Banking (prudential standard) determination No. 12 of 2022

Prudential Standard APS 180 Capital Adequacy: Counterparty Credit Risk

Banking Act 1959

I, Renée Roberts, a delegate of APRA:

(a)   under subsection 11AF(3) of the *Banking Act 1959* (the Act) REVOKE Banking (prudential standard) determination No. 1 of 2018, including *Prudential Standard APS 180 Capital Adequacy: Counterparty Credit Risk* made under that determination; and

(b)   under subsection 11AF(1) of the *Banking Act 1959* (the Act) DETERMINE *Prudential Standard APS 180 Capital Adequacy: Counterparty Credit Risk*, in the form set out in the schedule, which applies to all ADIs and authorised NOHCs to the extent provided in paragraphs 2 to 4 of the prudential standard.

This instrument commences on 1 January 2023.

Dated: 1 December 2022

[Signed]

Renée Roberts
Executive Director
Policy and Advice Division

Interpretation

In this instrument:

APRA means the Australian Prudential Regulation Authority.

ADI and *authorised NOHC* have their respective meanings given in section 5 of the Act.

Schedule

Prudential *Standard APS 180 Capital Adequacy: Counterparty Credit Risk* comprises the document commencing on the following page.

Prudential Standard APS 180

Capital Adequacy: Counterparty Credit Risk

Objectives and key requirements of this Prudential Standard

This Prudential Standard requires an authorised deposit-taking institution to adopt risk management practices and hold sufficient regulatory capital for counterparty credit risk exposures arising from over-the-counter derivative transactions, exchange-traded derivative transactions, securities financing transactions and long settlement transactions.

The key requirements of this Prudential Standard are that an authorised deposit-taking institution must:

- calculate counterparty credit risk exposure amounts according to the standardised approach for measuring counterparty credit risk exposures or the adjusted current exposure method;

- apply risk weights to counterparty credit risk exposure amounts for capital adequacy purposes;

- where applicable, calculate and hold a credit valuation adjustment risk capital charge;

- where applicable, calculate and hold a default fund capital charge for default fund contributions to a qualifying central counterparty; and

- adopt risk management practices for bilateral and centrally cleared counterparty credit risk exposures.

Table of contents

Authority

1. This Prudential Standard is made under section 11AF of the *Banking Act 1959* (the **Banking Act**).

Application

2. This Prudential Standard applies to all **authorised deposit-taking institutions** (**ADIs**) with the exception of:

    (a) **foreign ADIs**; and

    (b) **purchased payment facility providers**.

3. A reference to an ADI in this Prudential Standard, unless otherwise indicated, is a reference to:

    (a) an ADI on a **Level 1** basis; and

    (b) a **group** of which an ADI is a member on a **Level 2** basis.

4. If an ADI to which this Prudential Standard applies is:

    (a) the holding company for a group of bodies corporate, the ADI must ensure that the requirements in this Prudential Standard are met on a Level 2 basis, where applicable; or

    (b) a **subsidiary** of an authorised non-operating holding company (**authorised NOHC**), the authorised NOHC must ensure that the requirements in this Prudential Standard are met on a Level 2 basis, where applicable.

Interpretation

5. Terms that are defined in *Prudential Standard APS 001 Definitions* appear in bold the first time they are used in this Prudential Standard.

6. Where this Prudential Standard provides for APRA to exercise a power or discretion, this power or discretion will be exercised in writing.

7. In this Prudential Standard, unless the contrary intention appears, a reference to an Act, Regulations or Prudential Standard is a reference to the Act, Regulations or Prudential Standard as in force from time to time.

Definitions

8.   The following definitions are used in this Prudential Standard:

(a)   adjusted current exposure method (CEM) — the adjusted CEM approach for measuring counterparty credit risk exposures is the methodology set out in Attachment E of this Prudential Standard;

(b)   central counterparty (CCP) — is a clearing house that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer. A CCP becomes counterparty to trades with market participants through novation, an open offer system or another legally binding arrangement. For the purposes of the capital framework, a CCP is a **financial institution**;

(c)   clearing member — is a member of, or a direct participant in, a CCP that is entitled to enter into a transaction with the CCP;

(d)   client of a clearing member — is a party to a transaction with a CCP through either a clearing member acting as a financial intermediary, or a clearing member guaranteeing the performance of the client to the CCP;

(e)   close-out netting — is the process of combining all outstanding transactions and reducing them to a single net payment in the event of default by a counterparty to a netting agreement;

(f)   counterparty credit risk — is the risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flows. An economic loss would occur if the transactions or portfolio of transactions with the counterparty has a positive economic value at the time of default;

(g)   default funds — are clearing members' funded or unfunded contributions towards, or underwriting of, a CCP's mutualised loss-sharing arrangements;

(h)   eligible bilateral netting agreement — has the meaning given in *Prudential Standard APS 112 Capital Adequacy: Standardised Approach to Credit Risk* (APS 112);

(i)   exchange-traded derivative — is a derivative that is transacted directly through an organised, licensed and regulated exchange;

(j)   hedging set — under the SA-CCR, a set of transactions under a single netting set within which partial or full offsetting may be recognised for the purposes of calculating the potential future exposure add-on;

(k)   independent collateral amount (ICA) — represents:

(i)   collateral (other than variation margin) posted by a counterparty that an ADI may seize upon default of the counterparty, the amount of

which does not change in response to the value of the transactions it secures; and/or

(ii)   the Independent Amount parameter as defined in standard industry documentation.

While ICA does not change in response to the value of the transactions it secures, it may change in response to factors such as the value of the collateral or a change in the number of transactions in the netting set. For clarity, initial margin for both centrally cleared and non-centrally cleared derivative transactions is included as ICA within the SA-CCR methodology outlined in Attachment D of this Prudential Standard;

(l)   initial margin — is collateral that is collected to cover the potential future exposure that could arise from future changes in the market value of a derivative transaction over the close-out period in the event of a counterparty default;

(m)   IRB ADI — is an ADI with approval from APRA to use an internal ratings-based (IRB) approach to credit risk;

(n)   long settlement transaction — is a transaction where a counterparty undertakes to receive or deliver a security, a commodity or a foreign exchange amount against cash, other financial instruments or commodities at a contractually specified settlement or delivery date that is more than the lesser of (i) the market standard for the particular instrument, and (ii) five business days after the date on which the parties enter into the transaction;

(o)   margin period of risk (MPOR) — is an estimated time period from the last exchange of collateral covering a netting set of transactions with a defaulting counterparty until the counterparty is closed out and the resulting market risk is re-hedged. For the purposes of measuring counterparty credit risk exposures using SA-CCR, MPOR must satisfy the conditions of the minimum holding period specified in paragraphs 30 and 31 of Attachment G of APS 112. MPOR must be measured in years;

(p)   net independent collateral amount (NICA) — is the amount of collateral that an ADI may use to offset its exposure on the default of the counterparty. NICA is equal to any ICA (segregated or unsegregated) received by the ADI less the unsegregated ICA posted by the ADI. NICA does not include any collateral an ADI has posted to a segregated, bankruptcy-remote account that would be returned to the ADI upon the bankruptcy of the counterparty;

(q)   netting — is the process under a netting agreement of combining all relevant outstanding transactions between two counterparties and reducing them to a single net sum for a party to either pay or receive;

(r)   netting by novation — is a netting agreement between two counterparties under which any obligation between the parties to deliver a given currency

(or equity, debt instrument or commodity) on a given date is automatically amalgamated with all other obligations under the netting agreement for the same currency (or other instrument or commodity) and value date. The result is to legally substitute a single net amount for the previous gross obligations;

(s)   netting set — is a group of transactions with a single counterparty that is subject to an eligible bilateral netting agreement under this Prudential Standard. If a transaction with a counterparty is not subject to an eligible bilateral netting agreement, it comprises its own netting set;

(t)   offsetting transaction — is the transaction leg between the clearing member and the CCP when the clearing member acts on behalf of a client (e.g. when a clearing member clears or novates a client's trade);

(u)   over-collateralisation — is when the haircut value of collateral held is greater than the net market value of the derivative contracts covered by the collateral. Conversely, under-collateralisation occurs when the haircut value of collateral held is less than the net market value of the derivative contracts;

(v)   over-the-counter (OTC) derivative transaction — is a customised, privately negotiated, risk-shifting agreement, the value of which is derived from the value of an underlying asset;

(w)   qualifying CCP (QCCP) — is an entity that is licensed to operate as a CCP (including a licence granted by way of confirming an exemption), and is permitted by the CCP's regulator/supervisor to operate as such with respect to the products offered. The entity must be based and prudentially supervised in a jurisdiction where the relevant regulator/overseer has established, and publicly indicated that it applies to the CCP on an ongoing basis, domestic rules and regulations that are consistent with the Committee on Payments and Market Infrastructures and International Organization of Securities Commissions (CPMI-IOSCO) *Principles for Financial Market Infrastructures* as it exists from time to time. In order for a CCP to be a QCCP, it must also calculate or make available the necessary data to allow for the calculation of an ADI's default fund capital charge;

(x)   reference entity — the entity or entities whose obligations are used to determine whether a credit event has occurred under the terms of a credit derivative contract;

(y)   reference obligation — the obligation used to calculate the amount payable when a credit event occurs under the terms of a credit derivative contract. A reference obligation is relevant for obligations that are to be cash settled (on a par-less-recovery basis);[1]

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[1]   A reference obligation will typically also be a deliverable obligation unless otherwise excluded.

APS 180 - **6**

(z)   SA-CCR — the standardised approach for measuring counterparty credit risk exposures (SA-CCR) is the methodology set out in Attachment D of this Prudential Standard;

(aa) securities financing transactions (SFTs) — are transactions such as repurchase agreements, reverse repurchase agreements and securities lending and borrowing transactions where the value of the transactions depends on the market valuation of securities and the transactions are typically subject to margin agreements;

(bb) settled-to-market — refers to a centrally cleared derivative transaction where the variation margin paid constitutes settlement of an exposure, as opposed to the posting of collateral;

(cc) standardised ADI — is an ADI that does not have approval from APRA to use an IRB approach to credit risk;

(dd) threshold — is the amount specified in a margin agreement that defines the level of exposure above which margin will be posted. The threshold represents the amount of uncollateralised exposure allowed under the margin agreement;

(ee) trade exposure — is an exposure a clearing member or a client of a clearing member has to a CCP reflecting a measure of the current mark-to-market value (replacement cost) and the potential future exposure arising from OTC derivative transactions, exchange-traded derivative transactions, SFTs and long settlement transactions. Trade exposure is calculated on a bilateral basis, and must include the initial margin posted by an ADI, as well as any variation margin due to the ADI from the CCP that has not yet been received; and

(ff) variation margin — is collateral that is collected or paid to reflect the current mark-to-market exposure resulting from changes in the market value of a derivative.

Key principles

9.   An ADI must include all OTC derivative transactions and exchange-traded derivative transactions (collectively 'derivative transactions'), long settlement transactions[2] and SFTs held in the banking and trading books in applying the counterparty credit risk requirements set out in this Prudential Standard.

10. An ADI must apply the counterparty credit risk requirements:

(a)   for all bilateral transactions, as set out in Attachment A of this Prudential Standard;

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[2]   For the purposes of this Prudential Standard, long settlement transactions must be treated as OTC derivatives transactions.

(b)   for all centrally cleared transactions, as set out in Attachment B of this Prudential Standard; and

(c)   for any default fund contribution to a QCCP, as set out in Attachment C of this Prudential Standard;

(d)   for an ADI with approval from APRA to use an **internal ratings-based (IRB) approach to credit risk** (IRB ADI), the standardised approach for measuring counterparty credit risk exposures (SA-CCR) as set out in Attachment D of this Prudential Standard to calculate its counterparty credit risk exposure amount; or

(e)   for an ADI that does not have approval from APRA to use an IRB approach to credit risk (standardised ADI), the adjusted CEM as set out in Attachment E of this Prudential Standard to calculate its counterparty credit risk exposure amount; and

(f)   for the purpose of calculating the Level 2 Regulatory Capital requirement for the credit exposures of an overseas banking subsidiary that is prudentially regulated by a prescribed New Zealand authority, an ADI must calculate RWA using the prescribed New Zealand authority's equivalent prudential rules as in force from time to time. [3]

11.   APRA may, upon request of a standardised ADI, approve the ADI to use the SA-CCR to calculate its counterparty credit risk exposure amount.

12.   APRA may require a standardised ADI to use the SA-CCR to calculate its counterparty credit risk exposure amount.

13.   The counterparty credit risk requirements comprise:

(a)   the risk-weighted credit exposures for counterparty credit risk, calculated as the sum of any applicable:

    (i)   risk-weighted credit exposures for counterparty credit default risk ('default risk RWE');

    (ii)   risk-weighted credit exposures for counterparty credit default risk arising from trade exposure to a CCP ('trade exposure RWE'); and

    (iii)   risk-weighted credit exposure arising from a default fund contribution to a non-qualifying CCP ('default fund RWE');

(b)   any applicable credit valuation adjustment (CVA) risk capital charge; and

(c)   any applicable default fund capital charge for any default fund contribution to a QCCP.

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[3]   *prescribed New Zealand authority* has the meaning given in subsection 5(1) of the Banking Act.

14. For all centrally cleared transactions, an ADI must apply the risk management requirements in paragraphs 30 to 39 of Attachment B.

Risk-weighting approach

15. For the purposes of determining the risk-weighted credit exposures for counterparty credit risk, this paragraph must be read in conjunction with APS 112 and, for an IRB ADI, *Prudential Standard APS 113 Capital Adequacy: Internal Ratings-based Approach to Credit Risk* (APS 113). Risk weights must be determined in the following manner:

    (a) an IRB ADI must determine the risk weights for bilateral transactions in accordance with APS 113;[4]

    (b) a standardised ADI must determine the risk weights for bilateral transactions in accordance with APS 112;

    (c) an ADI must determine the risk weights for trade exposures with a CCP in accordance with Attachment B of this Prudential Standard.; and

    (d) an ADI must determine the risk weights for default fund exposures with a non-qualifying CCP in accordance with Attachment B of this Prudential Standard.

16. APRA may determine a higher or lower risk weight for a particular exposure of an ADI where APRA considers that the ADI has not risk weighted the exposure appropriately.

Historical rate rollovers

17. An ADI must not enter into market-related contracts at off-market prices other than historical rate rollovers on foreign exchange contracts. An ADI must have a policy framework in place agreed to by APRA that sets out its systems and controls for approving and monitoring these rollovers and adequately restricts the ADI's capacity to enter into such contracts. Transactions outside of the agreed framework must be discussed with APRA to determine their appropriate treatment.

Adjustments and exclusions

18. APRA may adjust or exclude a specific prudential requirement in this Prudential Standard in relation to one or more specified ADIs or authorised NOHCs.[5]

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4   For the avoidance of doubt, an IRB ADI that has IRB approval for a portion of its exposures must determine the risk weights for exposures subject to the **standardised approach to credit risk** in accordance with APS 112, as required under APS 113.

5   Refer to subsection 11AF(2) of the Banking Act.

Previous exercise of discretion

19.   An ADI must contact APRA if it seeks to place reliance, for the purposes of complying with this Prudential Standard, on a previous exemption or other exercise of discretion by APRA under APS 112.

Attachment A — Counterparty credit risk requirements for bilateral transactions

1.   This Attachment applies to OTC derivative transactions, SFTs and long settlement transactions that are not centrally cleared. For the purposes of this Attachment, a long settlement transaction must be treated as an OTC derivative transaction.

2.   This Attachment also applies to centrally cleared transactions, including exchange-traded derivative transactions, which are required to be treated as bilateral transactions under Attachment B.

3.   For bilateral OTC derivative transactions, an ADI must calculate each of the following counterparty credit risk requirements:

   (a)   default risk RWE, which reflects the potential loss arising from a default of a counterparty (refer to paragraphs 6 to 12 of this Attachment); and

   (b)   a CVA risk capital charge, which accounts for mark-to-market losses arising from a deterioration in a counterparty's credit quality (refer to paragraphs 13 to 20 of this Attachment).

4.   For bilateral SFTs, an ADI must calculate default risk RWE. To determine default risk RWE for SFTs, an ADI must calculate the counterparty credit risk exposure amount according to APS 112[6] and apply the applicable risk weight according to the requirements of APS 112, or for an IRB ADI, according to the requirements of APS 113.

5.   Bilateral SFTs are not subject to a CVA risk capital charge unless APRA has determined that an ADI's CVA loss exposure arising from SFTs is material and notified the ADI that it must calculate a CVA risk capital charge according to paragraphs 13 to 20 of this Attachment.

Default risk RWE for OTC derivative transactions

6.   To determine default risk RWE for OTC derivative transactions, an ADI must calculate a counterparty credit risk exposure amount and apply the relevant risk weight in accordance with paragraph 12 of this Attachment.

7.   The counterparty credit risk exposure amount is:

   (a)   for an IRB ADI, the exposure at default (EAD) calculated according to the SA-CCR; or

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[6]   The total exposure amount for bilateral SFTs must be calculated by adding together the exposure amount for each SFT not covered by an eligible netting agreement (refer to Attachment G of APS 112) and the exposure amount for all SFTs covered by an eligible netting agreement (refer to Attachment H of APS 112).

(b)   for a standardised ADI, the credit equivalent amount (CEA) calculated according to the adjusted CEM.

Counterparty credit risk exposure amount under the SA-CCR

8.   Under the SA-CCR, the counterparty credit risk exposure amount is the EAD for all OTC derivative transactions with a given counterparty, calculated according to the SA-CCR methodology in Attachment D. Eligible netting and collateralisation are incorporated in the SA-CCR methodology.

Counterparty credit risk exposure amount under the adjusted CEM

9.   Under the adjusted CEM, the counterparty credit risk exposure amount is the CEA for all OTC derivative transactions with a given counterparty, calculated by adding together:

(a)   the transaction-level CEA calculated under the adjusted CEM methodology in Attachment E for each transaction not covered by an eligible bilateral netting agreement; and

(b)   the CEA calculated under the adjusted CEM methodology in Attachment E for transactions covered by an eligible bilateral netting agreement that meet the criteria set out in Attachment H of APS 112;

and adjusting the sum for collateral that meets the eligibility criteria for the adjusted CEM set out in Attachment G of APS 112.

Adjustment for incurred CVA under the SA-CCR and adjusted CEM[7]

10.   For all OTC derivative transactions, the counterparty-level EAD or CEA must be adjusted for incurred CVA by subtracting the CVA amount for the counterparty that has already been recognised by the ADI as an incurred write-down (i.e. a CVA loss). The incurred CVA loss must be calculated according to the ADI's own valuation methodology and must not include any debit value adjustment (DVA).

Credit risk mitigation

11.   Forms of credit risk mitigation including guarantees and credit derivatives may be used to reduce default risk RWE. The eligibility and other requirements for application are as set out in APS 112.

Risk weighting

12.   The applicable risk weight for a counterparty credit risk exposure amount is determined according to the requirements of:

(a)   APS 113 for an IRB ADI;[8] or

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[7]   No adjustment to CVA should be included for SFTs.

(b)   APS 112 for a standardised ADI.

CVA risk capital charge

13.   An ADI must calculate its CVA risk capital charge for the risk of mark-to-market losses on the expected counterparty credit risk (CVA loss) for all bilateral OTC derivative transactions and centrally cleared transactions required to be treated as bilateral. The CVA risk capital charge is calculated using the CVA approach outlined in paragraphs 16 to 20 of this Attachment, unless the conditions under paragraph 14 of this Attachment are satisfied.

14.   An ADI, other than an ADI with either funded or unfunded default fund contributions to a CCP, may apply to APRA for approval to determine its CVA risk capital requirement according to a simplified approach, instead of the approach set out in paragraphs 16 to 20 of this Attachment. APRA may approve an application made under this paragraph.

15.   Where an ADI has obtained approval from APRA under paragraph 14 of this Attachment, the ADI must set its CVA risk capital charge equal to the amount of capital required for its risk-weighted credit exposure for counterparty credit default risk.

16.   An ADI must calculate its CVA risk capital charge, K_{CVA}, according to one of the three following formulae:

(a)   an ADI that has OTC derivative exposure to only one counterparty must calculate its CVA risk capital charge as:

$$K_{CVA} = 2.33 \times w \times M \times D \times Exposure^{total}$$

where:

w = the weight applicable to the counterparty determined according to paragraph 17 of this Attachment;

M = the weighted average maturity in years (weighted by notional amount) of all OTC derivative transactions with the counterparty, determined according to paragraphs 40 to 46 of Attachment B of APS 113, except that M is not capped at five years;

$$D = \frac{1 - e^{-0.05M}}{0.05M}$$

; and[9]

For an IRB ADI, $Exposure^{total}$ = the EAD for the counterparty under SA-CCR without any adjustment for incurred CVA;

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[8]   For the avoidance of doubt, an IRB ADI that has IRB approval for a portion of its exposures must determine the risk weights for exposures subject to the standardised approach to credit risk in accordance with APS 112, as required under APS 113.

[9]   D is the supervisory discount factor based on an interest rate of five per cent per annum and term to maturity of M years, and e (≈2.71828) is the base of the natural logarithm.

For a standardised ADI, $Exposure^{total}$ = the counterparty-level CEA under the adjusted CEM without any adjustment for incurred CVA;

If there is more than one netting set for the counterparty, an ADI must determine M, D and $Exposure^{total}$ separately for each netting set, and calculate the sum of $M \times D \times Exposure^{total}$ over all netting sets.[10] The calculation of M applies at the netting set level;

(b) an ADI that has OTC derivative exposures to more than one counterparty, but does not allow for CVA hedges in accordance with paragraphs 18 to 20 of this Attachment, must calculate its CVA risk capital charge as:

$$K_{CVA} = 2.33 \sqrt{0.25\left(\sum_i w_i M_i D_i Exposure_i^{total}\right)^2 + 0.75 \sum_i \left(w_i M_i D_i Exposure_i^{total}\right)^2}$$

where the summations (subscript i) are by counterparty; and

(c) an ADI that has OTC derivative exposures to more than one counterparty, and has in place eligible CVA hedges in accordance with paragraphs 18 to 20 of this Attachment, must calculate its CVA risk capital charge as:

$$K_{CVA} = 2.33 \sqrt{\left(\sum_i 0.5 w_i\left(M_i D_i Exposure_i^{total} - M_i^{hedge} D_i^{hedge} B_i\right) - \sum_{ind} w_{ind} M_{ind} D_{ind} B_{ind}\right)^2 + 0.75 \sum_i w_i^2\left(M_i D_i Exposure_i^{total} - M_i^{hedge} D_i^{hedge} B_i\right)^2}$$

where:

M_i^{hedger} = the maturity in years of the purchased single name credit default swap (CDS) hedge referencing counterparty i and used to hedge CVA risk;

$$D_i^{hedge} = \frac{1-e^{-0.05 M_i^{hedge}}}{0.05 M_i^{hedge}};$$

B_i = the notional amount of the purchased single-name CDS hedge referencing counterparty i and used to hedge CVA risk;

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[10] This approach also applies for the K_{CVA} calculations in paragraphs 16(b) and 16(c) of this Attachment.

w_{ind} = the weight applicable to the 'ind' CDS index determined according to paragraph 17 of this Attachment;

M_{ind} = the maturity in years of 'ind' CDS index purchased protection;

$$D_{ind} = \frac{1 - e^{-0.05M_{ind}}}{0.05M_{ind}}$$; and

B_{ind} = the notional amount of 'ind' CDS index purchased protection used to hedge CVA risk.

An ADI that has more than one purchased single-name CDS hedge referencing counterparty i used to hedge CVA risk, must replace $M_i^{hedge}D_i^{hedge}B_i$ in the formula above by the sum over all such hedges:

$$M_{ind}D_{ind}B_{ind} = \sum_j M_{ind,j}D_{ind,j}B_{ind,j}$$

where each hedge is denoted by the subscript $j = 1,2,3$ ...

An ADI that has purchased more than one CDS index protection to hedge CVA risk must replace $M_{ind}D_{ind}B_{ind}$ in the formula above by the sum over all such hedges:

$$M_{ind}D_{ind}B_{ind} = \sum_j M_{ind,j}D_{ind,j}B_{ind,j}$$

where each hedge is denoted by the subscript $j = 1,2,3$ ...

17.   For the purposes of calculating the CVA risk capital charge, an ADI must determine the weight for a counterparty or credit index by its **credit rating grade** according to Table 1 below.

Table 1: CVA risk capital formula weights

Long term credit rating grade	Weight (%)
1	0.7
2	0.8
3	1.0
4 or unrated	2.0
5	3.0
6	10.0

18. An ADI may include eligible CVA hedges in the calculation of the CVA risk capital charge as set out in paragraph 16(c) of this Attachment subject to the following conditions:

    (a) to qualify as an eligible CVA hedge, the hedge must be transacted with an external counterparty, used for the purposes of mitigating CVA risk, and managed as such;

    (b) the only CDS hedges that may qualify as eligible CVA hedges are single-name CDS (including sovereign CDS), single-name contingent CDS, other equivalent hedging instruments referencing the counterparty directly, and index CDS. A tranched or nth-to-default CDS may not be treated as an eligible CVA hedge; and

    (c) an instrument for which the associated payment depends on cross-default (such as a related entity hedged with a reference entity CDS and CDS triggers) may not be treated as an eligible CVA hedge. If restructuring is not included in the CDS contract then the proportion of that CDS hedge that may be treated as an eligible CVA hedge is as in accordance with the rules regarding specific risk offsetting set out in Attachment D of *Prudential Standard APS 116 Capital Adequacy: Market Risk* (APS 116).

19. Other types of counterparty risk hedges must not be reflected within the calculation of the CVA risk capital charge, and these other hedges must be treated as any other instrument in the ADI's inventory for **Regulatory Capital** purposes. Eligible CVA hedges that are included in the CVA risk capital charge must not be included in the ADI's market risk capital charge calculation under APS 116.

20. If a counterparty is also a constituent of an index on which a CDS is used for hedging counterparty credit risk, the notional amount attributable to that single name (as per its reference entity weight) may, with APRA's approval, be subtracted from the index CDS notional amount and treated as a single name eligible CVA hedge of the individual counterparty with maturity using the maturity of the index.

Attachment B — Counterparty credit risk requirements for centrally cleared transactions

1. This Attachment applies to all transactions that are centrally cleared, including OTC derivative transactions, exchange-traded derivative transactions, SFTs and long settlement transactions. For the purposes of this Attachment, a long settlement transaction must be treated as an OTC derivative transaction. Transactions that result in exposures arising from the settlement of cash transactions only (e.g. equities, fixed income, spot foreign exchange (FX) and spot commodities) are not subject to this treatment. [11]

2. For transactions cleared through a QCCP, an ADI must apply the counterparty credit risk requirements for exposures to a QCCP and the ADI's clients in accordance with paragraphs 9 to 28 of this Attachment, and the risk management requirements in accordance with paragraphs 30 to 34 of this Attachment.

3. Where a CCP does not meet the definition of a QCCP in paragraph 8(w) of this Prudential Standard, or where a CCP does not meet all of the requirements in paragraph 6 of Attachment C, the CCP is considered to be a non-qualifying CCP. An ADI must apply the counterparty credit risk requirements for exposures to a non-qualifying CCP in accordance with paragraph 29 of this Attachment and the risk management requirements in accordance with paragraphs 30 to 34 of this Attachment.

4. Within three months of a CCP ceasing to qualify as a QCCP, unless required otherwise by APRA, the transactions with a former QCCP may, for the purposes of this Attachment, continue to be treated as though they are with a QCCP. After that time, the ADI's exposures with such a CCP must be treated according to paragraph 29 of this Attachment.

5. For the purposes of calculating an ADI's exposure to a CCP:

    (a) initial margin is the funded collateral posted to a CCP to mitigate the potential future exposure of the CCP to the clearing member, including collateral deposited by a clearing member or a client that may be in excess of the minimum required amount provided there are appropriate arrangements in place to prevent the withdrawal of such excess collateral by the clearing member of the client. Initial margin does not include an ADI's contribution to a CCP for a mutualised loss-sharing arrangement (i.e. a default fund contribution); and

    (b) variation margin is the funded collateral posted on a daily or intraday basis to a CCP to mitigate movements in ongoing mark-to-market exposure.

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[11] For contributions to prepaid default funds covering settlement risk-only products, the applicable risk weight is zero per cent.

6. An ADI may treat a transaction as settled-to-market and an unmargined transaction with the remaining maturity (M_i) equal to the time until the next exchange of variation margin if:

   (a) the outstanding exposure is settled by variation margin and the terms are reset so that the fair value of the contract is zero; and

   (b) the ADI has legal opinion to support such treatment of variation margin.[12]

7. For an exchange-traded derivative where the transaction between the clearing member and client is conducted under a bilateral agreement, an ADI that is either a clearing member (clearing member ADI) or a client (client ADI) must treat the transaction as an OTC derivative transaction for the purposes of this Attachment.

8. Where the amount of capital required for an ADI's exposure to a QCCP due to its trade exposure and default fund contribution is higher than would be applied if the CCP were a non-qualifying CCP, the required capital is capped at the amount for a non-qualifying CCP.

Exposures arising from transactions cleared through a QCCP

9. For transactions cleared through a QCCP, a clearing member ADI must calculate each of the following counterparty credit risk requirements:

   (a) trade exposure RWE on the clearing member ADI's trade exposure[13] to the QCCP according to paragraphs 11 to 18 of this Attachment; and

   (b) a default fund capital charge on the default fund contribution to the QCCP calculated according to Attachment C of this Prudential Standard; and

   (c) where a clearing member ADI has provided a guarantee of a client transaction to the QCCP or acts as a financial intermediary between a client and the QCCP (i.e. the clearing member completes an offsetting transaction with the QCCP), default risk RWE and a CVA risk capital charge on the counterparty credit risk exposure to its client, calculated according to paragraph 19 of this Attachment; and

   (d) where a clearing member ADI has provided a guarantee to a client, by undertaking any obligation to reimburse a client for any losses suffered due to changes in transaction value in the event that a QCCP defaults, trade exposure RWE and a default fund capital charge on the guaranteed transaction.

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[12] The remaining maturity (M_i) of an unmargined transaction is subject to a floor of 10 business days. as per paragraph 48(a) of Attachment D.

[13] Trade exposure includes any posted collateral but excludes any default fund contributions. Refer to paragraph 8(ee) for the complete definition of trade exposure.

10.   For an ADI acting as a client of a clearing member to a QCCP, the client ADI must apply the counterparty credit risk requirements specified in paragraphs 20 to 24 of this Attachment.

Trade exposure RWE for a clearing member ADI's exposure to a QCCP

11.   To calculate trade exposure RWE, a clearing member ADI must calculate its trade exposure to the QCCP and apply the relevant risk weights according to paragraphs 12 to 18 of this Attachment.

12.   For the clearing member ADI-to-QCCP leg of a transaction cleared through a QCCP, a clearing member ADI must calculate its trade exposure to the QCCP using the SA-CCR (refer to Attachment D) for all derivative transactions and in accordance with the requirements of paragraph 4 of Attachment A for all SFTs. In addition, for centrally cleared transactions treated as margined transactions, the following conditions apply:

(a)   for all OTC derivative transactions, apply a margin period of risk (MPOR) of at least 10 business days;

(b)   for all other transactions, apply a MPOR or holding period that is at least equal to that applicable if the transaction were a bilateral transaction;

(c)   for a netting set where the number of trades exceeds 5,000 at any point during a quarter, the 20-business day floor for MPOR specified in paragraph 31 of Attachment G of APS 112 does not apply if the netting set does not contain any illiquid collateral, exotic trades or disputed trades; and

(d)   where a QCCP retains variation margin against certain transactions and that variation margin is not protected against the insolvency of the QCCP, set the transaction's maturity factor (*MF*) under the SA-CCR to that of the unmargined case under paragraph 48 of Attachment D.

13.   A clearing member ADI may calculate its trade exposure to a QCCP applying appropriate netting when the below two conditions are satisfied:

(a)   settlement is legally enforceable on a net basis in an event of default regardless of whether the counterparty is insolvent or bankrupt; and

(b)   all netting agreements meet the requirements for the bilateral case set out in Attachment H of APS 112.[14]

14.   Where a clearing member ADI cannot demonstrate that a netting agreement meets the requirements in paragraph 13 of this Attachment, it must treat each

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[14]   To the extent that the rules referenced in Attachment H of APS 112 include the term 'master agreement' or the phrase 'a netting contract with a counterparty or other agreement', this terminology must be read as including any enforceable arrangement that provides legally enforceable rights of set-off.

single transaction with the QCCP as a netting set of its own for the calculation of trade exposure.

15.   If a clearing member ADI first collects collateral from a client for a client-cleared trade and then this collateral is passed on to the QCCP, the ADI may recognise this collateral for both the QCCP-to-clearing member leg and the clearing member-to-client leg of the client-cleared transaction.

16.   Where a clearing member ADI is transacting with a QCCP for its own purposes, the clearing member ADI must apply a two per cent risk weight to its trade exposure to the QCCP (excluding any posted collateral eligible for a zero risk weight under paragraph 27(a) of this Attachment).

17.   Where a clearing member ADI offers clearing services to clients, the clearing member ADI must apply a two per cent risk weight to its trade exposure to the QCCP (excluding any posted collateral eligible for a zero risk weight under paragraph 27(a) of this Attachment) arising from any obligations to reimburse a client for any losses suffered due to changes in transaction value in the event that the QCCP defaults.

18.   The risk weight applied to any collateral posted by a clearing member ADI to the QCCP that is included in the definition of trade exposure in paragraph 8(ee) of this Prudential Standard must be determined in accordance with paragraphs 25 to 28 of this Attachment.

Clearing member ADI's exposure to clients

19.   For the clearing member ADI-to-client leg of a transaction with a QCCP, a clearing member ADI must calculate its counterparty credit risk requirements on its exposures to its clients following the requirements for bilateral transactions set out in Attachment A (comprising both default risk RWE and a CVA risk capital charge). However, to recognise the shorter close-out period for cleared client derivative transactions, the clearing member ADI may apply a minimum MPOR of five business days in calculating the clearing member ADI's exposure amounts to its clients under the SA-CCR (refer to Attachment D). The reduced EAD may also be used in the calculation of the CVA risk capital charge.

Client ADI's exposure to a QCCP

20.   An ADI is considered a 'client ADI' where:

(a)   the ADI clears through a QCCP indirectly as a client of a clearing member acting as a financial intermediary (i.e. the clearing member completes an offsetting transaction with the QCCP); or

(b)   the ADI enters into a transaction with a QCCP, with a clearing member guaranteeing the client ADI's performance,

21.   A client ADI must:

(a)   calculate a trade exposure to the clearing member ADI or QCCP, as the case may be, using:

(i)   for an IRB ADI, the SA-CCR (refer to Attachment D); or

(ii)   for a standardised ADI, the adjusted CEM (refer to Attachment E); and

(b)   risk weight the trade exposure according to the requirements in paragraphs 22 to 24 of this Attachment.

22.   A client ADI must treat its trade exposure (excluding any posted collateral eligible for a zero risk weight under paragraph 28(a) of this Attachment), as if it were a clearing member ADI's trade exposure to the QCCP, and apply the requirements set out in paragraphs 11 to 16 of this Attachment when the following three conditions are met:

(a)   the offsetting transactions are identified by the QCCP as client transactions and the collateral to support the offsetting transactions is held in a manner that prevents any losses to the client ADI due to either the default or insolvency of the clearing member, or the default or insolvency of the clearing member's other clients. Additionally, the client ADI must have conducted a sufficient legal review, and undertake further review as necessary to ensure continuing enforceability of the arrangements. The client ADI must have a well-founded basis to conclude that, in the event of legal challenge, the relevant courts and administrative authorities would find that the arrangements would be legal, valid, binding and enforceable under the relevant laws of the relevant jurisdiction(s);

(b)   the collateral supporting the offsetting transactions is held in a manner that prevents any losses to the client ADI due to the joint default or insolvency of the clearing member and any of its other clients. Additionally, the client ADI must have conducted a sufficient legal review, and undertake further review as necessary to ensure continuing enforceability of the arrangements. The client ADI must have a well-founded basis to conclude that, in the event of legal challenge, the relevant courts and administrative authorities would find that the arrangements would be legal, valid, binding and enforceable under the relevant laws of the relevant jurisdiction(s); and

(c)   the relevant laws, regulation, rules, contractual or administrative arrangements provide that the offsetting transactions with the defaulted or insolvent clearing member are highly likely to continue to be indirectly transacted through the QCCP, or by the QCCP, if the clearing member defaults or becomes insolvent. In such circumstances, the client positions and collateral with the QCCP will be transferred at market value unless the client ADI requests to close out the position at market value.

23.   Where only conditions (a) and (c) of paragraph 22 of this Attachment are satisfied, the client ADI must apply a risk weight of four per cent to its calculated trade exposure to the QCCP (excluding any posted collateral eligible for a zero risk weight under paragraph 28(a) of this Attachment). The applicable risk weight on collateral posted by the client ADI that is included in the

APS 180 – **Attachment B - 21**

definition of trade exposure must be determined according to paragraphs 25 to 28 of this Attachment.[15]

24.   In any other case, the client ADI must treat the exposure as bilateral for the purposes of all counterparty credit risk requirements and apply the treatment set out in Attachment A (comprising both default risk RWE and a CVA risk capital charge).

Exposures arising from collateral posted to a QCCP

25.   For the purposes of this Attachment, collateral posted by an ADI to the QCCP includes but is not limited to: initial margin, any variation margin due to the ADI from the QCCP but not yet received, cash, securities, other pledged assets and any excess initial or variation margin. Posted collateral does not include any default fund contribution.

26.   An ADI that has posted collateral to a QCCP must risk weight those assets in accordance with the relevant banking book or trading book treatment that would otherwise apply regardless of the fact that such assets have been posted as collateral.

27.   For collateral posted by a clearing member ADI to a QCCP, the ADI:

(a)   may apply a zero risk weight to all posted collateral that is held by a custodian where that collateral is bankruptcy remote from the QCCP;[16,17] and

(b)   must apply a two per cent risk weight to all posted collateral held by the QCCP where that collateral is not held in a bankruptcy remote manner.[18]

28.   For collateral posted by a client ADI to a QCCP, the ADI:

(a)   may apply a zero risk weight to all posted collateral that is held by a custodian where the collateral is bankruptcy remote from the QCCP, the clearing member, and the clearing member's other clients;

(b)   must apply a two per cent risk weight to all posted collateral held by the QCCP if the collateral is not bankruptcy remote from the QCCP, and all conditions (a), (b) and (c) in paragraph 22 of this Attachment are satisfied; and

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[15]   Trade exposure is defined in paragraph 8(bb) of this Prudential Standard.

[16]   A custodian may include a trustee, agent, pledgee, secured creditor or any other person that holds property in a way that does not give such person a beneficial interest in such property and will not result in such property being subject to legally-enforceable claims by such persons' creditors, or to a court-ordered stay of the return of such property, if such person becomes insolvent or bankrupt.

[17]   For the avoidance of doubt, such collateral should not be included in the calculation of EAD under the SA-CCR

[18]   For the avoidance of doubt, such collateral should be included in the calculation of EAD under the SA-CCR.

(c)   must apply a four per cent risk weight to all posted collateral held by the QCCP if the collateral is not bankruptcy remote from the QCCP and only conditions (a) and (c) in paragraph 22 of this Attachment are satisfied.

Exposures arising from transactions cleared through a non-qualifying CCP

29.   For all transactions with a non-qualifying CCP, an ADI must calculate the following counterparty credit risk requirements:

(a)   trade exposure RWE in respect of the ADI's trade exposure to the non-qualifying CCP (including any exposure to the non-qualifying CCP that arises due to the ADI guaranteeing a client trade), calculated in accordance with Attachment A of this Prudential Standard, and risk weighted in accordance with APS 112;[19]

(b)   trade exposure RWE in respect of any exposure to the ADI's clients, calculated in accordance with Attachment A of this Prudential Standard and:

    (i)   for an IRB ADI, risk weighted in accordance with to APS 113;[20] or

    (ii)   for a standardised ADI, risk weighted in accordance with APS 112;

(c)   a CVA risk capital charge in respect of the non-qualifying CCP and any clients, calculated in accordance with Attachment A of this Prudential Standard; and

(d)   where the ADI is a clearing member of the non-qualifying CCP, default fund RWE, given by:

$$RWE = 1250\% \times DF$$

where:

RWE = the clearing member ADI's risk-weighted exposure (RWE) in respect of its default fund exposure to the non-qualifying CCP; and

DF = the clearing member ADI's pre-funded contribution to the default fund of the non-qualifying CCP, plus a proportion, to be specified by APRA, of the ADI's unfunded contributions that are liable to be paid should the CCP so require.

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[19]   An ADI must apply the standardised risk-weighting methodology of APS 112 regardless of whether the ADI has approval to use an internal ratings-based approach to credit risk under APS 113.

[20]   For the avoidance of doubt, an IRB ADI that has IRB approval for a portion of its exposures must determine the risk weights for exposures subject to the standardised approach to credit risk in accordance with APS 112, as required under APS 113.

Risk management requirements for centrally cleared exposures

30. An ADI must establish a process for monitoring by, and regular reporting to, senior management of all of its exposures to CCPs, including exposures arising from trading through a CCP and exposures arising from CCP membership obligations such as default fund contributions. An ADI must also establish a process for regular reporting of material exposures to CCPs to the appropriate committee of the Board of directors (Board).

31. An ADI must ensure that it maintains adequate capital for its exposures to CCPs, regardless of whether a CCP is classified as a QCCP. In particular, an ADI must consider whether it might need to hold capital in excess of the minimum capital requirements if, for example, (i) its dealings with a CCP give rise to higher risk exposure or (ii) where it is unclear whether a CCP meets the definition of a QCCP in paragraph 8(w) of this Prudential Standard based on the ADI's dealings with the CCP.

32. For all exposures to CCPs, a clearing member ADI must assess through appropriate scenario analysis and stress testing whether the level of capital held against exposures to a CCP adequately addresses the inherent risks of those transactions. The assessment must include potential future or contingent exposure resulting from future drawings on default fund commitments, and/or from any secondary commitments to take over or replace offsetting transactions from clients of another clearing member in the event that the clearing member defaults or becomes insolvent.

33. Where a CCP is not based and prudentially supervised in a jurisdiction where the relevant regulator/overseer has publicly indicated that it applies domestic rules and regulations that are consistent with the CPMI-IOSCO *Principles for Financial Market Infrastructures* as it exists from time to time to the CCP on an ongoing basis, that CCP must be treated as a non-qualifying CCP unless APRA makes a determination that it may be treated as a QCCP.

34. APRA may require an ADI to hold additional capital against its exposures to a QCCP if an external assessment has found material shortcomings in the regulation of the QCCP and the CCP regulator has not since publicly addressed the issues identified.

Membership of CCPs

35. A clearing member ADI must have an appropriate risk management framework to cover its activities as a clearing member. Such a framework must include, as a minimum:

    (a) assessment of the risk (financial, operational and reputational) that might arise from membership of and conduct of business through a CCP and from any similar engagement with multiple CCPs;

    (b) application of appropriate systems and controls to monitor, on a continuing basis, the risk that membership of and conduct of business

through a CCP or multiple CCPs may create and to manage such risk. This would include application of limits on potential risk exposures; and

(c)   maintenance of appropriate capital cover against the risks that may arise from membership of and the conduct of business through a CCP and multiple CCPs. This would include capital cover relating to business conducted through the CCP and any funded support provided to a CCP or any contingent support to which the ADI may be committed to provide to a CCP.

36.   Membership of a CCP must not expose an ADI to an unlimited contingent liability to support the CCP.

37.   An ADI must notify APRA prior to applying for membership of a CCP.

38.   An ADI that is a member of a CCP must notify APRA of any proposed changes to the contractual provisions or rules governing its membership and business undertaken through the CCP that may have the potential to impact on the level of exposure incurred from conducting business through the CCP or from any support that has to be provided (funded or unfunded) to the CCP.

39.   An ADI must notify APRA of any operational or financial risks arising from membership of and conduct of business through a CCP that may have a potential material adverse impact on the ADI's operations, financial position or reputation. This would include any pertinent rulings, advice or actions by those entities responsible for the oversight or regulation of the conduct of business undertaken through the CCP or of membership of the CCP.

Attachment C — Capital charge for default fund exposure to a QCCP

1. The default fund capital charge applies only to an ADI that is a clearing member to a QCCP. A client ADI is not required to calculate this capital charge.

2. Where a default fund is shared between products or types of business with settlement risk only and products or types of business that give rise to counterparty credit risk (i.e. OTC derivative transactions, exchange-traded derivative transactions, SFTs or long settlement transactions), all of the default fund contributions will receive the risk weight determined according to the methodology outlined in paragraphs 3 to 15 of this Attachment, without apportioning to different classes or types of business or products under paragraph 3 of this Attachment.

3. Where the default fund is segregated by product types and only accessible for specific product types, the capital charge for those default fund exposures must be calculated for each specific product giving rise to counterparty credit risk.

4. When a QCCP's pre-funded own resources are shared among product types, those funds must be allocated to each of the calculations in proportion to the respective product-specific EADs in the calculation of the ADI's own default fund exposure to that QCCP.

5. The default fund capital charge for a clearing member ADI's default fund exposure is obtained by following a two-step process:

    (a) Step 1 - the calculation of a risk-sensitive measure of the exposure a QCCP has to all its clearing members and their clients (refer to paragraphs 7 to 14 of this Attachment); and

    (b) Step 2 - the calculation of the default fund capital charge for the clearing member ADI (refer to paragraph 15 of this Attachment).

6. A clearing member ADI may rely on the QCCP to undertake the calculations in paragraphs 7 to 14 of this Attachment and provide to the clearing member ADI the necessary data to calculate its default fund capital charge, provided any calculations undertaken by the QCCP meet the following conditions:

    (a) the QCCP's calculations are undertaken in a transparent manner with sufficient shared information so as to permit:

        (i) a supervisor of the QCCP to oversee those calculations;

        (ii) the clearing member ADI to calculate the default fund capital charge on its own default fund contributions; and

        (iii) APRA to review and confirm such calculations upon request;

    (b) all calculations, including both steps and the inputs to both steps, must be repeated upon any material change (such as the QCCP clearing a new

product, or when there are material changes to the number of or the exposure of cleared transactions or material changes to the financial resources of the QCCP), and, in any case, at least quarterly. APRA may request a refreshed or more frequent recalculation at any time; and

(c) sufficient aggregate information about the composition of the QCCP's exposures to its clearing members, as well as any information[21] provided to the ADI for calculation purposes, is made available to APRA at least quarterly, or upon request.

Where any of these conditions are not met, an ADI must treat its default fund exposure as if it were to a non-qualifying CCP and calculate default fund RWE in accordance with Attachment B.

7. Step 1 is to compute the hypothetical capital requirement of the QCCP, K_{CCP},[22] due to its counterparty credit risk exposures to all of its clearing members and their clients. K_{QCCP} must be calculated according to:

$$K_{QCCP} = RW \times 8\% \times \sum_m EAD_m$$

where:

RW = 20 per cent, except where APRA has determined that a higher risk weight must be used; and

EAD_m = the exposure amount of the QCCP to the mth clearing member, which must be calculated according to paragraphs 8 to 14 of this Attachment.

In the circumstances where a CCP does not calculate and make available K_{QCCP} to a clearing member ADI but otherwise satisfies the definition of QCCP, the ADI must seek APRA's approval for alternative arrangements for calculating its default fund capital charge. APRA may approve an application made under this paragraph.

8. The exposure or the EAD amount must be calculated separately for derivative transactions and SFTs. The specific treatment depends on whether the clearing member provides client services and whether the client transactions and collaterals are held in separate sub-accounts to the clearing member's house sub-account.

9. When a clearing member m provides client services to multiple clients (a client is denoted by c), and the client transactions and collaterals are held in separate (individual or omnibus) sub-accounts to clearing member m's house sub-account for proprietary business, the exposure for clearing member m, EAD_m,

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21   This includes the calculation for Step 1 and the CCP-level inputs used in Step 2.

22   K_{CCP} is calculated on a consistent basis for the sole purpose of determining the capital requirements of a clearing member's default fund contribution. It does not represent the actual capital requirements of a QCCP.

must be calculated separately for each client sub-account and the house sub-account, according to:

$$EAD_m = EAD_m^{\text{derivatives}} + EAD_m^{\text{SFTs}} + \sum_c \left(EAD_{m,c}^{\text{derivatives}} + EAD_{m,c}^{\text{SFTs}}\right)$$

where:

$EAD_m{}^{TYPE}$ = the EAD of the QCCP to clearing member m's house sub-account for a given type of transaction; and

$EAD_{m,c}{}^{TYPE}$ = the EAD of the QCCP to client c's sub-account for a given type of transaction.

10. When a clearing member m provides client services and those client transactions and collateral are not held in separate sub-accounts to the clearing member's house sub-account, then the exposure of m and all of its clients must be calculated together, according to:

$$EAD_m = EAD_{m,\sum c}^{\textbf{derivatives}} + EAD_{m,\sum c}^{\textbf{SFT}}$$

where:

$EAD_{m,\sum c}{}^{TYPE}$ = the EAD of the QCCP to both clearing member m's house sub-account, and all of its clients' sub-accounts for a given type of transaction.

11. Where a clearing member m does not provide any client services, EAD_m must be calculated simply as:

$$EAD_m = EAD_m^{\textbf{derivatives}} + EAD_m^{\textbf{SFT}}$$

where:

$EAD_m{}^{TYPE}$ = the EAD of the QCCP to clearing member m's house sub-account for a given type of transaction.

12. In calculating each sub account-level EAD amount the following three conditions must be satisfied:

(a) the netting sets that are applicable to regulated clearing members (and their clients) of the QCCP must be the same as those referred to in paragraphs 13 and 14 of Attachment B. All other clearing members (and their clients) of the QCCP must otherwise follow the netting rules as laid out by the QCCP based upon notification of each of its clearing members. Where APRA is not satisfied with these netting rules, APRA may request an ADI to ensure that more granular netting sets than as laid out by the QCCP are used in the calculation;

(b) if the default fund contributions of the clearing member of the QCCP are not split with regard to client and house sub-accounts, these default fund contributions must each be allocated per sub-account according to the

respective fraction the initial margin of that sub-margin has in relation to the total initial margin posted by or for the account of the clearing member; and

(c)   within each sub-account (of both the client and the house), the pre-funded initial margin provided by the clearing member or client, as well as the default fund contribution provided by the clearing member or apportioned to the client, must be allocated to the derivative and SFT exposures in proportion to the respective product specific EADs, calculated in accordance with the SA-CCR methodology without including the effects of collateral for derivative transactions; or as the exposure value under Attachment G of APS 112 for SFTs.

13.   For derivative transactions, each sub account-level EAD must be calculated as the bilateral trade exposure the QCCP has against the clearing member ADI or client ADI using the SA-CCR methodology and is subject to the following two requirements:

(a)   all collateral[23] held by the QCCP to which it has a legal claim in the event of the default of the member or client, must be used to offset the QCCP's EAD to that member or client through inclusion in the potential future exposure (PFE) multiplier in accordance with paragraph 14 of Attachment D of this Prudential Standard; and

(b)   a MPOR of 10 business days must be used for the calculation of the EAD.[24]

14.   For SFTs, each sub account-level EAD amount must be calculated according to the following formula:

$$EAD_i^{\text{SFT}} = \max\{EBRM_i - IM_i - DF_i; 0\}$$

where:

EAD_i^{SFT} = the EAD amount of the QCCP to the SFT exposure originated from party[25] i;

$EBRM_i$ = the exposure value of the SFTs that a QCCP has against party i before risk mitigation under Attachment G of APS 112. The mark-to-market value of the SFTs must incorporate the variation margin that has been exchanged before the margin called on the final margin call of the calculation date;

IM_i = initial margin allocated to SFT exposures posted by party i with the QCCP; and

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[23]   This collateral includes initial margin, default fund contribution, variation margin, over-collateralisation, and the collateral posted by clients as specified in paragraph 15 of Attachment B.

[24]   The 20-business day floor outlined in paragraph 31(a) of Attachment G of APS 112 does not apply to this case.

[25]   A party can either be a clearing member or a client.

DF_i = the pre-funded default fund contribution allocated to the SFT exposure by party i, that will be applied upon the default of i if i is a clearing member, or of i's clearing member if is a client, either along with or immediately following the posted initial margin to reduce the QCCP's loss.

In calculating EAD_i^{SFT}, the minimum holding period used in the bilateral case for SFTs outlined in paragraph 30 of Attachment G of APS 112 must be applied.[26]

15. Step 2 is to compute the default fund capital charge for an ADI, K_{ADI}, as a fraction of K_{QCCP}. The capital charge for an ADI (K_{ADI}) is subject to a floor of 0.16 per cent (corresponding to a default fund exposure risk weight of two per cent) on an ADI pre-funded default fund contribution. K_{ADI} is determined by the ratio of the ADI's pre-funded default fund contribution to the total of all pre-funded resources and contributions from the QCCP itself and all of its clearing members, according to:

$$K_{ADI} = \max\left\{K_{QCCP} \times \left(\frac{DF_{ADI}}{DF_{CCP} + DF_{CM}}\right); 0.16\% \times DF_{ADI}\right\}$$

where:

DF_{ADI} = the pre-funded default fund contributions provided by the ADI;

DF_{CM} = the total pre-funded default fund contributions from all clearing members of the QCCP; and

DF_{CCP} = the QCCP's pre-funded own resources which are contributed to the default waterfall, where these are junior or *pari passu* to pre-funded member contributions.

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[26] See footnote 24.

Attachment D — The standardised approach for measuring counterparty credit risk exposures (SA-CCR)

1. This Attachment applies to an IRB ADI. The SA-CCR applies to OTC derivative transactions, exchange-traded derivative transactions and long settlement transactions. For the purposes of this Attachment, a long settlement transaction must be treated as an OTC derivative transaction. The SA-CCR does not apply to SFTs.

2. The SA-CCR must be used for bilateral and centrally-cleared derivative transactions. The SA-CCR must be used for both margined[27] and unmargined[28] derivative transactions.

Exposure at default (EAD)

3. To calculate EAD for:

   (a) unmargined transactions, apply the treatment in paragraphs 4 to 49 of this Attachment;

   (b) margined transactions where the set of transactions under a margin agreement and within the netting set coincide, apply the treatment in paragraphs 4 to 49 of this Attachment;

   (c) margined transactions where the set of transactions under a margin agreement and within the netting set differ, apply the treatment in paragraphs 50 to 52 of this Attachment; and

   (d) transactions where eligible collateral is taken outside of netting sets but is available to offset default losses, apply the treatment in paragraph 53 of this Attachment.

4. The EAD for all derivative transactions with a counterparty must be calculated as the sum of the EAD for each netting set with the counterparty. The EAD for a netting set must be calculated as:

$$EAD = 1.4 \times (RC + PFE)$$

   where RC is the replacement cost (refer to paragraphs 8 to 10 of this Attachment) and PFE is the potential future exposure (refer to paragraphs 12 to 49 of this Attachment).

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[27] Transactions are considered to be margined where there is exchange of variation margin. Other forms of collateral may also exist.

[28] Transactions are considered unmargined in the case that there is no exchange of variation margin, but collaterals other than VM such as in the form of independent collateral amount (ICA) may exist.

5. Bilateral transactions must be treated as margined where a transaction is subject to exchange of variation margin. Bilateral transactions with a one-way margining agreement in favour of an ADI's counterparty (that is, where an ADI posts, but does not collect, variation margin) must be treated as unmargined transactions. Centrally cleared transactions must be treated as either margined or unmargined transactions in accordance with the treatment adopted under paragraph 6 of Attachment B of this Prudential Standard.

6. The maximum EAD for a margined netting set is the EAD of the same netting set calculated as if it were unmargined.

7. An ADI may set EAD to zero for sold options that are:

   (a)　not in any netting or margining agreements; or

   (b)　the only types of exposures in a netting set,

   where all premiums have been paid upfront.

Replacement cost (RC)

8. The RC must be calculated for each netting set according to:

   (a)　paragraph 9 for a netting set of unmargined transactions; or

   (b)　paragraph 10 for a netting set of margined transactions.

RC for an unmargined netting set

9. For an unmargined netting set, the RC must be calculated as:

$$RC = \mathbf{max}\{V - C_H(1\ \mathbf{year}), 0\}$$

   where:

   V = the total current market value of all the derivative transactions within the netting set; and

   C_H (1 year) = the haircut value of net collateral held by the ADI calculated in accordance with paragraph 11 of this Attachment, with a holding period of one year.

RC for a margined netting set

10. For a margined netting set, the RC must be calculated as:

$$RC = \max\{V - C_H(\text{MPOR}), TH + MTA - NICA, 0\}$$

   where:

   V = the total current market value of all the derivative transactions within the netting set;

MPOR = the margin period of risk as defined in paragraph 8(o) of this Prudential Standard;

$C_H(MPOR)$ = the haircut value of net collateral held by the ADI calculated in accordance with paragraph 11 of this Attachment, with a holding period equal to the *MPOR*;

TH = the positive threshold above which the counterparty must send the ADI collateral as specified in the margin agreement;

MTA = the minimum transfer amount applicable to the counterparty as specified in the margin agreement; and

NICA = the net independent collateral amount.

11. The following haircut formula must be applied to the current value of the net collateral (*C*) held by an ADI within the RC calculation for both the margined and unmargined cases:

$$C_H(t) = \begin{cases} C \times (1 - H(t)), & \textbf{if } C \geq 0 \\ C \times (1 + H(t)), & \textbf{if } C < 0 \end{cases}$$

where:

C = the current mark-to-market value of the net collateral held by an ADI. This includes all initial and variation margin posted and held by the ADI except for collateral posted by the ADI in a bankruptcy remote manner;

$C_H(t)$ = the haircut value of net collateral held;

t = the holding period applicable to the collateral; and

H(t) = the haircut appropriate to the collateral using a holding period of *t*, determined in accordance with paragraphs 28 to 33 of Attachment G of APS 112 (including FX haircuts).

Potential future exposure (PFE)

12. The PFE for a netting set is determined by the aggregated PFE add-on factors for each asset class within a given netting set and a multiplier allowing partial recognition of excess collateral. The five asset classes are interest rate, foreign exchange, credit, equity and commodity.

13. An ADI must either assign each transaction to one of the five asset classes based on the single risk factor referenced by its underlying instrument, or, where a transaction is exposed to multiple risk factors referencing multiple asset classes, an ADI must follow the approach set out in paragraph 20 of this Attachment.

14. The PFE must be calculated as:

$$PFE = m \times AddOn^{aggregate}$$

with m and $AddOn^{aggregate}$ calculated as:

$$m = \min\left\{0.05 + 0.95 \times e^{\left(\frac{V-C_H(\cdot)}{1.9 \times AddOn^{aggregate}}\right)}, 1\right\}$$

$$AddOn^{aggregate} = \sum_{a \in A} AddOn^a$$

where:

m = the multiplier that allows for the recognition of over-collateralisation or negative mark-to-market value of the transactions. m decreases to a minimum value of five per cent as excess collateral increases;

V = the total current market value of all the derivative transactions within the netting set;

$C_H(\square)$ = $C_H(1\ year)$ for unmargined transactions and $C_H(MPOR)$ for margined transactions (refer to paragraphs 9 and 10 of this Attachment, respectively);

$AddOn^a$ = the add-on factor for asset class a; and

A = the set containing all asset classes (interest rate, foreign exchange, credit, equity and commodity).

15. For each asset class a, the add-on factor $AddOn^a$ must be calculated as the sum of all hedging set level (j)[29] add-ons within asset class a:

$$AddOn^a = \sum_j AddOn^a_j$$

where:

$AddOn^a_j$ = the positive add-on factor for hedging set j within asset class a.

16. The definition of a hedging set for each asset class is provided in paragraph 19 of this Attachment. Treatment of basis and volatility transactions is provided in paragraph 17 of this Attachment. The calculation of the add-on factor for a hedging set within each asset class is defined in the following paragraphs of this Attachment:

 (a)   interest rate asset class, paragraphs 22 to 25;

 (b)   foreign exchange asset class, paragraphs 26 to 28;

 (c)   credit asset class, paragraphs 29 to 33;

 (d)   equity asset class, paragraphs 34 to 37; and

 (e)   commodity asset class, paragraphs 38 to 41.

17. Within each asset class, basis and volatility transactions must form separate hedging sets:

    (a)   A basis transaction is a non-foreign exchange transaction (i.e. both legs are denominated in the same currency) in which the cash flows of both legs depend on different risk factors from the same asset class.[29] A separate hedging set[30] must be used for each basis risk (i.e. for each specific pair of risk factors). For a hedging set consisting of basis transactions:

        (i)   the same hedging set category definition must be applied given the particular asset class (refer to paragraph 19 of this Attachment); and

        (ii)   the supervisory factor (SF^a) applicable to a given asset class a as defined in paragraph 21 of this Attachment must be multiplied by one-half.

    (b)   A volatility transaction is one in which the reference asset depends on the volatility (historical or implied) of a risk factor. For a hedging set consisting of volatility transactions:

        (i)   the same hedging set category definition must be applied given the particular asset class (refer to paragraph 19 of this Attachment); and

        (ii)   the supervisory factor (SF^a) applicable to a given asset class a as defined in paragraph 21 of this Attachment must be multiplied by five.

18. Aggregation of the add-on factors for basis and volatility hedging sets with those from other hedging sets within the same asset class must be performed according to the hedging set aggregation rule set out in paragraph 15 of this Attachment.

19. No offsetting is permitted across different hedging sets. Partial or full offsetting may be permitted within a single hedging set.[31] Permitted offsetting varies based on the particular asset class as summarised in Table 2.[32]

Table 2: Definition of hedging sets and categories, and permitted offsetting within a single hedging set for each asset class

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[29]   Derivative transactions with two floating legs that are denominated in different currencies (such as cross-currency swaps) must be treated as non-basis foreign exchange contracts.

[30]   Within this hedging set, long and short positions must be determined with respect to the basis.

[31]   A hedging set j within the asset class a represents one of the following three cases: (1) the core hedging set for the credit or equity class, or; (2) one of the hedging sets defined within the interest rate, foreign exchange or commodity class; or (3) one of the hedging sets defined for the basis or volatility transactions within asset class a.

[32]   Note, basis and volatility hedging sets follow the same hedging set aggregation rules for the relevant asset class.

Asset class	Definition of hedging sets and categories	Permitted offsetting within a single hedging set
Interest rate	A separate hedging set must be established for all transactions that reference interest rates of the same currency. Each hedging set is further divided into three separate maturity categories.	Full offsetting is permitted in the same maturity category within each hedging set. Partial offsetting may be recognised across different maturity categories within each hedging set.
Foreign exchange	A separate hedging set must be established for each currency pair. No categories are defined within a hedging set.	Full offsetting is permitted within each hedging set.
Credit	All transactions form a single core hedging set. The hedging set is further divided into separate categories for each reference entity, either single name or index.	Full offsetting is permitted within the same reference entity category within each hedging set. Partial offsetting may be recognised across different reference entity categories within each hedging set.
Equity	All transactions form a single core hedging set. The hedging set is further divided into separate categories for each reference entity, either single name or index.	Full offsetting is permitted within the same reference entity category within each hedging set. Partial offsetting may be recognised across different reference entity categories within each hedging set.
Commodity	A separate hedging set must be established for each of four broad groups of commodities: • energy;[33] • metals;[34] • agricultural; and • other commodities. Each hedging set is further divided into separate ADI-	Full offsetting is permitted in the same commodity type category within each hedging set. Partial offsetting may be recognised across different commodity type categories within each hedging set.

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[33] Consists of both electricity and oil/gas.
[34] Includes gold and other precious metals.

	defined categories based on commodity type.	

Allocation of a transaction to one or more asset classes

20. An ADI must treat transactions with multiple risk factors in a consistent manner. When a transaction is exposed to multiple risk factors referencing multiple asset classes (e.g. multi-asset or hybrid derivative transactions), an ADI must:

   (a) measure and record the sensitivities and volatilities of each risk factor of that transaction;

   (b) repeat the process at regular intervals or when substantial market movements take place; and

   (c) assign the transaction to:

      (i) a single asset class where the ADI has determined that the transaction has a primary risk factor that is the clear main driver of profit and loss (P&L) volatility based on sensitivities and risk factor volatilities; or

      (ii) all applicable asset classes where the transaction does not have a primary risk factor and multiple risk factors are significant drivers of P&L volatility based on sensitivities and risk factor volatilities, except where APRA has granted approval to assign the transaction to a single asset class.

Definition and notation of key parameters

21. An ADI must use the definitions in Table 3 and paragraphs 42 to 49 of this Attachment when calculating the PFE add-ons. Transaction-level parameters are denoted with subscript *i* representing transaction i.[35]

   Table 3: Definition of transaction-level and supervisory parameters

Symbol	Parameter	Definition
d_i^a	Adjusted notional amount (refer to paragraph 42)	The transaction-level adjusted notional amount for transaction *i* belonging to asset class *a*.
MF_i	Maturity factor (refer to paragraph	A multiplier used in determining the effective notional amount for transaction *i*. The maturity factor is calculated differently

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[35] For guidance, an ADI may refer to examples of maturity dates, start dates and end dates for various transactions published by the Basel Committee on Banking Supervision.

Symbol	Parameter	Definition
	48)	for margined and unmargined transactions.
δ_i	Supervisory delta adjustment (refer to paragraphs 43 to 47)	A transaction-level supervisory delta adjustment reflecting the direction and non-linearity of transaction i.
p^a	Supervisory correlation parameter (refer to paragraph 49)	A supervisory parameter specifying the weight between systematic and idiosyncratic components in the one-factor model used in the credit, equity and commodity asset classes only.
SF^a	Supervisory factor (refer to paragraph 49)	A factor or factors specific to each asset class used to convert the effective notional amount into Effective expected positive exposure (Effective EPE) based on the measured volatility of the asset class.
M_i	Maturity date	The time interval between the calculation date (today) and the latest date when transaction i may still be active, measured in years. If transaction i has another derivative contract as its underlying (e.g. a swaption) and may be physically exercised into the underlying contract (i.e. an ADI would assume a position in the underlying contract in the event of exercise), then M_i must be set as the time interval between the calculation date and the final settlement date of the underlying derivative contract.
S_i	Start date	The time interval between the calculation date (today) and the start date of the time period referenced by transaction i, measured in years. The time period referenced by transaction i is subject to a floor of 10 business days. If the start date has occurred (e.g. an ongoing interest rate swap), S_i must be set to zero. If transaction i references the value of another interest rate or credit instrument (e.g. a swaption or bond option), the time period must be determined on the basis of the underlying instrument. This parameter, S_i, applies only to interest rate and credit transactions.
E_i	End date	The time interval between the calculation date (today) and the end date of the time period referenced by transaction i, measured in years. The time period

Symbol	Parameter	Definition
		referenced by transaction *i* is subject to a floor of 10 business days. If the start date has occurred (e.g. an ongoing interest rate swap), S_i must be set to zero. If transaction *i* references the value of another interest rate or credit instrument (e.g. a swaption or bond option), the time period must be determined on the basis of the underlying instrument. This parameter, E_i, applies only to interest rate and credit transactions.

Add-on for interest rate derivative transactions

22. For the interest rate asset class, within each hedging set (refer to paragraph 19 of this Attachment), transactions must be divided into three maturity categories based on the end date of the transaction: less than one year (*k = 1*), between one to five years (*k = 2*) and more than five years (*k = 3*).

23. For the interest rate asset class, the add-on for each hedging set *j*, $AddOn_j^{IR}$, must be calculated as:

$$AddOn_j^{IR} = SF^{IR} \times EffectiveNotional_j^{IR}$$

where:

SF^{IR} = the supervisory factor for the interest rate asset class (refer to paragraph 49); and

$EffectiveNotional_j^{IR}$ = the hedging set level (*j*) effective notional amount defined in paragraph 24 of this Attachment.

24. The effective notional amount for hedging set *j*, $EffectiveNotional_j^{IR}$, is the aggregate effective notional amounts across the three maturity categories. An ADI must aggregate the three category-level (*k*) effective notional amounts using the following formula where partial offsetting is recognised:

$$EffectiveNotional_j^{IR}$$
$$= \sqrt{\left(\sum_{k \in \{1,2,3\}} \left(D_{j,k}^{IR}\right)^2\right) + 1.4 \times D_{j,1}^{IR} \times D_{j,2}^{IR} + 1.4 \times D_{j,2}^{IR} \times D_{j,3}^{IR} + 0.6 \times D_{j,1}^{IR} \times D_{j,3}^{IR}}$$

Alternatively, an ADI may elect to not recognise any offsetting across maturity categories in which case the formula to be used is:

$$EffectiveNotional_j^{IR} = \sum_{k \in \{1,2,3\}} \left|D_{j,k}^{IR}\right|$$

where $D_{j,k}{}^{IR}$ = the effective notional amount for category k, defined in paragraph 25 of this Attachment.

25. The effective notional amount for category k, denoted by $D_{j,k}{}^{IR}$, must be calculated as the sum of all individual transaction level (i) quantities, according to:

$$D_{j,k}^{IR} = \sum_{i \in I(j,k)} \delta_i \times d_i^{IR} \times MF_i$$

where:

$I(j,k)$ = the set of all interest rate transactions belonging to maturity category k and hedging set j;

δ_i = the supervisory delta adjustment for transaction i, calculated according to paragraphs 43 to 47 of this Attachment;

MF_i = the maturity factor for transaction i, calculated according to paragraph 48 of this Attachment; and

d_i^{IR} = the adjusted notional amount for transaction i, and must be calculated as:

$$d_i^{IR} = N_i \times \left(\frac{e^{-0.05 S_i} - e^{-0.05 E_i}}{0.05} \right)$$

where:

N_i = the notional amount of transaction i, converted to AUD, using the exchange rate on the calculation date. The parameter N_i is also subject to the requirements in paragraph 42 of this Attachment;

S_i = the start date for transaction i; and

E_i = the end date for transaction i.

Add-on for foreign exchange derivative transactions

26. For the foreign exchange asset class, hedging sets must be constructed according to paragraph 19 of this Attachment.

27. The add-on for each hedging set j, $AddOn_j^{FX}$, must be calculated as:

$$AddOn_j^{FX} = SF^{FX} \times \left| EffectiveNotional_j^{FX} \right|$$

where:

SF^{FX} = the supervisory factor for the foreign exchange asset class (refer to paragraph 49 of this Attachment); and

$EffectiveNotional_j^{FX}$ = effective notional amount for hedging set j, calculated according to paragraph 28 of this Attachment.

28. The effective notional amount for hedging set j, denoted by $EffectiveNotional_j^{FX}$, must be calculated as the sum of all individual transaction level (i) quantities, according to:

$$EffectiveNotional_j^{FX} = \sum_{i \in I(j)} \delta_i \times d_i^{FX} \times MF_i$$

where:

$I(j)$ = the set of all foreign exchange transactions belonging to hedging set j;

δ_i = the supervisory delta adjustment for transaction i, calculated according to paragraphs 43 to 47 of this Attachment;

MF_i = the maturity factor for transaction i, calculated according to paragraph 48 of this Attachment; and

d_i^{FX} = the adjusted notional amount for transaction i. It must be set as the notional of the foreign currency leg of transaction i, converted to AUD using the exchange rate on the calculation date. If both legs are denominated in currencies other than AUD, the notional amount of each leg must first be converted to AUD using the exchange rate on the calculation date and d_i^{FX} must be set as the leg with the larger AUD value. The adjusted notional amount is also subject to the requirements in paragraph 42 of this Attachment.

Add-on for credit derivative transactions

29. With the exception of separate hedging sets for basis and volatility transactions, a single core hedging set must be used for all credit derivative transactions. Within the core hedging set (refer to paragraph 19 of this Attachment), transactions must be further divided into different categories, with each category (k) containing all the transactions referencing the same entity k. Each single name entity or index is a separate category.

30. The add-on factor for the single core hedging set for the credit asset class, $AddOn_{CORE}^{CR}$, must be calculated as:

$$AddOn_{CORE}^{CR} = \sqrt{\left[\sum_k \left(\rho_k^{CR} \times AddOn_{CORE,k}^{CR} \right) \right]^2 + \sum_k \left\{ [1 - (\rho_k^{CR})^2] \times \left(AddOn_{CORE,k}^{CR} \right)^2 \right\}}$$

where:

p_k^{CR} = the supervisory correlation parameter for category k. An ADI must determine p_k^{CR} depending on whether k is a single name or index entity according to paragraph 49 of this Attachment; and

$AddOn_{CORE,k}{}^{CR}$ = the add-on factor for category k, calculated according to paragraph 31 of this Attachment.

31. The add-on factor for category k, $AddOn_{CORE,k}{}^{CR}$, must be calculated as:

$$AddOn^{CR}_{CORE,k} = SF^{CR}_k \times EffectiveNotional^{CR}_{CORE,k}$$

where:

$SF_k{}^{CR}$ = the supervisory factor for the rating class of category k (i.e. reference entity k) determined according to paragraph 49 of this Attachment; and

$EffectiveNotional_{CORE,k}{}^{CR}$ = the category-level (k) effective notional amount, calculated according to paragraph 32.

32. The effective notional amount for category k, $EffectiveNotional_{CORE,k}{}^{CR}$, must be calculated as the sum of all individual transaction level (i) quantities, according to:

$$EffectiveNotional^{CR}_{CORE,k} = \sum_{i \in I(CORE,k)} \delta_i \times d^{CR}_i \times MF_i$$

where:

$I(CORE,k)$ = the set of all transactions belonging to category k (i.e. reference entity k) within the core credit hedging set;

δ_i = the supervisory delta adjustment for transaction i, calculated according to paragraphs 43 to 47 of this Attachment;

MF_i = the maturity factor for transaction i calculated according to paragraph 48 of this Attachment; and

$d_i{}^{CR}$ = the adjusted notional amount for transaction i, calculated as:

$$d^{CR}_i = N_i \times \left(\frac{e^{-0.05S_i} - e^{-0.05E_i}}{0.05} \right)$$

where:

N_i is the notional amount of transaction i, converted to AUD, using the exchange rate on the calculation date. The parameter N_i is also subject to the requirements in paragraph 42 of this Attachment;

S_i is the start date for transaction i; and

E_i is the end date for transaction i.

33. For transaction i, where an ADI is the credit protection seller and the transaction is not in any netting or margin agreements, the ADI may cap the EAD to the amount of unpaid premiums. An ADI may also remove a transaction from its

netting set where it is the credit protection seller and treat the transaction as an individual unmargined transaction in order to apply the cap.

Add-on for equity derivative transactions

34. With the exception of separate hedging sets for basis and volatility transactions, a single core hedging set must be used for all equity derivative transactions. Within the core hedging set (refer to paragraph 19 of this Attachment), transactions must be further divided into categories, with each category (k) containing all the transactions referencing the same entity k. Each single name entity or index is a separate category.

35. The add-on factor for the single core hedging set for the equity asset class, $AddOn_{CORE}^{EQ}$, must be calculated as:

$$AddOn_{CORE}^{EQ} = \sqrt{\left[\sum_k \left(\rho_k^{EQ} \times AddOn_{CORE,k}^{EQ}\right)\right]^2 + \sum_k \left\{\left[1 - \left(\rho_k^{EQ}\right)^2\right] \times \left(AddOn_{CORE,k}^{EQ}\right)^2\right\}}$$

where:

p_k^{EQ} = the supervisory correlation parameter for category k. An ADI must determine p_k^{EQ} depending on whether k is a single name or index entity, according to paragraph 49 of this Attachment; and

$AddOn_{CORE,k}^{EQ}$ = the add-on factor for category k, calculated according to paragraph 36 of this Attachment.

36. The add-on factor for category k, $AddOn_{CORE,k}^{EQ}$, must be calculated as:

$$AddOn_{CORE,k}^{EQ} = SF_k^{EQ} \times EffectiveNotional_{CORE,k}^{EQ}$$

where:

SF_k^{EQ} = the supervisory factor for category k determined according to paragraph 49 of this Attachment; and

$EffectiveNotional_{CORE,k}^{EQ}$ = the category-level (k) effective notional amount, calculated according to paragraph 37 of this Attachment.

37. The effective notional amount for category k, denoted by $EffectiveNotional_{CORE,k}^{EQ}$, must be calculated as the sum of all individual transaction level (i) quantities, according to:

$$EffectiveNotional_{CORE,k}^{EQ} = \sum_{i \in I(CORE,k)} \delta_i \times d_i^{EQ} \times MF_i$$

where:

I(CORE,k) = the set of all transactions belonging to category *k* (i.e. reference entity *k*) within the core equity hedging set;

δ_i = the supervisory delta adjustment for transaction *i*, calculated according to paragraphs 43 to 47;

d_i^{EQ} = the adjusted notional amount for transaction *i*, and must be calculated as the product of the current price of one unit of the stock and the number of units referenced by transaction *i* except where transaction *i* is an equity volatility transaction, in which case the adjusted notional amount for transaction *i* must be calculated as the product of the underlying volatility or variance referenced by transaction *i* and the contractual notional amount of transaction *i*. The adjusted notional amount is also subject to the requirements in paragraph 42 of this Attachment; and

MF_i = the maturity factor for transaction *i*, calculated according to paragraph 48 of this Attachment.

Add-on for commodity derivative transactions

38. For the commodity asset class, within each hedging set (refer to paragraph 19 of this Attachment), transactions must be further divided into categories, each one (*k*) containing all the transactions belonging to the same commodity type. An ADI must specify categories based on commodity type that are more granular than the four broad commodity groups defined in paragraph 19 of this Attachment. An ADI must determine the commodity types such that all material basis risks[36] are captured. All uncaptured basis risks must be formally identified and regularly monitored. An ADI must also regularly review and update the categorisation of commodity types to reflect any significant changes in materiality. Where an ADI is unable to demonstrate to APRA's satisfaction that the basis risks are appropriately captured or monitored, APRA may require the ADI to use a more refined set of commodity types.

39. The add-on for each of the four hedging sets *j*, $AddOn_j^{COM}$, must be calculated as:

$$AddOn_j^{COM}$$
$$= \sqrt{\left[\sum_k \left(\rho^{COM} \times AddOn_{j,k}^{COM}\right)\right]^2 + \sum_k \left\{[1 - (\rho^{COM})^2] \times \left(AddOn_{j,k}^{COM}\right)^2\right\}}$$

where:

p^{COM} = the supervisory correlation parameter for the commodity asset class; and

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[36] These basis risks arise due to the impracticality and difficulty in specifying all relevant distinctions between commodity types (e.g. location and quality) within the same hedging set.

$AddOn_{j,k}{}^{COM}$ = the add-on factor for category k, calculated according to paragraph 40 of this Attachment.

40. The add-on factor for category k within hedging set j, $AddOn_{j,k}{}^{COM}$, must be calculated as:

$$AddOn_{j,k}^{COM} = SF_k^{COM} \times EffectiveNotional_{j,k}^{COM}$$

where:

SF_k^{COM} = the supervisory factor for the commodity group[37] for category (i.e. commodity type) k, calculated according to paragraph 49 of this Attachment; and

$EffectiveNotional_{j,k}{}^{COM}$ = the effective notional amount for category k, calculated according to paragraph 41 of this Attachment.

41. The effective notional amount for category k, denoted by $EffectiveNotional_{j,k}{}^{COM}$, must be calculated as the sum of all individual transaction level (i) quantities, according to:

$$EffectiveNotional_{j,k}^{COM} = \sum_{i \in I(j,k)} \delta_i \times d_i^{COM} \times MF_i$$

where:

$I(j,k)$ = the set of all transactions belonging to category k and hedging set j;

δ_i = the supervisory delta adjustment for transaction i, calculated according to paragraphs 43 to 47 of this Attachment;

MF_i = the maturity factor for transaction i, calculated according to paragraph 48 of this Attachment; and

d_i^{COM} = the adjusted notional amount for transaction i, and must be calculated as the product of the current price of one unit of the commodity and the number of units referenced by transaction i except where transaction i is a commodity volatility transaction, in which case the adjusted notional amount for transaction i must be calculated as the product of the underlying volatility or variance referenced by transaction i and the contractual notional amount of transaction i. The adjusted notional amount is also subject to the requirements in paragraph 42 of this Attachment.

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[37] The groups used for determining the supervisory factors are slightly more granular than that used for defining the four hedging sets. In this case, the energy group is further divided into electricity and oil/gas.

Transaction-level and supervisory parameters

Adjusted notional amount

42.   For each transaction i in all asset classes, the adjusted notional amount, d_i^a, is derived from transaction i's trade notional amount. In many cases the trade notional amount is stated clearly and fixed until maturity. Where this is not the case, an ADI must apply the following rules to determine the trade notional amount:

(a)   where the notional is a formula of market values, an ADI must use the current market values to determine the trade notional amount;

(b)   for interest rate and credit derivative transactions with variable notional amounts specified by the contract such as amortising and accreting swaps, an ADI must use the time-weighted average notional over the remaining life of the swap as the trade notional amount;

(c)   for a leveraged swap, the transaction must be converted to the notional of the equivalent unleveraged swap; that is, where all rates in a swap are multiplied by a factor, the stated notional must be multiplied by the factor on the interest rates;

(d)   for a derivative contract with multiple exchanges of principal, the notional is multiplied by the number of exchanges of principal in the derivative contract; and

(e)   for a derivative contract that is structured such that on specified dates any outstanding exposure is settled and the terms are reset so that the fair value of the contract is zero, the remaining maturity (M_i) equals the time until the next reset date.[38]

Supervisory delta adjustment and treatment of options

43.   For each transaction (other than options or collateralised debt obligation (CDO) tranches, refer to paragraphs 44 to 47 of this Attachment), the supervisory delta adjustment, δ_i, must be assigned based on whether transaction i is long or short in either: (i) the risk factor if i is exposed to a single risk factor, or (ii) the primary risk factor if i is exposed to multiple risk factors:

(a)   Transaction i is long in the risk factor if the market value of i increases when the risk factor increases. Where transaction i is long in the risk factor, the supervisory delta adjustment δ_i must be set to the value of 1.

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[38]   For example, a principal resetting cross-currency swap or a settled-to-market derivative where, at the next reset date, the outstanding exposure is settled and the terms are reset so that the fair value of the contract is zero. A derivative contract with a mandatory break (where there is a legal contractual obligation on both parties to terminate the transaction by the mandatory break date) would also be eligible where the outstanding exposure is settled completely.

(b) Transaction i is short in the risk factor if the market value of i decreases when the risk factor increases. Where transaction i is short in the risk factor, the supervisory delta adjustment δ_i must be set to the value of -1.

44. For options in all asset classes (with the exception of those in paragraph 45 of this Attachment), the supervisory delta adjustment δ_i must be calculated according to the formula in Table 4 and the requirements in paragraph 47 of this Attachment.

Table 4: Formula for supervisory delta adjustment

	Bought	**Sold**
Call options	$+\phi\left(\dfrac{\ln\left(\frac{P_i}{K_i}\right)+0.5\times\sigma_i^2\times T_i}{\sigma_i\times\sqrt{T_i}}\right)$	$-\phi\left(\dfrac{\ln\left(\frac{P_i}{K_i}\right)+0.5\times\sigma_i^2\times T_i}{\sigma_i\times\sqrt{T_i}}\right)$
Put options	$-\phi\left(-\dfrac{\ln\left(\frac{P_i}{K_i}\right)+0.5\times\sigma_i^2\times T_i}{\sigma_i\times\sqrt{T_i}}\right)$	$\phi\left(-\dfrac{\ln\left(\frac{P_i}{K_i}\right)+0.5\times\sigma_i^2\times T_i}{\sigma_i\times\sqrt{T_i}}\right)$

where:

$\phi(\square)$ represents the standard normal cumulative distribution function;

T_i = the time interval between the calculation date (today) and the latest contractual exercise date as referenced by transaction i, measured in years;

P_i = the underlying price[39] of option i;

K_i = the strike price of option i; and

σ_i = the supervisory volatility of the option i.

45. For all interest rate options in currency j where the supervisory delta adjustment δ_i for at least one of those options cannot be calculated (i.e. where $P \leq 0$ and/or $K \leq 0$), δ_i must be calculated according to the formula in Table 5 and the requirements in paragraph 47 of this Attachment.[40] An ADI must seek approval from APRA for the specification and value of λ_j. APRA may require an ADI to use the alternative formula or that a particular value of λ_j to be applied.

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[39] Whenever appropriate, forward (rather than spot) value of the underlying should be used in order to account for the risk-free rate as well as for possible cash flows prior to the option expiry, such as dividends.

[40] The specification in paragraph 45 of this Attachment relates to interest rate options in the negative interest rate environment although a λ adjustment could also be applied in other cases where the supervisory delta adjustment cannot be computed appropriately.

Table 5: Alternative formula for supervisory delta adjustment

	Bought	**Sold**
Call options	$\phi\left(\dfrac{\ln\left(\frac{P_i + \lambda_j}{K_i + \lambda_j}\right) + 0.5 \times \sigma_i^2 \times T_i}{\sigma_i \times \sqrt{T_i}}\right)$	$-\phi\left(\dfrac{\ln\left(\frac{P_i + \lambda_j}{K_i + \lambda_j}\right) + 0.5 \times \sigma_i^2 \times T_i}{\sigma_i \times \sqrt{T_i}}\right)$
Put options	$-\phi\left(-\dfrac{\ln\left(\frac{P_i + \lambda_j}{K_i + \lambda_j}\right) + 0.5 \times \sigma_i^2 \times T_i}{\sigma_i \times \sqrt{T_i}}\right)$	$\phi\left(-\dfrac{\ln\left(\frac{P_i + \lambda_j}{K_i + \lambda_j}\right) + 0.5 \times \sigma_i^2 \times T_i}{\sigma_i \times \sqrt{T_i}}\right)$

where:

λ_i = the shift parameter applying to the set of all interest rate options in currency j where λ_j would represent the extent to which affected currency j can be negative. This would be set to allow computation of the supervisory delta adjustment with the objective that λ_j is to be set as low as possible.

46. For tranches of CDOs and nth-to-default transactions in the credit asset class, the supervisory delta adjustment δ_i must be set according to Table 6:

Table 6: Supervisory delta adjustment for CDO tranches

Purchased (long protection)	**Sold (short protection)**
$\dfrac{15}{(14A_i + 1) \times (14D_i + 1)}$	$-\dfrac{15}{(14A_i+1)\times(14D_i+1)}$

where:

A_i = the attachment point of the CDO tranche or $(n - 1)/m$ for an nth-to-default transaction on a pool of m reference names for transaction i; and

D_i = the detachment point of the CDO tranche or n/m for a nth-to-default transaction on a pool of m reference names for transaction i.

47. For options, the calculation of transaction level effective notional amount differs depending on the nature of the option payoff and must be calculated as follows:

(a) single payment European options must use the supervisory delta adjustment formulas in paragraph 44 and 45 of this Attachment;

(b) single payment Asian options must use the formulas in paragraph 44 and 45 of this Attachment with P_i set equal to the current value of the average used in the payoff;

(c)   single payment American and Bermudan options must use the formulas in paragraph 44 and 45 of this Attachment with T_i set equal to the latest allowed exercise date;

(d)   single payment Bermudan swaptions must set the start date S_i equal to the earliest allowed exercise date, and the end date E_i equal to the end date of the underlying swap in the formulas in paragraph 25;

(e)   single payment digital or binary options with strike K_i must have the payoff approximated via a collar combination of bought and sold European options of the same type (call or put) with strikes set equal to 0.95 K_i and 1.05 K_j. The size of the position in the collar components must be such that the digital payoff is reproduced exactly outside the region between the two strikes. The effective notional for each component European option must be calculated separately using the formulas in paragraph 44 and 45 of this Attachment with T_i set equal to the exercise date of the digital option and P_i set equal to the current value of the underlying for the digital option. The absolute value of the digital option effective notional must be capped by the ratio of the digital payoff to the relevant supervisory factor. An ADI may use a different treatment in this case, subject to APRA's approval;

(f)   single payment options that can be represented as a combination of single payment European options must be decomposed and the effective notional amount for each component European option must be calculated separately; and

(g)   multi-payment options may be represented as a combination of single payment options for the purpose of effective notional calculations. If the multi-payment option is decomposed, then the effective notional amount for each component option must be calculated separately. Interest rate caps and floors may be represented as a portfolio of individual caplets and floorlets, where each caplet or floorlet is treated as a European option on the floating interest rate over a specific coupon period. For each caplet or floorlet, the start date S_i and exercise date T_i must be set equal to the start of the coupon period, while the end date E_i must be set equal to the end of the coupon period.

Maturity Factor

48.   The maturity factor is set differently for margined and unmargined transactions. When the SA-CCR methodology is used by a clearing member ADI, the clearing member ADI must determine the MPOR and the maturity factor in conjunction with the requirements of paragraphs 12 and 19 of Attachment B of this Prudential Standard.

(a)   For an unmargined transaction, the maturity factor MF_i must be set as:

$$MF_i = \sqrt{\min\{M_i, 1\}}$$

where:

M_i is the maturity date for transaction i as defined in paragraph 21 of this Attachment, subject to a floor of 10 business days.

(b) For a margined transaction, the maturity factor MF_i must be set as:

$$MF_i = 1.5\sqrt{MPOR_i}$$

where:

$MPOR_i$ represents the margin period of risk as defined in paragraph 8(o) of this Prudential Standard.

49. When calculating the PFE add-on for each asset class, the supervisory factor, the supervisory correlation parameter and the supervisory volatility are as given in Table 7.

Table 7: Summary table of supervisory parameters

Asset class		Supervisory factor (SF) (%)[41]	Supervisory Correlation (ρ) (%)	Supervisory volatility (σ) (%)
Interest rate		0.5	N/A	50
Foreign exchange		4.0	N/A	15
Credit single name	Credit rating grade 1	0.38	50	100
	Credit rating grade 2	0.42		
	Credit rating grade 3	0.54		
	Credit rating grade 4	1.06		
	Credit rating grade 5	1.60		
	Credit rating grade 6	6.0		
Credit index	Investment grade (IG)	0.38	80	80
	Sub-investment grade (SG)	1.06		
Equity single name		32	50	120
Equity index		20	80	75
Commodity	Electricity	40	40	150
	Oil/gas	18		70
	Metals			
	Agricultural			

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[41] The applicable supervisory factor must be multiplied by one-half for basis transactions and multiplied by a factor of five for volatility transactions, as specified in paragraph 17 of this Attachment.

Asset class		Supervisory factor (SF) (%)[41]	Supervisory Correlation (ρ) (%)	Supervisory volatility (σ) (%)
	Other			

Treatment of multiple margin agreements and multiple netting sets

50. Where the transactions under a given margin agreement and netting set do not coincide, an ADI must follow an alternative treatment:

 (a) where multiple margin agreements apply to a single netting set, an ADI must follow the treatment set out in paragraph 51 of this Attachment; or

 (b) where there are multiple netting sets within a single margin agreement, an ADI must follow the treatment set out in paragraph 52 of this Attachment.

51. Where multiple margin agreements apply to a single netting set, the netting set must be divided into sub-netting sets, each aligning with its respective margin agreement. The EAD of the original netting set must then be obtained by taking the sum of the EAD of each sub-netting set. The EAD for each sub-netting set is calculated according to paragraphs 42 to 49 of this Attachment using the relevant sub-netting set-level (i.e. margin agreement-level) parameters.[42]

52. Where a single margin agreement applies to multiple netting sets, an ADI must calculate the EAD for the netting sets by:

 (a) calculating the replacement cost (RC) for all netting sets (RC_{MA}) contained within a single margin agreement (*MA*) on the aggregate margin agreement level,[43] as common collateral cannot clearly be allocated to an individual netting set. The aggregate RC for all netting sets under a single margin agreement must be calculated as:

$$RC_{MA} = \max\left\{\left(\sum_{NS \in MA} \max\{V_{NS}, 0\}\right) - \max\{C_{MA}, 0\}, 0\right\}$$
$$+ \max\left\{\left(\sum_{NS \in MA} \min\{V_{NS}, 0\}\right) - \min\{C_{MA}, 0\}, 0\right\}$$

 where:

 V_{NS} = the current net mark-to-market value of all derivative transactions within the netting set NS; and

 C_{MA} = the net haircut value of all currently available collateral (including both NICA and VM) under the margin agreement; and

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[42] These parameters include *C, TH*, *MTA* and *NICA*.

[43] This is opposed to the simplest case where the set of transactions under a margin agreement and within the netting set coincide, in which case the replacement cost is calculated on the individual netting set-level (NS).

(b) calculating the PFE for the margin agreement (PFE_{MA}), by taking the sum of all the netting set-level PFE factors. The PFE add-on factor for each netting set under the margin agreement must be calculated according to the methodology for unmargined transactions.

Treatment of eligible collateral taken outside of netting sets

53. Where eligible collateral is taken outside a netting set but is available to offset default losses from transactions subject to SA-CCR, an ADI must calculate the EAD as follows:

   (a) where eligible collateral is available to offset losses on one netting set only, the eligible collateral must be treated as an independent collateral amount associated with that netting set; and

   (b) where eligible collateral is available to offset losses on more than one netting set, the eligible collateral must be treated as collateral taken under a single margin agreement applying to multiple netting sets (refer to paragraph 52 of this Attachment).

   Where eligible collateral is available to offset losses on transactions subject to both SA-CCR and non SA-CCR exposures, the eligible collateral amount in 53(a) and 53(b) of this Attachment must only include the portion of eligible collateral assigned to the transactions subject to SA-CCR.

Attachment E — The adjusted current exposure method (adjusted CEM)

1. This Attachment applies only to a standardised ADI.

2. For the purpose of calculating counterparty credit risk requirements under the adjusted CEM, an ADI must calculate the CEA of its market-related contracts. Where the transaction is secured by eligible collateral or there is an eligible guarantee, credit derivatives or netting arrangement in place, the CRM techniques set out in Attachments G, H, I and J of APS 112 may be used to reduce the amount of the exposure. An ADI must calculate CEA in the following manner:

    (a) for market-related transactions that are not covered by an eligible bilateral netting agreement as set out in Attachment H of APS 112, the ADI must calculate the CEA as:

    for margined[44] transactions:

    $$CEA = CCE + PFCE$$

    for unmargined transactions:

    $$CEA = CCE + (3 \times PFCE)$$

    where:

    CCE = the current credit exposure, calculated as sum of the positive mark-to-market value (or replacement cost) of these transactions; and

    $PFCE$ = the potential future credit exposure of these transactions determined in accordance with paragraphs 3 to 11 of this Attachment.

    (b) for OTC derivative transactions covered by an eligible bilateral netting agreement that satisfies the requirements in Attachment H of APS 112 for netting, an ADI must calculate the CEA of transactions subject to a netting agreement as:

    for netting agreements containing only margined[45] transactions:

    $$CEA = NCCE \ (if \ positive) + PFCE_{adj}$$

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[44]   For the purposes of the adjusted CEM, bilateral transactions must be treated as margined transactions where there is exchange of variation margin with a zero threshold. Where a transaction does not meet these conditions, or where it unclear as to whether a transaction meets these conditions, the transaction must be treated as an unmargined transaction. Bilateral transactions with a one-way margining agreement in favour of an ADI's counterparty (that is, where an ADI posts, but does not collect, variation margin) must be treated as unmargined transactions. Centrally cleared transactions would be treated as either margined or unmargined transactions in accordance with the treatment adopted under paragraph 6 of Attachment B.

[45]   Refer to footnote 44 for the definition of margined transaction.

for netting agreements containing only unmargined transactions:

$$CEA = NCCE \ (if \ positive) + [3 \times (PFCE_{adj})]$$

for netting agreements containing both margined and unmargined transactions:[46]

$$CEA = NCCE \ (if \ positive) + [(1 + 2 \times A) \times (PFCE_{adj})]$$

where:

NCCE = the net current credit exposure (i.e. net mark-to-market) of all transactions covered by the netting agreement, if positive. *NCCE* must be calculated as the sum of all positive and negative mark-to-market values of all individual contracts covered by a netting agreement (i.e. positive mark-to-market values of transactions may be offset against negative mark-to-market values on other transactions covered by the netting agreement). If the net sum of individual mark-to-market values is positive, the *NCCE* is equal to that sum. If the sum of mark-to-market values is zero or negative, the *NCCE* is set equal to zero;

PFCE_{adj} = the add-on for potential future credit exposure based on the notional principal of all the individual underlying contracts (i.e. the gross potential future credit exposure (*PFCE_{gross}*)) adjusted to reflect the effects of the netting agreement. *PFCE_{adj}* must be determined in accordance with paragraphs 12 to 17 of this Attachment; and

$$A = \frac{PFCE_{gross} \ for \ unmargined \ transactions \ in \ the \ netting \ agreement}{PFCE_{gross} \ for \ all \ transactions \ in \ the \ netting \ agreement}$$

Calculation of potential future credit exposure: transactions that are not covered by an eligible bilateral netting agreement

3. An ADI must, for the purpose of calculating its potential future credit exposure for each transaction, multiply the notional principal amount of each of these transactions by the relevant credit conversion factor (CCF) specified in Table 8.

Table 8: Current exposure method – market-related CCFs

Residual maturity	Interest rate contracts (%)	Foreign exchange and gold contracts (%)	Equity contracts (%)	Precious metal contracts (other than gold) (%)	Other commodity contracts (other than precious metals) (%)
≤ 1 year	0.0	1.0	6.0	7.0	10.0

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[46] Alternatively, an ADI may elect to use the formula for CEA for netting agreements containing only unmargined transactions.

>1 year, ≤ 5 years	0.5	5.0	8.0	7.0	12.0
>5 years	1.5	7.5	10.0	8.0	15.0

4. The notional or nominal principal amount, or value, of a contract must be the reference amount used to calculate payment streams between counterparties to a contract.

5. Potential future credit exposure must be based on effective rather than apparent notional amounts. In the event that the stated notional amount of a contract is leveraged or enhanced by the structure of the transaction, an ADI must use the effective notional amount when calculating potential future credit exposure.

6. No potential future credit exposure is calculated for single currency floating/floating interest rate swaps as the credit exposure on these contracts must be evaluated solely on the basis of their mark-to-market values.

7. For contracts that are structured to settle outstanding exposures following specified payment dates where the terms are reset such that the mark-to-market value of the contract is zero on these specified dates, the residual maturity must be set equal to the time until the next reset date.[47] In the case of interest rate contracts with these features and a remaining maturity of more than one year, the CCF to be applied is subject to a floor of 0.5 per cent even if there are reset dates of a shorter maturity.

8. For contracts with multiple exchanges of principal, the CCFs must be multiplied by the number of remaining payments (i.e. exchanges of principal) still to be made under the contract.

9. Contracts that do not fall within one of the specific categories listed in Table 8 must be treated as 'other commodities contracts'.

10. An ADI must calculate the counterparty credit risk requirement for single name credit default swaps and single name total-rate-of-return swaps in the trading book using the potential future exposure CCFs in Table 9.

Table 9: Potential future exposure credit conversion factors

Type of swap	Protection buyer (%)	Protection seller[48] (%)
Credit default swap		
Qualifying[49] reference obligation	5	5

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[47] For example, a principal resetting cross-currency swap or a settled-to-market derivative where, at the next reset date, the outstanding exposure is settled and the terms are reset so that the fair value of the contract is zero. A derivative contract with a mandatory break (where there is a legal contractual obligation on both parties to terminate the transaction by the mandatory break date) would also be eligible where the outstanding exposure is settled completely.

[48] The protection seller of a credit default swap would only be subject to the add-on factor where it is subject to closeout upon the insolvency of the protection buyer while the underlying asset is still solvent. The add-on should be capped to the amount of unpaid premiums.

APS 180 – **Attachment E - 55**

Non-qualifying reference obligation	10	10
Total-rate-of-return swap		
Qualifying reference obligation	5	5
Non-qualifying reference obligation	10	10

11. An ADI, in calculating the counterparty credit risk requirement for an nth-to-default credit derivative transaction (such as a first-to-default transaction), must use the add-on determined by the nth-lowest credit quality underlying asset in the basket.

Calculation of potential future credit exposure: Transactions covered by an eligible bilateral netting agreement

12. An ADI must recognise the effects of netting agreements on its potential future credit exposure by applying the formula below to produce an adjusted add-on amount for potential future credit exposure on all contracts subject to the netting agreement. Thus:

$$PFCE_{adj} = 0.4\,(PFCE_{gross}) + 0.6\,(NGR \times PFCE_{gross})$$

13. The potential future credit exposure *(PFCE$_{gross}$)* is calculated as the sum of an ADI's potential future credit exposure for each individual transaction covered by a netting agreement with a counterparty as if no netting would occur (with the exception of transactions covered by the definition of *NCCE* in paragraph 2 of this Attachment). Potential future credit exposure for each transaction is calculated by multiplying the notional principal amount of the transaction by the appropriate CCF for that transaction as set out in Table 8.

14. For the purpose of calculating *PFCE$_{gross}$*, an ADI may treat matching transactions included in a netting agreement as a single transaction with a notional principal equivalent to the net receipts on those transactions. For this purpose, matching transactions are defined as forward foreign exchange and other similar market-related transactions in which the notional principal is equivalent to cash flows, where the cash flows fall due on the same value date and are in the same currency.

15. The net to gross ratio (NGR) is the ratio of the net current exposure of all transactions included in a netting agreement to the gross current credit exposure (GCCE) of these same transactions. GCCE is the sum of the mark-to-market values of all transactions covered by a netting agreement with a positive mark-to-market value with no offsetting against contracts with a negative mark-to-market value (with the exception of transactions covered by the definition of *NCCE* in paragraph 2 of this Attachment). The NGR reflects the risk reducing portfolio effects of netted transactions with respect to current credit exposure. Thus:

$$NGR = NCCE/GCCE$$

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[49] The definition of qualifying is the same as for the qualifying category for the treatment of specific risk under the standardised measurement method in APS 116.

16. The *NGR* may be calculated using one of the following approaches:

    (a) counterparty-by-counterparty approach – under this approach a unique NGR is applied to each counterparty in calculating the CEA of transactions with that counterparty. NGR is defined as the NCCE of all transactions with an individual counterparty covered by a netting agreement (i.e. $NCCE_{individual}$) divided by the GCCE of all the transactions with that counterparty covered by the netting agreement (i.e. $GCCE_{individual}$). In calculating $GCCE_{individual}$, negative mark-to-market values for individual transactions with the same counterparty may not be used to offset positive mark-to-market values for other transactions with the same counterparty; or

    (b) aggregate approach – under this approach a single NGR is calculated and applied to all counterparties in calculating the CEA for transactions with each of those counterparties. The NGR is the ratio of the sum of all NCCEs of all transactions with all counterparties subject to any netting agreement (i.e. $NCCE_{aggregate}$) to the sum of all of the GCCEs for all transactions of all counterparties subject to any netting agreement (i.e. $GCCE_{aggregate}$). In calculating $GCCE_{aggregate}$, negative mark-to-market values of transactions with one counterparty cannot be used to offset positive mark-to-market values of transactions with that counterparty or any other counterparty included in the aggregate calculations.

17. An ADI must consistently use either the counterparty-by-counterparty approach or the aggregate approach to calculate the NGR and must inform APRA of which approach it intends to use.

Risk-weighted amount

18. With respect to the netted exposures determined in paragraphs 12 to 17 of this Attachment, an ADI must assign the relevant risk weight applicable to a counterparty, or if eligible, the risk weight of a guarantor or collateral to the CEA. Counterparty risk weightings for OTC derivative transactions will not be subject to any specific ceiling.

19. For the purposes of paragraph 23 of Attachment G of APS 112, potential future exposure is $PFCE_{adj}$ as determined in paragraph 12 of this Attachment.