - (b) represent what the deposit taker considers are the material drivers of EAD; and
 - (c) are supported by credible internal analysis.
- (2) The deposit taker must be able to produce information about the factors driving its EAD experience, and a breakdown of how those factors contribute to EAD.
- (3) The deposit taker must—
 - (a) use all relevant and material information in the derivation of its EAD estimates; and
 - (b) review the estimates—
 - (i) when material new information comes to light; and
 - (ii) in all cases, at least once in a 12-month period.

18 Estimates of EAD based on current and potential drawings

- (1) In its estimate of EAD, a deposit taker must give due consideration to the policies and strategies it has in place in relation to account monitoring and payment processing.
- (2) The deposit taker must—
 - (a) consider its ability and willingness to prevent further drawings in circumstances short of payment default;
 - (b) have adequate systems and procedures in place to monitor—
 - (i) facility amounts; and
 - (ii) current outstandings against committed lines; and
 - (iii) changes in outstandings for each obligor and each grade;
 - (c) be able to monitor outstanding balances daily.

19 Estimates of EAD for on-balance-sheet items

- (1) For on-balance-sheet items, a deposit taker must estimate EAD at no less than the current drawn amount, subject to recognising the effects of netting using the method set out in subpart 4 of Part 6 of the Deposit Takers (Capital) Standard 2027 (on-balance-sheet netting).

- (2) The minimum requirements for the recognition of on-balance-sheet netting under the internal models approach are the same as the standardised approach.

20 Estimates of EAD for counterparty credit risk exposures

For transactions that expose a deposit taker to counterparty credit risk, the deposit taker must calculate EAD using the standardised supervisory methodology provided in subpart 7 of Part 5 of the Deposit Takers (Capital) Standard 2027 (counterparty credit risk).

21 Estimates of EAD for other off-balance-sheet items

- (1) A deposit taker must have a procedure for estimating EAD for off-balance-sheet items, and these procedures must specify the estimates of EAD to be used for each facility type.
- (2) An estimate of EAD must—
- (a) reflect the possibility of additional drawings by an obligor up to the time a default event is triggered; and
 - (b) account for the possibility of additional drawings after default, if the deposit taker does not include the possibility of such drawings in its LGD estimates.
- (3) If estimates of EAD differ by facility type, the deposit taker must ensure that the definitions of the different facility types provide clear and unambiguous boundaries between them.
- (4) The deposit taker must assign an estimate of EAD to each facility that must—
- (a) be an estimate of the long-run default-weighted average EAD for similar facilities and obligors over a sufficiently long period; and
 - (b) incorporate a margin of conservatism reflecting the likely range of errors in the estimate.
- (5) When EAD estimates for an exposure vary over the business cycle, the deposit taker must use an EAD estimate that is appropriate for an economic downturn if that would produce a more conservative outcome than a long-run average.

22 Data observation period: additional requirements for corporate exposures

- (1) A deposit taker must base its estimate of EAD on a period that covers a complete economic cycle, if possible, and is in all cases no less than 7 years.
- (2) If relevant and material data are available over a longer period from a source, the deposit taker must use the longer period.
- (3) The deposit taker must determine an EAD estimate using a default-weighted average, rather than a time-weighted average.

23 Data observation period: additional requirements for retail exposures

A deposit taker must base its EAD estimates for retail exposures on data observations over at least 5 years.

Subpart 4—Operational requirements for purchased receivables

24 Operational requirements

- (1) When purchasing receivables, a deposit taker must be satisfied that current and future advances can be repaid from the liquidation of, or collections against, the receivables pool.
- (2) A pool of receivables will qualify for the top-down treatment of credit risk only if the deposit taker is able to closely monitor and control the pool and the overall lending relationship.

25 Legal certainty

- (1) A deposit taker must ensure that the facility under which the receivables are purchased is structured in manner that gives it effective ownership and control of the cashflow from the receivables in all foreseeable circumstances.
- (2) The deposit taker must—
 - (a) obtain regular verification that an obligor’s payments made directly to a seller or servicer are forwarded completely and within the contractually agreed terms;
 - (b) ensure that ownership of the receivables and cash receipts are protected against legal challenges or moratoria that could inhibit or materially delay its ability to—
 - (i) liquidate or assign the receivables; or
 - (ii) retain control over the cash receipts.

26 Effectiveness of monitoring systems

- (1) A deposit taker must be able to monitor—
 - (a) the quality of the receivables; and
 - (b) the financial condition of the seller and servicer.
- (2) In particular, the deposit taker must—
 - (a) assess the correlation between the quality of the receivables and the financial conditions of both the seller and the servicer; and
 - (b) have internal policies and procedures that adequately safeguard against the existence of such correlation and assign an internal risk rating to each seller and servicer; and
 - (c) be able to assess the characteristics of the receivables pool, including—
 - (i) over-advances; and
 - (ii) the history of the seller’s arrears, bad debts, and bad debt allowances; and
 - (iii) the payment terms; and
 - (iv) any potential contra accounts; and
 - (d) have clear and effective policies and procedures for—
 - (i) determining the eligibility of sellers and servicers; and

- (ii) monitoring, on an aggregate basis, single-obligor concentrations both within and across receivables pools; and
- (e) ensure it receives timely and sufficiently detailed reports of receivables ageing and dilutions, to—
 - (i) ensure compliance with its eligibility criteria and policies governing purchased receivables; and
 - (ii) provide an effective means of monitoring and confirming the seller’s terms of sale and dilution.
- (3) For the purposes of subclause (2)(c), the deposit taker or its agent must conduct and document periodic reviews of sellers and servicers to—
 - (a) verify the accuracy of reports from the seller or servicer, as applicable; and
 - (b) detect fraud or operational weaknesses; and
 - (c) verify the quality of the seller’s credit policies and servicer’s collection policies and procedures.

27 Effectiveness of work-out systems

- (1) A deposit taker must have systems and procedures for—
 - (a) detecting deterioration at an early stage—
 - (i) for a seller’s financial condition; and
 - (ii) in the quality of the receivables; and
 - (b) addressing emerging problems pro-actively.
- (2) In particular, the deposit taker must have—
 - (a) clear and effective policies, procedures, and information systems to monitor compliance with—
 - (i) all contractual terms of the facility; and
 - (ii) the internal policies governing advance rates and receivables eligibility; and
 - (b) systems that track violations and waivers as well as exceptions to established policies and procedures; and
 - (c) effective policies and procedures for detecting, approving, monitoring, and correcting over-advances to limit inappropriate draw-downs.
- (3) The deposit taker must also have effective policies and procedures in place for dealing with financially weakened sellers or servicers and any deterioration in the quality of receivable pools.
- (4) The policies and procedures referred to in subclause (3) include, but are not limited to,—
 - (a) early termination triggers in revolving facilities and other protections; and
 - (b) a structured and disciplined approach to dealing with violations; and

- (c) clear and effective policies and procedures for initiating legal actions and dealing with problem receivables.

28 Effectiveness of systems for control of receivables, credit, and cash

- (1) A deposit taker must have clear and effective policies and procedures for governing the control of receivables, credit, and cash.
- (2) In particular, the deposit taker must—
 - (a) have documented internal policies that specify all material elements of its receivables purchase programme, including—
 - (i) the advance rates; and
 - (ii) eligible collateral; and
 - (iii) necessary documentation; and
 - (iv) concentration limits; and
 - (v) the handling of cash receipts; and
 - (b) have internal systems that ensure that funds are advanced only against specified supporting collateral and documentation.
- (3) For the purposes of subclause (2)(a), the elements must take appropriate account of all relevant and material factors, including—
 - (a) the seller's or servicer's financial condition; and
 - (b) risk concentrations; and
 - (c) trends in the quality of the receivables and the seller's customer base.

29 Compliance with internal policies and procedures

- (1) A deposit taker must have an internal process for assessing compliance with all critical policies and procedures in relation to its receivables purchasing programme.
- (2) The process must include—
 - (a) regular internal or external audits of all critical phases of the programme; and
 - (b) verification of the separation of duties—
 - (i) between the assessment of the seller or servicer and the assessment of the obligor; and
 - (ii) between the assessment of the seller or servicer and the field audit of the seller or servicer; and
 - (c) evaluations of back-office operations, with particular focus on qualifications, experience, staffing levels, and supporting systems.

Schedule 3

Default, re-ageing, and overdrafts

Default

1 Definition of default

- (1) A default is considered to have occurred for a particular obligor when 1 or both of the following events have taken place:
- (a) the deposit taker considers that the obligor is unlikely to pay its credit obligations in full, without recourse by the deposit taker to actions such as realising any security;
 - (b) the obligor is more than 90 days past due on a material credit obligation.
- (2) For the purposes of subclause (1)(b),—
- (a) an overdraft is taken as being past due once the person has breached an advised limit, or has been advised of a limit smaller than current outstandings; and
 - (b) the 90 days may be measured as 90 calendar days past due or as 90 days' worth of contractual payments past due.

2 Indicators of payment being unlikely

For the purposes of clause 1(1)(a) of this Schedule, indications that payment is unlikely include the following:

- (a) the deposit taker has put the credit obligation on non-accrual status;
- (b) the deposit taker has made a charge-off or account-specific allowance for impairment that results from a significant perceived decline in credit quality;
- (c) the deposit taker has sold the credit obligation at a material credit-related economic loss;
- (d) the deposit taker has consented to a distressed restructuring of the credit obligation, which is likely to result in a diminished financial obligation;
- (e) the deposit taker has filed for the obligor's bankruptcy, statutory management, liquidation, voluntary administration, or has taken other similar action, in respect of the obligor's credit obligation;
- (f) the obligor is insolvent or bankrupt or has been placed in statutory management, liquidation, or voluntary administration, or any similar arrangement that would have the effect of preventing or delaying repayment of the credit obligation.

3 Default on retail exposures

For retail exposures, a deposit taker may apply the definition of default at the level of a particular facility rather than at the level of the obligor.

4 Previously defaulted or renegotiated facilities

- (1) If the status of a previously defaulted exposure is such that no trigger of the definition of default still applies, and if subclause (2) does not apply, the deposit taker may treat the exposure as a non-defaulted facility.
- (2) The deposit taker must not re-rate a renegotiated or otherwise modified item to a non-defaulted grade or rating until the item has operated in accordance with non-concessional terms and conditions for a period of at least 6 months.

Re-ageing

5 Re-ageing documentation and policy

- (1) The deposit taker must have clearly documented policies in place to determine when an exposure becomes classified as defaulted.
- (2) This applies particularly to the re-ageing of facilities and to the granting of extensions, deferrals, renewals, and rewrites of existing accounts.
- (3) At a minimum, the re-ageing policy must include—
 - (a) approval authorities and reporting requirements; and
 - (b) the minimum age of a facility before it is eligible for re-ageing; and
 - (c) the delinquency levels of facilities that are eligible for re-ageing; and
 - (d) the maximum number of times a facility may be re-aged; and
 - (e) a reassessment of the obligor's capacity to repay.
- (4) The policy must be applied consistently over time, and its application must meet the requirements of clause 12.

6 Re-ageing and renegotiated items

The deposit taker must not re-age a renegotiated item (*see* clause 4 of this Schedule) until the item has performed in accordance with non-concessional terms and conditions for a period of at least 6 months.

Overdrafts

7 Treatment of overdrafts

A deposit taker must, in relation to overdrafts,—

- (a) ensure that authorised overdrafts are subject to a credit limit; and
- (b) bring that credit limit to the client's attention; and
- (c) monitor any breach of the credit limit.

Schedule 4

Validation and governance provisions

Validation of internal estimates

1 Comparison of estimates with outcomes

- (1) A deposit taker must—
 - (a) regularly compare realised default rates with the estimated PD for each obligor rating grade; and
 - (b) carry out similar analyses for its LGD and EAD estimates.
- (2) The comparisons must use the longest period of historical data possible.
- (3) The deposit taker must—
 - (a) document the methods and data used for the comparisons; and
 - (b) update the analysis and documentation at least once in a 12-month period.

2 Quantitative validation and testing

- (1) In addition to the requirements of clause 1 of this Schedule, a deposit taker must use—
 - (a) quantitative validation tools; and
 - (b) comparisons with relevant external data sources that—
 - (i) are appropriate to the portfolio;
 - (ii) are updated regularly;
 - (iii) cover a relevant observation period.
- (2) The deposit taker must base its internal assessments of the performance of its rating systems on long data histories that cover a range of economic conditions and, if possible, 1 or more complete business cycles.
- (3) The deposit taker must not use quantitative testing methods and other validation methods that vary systematically with the economic cycle.
- (4) The deposit taker must clearly document any changes to the methods and data used.

3 Deviations from estimation values

- (1) A deposit taker must have internal standards for dealing with situations in which realised PD, LGD, and EAD values deviate from estimates by enough to call into question the validity of the estimates.
- (2) The standards must take account of systematic variability in its experience of default by obligors.
- (3) When realised values continue to be higher than its estimates, the deposit taker must revise the estimates upward to reflect the default and loss experience.

Changes to estimates and models

4 Proposed changes

- (1) A deposit taker must apply to the Bank for approval of all proposed changes to its estimates and models before implementing them.
- (2) For the purposes of subclause (1), **proposed change** means—
 - (a) a periodic change driven by new data; or
 - (b) a change to model structures, estimates, or judgements, including any changes proposed to the estimation of PD, LGD, and EAD.

5 Process requirements

- (1) A deposit taker must subject a proposed change referred to in clause 4 to formal submission requirements, clearly setting out the following matters in relation to each of the proposed changes:
 - (a) the rationale for the change, including the reasons why a new model is an improvement on the existing model together with supporting material;
 - (b) “before” and “after” comparisons for the affected risk parameters that cover at least 4 consecutive periods, unless the Bank approves otherwise;
 - (c) the impact on RWAs and regulatory capital, and how the impacts are calculated, unless the Bank approves otherwise;
 - (d) any linkage to the deposit taker’s approval requirements;
 - (e) a comparison with the capital outcome under the standardised approach.
- (2) For the purposes of an approval under subclause (1)(b), the Bank must be satisfied that the deposit taker has demonstrated that an alternative period is sufficient to show that the revised approach would improve the capacity of the model to produce risk weights aligned with the underlying credit risk.
- (3) For the purposes of an approval under subclause (1)(c), the Bank must be satisfied that the lack of materiality justifies the exclusion.

Governance requirements

6 Board responsibilities

A deposit taker’s board of directors must approve all material aspects of the rating and estimation processes of the deposit taker. It must—

- (a) be notified of material changes or exceptions from established policies that will materially affect the operations of the rating system; and
- (b) be confident that the deposit taker’s senior management complies with the requirements of clause 7 of this Schedule.

7 Senior management responsibilities

- (1) Senior management must—

- (a) approve any material differences between established procedures and actual practice;
 - (b) ensure, on an ongoing basis, that the rating system operates properly.
- (2) Senior management and staff in the deposit taker's credit control function must regularly assess—
- (a) the performance of the rating process; and
 - (b) the areas needing improvement; and
 - (c) the status of efforts to improve previously identified deficiencies.

8 Internal reporting requirements

- (1) Internal ratings must be an essential part of reporting to the board of directors and senior management.
- (2) Reporting must include—
 - (a) risk profile by grade; and
 - (b) migration across rating grades; and
 - (c) estimation of the relevant parameters for each grade; and
 - (d) comparison of realised default rates, LGD, and EAD against the relevant estimates from the deposit taker's internal models.

9 Credit risk control units

- (1) The deposit taker must have an independent credit risk control unit responsible for the design or selection, implementation, and performance of the deposit taker's internal rating systems.
- (2) The unit must be—
 - (a) functionally independent from the personnel and management functions responsible for originating exposures; and
 - (b) responsible for—
 - (i) testing and monitoring internal grades; and
 - (ii) producing summary reports from the rating system, including historical default data sorted by rating at the time of default and 12 months prior to default, grade migration analyses, and monitoring of trends in key rating criteria; and
 - (iii) implementing procedures to verify that rating definitions are consistently applied across departments and geographic areas; and
 - (iv) reviewing and documenting any changes to the rating process, including the reasons for those changes; and
 - (v) reviewing whether the rating criteria remain predictive of risk.
- (3) The unit must document changes to the rating process, rating criteria, or individual rating parameters and retain that documentation.

10 Annual audit or review

- (1) The deposit taker must have an internal or external audit function, or an equally independent function, that must—
 - (a) review, at least once in a 12-month period, the deposit taker's rating system and its operations; and
 - (b) document its findings.
- (2) The review must—
 - (a) address the operations of the credit function and the estimations of PD, LGD, and EAD; and
 - (b) include consideration of whether all applicable minimum requirements have been met.

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Schedule 5 Supervisory slotting

Table 1: Supervisory rating grades for project finance exposures

	Strong	Good	Satisfactory	Weak
Financial strength				
Market conditions	There are few competing suppliers or there is a substantial and durable advantage in location, cost or technology. Demand is strong and growing.	There are few competing suppliers or there is a better than average location, cost or technology but this situation may not last. Demand is strong and stable.	The project has no advantage in location, cost or technology. Demand is adequate and stable.	The project has worse than average location, cost or technology. Demand is weak and declining.
Financial ratios (e.g. debt service coverage ratio (DSCR), loan life coverage ratio (LLCR), project life coverage ratio (PLCR) and debt-to-equity ratio)	The project has strong financial ratios considering the level of project risk and very robust economic assumptions.	The project has strong to acceptable financial ratios considering the level of project risk and robust project economic assumptions.	The project has standard financial ratios considering the level of project risk.	The project has aggressive financial ratios considering the level of project risk.
Stress analysis	The project can meet its financial obligations under sustained severely stressed economic or sectoral conditions.	The project can meet its financial obligations under stressed economic or sectoral conditions. The project is only likely to default under severe economic conditions.	The project is vulnerable to stresses that are not uncommon through an economic cycle and may default in a normal downturn.	The project is likely to default unless conditions improve soon.
Financial structure				
Duration of the credit compared to the duration of the project	The useful life of the project significantly exceeds the tenor of the loan.	The useful life of the project exceeds the tenor of the loan.	The useful life of the project exceeds the tenor of the loan.	The useful life of the project may not exceed the tenor of the loan.
Amortisation schedule	Amortising debt.	Amortising debt.	Amortising debt repayments with limited balloon payment.	Bullet payment or amortising debt with high balloon repayment.
Political and legal environment				
Political risk, including transfer risk, considering project type and mitigants	The project has very low exposure; there are strong mitigation instruments, if needed.	The project has low exposure; there are satisfactory mitigation instruments, if needed.	The project has moderate exposure; there are fair mitigation instruments.	The project has high exposure; the mitigation instruments are weak or there are none.
Force majeure risk (war, civil unrest, etc)	Low exposure.	Acceptable exposure.	Standard protection.	There are significant risks which are not fully mitigated.
Government support and project's importance for the country over the long term	The project is of strategic importance for the country (preferably export-oriented). It has strong support from the government.	The project is considered important for the country. It has a good level of support from the government.	The project may not be strategic but brings unquestionable benefits for the country. Government support may not be explicit.	The project is not key to the country. The support from the government, if any, is weak.
Stability of legal and regulatory environment (risk of change in law)	The regulatory environment is favourable and stable over the long term.	The regulatory environment is favourable and stable over the medium term.	Regulatory changes can be predicted with a fair level of certainty.	Current or future regulatory issues may affect the project.
Acquisition of all necessary supports and approvals for such relief from local content laws	Strong.	Satisfactory.	Fair.	Weak

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	Strong	Good	Satisfactory	Weak
Enforceability of contracts, collateral and security	Contracts, collateral and security are enforceable.	Contracts, collateral and security are enforceable.	Contracts, collateral and security are considered enforceable even if certain non-key issues exist.	There are unresolved key issues in respect of actual enforcement of contracts, collateral and security.
Transaction characteristics				
Design and technology risk	The project has fully proven technology and design.	The project has fully proven technology and design.	The project has proven technology and design; start-up issues are mitigated by a strong completion package.	The project has unproven technology and design; technology issues exist and/or complex design.
Construction risk				
Permitting and siting	All permits have been obtained.	Some permits are still outstanding but their receipt is considered very likely.	Some permits are still outstanding but the permitting process is well defined and they are considered routine.	Key permits still need to be obtained and are not considered routine. Significant conditions may be attached.
Type of construction contract	Fixed-price date-certain turnkey construction engineering and procurement contract (EPC).	Fixed-price date-certain turnkey construction EPC.	Fixed-price date-certain turnkey construction contract with one or several contractors.	No or partial fixed-price turnkey contract and/or interfacing issues with multiple contractors.
Completion guarantees	The liquidated damages are substantial and are supported by financial substance and/or strong completion guarantee from sponsors with excellent financial standing.	The liquidated damages are significant and are supported by financial substance and/or completion guarantee from sponsors with good financial standing.	The liquidated damages are adequate and are supported by financial substance and/or completion guarantee from sponsors with good financial standing.	The liquidated damages are inadequate or not supported by financial substance or weak completion guarantees.
Track record and financial strength of contractor in constructing similar projects	Strong.	Good.	Satisfactory.	Weak.
Operating risk				
Scope and nature of operations and maintenance (O & M) contracts	There is a strong long-term O&M contract, preferably with contractual performance incentives and/or O&M reserve accounts.	There is a long-term O&M contract and/or O&M reserve accounts.	There is a limited O&M contract or O&M reserve account.	There is no O&M contract. There is a risk of high operational cost overruns beyond mitigants.
Operator's expertise, track record and financial strength	Very strong or committed technical assistance of the sponsors.	Strong.	Acceptable.	Limited/weak or local operator dependent on local authorities.
Off-take risk				
(a) If there is a take-or-pay or fixed-price off-take contract	The off-taker has excellent creditworthiness. There are strong termination clauses. The tenor of the contract comfortably exceeds the maturity of the debt.	The off-taker has good creditworthiness. There are strong termination clauses. The tenor of the contract exceeds the maturity of the debt.	The off-taker's financial standing is acceptable. There are normal termination clauses. The tenor of the contract generally matches the maturity of the debt.	The off-taker is considered weak and there are weak termination clauses. The tenor of the contract does not exceed the maturity of the debt.
(b) If there is no take-or-pay or fixed-price off-take contract	The project produces essential services or a commodity sold widely on a world market. Output can readily be absorbed at projected prices even at lower than historic market growth rates.	The project produces essential services or a commodity sold widely on a regional market that will absorb it at projected prices at historical growth rates.	The commodity is sold on a limited market that may absorb it only at lower than projected prices.	The project output is demanded by only one or a few buyers or is not generally sold on an organised market.
Price, volume and transportation risk of feed-stocks; supplier's track record and financial strength	There is a long-term supply contract with a supplier of excellent financial standing.	There is a long-term supply contract with a supplier of good financial standing.	There is a long-term supply contract with a supplier of good financial standing – a degree of price risk may remain.	There is a short-term supply contract or long-term supply contract with a financially weak supplier – a degree of price risk definitely remains.
Reserve risks (e.g. natural resource development)	Reserves are independently audited, proven and developed and are well in excess of requirements over lifetime of the project.	Reserves are independently audited, proven and developed and are in excess of requirements over lifetime of the project.	Reserves are proven and can supply the project adequately through the maturity of the debt.	The project relies to some extent on potential and undeveloped reserves.

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	Strong	Good	Satisfactory	Weak
Strength of Sponsor				
Sponsor's track record, financial strength and country/sector experience	The sponsor is strong with an excellent track record and high financial standing.	The sponsor is good with a satisfactory track record and good financial standing.	The sponsor is adequate with an adequate track record and good financial standing.	The sponsor is weak with a questionable/no track record and/or financial weaknesses.
Sponsor support, as evidenced by equity, ownership clause and incentive to inject additional cash if necessary	Strong. The project is highly strategic for the sponsor (core business – long-term strategy).	Good. The project is strategic for the sponsor (core business – long-term strategy).	Acceptable. The project is considered important for the sponsor (core business).	Limited. The project is not key to the sponsor's long-term strategy or core business.
Security package				
Assignment of contracts and accounts	Fully comprehensive.	Comprehensive.	Acceptable.	Weak.
Pledge of assets, taking into account quality, value and liquidity of assets	First perfected security interest in all project assets, contracts, permits and accounts necessary to run the project.	Perfected security interest in all project assets, contracts, permits and accounts necessary to run the project.	Acceptable security interest in all project assets, contracts, permits and accounts necessary to run the project.	Little security or collateral for lenders; weak negative pledge clause.

Strength of Sponsor

Sponsor's track record, financial strength and country/sector experience	The sponsor is strong with an excellent track record and high financial standing.	The sponsor is good with a satisfactory track record and good financial standing.	The sponsor is adequate with an adequate track record and good financial standing.	The sponsor is weak with a questionable/no track record and/or financial weaknesses.
Sponsor support, as evidenced by equity, ownership clause and incentive to inject additional cash if necessary	Strong. The project is highly strategic for the sponsor (core business – long-term strategy).	Good. The project is strategic for the sponsor (core business – long-term strategy).	Acceptable. The project is considered important for the sponsor (core business).	Limited. The project is not key to the sponsor's long-term strategy or core business.
Security package				
Assignment of contracts and accounts	Fully comprehensive.	Comprehensive.	Acceptable.	Weak.
Pledge of assets, taking into account quality, value and liquidity of assets	First perfected security interest in all project assets, contracts, permits and accounts necessary to run the project.	Perfected security interest in all project assets, contracts, permits and accounts necessary to run the project.	Acceptable security interest in all project assets, contracts, permits and accounts necessary to run the project.	Little security or collateral for lenders; weak negative pledge clause.

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Table 2: Supervisory rating grades for income-producing real estate exposures

	Strong	Good	Satisfactory	Weak
Financial strength				
Market conditions	The supply and demand for the project's type and location are currently in equilibrium. The number of competitive properties coming to market is equal or lower than forecasted demand.	The supply and demand for the project's type and location are currently in equilibrium. The number of competitive properties coming to market is roughly equal to forecasted demand.	Market conditions are roughly in equilibrium. Competitive properties are coming on the market and others are in the planning stages. The project's design and capabilities may not be state of the art compared to new projects.	Market conditions are weak. It is uncertain when conditions will improve and return to equilibrium. The project is losing tenants at lease expiration. New lease terms are less favourable compared to those expiring.
Financial ratios and advance rate	The property's DSCR is considered strong (DSCR is not relevant for the construction phase) and its loan to valuation ratio (LVR) is considered low given its property type. Where a secondary market exists, the transaction is underwritten to market standards.	The DSCR (not relevant for development real estate) and LVR are satisfactory. Where a secondary market exists, the transaction is underwritten to market standards.	The property's DSCR has deteriorated and its value has fallen, increasing its LVR.	The property's DSCR has deteriorated significantly and its LVR is well above underwriting standards for new loans.
Stress analysis	The property's resources, contingencies and liability structure allow it to meet its financial obligations during a period of severe financial stress (e.g. increase in interest rates, downturn in economic growth).	The property can meet its financial obligations under a sustained period of financial stress (e.g. increase in interest rates, downturn in economic growth). The property is likely to default only under severe economic conditions.	During an economic downturn, the property would suffer a decline in revenue that would limit its ability to fund capital expenditures and significantly increase the risk of default.	The property's financial condition is strained and is likely to default unless conditions improve in the near term.
Cash-flow predictability				
(a) For complete and stabilised property	The property's leases are long-term with creditworthy tenants and their maturity dates are scattered. The property has a track record of tenant retention upon lease expiration. Its vacancy rate is low. Expenses (maintenance, insurance, security and property taxes) are predictable.	Most of the property's leases are long-term, with tenants that range in creditworthiness. The property experiences a normal level of tenant turnover upon lease expiration. Its vacancy rate is low. Expenses are predictable.	Most of the property's leases are medium rather than long-term with tenants that range in creditworthiness. The property experiences a moderate level of tenant turnover upon lease expiration. Its vacancy rate is moderate. Expenses are relatively predictable but vary in relation to revenue.	The property's leases are of various terms with tenants that range in creditworthiness. The property experiences a very high level of tenant turnover upon lease expiration. Its vacancy rate is high. Significant expenses are incurred preparing space for new tenants.
(b) For complete but not stabilised property	Leasing activity meets or exceeds projections. The project should achieve stabilisation in the near future.	Leasing activity meets or exceeds projections. The project should achieve stabilisation in the near future.	Most leasing activity is within projections; however, stabilisation will not occur for some time.	Market rents do not meet expectations. Despite achieving target occupancy rate, cash flow coverage is tight due to disappointing revenue.
(c) For construction phase	The property is entirely pre-leased through the tenor of the loan or pre-sold to an investment grade tenant or buyer or the bank has a binding commitment for take-out financing from an investment grade lender.	The property is entirely pre-leased or pre-sold to a creditworthy tenant or buyer or the bank has a binding commitment for permanent financing from a creditworthy lender.	Leasing activity is within projections but the building may not be pre-leased and take-out financing may not exist. The bank may be the permanent lender.	The property is deteriorating due to cost overruns, market deterioration, tenant cancellations or other factors. There may be a dispute with the party providing the permanent financing.
Asset characteristics				
Location	The property is located in a highly desirable location that is convenient to services that tenants desire.	The property is located in a desirable location that is convenient to services that tenants desire.	The property location lacks a competitive advantage.	The property's location, configuration, design and maintenance have contributed to the property's difficulties.
Design and condition	The property is favoured due to its design, configuration and maintenance and is highly competitive with new properties.	The property is appropriate in terms of its design, configuration and maintenance. The property's design and capabilities are competitive with new properties.	The property is adequate in terms of its configuration, design and maintenance.	Weaknesses exist in the property's configuration, design or maintenance.
Property is under construction	The construction budget is conservative and technical hazards are limited. Contractors are highly qualified.	The construction budget is conservative and technical hazards are limited. Contractors are highly qualified.	The construction budget is adequate and contractors are ordinarily qualified.	The project is over budget or unrealistic given its technical hazards. Contractors may be under qualified.

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Strength of Sponsor/Developer				
Financial capacity and willingness to support the property	The sponsor/developer made a substantial cash contribution to the construction or purchase of the property. The sponsor/developer has substantial resources and limited direct and contingent liabilities. The sponsor/developer's properties are diversified geographically and by property type.	The sponsor/developer made a material cash contribution to the construction or purchase of the property. The sponsor/developer's financial condition allows it to support the property in the event of a cash flow shortfall. The sponsor/developer's properties are located in several geographic regions.	The sponsor/developer's contribution may be immaterial or non-cash. The sponsor/developer is average to below average in financial resources.	The sponsor/developer lacks capacity or willingness to support the property.
Reputation and track record with similar properties	Management are experienced and the sponsors' quality is high. Strong reputation, lengthy and successful record with similar properties.	Appropriate management and sponsors' quality. The sponsor or management has a successful record with similar properties.	Moderate management and sponsor's quality. The management or sponsor track record does not raise serious concerns.	Ineffective management and sub-standard sponsor's quality. The management and sponsor difficulties have contributed to difficulties in managing properties in the past.
Relationships with relevant real estate agents	Strong relationships with leading agents such as leasing agents.	Proven relationships with leading agents such as leasing agents.	Adequate relationships with leasing agents and other parties providing important real estate services.	Poor relationships with leasing agents and/or other parties providing important real estate services.
Security package				
Nature of lien	Perfected first lien.	Perfected first lien.	Perfected first lien.	Ability of lender to foreclose is constrained.
Assignment of rents (for projects leased to long-term tenants)	The lender has obtained an assignment. They maintain current tenant information that would facilitate providing notice to remit rents directly to the lender, such as a current rent roll and copies of the project's leases.	The lender has obtained an assignment. They maintain current tenant information that would facilitate providing notice to the tenants to remit rents directly to the lender, such as current rent roll and copies of the project's leases.	The lender has obtained an assignment. They maintain current tenant information that would facilitate providing notice to the tenants to remit rents directly to the lender, such as current rent roll and copies of the project's leases.	The lender has not obtained an assignment of the leases or has not maintained the information necessary to readily provide notice to the building's tenants.
Quality of the insurance coverage	Appropriate.	Appropriate.	Appropriate.	Substandard.



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Table 3: Supervisory rating grades for object finance exposures

	Strong	Good	Satisfactory	Weak
Financial strength				
Market conditions	Demand is strong and growing. There are strong entry barriers and low sensitivity to changes in technology and economic outlook.	Demand is strong and stable. There are some entry barriers and some sensitivity to changes in technology and economic outlook.	Demand is adequate and the entry barriers are limited and stable. There is significant sensitivity to changes in technology and economic outlook.	Demand is weak and declining, vulnerable to changes in technology and economic outlook and a highly uncertain environment.
Financial ratios (debt service coverage ratio and loan-to-value ratio)	The financial ratios are strong considering the type of asset. Very robust economic assumptions.	The financial ratios are strong/acceptable considering the type of asset. Robust project economic assumptions.	The financial ratios are standard for the asset type.	The financial ratios are aggressive considering the type of asset.
Stress analysis	Long-term revenues are stable and capable of withstanding severely stressed conditions through an economic cycle.	Short-term revenues are satisfactory. The loan can withstand some financial adversity. Default is only likely under severe economic conditions.	Short-term revenues are uncertain. Cash flows are vulnerable to stresses that are not uncommon through an economic cycle. The loan may default in a normal downturn.	Revenues are subject to strong uncertainties. Even in normal economic conditions the asset may default, unless conditions improve.
Market liquidity	The market is structured on a worldwide basis. Assets are highly liquid.	The market is worldwide or regional. Assets are relatively liquid.	The market is regional with limited prospects in the short term, implying lower liquidity.	The market is local and/or has poor visibility. There is low or no liquidity, particularly on niche markets.
Political and legal environment				
Political risk, including transfer risk	Very low. There are strong mitigation instruments, if needed.	Low. There are satisfactory mitigation instruments, if needed.	Moderate. There are fair mitigation instruments.	High. The mitigation instruments, if any, are weak.
Legal and regulatory risks	The jurisdiction is favourable to repossession and enforcement of contracts.	The jurisdiction is favourable to repossession and enforcement of contracts.	The jurisdiction is generally favourable to repossession and enforcement of contracts, even if repossession might be long and/or difficult.	The legal and regulatory environment is poor and/or unstable. The jurisdiction may make repossession and enforcement of contracts lengthy or impossible.
Transaction characteristics				
Financing term compared to the economic life of the asset	Full payout profile/minimum balloon. No grace period.	Balloon more significant, but still at satisfactory levels.	Important balloon with potential grace periods.	Repayment in fine or high balloon.
Operating risk				
Permits/licensing	All permits have been obtained; the asset meets current and foreseeable safety regulations.	All permits have been obtained or are in the process of being obtained; the asset meets current and foreseeable safety regulations.	Most permits have been obtained or are in the process of being obtained, outstanding ones are considered routine, the asset meets current safety regulations.	There are problems in obtaining all required permits, part of the planned configuration and/or planned operations might need to be revised.
Scope and nature of O & M contracts	There is a strong long-term O&M contract, preferably with contractual performance incentives and/or O&M reserve accounts (if needed).	There is a long-term O&M contract and/or O&M reserve accounts (if needed).	There is a limited O&M contract or O&M reserve account (if needed).	There is no O&M contract and a risk of high operational cost overruns beyond mitigants.
Operator's financial strength, track record in managing the asset type and capability to re-market asset when it comes off-lease	Excellent track record and strong re-marketing capability.	Satisfactory track record and re-marketing capability.	Weak or short track record and uncertain re-marketing capability.	No or unknown track record and inability to re-market the asset.
Asset characteristics				
Configuration, size, design and maintenance (i.e. age, size for a plane) compared to other assets on the same market	There is a strong advantage in design and maintenance. Configuration is standard such that the object meets a liquid market.	The design and maintenance is above average. Standard configuration, possibly with very limited exceptions, such that the object meets a liquid market.	The design and maintenance is average. Configuration is somewhat specific and thus might cause a narrower market for the object.	The design and maintenance is below average. The asset is near the end of its economic life. Configuration is very specific. The market for the object is very narrow.
Resale value	The current resale value is well above debt value.	The resale value is moderately above debt value.	The resale value is slightly above debt value.	The resale value is below debt value.
Sensitivity of the asset value and liquidity to economic cycles	The asset value and liquidity are relatively insensitive to economic cycles.	The asset value and liquidity are sensitive to economic cycles.	The asset value and liquidity are quite sensitive to economic cycles.	The asset value and liquidity are highly sensitive to economic cycles.

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	Strong	Good	Satisfactory	Weak
Strength of sponsor				
Operator's financial strength, track record in managing the asset type and capability to re-market asset when it comes off-lease	Excellent track record and strong re-marketing capability.	Satisfactory track record and re-marketing capability.	Weak or short track record and uncertain re-marketing capability.	No or unknown track record and inability to re-market the asset.
Sponsors' track record and financial strength	The sponsors have an excellent track record and high financial standing.	The sponsors have a good track record and good financial standing.	The sponsors have an adequate track record and good financial standing.	The sponsors have a questionable/no track record and/or financial weaknesses.
Security package				
Asset control	Legal documentation provides the lender effective control (e.g. a first perfected security interest or a leasing structure including such security) on the asset or on the company owning it.	Legal documentation provides the lender effective control (e.g. a perfected security interest or a leasing structure including such security) on the asset or on the company owning it.	Legal documentation provides the lender effective control (e.g. a perfected security interest or a leasing structure including such security) on the asset, or on the company owning it.	The contract provides little security to the lender and leaves room to some risk of losing control on the asset.
Rights and means at the lender's disposal to monitor the location and condition of the asset	The lender is able to monitor the location and condition of the asset at any time and place (regular reports, possibility to lead inspections).	The lender is able to monitor the location and condition of the asset almost at any time and place.	The lender is able to monitor the location and condition of the asset almost at any time and place.	The lender has a limited ability to monitor the location and condition of the asset.
Insurance against damages	There is strong insurance coverage including collateral damages with top quality insurance companies.	The insurance coverage is satisfactory (not including collateral damages) with good quality insurance companies.	The insurance coverage is fair (not including collateral damages) with acceptable quality insurance companies.	The insurance coverage is weak (not including collateral damages) or with weak quality insurance companies.

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Table 4: Supervisory rating grades for commodities finance exposures

	Strong	Good	Satisfactory	Weak
Financial strength				
Degree of over-collateralisation of trade	Strong.	Good.	Satisfactory.	Weak.
Political and legal environment				
Country risk	No country risk.	There is limited exposure to country risk (in particular, offshore location of reserves in an emerging country).	There is some exposure to country risk (in particular, offshore location of reserves in an emerging country).	There is strong exposure to country risk (in particular, inland reserves in an emerging country).
Mitigation of country risks	Very strong mitigation. Strong offshore mechanisms. Strategic commodity . Excellent buyer.	Strong mitigation. Offshore mechanisms. Strategic commodity . Strong buyer.	Acceptable mitigation. Offshore mechanisms. Less strategic commodity . Acceptable buyer.	Only partial mitigation. No offshore mechanisms. Non-strategic commodity . Weak buyer.
Asset characteristics				
Liquidity and susceptibility to damage	The commodity is quoted and can be hedged through futures or over the counter (OTC) instruments. The commodity is not susceptible to damage.	The commodity is quoted and can be hedged through OTC instruments. The commodity is not susceptible to damage.	The commodity is not quoted but is liquid. There is uncertainty about the possibility of hedging. The commodity is not susceptible to damage.	The commodity is not quoted. Liquidity is limited given the size and depth of the market. There are no appropriate hedging instruments. The commodity is susceptible to damage.
Strength of sponsor				
Financial strength of trader	Very strong, relative to trading philosophy and risks.	Strong relative to trading philosophy and risks.	Adequate relative to trading philosophy and risks.	Weak relative to trading philosophy and risks.
Track record, including ability to manage the logistic process	Extensive experience with the type of transaction in question. Strong record of operating success and cost efficiency.	Sufficient experience with the type of transaction in question. Above average record of operating success and cost efficiency.	Limited experience with the type of transaction in question. Average record of operating success and cost efficiency.	Limited or uncertain track record in general. Volatile costs and profits.
Trading controls and hedging policies	Strong standards for counterparty selection, hedging and monitoring.	Adequate standards for counterparty selection, hedging and monitoring.	Adequate standards for counterparty selection, hedging and monitoring. Past deals have experienced no or minor problems.	Weak standards for counterparty selection, hedging and monitoring. Trader has experienced significant losses on past deals.
Quality of financial disclosure	Excellent.	Good.	Satisfactory.	Financial disclosure contains some uncertainties or is insufficient.
Security package				
Asset control	First perfected security interest provides the lender legal control of the assets at any time if needed.	First perfected security interest provides the lender legal control of the assets at any time if needed.	At some point in the process, there is a break in the control of the assets by the lender. The break is mitigated by knowledge of the trade process or a third party undertaking as the case may be.	Contract leaves room for some risk of losing control over the assets. Recovery could be jeopardised.
Insurance against damages	Insurance coverage is strong, including collateral damages with top quality insurance companies.	Insurance coverage is satisfactory (not including collateral damages) with good quality insurance companies.	Insurance coverage is fair (not including collateral damages) with acceptable quality insurance companies.	Insurance coverage is weak (not including collateral damages) or with weak quality insurance companies.

Made at Wellington on [day month year].

Reserve Bank of New Zealand

Explanatory note

This standard comes into force on 1 July 2028.

The standard is issued under section 72 of the Deposit Takers Act 2023 and prescribes matters relating to the assessment of capital adequacy and methods of calculating capital described in section 79(a) of that Act. It provides the minimum operational requirements that a deposit taker must meet in order to use the internal-models approach to determine the capital requirement as distinct from the standardised approach provided in the Deposit Takers (Capital) Standard 2027.

The standard sets out—

- how a deposit taker obtains approval from the Bank to determine its capital requirements using an internal rating system:
- the methods the deposit taker must use to classify its credit risk exposures:
- the methods that must be used to calculate risk-weighted assets as part of an overall calculation, and how expected losses are calculated on those same credit risk exposures:
- the formulas that the deposit taker must use for measuring its credit risk.

The standard applies only to deposit takers incorporated in New Zealand that have been approved by the Bank to use the internal models approach in calculating risk-weighted assets for exposures in an approved business model. If the requirements are not met, the deposit taker must use the standardised method of measuring credit risk.

Part 2 and Schedules 1 to 4 provide the general requirements that a deposit taker must meet to use the internal models approach to measure credit risk, including risk-rating systems requirements and processes, risk quantification processes, how default is defined, and the associated validation and governance requirements. They also provide for the wider use of the internal models approach, extending to the credit approval, risk management, internal capital allocations, and corporate governance functions of the deposit taker.

Subpart 2 of Part 2 sets out how a deposit taker becomes an internal models deposit taker, which is by obtaining first the Bank's approval to use the internal models approach and then its approval of the business models it uses to measure credit risk.

Part 3 provides the exposure categories for internal assessment, which are the corporate exposure and retail exposure categories and their subclasses. Corporate exposures include exposures related to specialised lending and to farm lending. The retail exposure class includes

residential mortgage loans, other than reverse residential mortgage loans, and exposures to small or medium enterprises.

The corporate exposure calculations are set out in *Part 4* and show how an internal models deposit taker calculates the capital requirement for non-defaulted and defaulted exposures and the corresponding value of risk-weighted assets for unexpected losses. The calculations use the values of loss components, PD, LGD, and EAD, relating to default amounts. They also use the variable inputs in the calculations for remaining effective maturity, M, and the correlation of asset value to systemic risk factors, R.

Subpart 7 of Part 3 outlines an alternative approach, the supervisory slotting approach, for a corporate exposure that is a specialised lending exposure. If an internal models deposit taker is required to use the supervisory slotting approach, it must map its internal obligor rating grades for an exposure to 1 of 5 supervisory slotting categories, and it must use that approach for risk-weighted assets for unexpected losses and for expected losses.

Part 5 contains the calculations for retail exposures, for which an internal models deposit taker must provide estimates of the loss components for each identified pool of retail exposures. The calculations provide separately for non-defaulted exposures for residential mortgage loans and for all other non-defaulted exposures, then for all defaulted exposures.

Purchased receivables are dealt with in *Part 6* which provides—

- for the measurement of credit risk in relation to retail purchased receivables and corporate purchased receivables as separate categories:
- the pooling requirements for exposures and the estimation methods that the deposit taker must use in relation to the pooled exposures:
- the alternative top-down approach or individual exposure approach for corporate purchased receivables.

Dilution risk which may arise when the total amount of purchased receivables is reduced through credits to obligors is accounted for in *subpart 3 of Part 6*.

Part 7 allows for adjustments to the calculations for exposures in recognition of the benefit of the collateral that an internal models deposit taker holds against an exposure and of the risk-mitigating effects of guarantees or credit derivatives.

Part 8 covers expected loss and eligible allowances and provides the method that an internal models deposit taker must use to measure expected loss. It also sets out a definition of eligible impairment allowances that the deposit taker must apply to all exposures in modelled exposure classes. It does not apply to non-modelled exposure classes, securitisation exposures, or any exposure subject to the standardised approach.

Schedules 1 and 2 provide the rules for rating systems design and operations, and the process requirements for risk quantification, that is, how a deposit taker arrives at its estimates of the loss components, and the operational requirements for purchased receivables. *Schedule 3* sets out the definition of default and provides for the treatment of re-ageing and overdrafts. *Schedule 4* provides the validation and governance provisions related to internal estimates, and how changes to estimates and models are to be treated.

Schedule 5 sets out the way in which the 5 categories established for supervisory slotting apply in relation to different parameters such as financial strength, the political and legal environment, transaction characteristics, and so on.

Deposit Takers (Internal Models) Standard 2027

This is secondary legislation issued under the authority of the Legislation Act 2019 .	
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Principal or amendment	Principal
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