MODULE	CA:	Capital Adequacy
CHAPTER	CA-3:	Credit Risk – The Standardized Approach

CA-3.1 Overview

CA-3.1.1 This Chapter sets out the rules relating to the standardized approach to credit risk. The securitisation framework is presented in Chapter CA-6. The standardized approach makes use of external credit assessments[9] as a means of calculating the risk weight for exposures to certain categories of counterparty.

CA-3.1.2 The Credit equivalent amount (CEA) of Over-the-counter (OTC) derivatives, Exchange-traded derivatives, Long settlement transactions and Securities financing transactions (SFT) that expose a conventional bank licensee to counterparty credit risk[10] is calculated under the rules set out in ~~Appendix CA-2~~ Chapter CA-5.

CA-3.1.3 **In determining the risk weights in the standardised approach, conventional bank licensees must use assessments by only those external credit assessment institutions which are recognised as eligible for capital purposes by CBB in accordance with the criteria defined in Section CA-3.4.**

CA-3.1.4 **Exposures must be measured at the book value as shown in the financial statements of the conventional bank licensee (normally at amortised cost or fair value after applying specific provisions, partial write-offs or fair value adjustments as applicable). ~~and~~ ~~r~~Risk-weighted assets are calculated as the product of the risk weights and the exposure amount taking into account eligible ~~financial collateral~~ credit risk mitigant as applicable (see Chapter CA-4 concerning credit risk mitigation).**

[9] The notations follow the methodology used by Standard & Poor's. The use of Standard & Poor's credit ratings is an example only; those of some other external credit assessment institutions could equally well be used. The ratings used throughout this document, therefore, do not express any preferences or determinations on external assessment institutions by CBB.

10 The counterparty credit risk is defined as 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. Unlike a firm's exposure to credit risk through a loan, where the exposure to credit risk is unilateral and only the lending bank faces the risk of loss, the counterparty credit risk creates a bilateral risk of loss: the market value of the transaction can be positive or negative to either counterparty to the transaction. The market value is uncertain and can vary over time with the movement of underlying market factors.

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CA-3.2 Segregation of Claims

Claims on Sovereigns

CA-3.2.1 Claims on governments of GCC member states (hereinafter referred to as GCC) and their central banks can be risk weighted at 0%. Claims on other sovereigns and their central banks are given a preferential risk weighting of 0% where such claims are denominated and funded in the relevant domestic currency of that sovereign/central bank (e.g. if a Bahraini bank has a claim on government of Australia and the loan is denominated and funded in Australian dollar, it will be risk weighted at 0%). Such preferential risk weight for claims on GCC/other sovereigns and their central banks will be allowed only if the relevant supervisor also allows 0% risk weighting to claims on its sovereign and central bank.

CA-3.2.2 Claims on sovereigns other than those referred to in the Paragraph CA-3.2.1 must be assigned risk weights as follows:

~~Credit Assessment~~ External Rating	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk Weight	0%	20%	50%	100%	150%	100%

Claims on International Organisations

CA-3.2.3 Claims on the Bank for International Settlements, the International Monetary Fund and the European Central Bank receive a 0% risk weight.

Claims on Non-central Government Public Sectors Entities (PSEs)

CA-3.2.4 Claims on the Bahraini PSEs listed in Appendix CA-18 are treated as claims on the government of Bahrain and are eligible for 0% risk weighting.

CA-3.2.4A In addition to the Bahraini PSEs listed in Appendix CA-18, existing exposures to the following entities which have been removed from the list of PSEs as of 1st March 2016, will be grandfathered and will remain eligible until the final maturity or sale of such exposure:

(a) Durrat Khaleej Al Bahrain Company;
(b) Hawar Island Development Company;
(c) Lulu Tourism Company; and
(d) Al Awali Real estate Company.

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CA-3.2 Segregation of Claims (continued)

CA-3.2.4B Any new claims to the entities listed under Paragraph CA-3.2.4A are subject to the normal risk weights as outlined in this Section.

CA-3.2.5 Where other supervisors also treat claims on named PSEs as claims on their sovereigns, claims to those PSEs are treated as claims on the respective sovereigns as outlined in Paragraphs CA-3.2.1 and CA-3.2.2. These PSEs must be shown on a list maintained by the concerned central bank or financial regulator. Where PSEs are not on such a list, they must be subject to the treatment outlined in Paragraph CA-3.2.6.

CA-3.2.6 Claims on all other (foreign) PSEs (i.e. not having sovereign treatment) denominated and funded in the home currency of the sovereign must be risk weighted as allowed by their home country supervisors, provided the sovereign carries rating BBB- or above. Claims on PSEs with no explicit home country weighting or to PSEs in countries of BB+ sovereign rating and below are subject to ECAI ratings as per the following table:

Credit Assessment	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk Weight	20%	50%	100%	100 %	150%	100%

CA-3.2.7 Claims on commercial companies owned by governments must be risk weighted as normal commercial entities unless they are in the domestic currency and covered by a government guarantee in the domestic currency that satisfies the conditions in CA-4.2 and CA-4.5 in which case they may take the risk weight of the concerned government.

MODULE	CA:	Capital Adequacy
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CA-3.2 Segregation of Claims (continued)

Claims on Multilateral Development Banks (MDBs)

CA-3.2.8 MDBs currently eligible for a 0% risk weight are: the World Bank Group comprised of the International Bank for Reconstruction and Development (IBRD) and the International Finance Corporation (IFC), the Asian Development Bank (ADB), the African Development Bank (AfDB), the European Bank for Reconstruction and Development (EBRD), the Inter-American Development Bank (IADB), the European Investment Bank (EIB), the European Investment Fund (EIF), the Nordic Investment Bank (NIB), the Caribbean Development Bank (CDB), the Islamic Development Bank (IDB), Arab Monetary Fund (AMF), the Council of Europe Development Bank (CEDB), the Arab Bank for Economic Development in Africa (ABEDA), Council of European Resettlement Fund (CERF), Kuwait Fund for Arab Economic Development (KFAED) and Asian Infrastructure Investment Bank (AIIB).

CA-3.2.9 The claims on MDB's, which do not qualify for the 0% risk weighting, are assigned risk weights as follows:

~~Banks Credit Quality Grades~~ External Rating of Counterparty	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Un-rated
Risk weights	20%	30~~50~~%	50%	100%	150%	50%

MODULE	CA:	Capital Adequacy
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CA-3.2 Segregation of Claims (continued)

Claims on Banks

CA-3.2.10 Claims on banks that are rated must be risk weighted as given in the following table. ~~No claim on an unrated bank may receive a risk weight lower than that applied to claims on its sovereign of incorporation (see Guidance in Paragraph CA-3.2.11A for self-liquidating letters of credit).~~ Exposure to AT1 instruments and T2 instruments classified as equity for accounting purposes, issued by other banks must be treated as exposure to capital instruments under Paragraph CA-3.2.26.

~~Banks Credit Quality Grades~~ External rating of counterparty	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-
~~Standard~~ Base risk weights	20%	30~~50~~%	50%	100%	150%
~~Preferential risk weight~~ Risk weight for short-term exposures	20%	20%	20%	50%	150%

Notwithstanding the risk weighting specified in the table above, claims on banks which are not subject to prudential regulations consistent with the Basel Committee on Banking Supervision's Basel III standards and its amendments must be risk weighted at 300%.

Banks must perform due diligence to ensure that the external ratings appropriately and conservatively reflect the creditworthiness of the bank counterparties. If the due diligence analysis reflects higher risk characteristics than that implied by the external rating bucket of the exposure (ie AAA to AA–; A+ to A– etc), the bank must assign a risk weight at least one bucket higher than the "base" risk weight determined by the external rating. Due diligence analysis must never result in the application of a lower risk weight than that determined by the external rating.

CA-3.2.10A The risk weights for unrated banks must apply the Standardised Credit Assessment Approach (SCRA) which requires banks to classify the exposures into one of three risk-weight buckets (i.e. graded, A, B and C) and assign risk weights in the accordance with the table below:

CA-3.2 Segregation of Claims (continued)

Credit risk assessment	Grade A	Grade B	Grade C
Base risk weight	40%	75%	150%
Risk weight for short term exposures	20%	50%	150%

(a) Grade A refers to exposures to banks, where the counterparty bank has adequate capacity to meet their financial commitments (including repayments of principal and interest) in a timely manner, for the projected life of the assets or exposures and irrespective of the economic cycles and business conditions.

(b) Grade B refers to exposures to banks, where the counterparty bank is subject to substantial credit risk, such as repayment capacities that are dependent on stable or favourable economic or business conditions.

(c) Grade C refers to higher credit risk exposures to banks, where the counterparty bank has material default risks and limited margins of safety. For these counterparties, adverse business, financial, or economic conditions are very likely to lead, or have led, to an inability to meet their financial commitments. At a minimum, if any of the following triggers is breached, a bank must classify the exposure into Grade C:

(i) The counterparty bank does not must meet or exceed the published minimum regulatory capital requirements and buffers established by its national supervisor as implemented in the jurisdiction where it is incorporated.

(ii) Where audited financial statements are required, the external auditor has issued an adverse audit opinion or has expressed substantial doubt about the counterparty bank's ability to continue as a going concern in its financial statements or audited reports within the previous 12 months.

(d) No claim on an unrated bank may receive a risk weight lower than that applied to claims on its sovereign of incorporation with the exception of short-term self-liquidating, trade-related contingent items that arise from the movement of goods (see Paragraph CA-3.3.10).

CA-3.2 Segregation of Claims (continued)

CA-3.2.11 Short-term claims on ~~locally incorporated~~ banks may be assigned a risk weighting ~~of 20%~~as specified in Paragraphs CA-3.2.10 and CA-3.2.10A where such claims on the banks are of an original maturity of 3 months or less ~~denominated and funded in either BD or US$. A preferential risk weight that is one category more favourable than the standard risk weighting may be assigned to claims on foreign banks licensed in Bahrain of an original maturity of 3 months or less denominated and funded in the relevant domestic currency (other than claims on banks that are rated below B-). Such preferential risk weight for short-term claims on banks licensed in other jurisdictions will be allowed only if the relevant supervisor also allows this preferential risk weighting to short-term claims on its banks.~~ Exposures to banks that arise from the movement of goods across national borders with an original maturity of six months or less can also be assigned risk-weights for short-term claims in accordance with Paragraphs CA-3.2.10 and CA-3.2.10A.

CA-3.2.11A ~~Self-liquidating letters of credit issued or confirmed by an unrated bank are allowed a risk weighting of 20% without reference to the risk weight of the sovereign of incorporation. All other claims will be subject to the 'sovereign floor' of the country of incorporation of the concerned issuing or confirming bank.~~

CA-3.2.12 Claims with a contractual original maturity under 3 months that are expected to be rolled over (i.e. where the effective maturity is longer than 3 months) do not qualify for a preferential treatment for capital adequacy purposes.

Claims on Investment Firms

CA-3.2.13 Claims on category one and category two investment firms which are licensed by the CBB are treated as claims on banks for risk weighting purposes but without the use of preferential risk weight for short-term claims. Claims on category three and category four investment firms licensed by the CBB must be treated as claims on corporates for risk weighting purposes. Claims on investment firms in other jurisdictions will be treated as claims on corporates for risk weighting purposes. However, if the bank can demonstrate that the concerned investment firm is subject to ~~an equivalent~~ a capital adequacy and liquidity regime ~~to this Module~~ equivalent to those applied to banks ~~and is treated as a bank for risk weighting purposes by its home regulator~~, then claims on such investment firms may be treated as claims on banks.

CA-3.2 Segregation of Claims (continued)

Claims on Corporates, including Insurance Companies

CA-3.2.14 Risk weighting for corporates including insurance companies is as follows:

Credit assessment	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to BB-	Below BB-	Unrated
Risk weight	20%	50%	75%	100%	150%	100%

CA-3.2.15 Risk weighting for unrated (corporate) claims will not be given a preferential RW to the concerned sovereign. Credit facilities to ~~small/medium enterprises (SMEs)~~ micro, small and medium enterprises (MSMEs) may be placed in the regulatory retail portfolio in limited cases ~~below~~ in accordance with Paragraph CA-3.2.18.

Claims under Specialised Lending

CA-3.2.15A A corporate exposure must be treated as a specialised lending exposure if such lending possesses some or all of the following characteristics, either in legal form or economic substance:

(a) The exposure is not related to real estate and is within the definitions of object finance, project finance or commodities finance;

(b) The exposure is typically to an entity (often a special purpose vehicle) that was created specifically to finance and/or operate physical assets;

(c) The borrowing entity has few or no other material assets or activities, and therefore little or no independent capacity to repay the obligation, apart from the income that it receives from the asset(s) being financed. The primary source of repayment of the obligation is the income generated by the asset(s), rather than the independent capacity of the borrowing entity; and

(d) The terms of the obligation give the lender a substantial degree of control over the asset(s) and the income that it generates.

CA-3.2 Segregation of Claims (continued)

CA-3.2.15B Specialised lending exposures must be classified in one of the following three subcategories:

(a) Project finance refers to the method of funding in which the lender looks primarily to the revenues generated by a single project, both as the source of repayment and as security for the loan. This type of financing is usually for large, complex and expensive installations such as power plants, chemical processing plants, mines, transportation infrastructure, environment, media, and telecoms. Project finance may take the form of financing the construction of a new capital installation, or refinancing of an existing installation, with or without improvements.

(b) Object finance refers to the method of funding the acquisition of equipment (e.g. ships, aircraft, satellites, railcars, and fleets) where the repayment of the loan is dependent on the cash flows generated by the specific assets that have been financed and pledged or assigned to the lender.

(c) Commodities finance refers to short-term lending to finance reserves, inventories, or receivables of exchange-traded commodities (e.g. crude oil, metals, or crops), where the loan will be repaid from the proceeds of the sale of the commodity and the borrower has no independent capacity to repay the loan.

CA-3.2.15C Banks must assign to their specialised lending exposures other than those referred to in CA-3.2.19C and CA-3.2.20, the risk weights determined by the issue-specific external ratings according to CA-3.2.14. Issuer ratings must not be used.

CA-3.2.15D For specialised lending exposures for which an issue-specific external rating is not available, and for all specialised lending exposures of banks incorporated in jurisdictions that do not allow the use of external ratings for regulatory purposes, the following risk weights must apply:

(a) Object and commodities finance exposures must be risk-weighted at 100%;

(b) Project finance exposures must be risk-weighted at 130% during the pre-operational phase and 100% during the operational phase. Project finance exposures in the operational phase which are deemed to be high quality, as described in paragraph CA-3.2.15E, will be risk weighted at 80%. For this purpose, operational phase is defined as the phase in which the entity that was specifically created to finance the project has (i) a positive net cash flow that is sufficient to cover any remaining contractual obligation, and (ii) declining long term debt.

CA-3.2 Segregation of Claims (continued)

CA-3.2.15E A high quality project finance exposure refers to an exposure to a project finance entity that is able to meet its financial commitments in a timely manner and its ability to do so is assessed to be robust against adverse changes in the economic cycle and business conditions. The following conditions must also be met:

(a) The project finance entity is restricted from acting to the detriment of the creditors (e.g. by not being able to issue additional debt without the consent of existing creditors);

(b) The project finance entity has sufficient reserve funds or other financial arrangements to cover the contingency funding and working capital requirements of the project;

(c) The revenues are availability-based or subject to a rate-of-return regulation or take-or-pay contract;

(d) The project finance entity's revenue depends on one main counterparty and this main counterparty shall be a central government, PSE or a corporate entity with a risk weight of 80% or lower;

(e) The contractual provisions governing the exposure to the project finance entity provide for a high degree of protection for creditors in case of a default of the project finance entity;

(f) The main counterparty or other counterparties which similarly comply with the eligibility criteria for the main counterparty will protect the creditors from the losses resulting from a termination of the project;

(g) All assets and contracts necessary to operate the project have been pledged to the creditors to the extent permitted by applicable law; and

(h) Creditors may assume control of the project finance entity in case of its default.

Claims included in the Regulatory Retail Portfolios

CA-3.2.16 No claim on any unrated corporate, where said corporate originates from a foreign jurisdiction, may be given a risk weight lower than that assigned to a corporate within its own jurisdiction, and in no case will it be below 100%.

CA-3.2 Segregation of Claims (continued)

CA-3.2.17 Claims included in the regulatory retail portfolio which include exposures to an individual person and exposure to MSMEs that meet the criteria included in CA-3.2.18 must be risk weighted as per the risk weights in the table below ~~at 75%,~~ except as provided in CA-3.2.23 for ~~past due loans~~ non-performing exposures.

Type	Risk weight
Regulatory retail exposures that do not arise from exposures to transactors (see definition in CA3.2.18A)	75%
Regulatory retail exposures that arise from exposures to transactors (see definition in CA3.2.18A)	45%
Other retail exposures to individuals that do not meet the criteria in CA-3.2.18	100%

CA-3.2.18 To be included in the regulatory retail portfolio, claims must meet the following criteria:

(a) Orientation – the exposure is to an individual person ~~or persons~~ or to ~~an~~ MSME ~~small business~~. ~~A small business is a Bahrain-based business with annual turnover below BD 2mn;~~

(b) Product – The exposure takes the form of any of the following: revolving credits and lines of credit (including credit cards and overdrafts), personal term loans and leases (e.g. auto leases, student loans) and MSME ~~small business~~ facilities. Securities (such as bonds and equities), whether listed or not, are specifically excluded from this category. Mortgage loans will be excluded if they qualify for treatment as claims secured by residential property (see below). Loans for purchase of shares are also excluded from the regulatory retail portfolios;

(c) Granularity – The regulatory retail portfolio is sufficiently diversified to a degree that reduces the risks in the portfolio, ~~warranting a 75% risk weight~~. No aggregate exposure to one counterpart[3] can exceed 0.2% of the regulatory retail portfolio; and

(d) The maximum aggregated retail exposure to one counterpart must not exceed an absolute limit of BD 500,000 ~~250,000~~.

[3] Aggregated exposure means gross amount (i.e. not taking any credit risk mitigation into account) of all forms of debt exposures (e.g. loans or commitments) that individually satisfy the three other criteria. In addition, "to one counterpart" means one or several entities that may be considered as a single beneficiary (e.g. in the case of a ~~small business~~ MSME that is affiliated to another ~~small business~~ MSME, the limit would apply to the bank's aggregated exposure on both businesses).

CA-3.2 Segregation of Claims (continued)

CA-3.2.18A **"Transactors" are obligors in relation to facilities such as credit cards and charge cards where the balance has been repaid in full at each scheduled repayment date for the previous 12 months. Obligors in relation to overdraft facilities would also be considered as transactors if there has been no drawdown over the previous 12 months.**

~~Claims Secured by Residential Property~~
Regulatory residential real estate

CA-3.2.19 **Lending fully secured by first mortgages on residential property that is or will be occupied by the borrower, or that is leased, must carry a risk weighting of 75%. Alternatively, such exposures may be risk weighted based on the table below. This approach is only available for exposures which are not materially dependent[4] on cash flows generated by the property and for which LTVs (loan to values, i.e. the amount[5] of the loan including undrawn commitment divided by the value of the property) are available.**

Residential property	Risk weights					
	LTV ≤ 50%	50% < LTV ≤ 60%	60% < LTV ≤ 80%	80% < LTV ≤ 90%	90% < LTV ≤ 100%	LTV > 100%
Exposure to individuals	20%	25%	30%	40%	50%	70%

CA-3.2.19A **The RW for exposure secured by residential real estate property must meet may be reduced to 35% subject to meeting all of the criteria below:**

(a) **The residential property is to be utilised for residential purposes only;**

(b) **The residential property must be pledged as a first lien collateral to the conventional bank licensee;**

(c) **There exists a legal infrastructure in the jurisdiction whereby the conventional bank licensee can enforce the repossession and liquidation of the residential property; and**

(d) **The conventional bank licensee must obtain a satisfactory legal opinion that foreclosure or repossession as mentioned in (c) above is possible without any impediment.**

[4] Exposures are materially dependent on cash flows generated when the prospects for servicing the loan materially depend on the cash flows generated by the property securing the loan rather than on the underlying capacity of the borrower to service the debt from other sources.

[5] The loan amount must be calculated gross of any provisions and other risk mitigants, except for pledged deposits accounts with the lending bank that meet all requirements for on-balance sheet netting and have been unconditionally and irrevocably pledged for the sole purposes of redemption of the mortgage loan.

CA-3.2 Segregation of Claims (continued)

CA-3.2.19B The RW for residential mortgage exposure granted under the Social Housing Schemes of the Kingdom of Bahrain may be further reduced to 25% subject to meeting conditions, (a) and (b) in CA-3.2.19A. The reduced risk weight is subject to ensuring the compliance with the requirements for timely recognition of expected credit loss (ECL) as per the Credit Risk Management Module (Module CM).

CA-3.2.19C The exposures, whether to individuals or legal persons, secured by fully completed residential real estate property (i.e. finished immovable property other than borrower's primary residence), which are materially dependent on cash flows generated by the property must be risk weighted based on the related LTV (loan to values, i.e. the amount of the loan including undrawn commitment divided by the value of the property) as follows:

Residential property	Risk weights					
	LTV ≤ 50%	50% < LTV ≤ 60%	60% < LTV ≤ 80%	80% < LTV ≤ 90%	90% < LTV ≤ 100%	LTV > 100%
Exposures that are materially dependent on cash flows generated by the property	30%	35%	45%	60%	75%	105%

CA-3.2.19D For unhedged retail and residential real estate exposures to individuals where the lending currency differs from the currency of the borrower's source of income, banks must apply a 1.5 times multiplier to the applicable risk weight subject to a maximum risk weight of 150%. An unhedged exposure refers to an exposure to a borrower that has no natural or financial hedge against the foreign exchange risk resulting from the currency mismatch between the currency of the borrower's income and the currency of the loan. A natural hedge exists where the borrower, in its normal operating procedures, receives foreign currency income that matches the currency of a given loan (e.g. remittances, rental incomes, salaries). A financial hedge generally includes a legal contract with a financial institution (e.g. forward contract). For the purposes of application of the multiplier, only those natural or financial hedges are considered sufficient where they cover at least 90% of the loan instalment, regardless of the number of hedges.

CA-3.2 Segregation of Claims (continued)

Claims Secured by Commercial Real Estate

CA-3.2.20 Claims fully secured by a first mortgages on finished commercial real estate property are subject to ~~a minimum of 100% risk weight. If the borrower is rated below BB-, the risk-weight corresponding to the rating of the borrower must be applied~~ the following risk weights based on the related LTVs (loan to values, i.e. the amount of the loan including undrawn commitment divided by the value of the property).

Exposure type	LTV ranges and risk weights		
	LTV ≤ 60%	60% < LTV ≤ 80%	LTV > 80%
Exposures that are not materially dependent on cash flows generated by the property	60% or RW of borrower whichever is lower	RW of borrower	
Exposures that are materially dependent on cash flows generated by the property	70%	90%	110%

Claims Secured by Land Acquisition, Development and Construction (ADC) exposures

CA-3.2.20A Exposures to companies or SPVs for land acquisition for development and construction purposes (ADC) of any residential or commercial property must be risk-weighted at 150%. ADC exposures to residential real estate projects may be risk weighted at 100%, provided that the following criteria are met:

(a) The property is fully completed (finished property),
(b) The exposure is secured by a first mortgage;
(c) There exists a legal infrastructure in the jurisdiction whereby the conventional bank licensee can enforce the repossession and liquidation of the property;
(d) The property must be subject to prudent valuation;
(e) Pre-sale contracts amount to over 50% of total contracts or equity at risk equivalent to at least 25% of the real estate's appraised as-completed value has been contributed by the borrower. Pre-sale contracts must be legally binding written contracts and the purchaser/renter must have made a substantial cash deposit which is subject to forfeiture if the contract is terminated; and
(f) For land acquisition, LTV does not exceed 60%.

CA-3.2 Segregation of Claims (continued)

Exposures Secured by Other Real Estate

CA-3.2.20B Exposure secured by other real estate is an exposure that does not fall under Paragraphs CA-3.2.19 to CA-3.2.20A. Such exposures must be risk-weighted as follows:

	Individual	SME	Other Counterparties
Not materially dependent on the cash flows generated by the property	75%	85%	The risk weight that would be assigned to an unsecured exposure to that counterparty
Materially dependent on the cash flows generated by the property	150%		

CA-3.2.20C Mortgage insurance[6] may be recognised as an eligible CRM in relation to exposures secured by real estate if it meets the operational requirements of the credit risk mitigation framework for a guarantee in Chapter CA-4. The LTV bucket and risk weight to be applied to the exposure amount must be determined before the application of the CRM.

CA-3.2.20D Where a bank grants different loans secured by the same property and they are sequential in ranking order (i.e. there is no intermediate lien from another bank), the different loans must be considered as a single exposure for risk-weighting purposes, and the amount of the loans should be added to calculate the LTV.

~~***Past Due Loans***~~
Non-performing Exposures (Stage 3 Exposures)

CA-3.2.21 The unsecured portion of any loan (other than a qualifying residential mortgage loan) that is past due for 90 days or more, net of specific provisions (including partial write-offs), must be risk-weighted as follows:

(a) 150% risk weight when specific provisions are less than 20% of the outstanding amount of the loan; and

(b) 100% risk weight when specific provisions are greater than 20% of the outstanding amount of the loan.

[6] A bank's use of mortgage insurance should mirror the FSB Principles for sound residential mortgage underwriting (April 2012).

CA-3.2 Segregation of Claims (continued)

CA-3.2.22 For the purposes of defining the secured portion of a past due loan, eligible collateral and guarantees is the same as for credit risk mitigation purposes.

CA-3.2.23 ~~Past due~~ non-performing retail loans must be excluded from the overall regulatory retail portfolio when assessing the granularity criterion, for risk-weighting purposes.

CA-3.2.24 In the case of residential mortgage loans that qualify for lower risk weight in CA-3.2.19, when such loans are past due for more than 90 days, they must be risk weighted at a minimum of 100% net of specific provisions.

~~*Securitisation Tranches*~~

CA-3.2.25 ~~Holdings of securitisation tranches must be weighted according to the risk weightings provided in requirements in Chapter CA-6. Please refer to Chapter CA-6 for full details.~~ [This Paragraph was deleted in XX 2023]

~~*Investments in Equities, MSRs and DTAs*~~
Subordinated debt, Equity and other Capital Instruments

CA-3.2.26 ~~Investments in listed equities must be risk weighted at 100% while equities other than listed must be risk weighted at 150% unless subject to the following treatments. Banks must assign a risk weight of 400% to speculative unlisted equity exposures and a risk weight of 250% to all other equity holdings. Subordinated debt and capital instruments other than equities must be risk weighted at 150% unless they have not already been deducted from CET1 as required by Paragraphs CA-2.4.15 to CA-2.4.24. The amount of any significant investments in commercial entities above the 15% and 60% Total Capital materiality thresholds (see CA-2.4.25) must be weighted at 800%. Significant investments in the common shares of unconsolidated financial entities and Mortgage Servicing Rights and Deferred Tax Assets arising from temporary differences must be risk weighted at 250% if they have not already been deducted from CET1 as required by Paragraphs CA-2.4.15 to CA-2.4.24.~~
Exposures to subordinated debt, equity and other capital instruments must be risk weighted as follows:

CA-3.2 Segregation of Claims (continued)

(a) 400% for speculative unlisted equity exposures[7];
(b) 150% for subordinated debt and capital instruments other than equities unless they have already been deducted from CET1 as required by Paragraphs CA-2.4.15 to CA-2.4.24;
(c) 300% for subordinated debt and capital instruments that give regulatory bodies the right to change the hierarchy of claims;
(d) 800% for any significant investments in commercial entities above the 15% of Total Capital for individual significant investments and 60% of Total Capital for the aggregate of such investments (see CA-2.4.25); and
(e) 250% for all other equity holdings and for significant investments in the common shares of unconsolidated financial entities and Mortgage Servicing Rights and Deferred Tax Assets arising from temporary differences if they have not already been deducted from CET1 as required by Paragraphs CA-2.4.15 to CA-2.4.24.

CA-3.2.26A Equity exposures for the purposes of the Paragraph CA-3.2.26 are defined on the basis of the economic substance of the instrument. They include both direct and indirect ownership interests[8], whether voting or non-voting, in the assets and income of a commercial enterprise or of a financial institution that is not consolidated or deducted. An instrument is considered to be an equity exposure if it meets all of the following requirements:
(a) It is irredeemable in the sense that the return of invested funds can be achieved only by the sale of the investment or sale of the rights to the investment or by the liquidation of the issuer;
(b) It does not embody an obligation on the part of the issuer; and
(c) It conveys a residual claim on the assets or income of the issuer.
(d) Additionally, any of the following instruments must be categorised as an equity exposure:
(i) An instrument with the same structure as those permitted as Tier 1 capital for banking organisations.

[7] Speculative unlisted equity exposures are defined as equity investments in unlisted companies that are invested for short-term resale purposes or are considered venture capital or similar investments which are subject to price volatility and are acquired in anticipation of significant future capital gains, for example, investments in unlisted equities of corporate clients with which the bank has or intends to establish a long-term business relationship.

[8] Indirect equity interests include holdings of derivative instruments tied to equity interests, and holdings in corporations, partnerships, limited liability companies or other types of enterprises that issue ownership interests and are engaged principally in the business of investing in equity instruments.

CA-3.2 Segregation of Claims (continued)

(ii) An instrument that embodies an obligation on the part of the issuer and meets any of the following conditions:

(1) The issuer may defer indefinitely the settlement of the obligation;

(2) The obligation requires (or permits at the issuer's discretion) settlement by issuance of a fixed number of the issuer's equity shares;

(3) The obligation requires (or permits at the issuer's discretion) settlement by issuance of a variable number of the issuer's equity shares and (ceteris paribus) any change in the value of the obligation is attributable to, comparable to, and in the same direction as, the change in the value of a fixed number of the issuer's equity shares[9]; or,

(4) The holder has the option to require that the obligation be settled in equity shares, unless either (i) in the case of a traded instrument, the supervisor is content that the bank has demonstrated that the instrument trades more like the debt of the issuer than like its equity, or (ii) in the case of non-traded instruments, the supervisor is content that the bank has demonstrated that the instrument should be treated as a debt position. In cases (i) and (ii), the bank may decompose the risks for regulatory purposes, with the consent of the CBB.

CA-3.2.26B Debt obligations and other securities, partnerships, derivatives or other vehicles structured with the intent of conveying the economic substance of equity ownership must be considered as an equity holding[10]. This includes liabilities from which the return is linked to that of equities. Conversely, equity investments that are structured with the intent of conveying the economic substance of debt holdings or securitisation exposures must not be considered as an equity holding.

[9] For certain obligations that require or permit settlement by issuance of a variable number of the issuer's equity shares, the change in the monetary value of the obligation is equal to the change in the fair value of a fixed number of equity shares multiplied by a specified factor. Those obligations meet the conditions of this instrument if both the factor and the referenced number of shares are fixed. For example, an issuer may be required to settle an obligation by issuing shares with a value equal to three times the appreciation in the fair value of 1,000 equity shares. That obligation is considered to be the same as an obligation that requires settlement by issuance of shares equal to the appreciation in the fair value of 3,000 equity shares.

[10] Equities that are recorded as a loan but arise from a debt/equity swap made as part of the orderly realisation or restructuring of the debt are included in the definition of equity holdings. However, these instruments may not attract a lower capital charge than would apply if the holdings remained in the debt portfolio.

CA-3.2 Segregation of Claims (continued)

CA-3.2.26C Banks must assign a risk weight of 150% to subordinated debt and capital instruments other than equities.

Equity Investments in Funds

CA-3.2.27 ~~Investments in funds (e.g. mutual funds, Collective Investment Undertakings etc.) must be risk weighted as follows: (a) If the instrument (e.g. units) is rated, it should be riskweighted according to its external rating (for risk-weighting, it must be treated as a "claim on corporate"); (b) If not rated, such investment should be treated as an equity investment and risk weighted accordingly (i.e. 100% for listed and 150% for unlisted); (c) The conventional bank licensee can apply to CBB for using the look-through approach for such investments if it can demonstrate that the look-through approach is more appropriate to the circumstances of the conventional bank licensee; (d) If there are no voting rights attached to investment in funds, the investment will not be subjected to consolidation, deduction or additional risk weighting requirements (in respect of large exposures or significant investments); and (e) For the purpose of determining the "large exposure limit" for investment in funds, the look-through approach must be used (even if the look-through approach is not used to risk weight the investment).~~ Equity investments in funds (e.g. mutual funds, Collective Investment Undertakings etc.) that are held in the banking book must be treated in a manner consistent with one or more of the following three approaches, which vary in their risk sensitivity and conservatism: the "look-through approach" (LTA), the "mandate-based approach" (MBA), and the "fall-back approach" (FBA).

The look-through approach

CA-3.2.27A Under the LTA conventional banks must risk weight the underlying exposures of a fund as if the exposures were held directly by the bank. This is the most granular and risk-sensitive approach. It must be used when:

(a) There is sufficient and frequent information provided to the bank regarding the underlying exposures of the fund; and

(b) Such information is verified by an independent third party.

CA-3.2 Segregation of Claims (continued)

CA-3.2.27B To satisfy condition (a) in paragraph CA-3.2.27A, the frequency of financial reporting of the fund must be the same as, or more frequent than, that of the bank's and the granularity of the financial information must be sufficient to calculate the corresponding risk weights[11]. To satisfy condition (b) in paragraph CA-3.2.27B, there must be verification of the underlying exposures by an independent third party, such as the depository or the custodian bank or, where applicable, the management company.

CA-3.2.27C Under the LTA, banks must risk weight all underlying exposures of the fund as if those exposures were directly held. This includes, for example, any underlying exposure arising from the fund's derivatives activities (for situations in which the underlying receives a risk weighting treatment under this rulebook) and the associated counterparty credit risk (CCR) exposure. Banks must multiply the CCR exposure by a factor of 1.5 before applying the risk weight associated with the counterparty[12]. See the annex for an example of how to calculate risk- weighted assets using the LTA.

CA-3.2.27D Banks may rely on third-party calculations for determining the risk weights associated with their equity investments in funds (i.e. the underlying risk weights of the exposures of the fund) if they do not have adequate data or information to perform the calculations themselves. In such cases, the applicable risk weight shall be 1.2 times higher than the one that would be applicable if the exposure were held directly by the bank[13].

The mandate-based approach

CA-3.2.27E The second approach, the MBA, must be used by banks for calculating regulatory capital when the conditions for applying the LTA are not met.

[11] An external audit is not required.
[12] A bank is not required to apply the 1.5 factor for situations in which the CVA capital charge would not otherwise be applicable. This includes: (i) transactions with a central counterparty and (ii) securities financing transactions (SFTs), unless the CBB determines that the bank's CVA loss exposure arising from SFTs are material.
[13] For instance, any exposure that is subject to a 20% risk weight under the Standardised Approach would be weighted at 24% (1.2 * 20%) when the look through is performed by a third party.

CA-3.2 Segregation of Claims (continued)

CA-3.2.27F Under the MBA banks may use the information contained in a fund's mandate governing such investment funds[14]. To ensure that all underlying risks are taken into account (including CCR) and that the MBA renders capital requirements no less than the LTA, the risk-weighted assets for the fund's exposures are calculated as the sum of the following three items:

(a) Balance sheet exposures (i.e. the funds' assets) are risk weighted assuming the underlying portfolios are invested to the maximum extent allowed under the fund's mandate in those assets attracting the highest capital requirements, and then progressively in those other assets implying lower capital requirements. If more than one risk weight can be applied to a given exposure, the maximum risk weight applicable must be used[15].

(b) Whenever the underlying risk of a derivative exposure or an off-balance-sheet item receives a risk weighting treatment under Pillar 1, the notional amount of the derivative position or of the off-balance sheet exposure is risk weighted accordingly[16] [17].

(c) The CCR associated with the fund's derivative exposures is calculated using the Standardised Approach for Counterparty Credit Risk (SA-CCR) set out in Chapter CA-5. SA-CCR calculates the counterparty credit risk exposure of a netting set of derivatives by multiplying (i) the sum of the replacement cost and potential future exposure; by (ii) an alpha factor set at 1.4. Whenever the replacement cost is unknown, the exposure measure for CCR will be calculated in a conservative manner by using the sum of the notional amounts of the derivatives in the netting set as a proxy for the replacement cost, and the multiplier used in the calculation of the potential future exposure will be equal to 1. Whenever the potential future exposure is unknown, it will be calculated as 15% of the sum of the notional values of the derivatives in the netting set. The risk weight associated with the counterparty is applied to the counterparty credit risk exposure. Banks must multiply the CCR exposure by a factor of 1.5 before applying the risk weight associated with the counterparty.

See the Appendix 1 for an example of how to calculate risk-weighted assets using the MBA.

[14] Information used for this purpose is not strictly limited to a fund's mandate governing like funds. It may also be drawn from other disclosures of the fund.
[15] For instance, for investments in corporate bonds with no ratings restrictions, a risk weight of 150% must be applied.
[16] If the underlying is unknown, the full notional amount of derivative positions must be used for the calculation.
[17] If the notional amount of derivatives mentioned in paragraph CA-3.2.27F is unknown, it will be estimated conservatively using the maximum notional amount of derivatives allowed under the mandate.

CA-3.2 Segregation of Claims (continued)

The fall-back approach

CA-3.2.27G Where neither the LTA nor the MBA is feasible, banks are required to apply the FBA. The FBA applies a 1,250% risk weight to the bank's equity investment in the fund.

Treatment of funds that invest in other funds

CA-3.2.27H When a bank has an investment in a fund (e.g. Fund A) that itself has an investment in another fund (e.g. Fund B), which the bank identified by using either the LTA or the MBA, the risk weight applied to the investment of the first fund (i.e. Fund A's investment in Fund B) can be determined by using one of the three approaches set out above. For all subsequent layers (e.g. Fund B's investments in Fund C and so forth), the risk weights applied to an investment in another fund (Fund C) can be determined by using the LTA under the condition that the LTA was also used for determining the risk weight for the investment in the fund at the previous layer (Fund B). Otherwise, the FBA must be applied.

Partial use of an approach

CA-3.2.27I A bank may use a combination of the three approaches when determining the capital requirements for an equity investment in an individual fund, provided that the conditions set out in paragraphs CA-3.2.27A to CA-3.2.27J are met.

Exclusions to the look-through, mandate-based and the fall-back approaches

CA-3.2.27J Equity holdings in entities whose debt obligations qualify for a zero risk weight can be excluded from the LTA, MBA and FBA approaches (including those publicly sponsored entities where a zero risk weight can be applied), at the discretion of the CBB. If the CBB makes such an exclusion, this will be available to all banks.

Leverage adjustment

CA-3.2.27K Leverage is defined as the ratio of total assets to total equity. Leverage is taken into account in the MBA by using the maximum financial leverage permitted in the fund's mandate.

CA-3.2 Segregation of Claims (continued)

CA-3.2.27L When determining the capital requirement related to its equity investment in a fund, a bank must apply a leverage adjustment to the average risk weight of the fund, as set out in paragraph CA-3.2.27M, subject to a cap of 1,250%.

CA-3.2.27M After calculating the total risk-weighted assets of the fund according to the LTA or the MBA, banks will calculate the average risk weight of the fund (Avg RWfund) by dividing the total risk-weighted assets by the total assets of the fund. Using Avg RWfund and taking into account the leverage of a fund (Lvg), the risk-weighted assets for a bank's equity investment in a fund can be represented as follows:

RWAinvestment = Avg RWfund * Lvg * equity investment

CA-3.2.27N The effect of the leverage adjustments depends on the underlying riskiness of the portfolio (ie the average risk weight) as obtained by applying Basel II's Standardised Approach or the IRB approaches for credit risk. The formula can therefore be re-written as:

RWAinvestment = RWAfund * percentage of shares

See Appendix 1 for an example of how to calculate the leverage adjustment.

Large Exposures over the Limits in Module CM

CA-3.2.28 The amount of any large exposures exceeding the limits set in ~~Chapter~~ Module CM ~~5~~ must be weighted at 800%.

Holdings of Real Estate

CA-3.2.29 All holdings of real estate by conventional bank licensees (i.e. owned directly or by way of investments in Real Estate Companies, subsidiaries or associated companies or other arrangements such as trusts, funds or REITs) must be risk-weighted at 200%. Premises occupied by the conventional bank licensee may be weighted at 100%. Investments in Real Estate Companies are subject to the materiality thresholds for commercial companies described in Section CA-2.4 and Chapter CM-5 and therefore any holdings which amount to 15% or more of Total Capital will be subject to 800% risk weight. The holdings below the 15% threshold will be weighted at 200%.

CA-3.2 Segregation of Claims (continued)

Other Assets

CA-3.2.30 Gold bullion held in own vaults or on an allocated basis to the extent backed by bullion liabilities may be treated as cash and therefore risk-weighted at 0%. In addition, cash items in the process of collection must be risk-weighted at 20%. The standard risk weight for all other assets will be 100%. Investments in regulatory capital instruments issued by banks or financial entities must be risk weighted at a minimum of 100%, unless they are deducted from regulatory capital according to the corresponding deduction approach outlined in Section CA-2.4 of this Module.

Underwriting of Non-trading Book Items

CA-3.2.31 Underwritings of capital instruments issued by other banking, financial or insurance entities are covered in Subparagraphs CA-2.4.16(c) and CA-2.4.20(c). The large exposures limits of ~~Chapter CM-5~~ Module CM are also applicable~~y~~ ~~for~~ to underwritings~~. This means~~ i.e. ~~the~~ 800% risk weights will apply ~~for~~ to underwriting exposures in excess of the limits in Module CM ~~set in Chapter CM-5~~. The risk weights below apply for exposures within the limits ~~of Module CM-5~~. Where a conventional bank licensee has acquired assets on its balance sheet in the banking book which it is intending to place with third parties under a formal arrangement, the following risk weightings apply for no more than 90 days. Once the 90-day period has expired, the usual risk weights apply:

(a) For holdings of private equity (non-bank), a risk weighting of 100% applies instead of the usual 150% (see CA-3.2.26); and

(b) For holdings of Real Estate, a risk weight of 100% applies instead of the usual 200% risk weight (see CA-3.2.29).

Exposure to Covered Bonds

CA-3.2.32 Exposure to covered bonds which means bonds issued by a bank or mortgage institution that are subject by law to special public supervision designed to protect bond holders must be risk weighted in accordance with the table below subject to meeting the criteria in Paragraphs CA-3.2.33 to CA-3.2.35.

CA-3.2 Segregation of Claims (continued)

Rated covered bonds

Issue specific rating of the covered bond	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-
Standard risk weights	10%	20%	20%	50%	100%

Unrated covered bonds

For unrated covered bonds, the "base" risk weight would be applied which is inferred from the risk weight of the issuing bank:

Risk weight of the issuing bank	20%	30%	40%	50%	75%	100%	150%
Base risk weight	10%	15%	20%	25%	35%	50%	100%

CA-3.2.33 Exposures to covered bonds are eligible for the treatment set out in Paragraph CA-3.2.32, provided that the bank investing in the covered bonds can demonstrate to the CBB that:

(a) It receives portfolio information at least on:
  (i) The value of the cover pool and outstanding covered bonds;
  (ii) The geographical distribution and type of cover assets, loan size, interest rate and currency risks;
  (iii) The maturity structure of cover assets and covered bonds; and
  (iv) The percentage of loans more than 90 days past due;
(b) The issuer makes the information referred to in (a) above available to the bank at least semi-annually; and
(c) Proceeds deriving from the issue of the covered bonds must be invested in conformity with the relevant law in assets which, during the whole period of the validity of the bonds, are capable of covering claims attached to the bonds and which, in the event of the failure of the issuer, would be used on a priority basis for the reimbursement of the principal and payment of the accrued interest.

CA-3.2 Segregation of Claims (continued)

CA-3.2.34 In order to be eligible for the risk weights under Paragraph CA-3.2.32, the underlying assets (the cover pool) of the covered bond must also meet the following:

(a) Claims on, or guaranteed by, sovereigns, their central banks, public sector entities or multilateral development banks;
(b) Claims secured by residential real estate that meet the criteria set out in CA-3.2.35 and with a loan-to-value ratio of 80% or lower at inception of the covered bond and throughout its remaining maturity;
(c) Claims secured by commercial real estate that meets the criteria set out in CA-3.2.35 and with a loan-to-value ratio of 60% or lower; or
(d) Claims on or guaranteed by banks that qualify for a 30% or lower risk weight. However, such assets cannot exceed 15% of covered bond issuances; and
(e) The nominal value of the pool of assets assigned to the covered bond instrument (s) by its issuer should exceed its nominal outstanding value by at least 10%.

CA-3.2.35 For the purposes of CA-3.2.34 (b) and (c) the criteria are as follows:
(a) Finished property: the exposure must be secured by a fully completed immovable property;
(b) Legal enforceability: any claim on the property taken must be legally enforceable in all relevant jurisdictions. The collateral agreement and the legal process underpinning it must be such that they provide for the bank to realise the value of the property within a reasonable time frame;
(c) Claims over the property: the loan is a claim over the property where the lender bank holds a first lien over the property;
(d) The bank has performed a due diligence of the ability of the borrower to repay the loan and it meets the debt burden ratios of the CBB for purpose of lending; and
(e) The bank has undertaken valuation of the collateral in accordance with the requirements of Module CM.

CA-3.3 Off-Balance Sheet Items

CA-3.3.1 Off-balance-sheet items must be converted into credit exposure equivalents applying credit conversion factors (CCFs). Counterparty risk weightings for OTC derivative transactions will not be subject to any specific ceiling.

CA-3.3.2 A 40% CCF will be applied to commitments, regardless of the maturity of the underlying facility, unless they qualify for a lower CCF. ~~Commitments with an original maturity of up to one year and commitments with an original maturity of over one year will receive a CCF of 20% and 50%, respectively.~~

CA-3.3.3 Any commitments that are unconditionally cancellable at any time by the conventional bank licensee without prior notice, or that are subject to automatic cancellation due to deterioration in a borrowers' creditworthiness, will receive a 10% ~~0%~~ CCF.

CA-3.3.4 Direct credit substitutes, e.g. general guarantees of indebtedness (including standby letters of credit serving as financial guarantees for loans and securities) and acceptances (including endorsements with the character of acceptances) must receive a CCF of 100%.

CA-3.3.5 Sale and repurchase agreements and asset sales with recourse[26], where the credit risk remains with the conventional bank licensee, must receive a CCF of 100%.

CA-3.3.6 A CCF of 100% must be applied to the lending of other banks' securities or the posting of securities as collateral by banks, including instances where these arise out of repo-style transactions (i.e. repurchase/reverse repurchase and securities lending/securities borrowing transactions). See Section CA-4.3 for the calculation of risk-weighted assets where the credit converted exposure is secured by eligible collateral.

CA-3.3.7 Forward asset purchases, forward deposits and partly-paid shares and securities[27], which represent commitments with certain drawdown and off-and balance sheet items that are credit substitutes not explicitly included in any other category must receive a CCF of 100%.

[26] These items are to be weighted according to the type of asset and not according to the type of counterparty with whom the transaction has been entered into.

[27] These items are to be weighted according to the type of asset and not according to the type of counterparty with whom the transaction has been entered into.

CA-3.3 Off-Balance Sheet Items (continued)

CA-3.3.8 Certain transaction-related contingent items (e.g. performance bonds, bid bonds, warranties and standby letters of credit related to particular transactions) must receive CCF of 50%.

CA-3.3.8A Asset value guarantees (where a bank provides protection on exit price or realisable value of a non-financial asset) must receive CCF of 100%.

CA-3.3.9 Note issuance facilities and revolving underwriting facilities must receive a CCF of 50%.

CA-3.3.10 For short-term self-liquidating trade letters of credit arising from the movement of goods (e.g. documentary credits collateralised by the underlying shipment), a 20% CCF must be applied to both issuing and confirming banks. Short term in this context means with a maturity below one year.

CA-3.3.11 Where there is an undertaking to provide a commitment on an off-balance sheet item, conventional bank licensees are to apply the lower of the two applicable CCFs.

CA-3.3.12 ~~The credit equivalent amount of OTC derivatives and SFTs that expose a conventional bank licensee to counterparty credit risk must be calculated as per Appendix CA-2.~~ [This Paragraph as deleted in XX 2023]

CA-3.3.13 Conventional bank licensees must closely monitor securities, commodities, and foreign exchange transactions that have failed, starting the first day they fail. A capital charge to failed transactions must be calculated in accordance with CBB guidelines set forth in Appendix CA-4 (Capital treatment for failed trades and non-DvP transactions).

CA-3.3.14 With regard to unsettled securities, commodities, and foreign exchange transactions, conventional bank licensees are encouraged to develop, implement and improve systems for tracking and monitoring the credit risk exposure arising from unsettled transactions as appropriate for producing management information that facilitates action on a timely basis.

CA-3.3.15 ~~Furthermore, when such transactions are not processed through a delivery-versus-payment (DvP) or payment-versus-payment (PvP) mechanism, conventional bank licensees must calculate a capital charge of up to 1,250% as set forth in Appendix CA-4.~~ [This Paragraph as deleted in XX 2023].

CA-3.4 External Credit Assessments

The Recognition Process and Eligibility Criteria

CA-3.4.1 CBB will assess all External Credit Assessment Institutions (ECAI) according to the six criteria below. The CBB also refers to the IOSCO Code of Conduct Fundamentals for Credit Rating Agencies when determining ECAI eligibility. Any failings, in whole or in part, to satisfy these to the fullest extent will result in the respective ECAI's methodology and associated resultant rating not being accepted by the CBB:

(a) Objectivity: The methodology for assigning credit assessments must be rigorous, systematic, and subject to some form of validation based on historical experience. Moreover, assessments must be subject to ongoing review and responsive to changes in financial condition. Before being recognized by the CBB, an assessment methodology for each market segment, including rigorous back testing, must have been established for an absolute minimum of one year and with a preference of three years;

(b) Independence: An ECAI must show independence and should not be subject to political or economic pressures that may influence the rating. The assessment process should be as free as possible from any constraints that could arise in situations where the composition of the board of directors, political pressure, the shareholder structure of the assessment institution or any other aspect could be seen as creating a conflict of interest;

(c) International access/Transparency: The individual assessments, the key elements underlining the assessments and whether the issuer participated in the assessment process should be publicly available on a non-selective basis, unless they are private assessments. In addition, the general procedures, methodologies and assumptions for arriving at assessments used by the ECAI should be publicly available;

(d) Disclosure: An ECAI should disclose the following information: its code of conduct; the general nature of its compensation arrangements with assessed entities; its assessment methodologies, including the definition of default, the time horizon, and the meaning of each rating; the actual default rates experienced in each assessment category; and the transitions of the assessments, e.g. the likelihood of AA ratings becoming A over time;

(e) Resources: An ECAI must have sufficient resources to carry out high quality credit assessments. These resources should allow for substantial ongoing contact with senior and operational levels within the entities assessed in order to add value to the credit assessments. Such assessments will be based on methodologies combining qualitative and quantitative approaches; and

(f) Credibility: Credibility, to a certain extent, can derive from the criteria above. In addition, the reliance on an ECAI's external credit assessments by independent parties (investors, insurers, trading partners) may be evidence of the credibility of the assessments of an ECAI. The credibility of an ECAI will also be based on the existence of internal procedures to prevent the misuse of confidential information. In order to be eligible for recognition, an ECAI does not have to assess firms in more than one country.

CA-3.4 External Credit Assessments (continued)

CA-3.4.2 The CBB recognises Standard and Poor's, Moody's, Fitch IBCA and Capital Intelligence as eligible ECAIs. With respect to the possible recognition of other rating agencies as eligible ECAIs, CBB will update this paragraph subject to the rating agencies satisfying the eligibility requirements. ~~(See Appendix CA-24 for comprehensive approach to ECAI recognition).~~

CA-3.4.3 **Conventional bank licensees must use the chosen ECAIs and their ratings consistently for each type of claim, for both risk weighting and risk management purposes. Conventional bank licensees will not be allowed to "cherry-pick" the assessments provided by different eligible ECAIs and to arbitrarily change the use of ECAIs.**

CA-3.4.4 **Conventional bank licensees must disclose in their annual reports the names of the ECAIs that they use for the risk weighting of their assets by type of claims, the risk weights associated with the particular rating grades as determined by CBB through the mapping process as well as the aggregated risk-weighted assets for each risk weight based on the assessments of each eligible ECAI.**

Multiple Assessments

CA-3.4.5 **If there are two assessments by eligible ECAIs chosen by a conventional bank licensee which map into different risk weights, the higher risk weight must be applied.**

CA-3.4.6 **If there are three or more assessments by eligible ECAIs chosen by a conventional bank licensee which map into different risk weights, the assessments corresponding to the two lowest risk weights must be referred to and the higher of those two risk weights must be applied.**

Issuer Versus Issue~~s~~ Assessment

CA-3.4.7 Where a conventional bank licensee invests in a particular issue that has an issue-specific assessment, the risk weight of the claim will be based on this assessment. Where the conventional bank licensee's claim is not an investment in a specific assessed issue, the following general principles apply:

(a) In circumstances where the borrower has a specific assessment for an issued debt — but the conventional bank licensee's claim is not an investment in this particular debt — a high quality credit assessment (one which maps into a risk weight lower than that which applies to an unrated claim) on that specific debt may only be applied to the conventional bank licensee's un-assessed claim if this claim ranks pari passu or senior to the claim with an assessment in all respects. If not, the credit assessment cannot be used and the un-assessed claim will receive the risk weight for unrated claims; ~~and~~

CA-3.4 External Credit Assessments (continued)

(b) In circumstances where the borrower has an issuer assessment, this assessment typically applies to senior unsecured claims on that issuer. Consequently, only senior claims on that issuer will benefit from a high-quality issuer assessment. Other un-assessed claims of a highly assessed issuer will be treated as unrated. If either the issuer or a single issue has a low-quality assessment (mapping into a risk weight equal to or higher than that which applies to unrated claims), an un-assessed claim on the same counterparty will be assigned the same risk weight as is applicable to the low quality assessment; and

(c) In circumstances where the issuer has a specific high-quality rating (one which maps into a lower risk weight) that only applies to a limited class of liabilities (such as a deposit rating or a counterparty risk rating), this may only be used in respect of exposures that fall within that class.

CA-3.4.8 **Whether the conventional bank licensee intends to rely on an issuer- or an issue-specific assessment, the assessment must take into account and reflect the entire amount of credit risk exposure the conventional bank licensee has with regard to all payments owed to it.[28]**

CA-3.4.9 **In order to avoid any double counting of credit enhancement factors, no recognition of credit risk mitigation techniques will be taken into account if the credit enhancement is already reflected in the issue specific rating (see Paragraph CA-4.1.5).**

Domestic Currency and Foreign Currency Assessments

CA-3.4.10 **Where unrated exposures are risk weighted based on the rating of an equivalent exposure to that borrower, the general rule is that foreign currency ratings must be used for exposures in foreign currency. Domestic currency ratings, if separate, must only be used to risk weight claims denominated in the domestic currency.**

CA-3.4.11 However, when an exposure arises through a conventional bank licensee's participation in a loan that has been extended, or has been guaranteed against convertibility and transfer risk, by certain MDBs, its convertibility and transfer risk can be considered by CBB, on a case by case basis, to be effectively mitigated. To qualify, MDBs must have preferred creditor status recognised in the market and be included in MDB's qualifying for 0% risk rate under CA-3.2.8. In such cases, for risk weighting purposes, the borrower's domestic currency rating may be used instead of its foreign currency rating. In the case of a guarantee against convertibility and transfer risk, the local currency rating can be used only for the portion that has been guaranteed. The portion of the loan not benefiting from such a guarantee will be risk-weighted based on the foreign currency rating.

[28] For example, if a bank is owed both principal and interest, the assessment must fully take into account and reflect the credit risk associated with repayment of both principal and interest.

CA-3.4 External Credit Assessments (continued)

Short-term/Long-term Assessments

CA-3.4.12 **For risk-weighting purposes, short-term assessments are deemed to be issue-specific. They can only be used to derive risk weights for claims arising from the rated facility. They cannot be generalised to other short-term claims, except under the conditions of paragraph CA-3.4.14. In no event can a short-term rating be used to support a risk weight for an unrated long-term claim. Short-term assessments may only be used for short-term claims against banks and corporates. The table below provides a framework for conventional bank licensees' exposures to specific short-term facilities, such as a particular issuance of commercial paper (which does not fall under the definition of asset backed commericial paper (ABCP) in Chapter CA-6):**

Credit Assessment	~~Securitisation Exposures~~ RW	~~Resecuritisation Exposures~~
A-1/P-1	20%	~~40~~
A-2/P-2	50%	~~100~~
A-3/P-3	100%	~~225~~
Others	150%	

CA-3.4.13 **If a short-term rated facility attracts a 50% risk-weight, unrated short-term claims cannot attract a risk weight lower than 100%. If an issuer has a short-term facility with an assessment that warrants a risk weight of 150%, all unrated claims, whether long-term or short-term, must also receive a 150% risk weight, unless the conventional bank licensee uses recognised credit risk mitigation techniques for such claims.**

CA-3.4.14 For short-term claims on conventional bank licensees, the interaction with specific short-term assessments is expected to be the following:

(a) The general preferential treatment for short-term claims, as defined under paragraphs CA-3.2.11 and CA-3.2.12, applies to all claims on conventional bank licensees of up to three months original maturity when there is no specific short-term claim assessment;

(b) When there is a short-term assessment and such an assessment maps into a risk weight that is more favourable (i.e. lower) or identical to that derived from the general preferential treatment, the short-term assessment should be used for the specific claim only. Other short-term claims would benefit from the general preferential treatment; and

(c) When a specific short-term assessment for a short-term claim on a conventional bank licensee maps into a less favourable (higher) risk weight, the general short-term preferential treatment for inter-bank claims cannot be used. All unrated short-term claims should receive the same risk weighting as that implied by the specific short-term assessment.

CA-3.4 External Credit Assessments (continued)

CA-3.4.15 When a short-term assessment is to be used, the institution making the assessment needs to meet all of the eligibility criteria for recognising ECAIs as presented in Paragraph CA-3.4.1 in terms of its short-term assessment.

Level of Application of the Assessment

CA-3.4.16 **External assessments for one entity within a corporate group must not be used to risk weight other entities within the same group.**

Unsolicited Ratings

CA-3.4.17 **Unsolicited ratings must be treated as unrated exposures.**

MODULE	CA:	Capital Adequacy
CHAPTER	CA-4:	Credit Risk – The Standardized Approach – Credit Risk Mitigation

CA-4.1 Overarching Issues

Introduction

CA-4.1.1 Banks use a number of techniques to mitigate the credit risks to which they are exposed. For example, exposures may be collateralised by first priority claims, in whole or in part with cash or securities, a loan exposure may be guaranteed by a third party, or a bank may buy a credit derivative to offset various forms of credit risk. Additionally, banks may agree to net loans owed to them against deposits from the same counterparty. Off-balance sheet items will first be converted into on-balance sheet equivalents prior to the CRM being applied.

General Remarks

CA-4.1.2 **The framework set out in this sub-section of "General remarks" is applicable to all banking book exposures.**

CA-4.1.3 **The comprehensive approach for the treatment of collateral (see Paragraphs CA-4.2.12 to CA-4.2.20 and CA-4.3.1 to CA-4.3.32) will also be applied to calculate the counterparty risk charges for OTC derivatives and repo-style transactions booked in the trading book.**

CA-4.1.4 **Transaction in which CRM techniques are used must not receive a higher capital requirement than an otherwise identical transaction where such techniques are not used.**

CA-4.1.5 **The effects of CRM will not be double counted. Therefore, no additional recognition of CRM for regulatory capital purposes will be applicable on claims for which an issue-specific rating is used that already reflects that CRM. As stated in Paragraph CA-3.4.8, principal-only ratings will also not be allowed within the framework of CRM.**

CA-4.1.6 **Conventional bank licensees must employ robust procedures and processes to control residual risks (see Paragraph CA-4.1.6A), including strategy; consideration of the underlying credit; valuation; policies and procedures; systems; control of roll-off risks; and management of concentration risk arising from the conventional bank licensee's use of CRM techniques and its interaction with the conventional bank licensee's overall credit risk profile.**

CA-4.1.6A While the use of CRM techniques reduces or transfers credit risk, it simultaneously may increase other risks (residual risks). Residual risks include legal, operational, liquidity and market risks.

CA-4.1.6B Where residual risks are not adequately controlled, the CBB may impose additional capital charges or take supervisory actions.

CA-4.1 Overarching Issues (continued)

CA-4.1.6C Conventional bank licensees must ensure that sufficient resources are devoted to the orderly operation of margin agreements with OTC derivative and securities-financing counterparties, as measured by the timeliness and accuracy of its outgoing calls and response time to incoming calls. Conventional bank licensees must have collateral management policies in place to control, monitor and report:

(a) The risk to which margin agreements exposes them (such as the volatility and liquidity of the securities exchanged as collateral);
(b) The concentration risk to particular types of collateral;
(c) The reuse of collateral (both cash and non-cash) including the potential liquidity shortfalls resulting from the reuse of collateral received from counterparties; and
(d) The surrender of rights on collateral posted to counterparties.

CA-4.1.7 Public Disclosure Requirements (see Module PD) relating to the use of collateral must also be observed for conventional bank licensees to obtain capital relief in respect of any CRM techniques.

Legal Certainty

CA-4.1.8 In order for conventional bank licensees to obtain capital relief for any use of CRM techniques, the minimum standards for legal documentation outlined in Paragraph CA-4.1.9 must be met.

CA-4.1.9 All documentation used in collateralised transactions and for documenting on-balance sheet netting, guarantees and credit derivatives must be binding on all parties and legally enforceable in all relevant jurisdictions. Conventional bank licensees must have conducted sufficient legal review to verify this and have a well-founded legal basis to reach this conclusion and undertake such further review as necessary to ensure continuing enforceability.

CA-4.2 Overview of Credit Risk Mitigation Techniques[29]

Collateralised Transactions

CA-4.2.1 A collateralised transaction is one in which:

(a) Conventional bank licensees have a credit exposure or potential credit exposure; and

(b) That credit exposure or potential credit exposure is hedged in whole or in part by collateral posted by a counterparty[30] or by a third party on behalf of the counterparty.

CA-4.2.2 Where conventional bank licensees take eligible financial collateral (e.g. cash or securities, more specifically defined in Paragraphs CA-4.3.1 and CA-4.3.2, they are allowed to reduce their credit exposure to a counterparty when calculating their capital requirements to take account of the risk mitigating effect of the collateral.

Overall Framework and Minimum Conditions

CA-4.2.3 Conventional bank licensees may opt for either the simple approach, which substitutes the risk weighting of the collateral for the risk weighting of the counterparty for the collateralised portion of the exposure (generally subject to a 20% floor), or for the comprehensive approach, which allows fuller offset of collateral against exposures, by effectively reducing the exposure amount by the value ascribed to the collateral. Conventional bank licensees may operate under either, but not both, approaches in the banking book, but only under the comprehensive approach in the trading book. Partial collateralisation is recognised in both approaches. Mismatches in the maturity of the underlying exposure and the collateral will only be allowed under the comprehensive approach.

CA-4.2.4 However, before capital relief will be granted in respect of any form of collateral, the standards set out below in Paragraphs CA-4.2.5 to CA-4.2.8 must be met under either approach.

[29] See Appendix CA-5 for an overview of methodologies for the capital treatment of transactions secured by financial collateral under the standardised approach.

[30] In this section "counterparty" is used to denote a party to whom a bank has an on- or off-balance sheet credit exposure or a potential credit exposure. That exposure may, for example, take the form of a loan of cash or securities (where the counterparty would traditionally be called the borrower), of securities posted as collateral, of a commitment or of exposure under an OTC derivatives contract.

CA-4.2 Overview of Credit Risk Mitigation Techniques (continued)

CA-4.2.5 In addition to the general requirements for legal certainty set out in Paragraphs CA-4.1.8 and CA-4.1.9, the legal mechanism by which collateral is pledged or transferred must ensure that the conventional bank licensee has the right to liquidate or take legal possession of it, in a timely manner, in the event of the default, insolvency or bankruptcy (or one or more otherwise-defined credit events set out in the transaction documentation) of the counterparty (and, where applicable, of the custodian holding the collateral). Furthermore conventional bank licensees must take all steps necessary to fulfil those requirements under the law applicable to the conventional bank licensee's interest in the collateral for obtaining and maintaining an enforceable security interest, e.g. by registering it with a registrar, or for exercising a right to net or set off in relation to title transfer collateral.

CA-4.2.6 In order for collateral to provide protection, the credit quality of the counterparty and the value of the collateral must not have a material positive correlation. For example, securities issued by the counterparty — or by any related group entity — would provide little protection and so would be ineligible.

CA-4.2.7 Conventional bank licensees must have clear and robust procedures for the timely liquidation of collateral to ensure that any legal conditions required for declaring the default of the counterparty and liquidating the collateral are observed, and that collateral can be liquidated promptly.

CA-4.2.8 Where the collateral is held by a custodian, conventional bank licensees must take reasonable steps to ensure that the custodian segregates the collateral from its own assets.

CA-4.2.9 A capital requirement will be applied to a conventional bank licensee on either side of the collateralised transaction: for example, both repos and reverse repos will be subject to capital requirements. Likewise, both sides of a securities lending and borrowing transaction will be subject to explicit capital charges, as will the posting of securities in connection with a derivative exposure or other borrowing.

CA-4.2 Overview of Credit Risk Mitigation Techniques (continued)

CA-4.2.10 **Where a conventional bank licensee, acting as agent, arranges a repo-style transaction (i.e. repurchase/reverse repurchase and securities lending/borrowing transactions) between a customer and a third party and provides a guarantee to the customer that the third party will perform on its obligations, then the risk to the conventional bank licensee is the same as if the conventional bank licensee had entered into the transaction as a principal. In such circumstances, a conventional bank licensee will be required to calculate capital requirements as if it were itself the principal.**

The Simple Approach

CA-4.2.11 In the simple approach the risk weighting of the collateral instrument collateralising or partially collateralising the exposure is substituted for the risk weighting of the counterparty. Details of this framework are provided in Paragraphs CA-4.3.26 to CA-4.3.29.

The Comprehensive Approach

CA-4.2.12 **In the comprehensive approach, when taking collateral, conventional bank licensees must calculate their adjusted exposure to a counterparty for capital adequacy purposes in order to take account of the effects of that collateral. Using haircuts and add-ons, conventional bank licensees are required to adjust both the amount of the exposure to the counterparty and the value of any collateral received in support of that counterparty to take account of possible future fluctuations in the value of either[31], occasioned by market movements. This will produce volatility adjusted amounts for both exposure and collateral. Unless either side of the transaction is cash, the volatility adjusted amount for the exposure will be higher than the exposure due to the add-on and for the collateral it will be lower due to the haircut.**

CA-4.2.13 **Additionally where the exposure and collateral are held in different currencies an additional downwards adjustment must be made to the volatility adjusted collateral amount to take account of possible future fluctuations in exchange rates.**

CA-4.2.14 **Where the volatility-adjusted exposure amount is greater than the volatility-adjusted collateral amount (including any further adjustment for foreign exchange risk), conventional bank licensees must calculate their risk-weighted assets as the difference between the two multiplied by the risk weight of the counterparty. The framework for performing these calculations is set out in Paragraphs CA-4.3.3 to CA-4.3.6.**

[31] Exposure amounts may vary where, for example, securities are being lent.

CA-4.2 Overview of Credit Risk Mitigation Techniques (continued)

CA-4.2.15 **Conventional bank licensees must use standard haircuts given in Paragraph CA-4.3.7 unless allowed to use models under Paragraph CA-4.3.22.**

CA-4.2.16 The size of the individual haircuts and add-ons will depend on the type of instrument, type of transaction and the frequency of marking-to-market and re-margining. For example, repo- style transactions subject to daily marking-to-market and to daily re-margining will receive a haircut based on a 5-business day holding period and secured lending transactions with daily mark-to-market and no re-margining clauses will receive a haircut based on a 20-business day holding period. These haircut numbers will be scaled up using the square root of time formula depending on the frequency of remargining or marking-to-market.

CA-4.2.17 For certain types of repo-style transactions (broadly speaking government bond repos as defined in Paragraphs CA-4.3.14 and CA-4.3.15), the CBB may allow conventional bank licensees using standard haircuts not to apply these haircuts in calculating the exposure amount after risk mitigation.

CA-4.2.18 The effect of master netting agreements covering repo-style transactions can be recognised for the calculation of capital requirements subject to the conditions in Paragraph CA-4.3.17.

CA-4.2.19 As an alternative to standard haircuts conventional bank licensees may, subject to approval from CBB, use VaR models for calculating potential price volatility for repo-style transactions and other similar SFTs, as set out in Paragraphs CA-4.3.22 to CA-4.3.25. Alternatively, subject to approval from the CBB's, they may also calculate, for these transactions, an expected positive exposure, as set forth ~~in Appendix CA-2~~ in Chapter CA-5.

On-balance Sheet Netting

CA-4.2.20 Where conventional bank licensees have legally enforceable netting arrangements for loans and deposits, they may calculate capital requirements on the basis of net credit exposures subject to the conditions in Paragraph CA-4.4.1.

Guarantees and Credit Derivatives

CA-4.2.21 Where guarantees or credit derivatives are direct, explicit, irrevocable and unconditional, and the CBB is satisfied that conventional bank licensees fulfil certain minimum operational conditions relating to risk management processes the CBB may allow conventional bank licensees to take account of such credit protection in calculating capital requirements.

CA-4.2 Overview of Credit Risk Mitigation Techniques (continued)

CA-4.2.22 A range of guarantors and protection providers are recognised, as shown in Paragraph CA-4.5.7. A substitution approach will be applied. Thus only guarantees issued by or protection provided by entities with a lower risk weight than the counterparty will lead to reduced capital charges since the protected portion of the counterparty exposure is assigned the risk weight of the guarantor or protection provider, whereas the uncovered portion retains the risk weight of the underlying counterparty.

CA-4.2.23 Detailed operational requirements are given in Paragraphs CA-4.5.1 to CA-4.5.5.

Maturity Mismatch

CA-4.2.24 **Where the residual maturity of the CRM is less than that of the underlying credit exposure a maturity mismatch occurs. Where there is a maturity mismatch and the CRM has an original maturity of less than one year, the CRM is not recognised for capital purposes. In other cases where there is a maturity mismatch, partial recognition is given to the CRM for regulatory capital purposes as detailed below in Paragraphs CA-4.6.1 to CA-4.6.4. Under the simple approach for collateral maturity mismatches will not be allowed.**

Miscellaneous

CA-4.2.25 Treatments for pools of credit risk mitigants and first- and second-to-default credit derivatives are given in Paragraphs CA-4.7.1 to CA-4.7.5.

CA-4.3 Collateral

Eligible Financial Collateral

CA-4.3.1 The following collateral instruments are eligible for recognition in the simple approach:

(a) Cash (as well as certificates of deposit or comparable instruments issued by the lending bank) on deposit with the bank which is incurring the counterparty exposure;[32,33]

(b) Gold;

(c) Debt securities rated by a recognised external credit assessment institution where these are either:
  (i) At least BB- when issued by sovereigns or PSEs that are treated as sovereigns by the CBB;
  (ii) At least BBB- when issued by other entities (including banks and securities firms); or
  (iii) At least A-3/P-3 for short-term debt instruments;

(d) Debt securities not rated by a recognised external credit assessment institution where these are:
  (i) Issued by a bank;
  (ii) Listed on a recognised exchange;
  (iii) Classified as senior debt;
  (iv) All rated issues of the same seniority by the issuing bank must be rated at least BBB- or A-3/P-3 by a recognised external credit assessment institution;
  (v) The bank holding the securities as collateral has no information to suggest that the issue justifies a rating below BBB- or A-3/P-3 (as applicable);
  (vi) The CBB is sufficiently confident about the market liquidity of the security;

(e) Equities (including convertible bonds) that are included in a main index;

(f) Undertakings for Collective Investments in Transferable Securities (UCITS) and mutual funds where:
  (i) A price for the units is publicly quoted daily; and
  (ii) The UCITS/mutual fund is limited to investing in the instruments listed in this paragraph[34]; and

(g) Re-securitisations (as defined in the securitisation framework), irrespective of any credit ratings, are not eligible financial collateral.

[32] Cash funded credit linked notes issued by the bank against exposures in the banking book which fulfil the criteria for credit derivatives will be treated as cash collateralised transactions.

[33] When cash on deposit, certificates of deposit or comparable instruments issued by the lending bank are held as collateral at a third-party bank in a non-custodial arrangement, if they are openly pledged/assigned to the lending bank and if the pledge /assignment is unconditional and irrevocable, the exposure amount covered by the collateral (after any necessary haircuts for currency risk) will receive the risk weight of the third-party bank.

[34] However, the use or potential use by a UCITS/mutual fund of derivative instruments solely to hedge investments listed in this paragraph and paragraph CA-4.3.2 shall not prevent units in that UCITS /mutual fund from being eligible financial collateral.

CA-4.3 Collateral (continued)

The Comprehensive Approach

CA-4.3.2 The following collateral instruments are eligible for recognition in the comprehensive approach:

(a) All of the instruments in paragraph CA-4.3.1;
(b) Equities (including convertible bonds) which are not included in a main index but which are listed on a recognised exchange; and
(c) CIUs/UCITS/mutual funds which include such equities.

~~***The Comprehensive Approach***~~

Calculation of Capital Requirement

CA-4.3.3 For a collateralised transaction, the exposure amount after risk mitigation is calculated as follows:

$$E^* = \text{Max}\{0, [E \times (1 + He) - C \times (1 - Hc - Hfx)]\}$$

where:

E* = The exposure value after risk mitigation
E = Current value of the exposure
He = Add-on appropriate to the exposure
C = The current value of the collateral received
Hc = Haircut appropriate to the collateral
Hfx = Haircut appropriate for currency mismatch between the collateral and exposure

CA-4.3.4 The exposure amount after risk mitigation is multiplied by the risk weight of the counterparty to obtain the risk-weighted asset amount for the collateralised transaction.

CA-4.3.5 The treatment for transactions where there is a mismatch between the maturity of the counterparty exposure and the collateral is given in Paragraphs CA-4.6.1 to CA-4.6.4.

CA-4.3.6 Where the collateral is a basket of assets, the haircut on the basket will be:
$H = \sum_i a_i H_i$, where a_i is the weight of the asset (as measured by units of currency) in the i basket and H_i the haircut applicable to that asset.

CA-4.3 Collateral (continued)

Standard Haircuts and Add-Ons

CA-4.3.7 These are the standardised supervisory haircuts and add-ons under the comprehensive approach (assuming daily mark-to market, daily re-margining and a 10-business day holding period), expressed as percentages:

Issue rating for debt securities	Residual Maturity	Sovereigns[27,28]	Other issuers[29]	Securitisation Exposures[30]
AAA to AA-/A-1	≤1 year	0.5	1	2
	>1 year, ≤~~5~~3 years	2	3	8
	>3 years, ≤5 years		4	
	> 5 years, ≤10 years	4	~~8~~6	16
	>10 years		12	
A+ to BBB-/ A-2/A-3/P-3 and Unrated bank securities	≤1 year	1	2	4
	>1 year, ≤~~5~~3 years	3	4	12
	>3 years, ≤5 years		6	
	> 5 years, ≤10 years	6	12	24
	>10 years		20	
BB+ to BB-	All	15	Not Eligible	Not Eligible
Main index equities	20 ~~15~~			
Other equities	30 ~~25~~			
CIUs/UCITS/mutual funds	Highest haircut applicable to any security ~~in fund~~ in which the fund can invest, unless the bank can apply the look-through approach (LTA) for equity investments in funds, in which case the bank may use a weighted average of haircuts applicable to instruments held by the fund.			
Cash in the same currency[31]	0			

[27] Includes PSEs which are treated as sovereigns by the CBB.
[28] Multilateral development banks receiving a 0% risk weight will be treated as sovereigns.
[29] Includes PSEs which are not treated as sovereigns by CBB.
[30] Securitisation exposures are defined as those exposures that meet the definition set forth in the securitisation framework.
[31] Eligible cash collateral specified in Subparagraph CA-4.3.1(a).

CA-4.3 Collateral (continued)

CA-4.3.8 **The standard haircut for currency risk where exposure and collateral are denominated in different currencies is 8% (also based on a 10-business day holding period and daily mark-to-market).**

CA-4.3.9 **For transactions in which the conventional bank licensee lends non-eligible instruments (e.g. non-investment grade corporate debt securities), ~~the add-on to be applied on the exposure must be the same as the one for equity traded on a recognised exchange that is not part of a main index.~~ the haircut to be applied on the exposure must be 30%. For transactions in which the bank borrows non-eligible instruments, credit risk mitigation may not be applied.**

Adjustment for Different Holding Periods and Non Daily Mark-to-market or Re-Margining

CA-4.3.10 For some transactions, depending on the nature and frequency of the revaluation and re-margining provisions, different holding periods are appropriate. The framework for collateral haircuts distinguishes between repo-style transactions (i.e. repo/reverse repos and securities lending/borrowing), "other capital-market-driven transactions" (i.e. OTC derivatives transactions and margin lending) and secured lending. In capital-market-driven transactions and repo-style transactions, the documentation contains remargining clauses; in secured lending transactions, it generally does not.

CA-4.3.11 **The minimum holding period for various products is summarised in the following table.**

Transaction type	Minimum holding period	Condition
Repo-style transaction	five business days	daily re-margining
Other capital market transactions	ten business days	daily re-margining
Secured lending	twenty business days	daily revaluation

CA-4.3 Collateral (continued)

CA-4.3.12 When the frequency of re-margining or revaluation is longer than the minimum, the minimum haircut numbers will be scaled up depending on the actual number of business days between re margining or revaluation using the square root of time formula below:

$$H = H_M \sqrt{\frac{N_R + (T_M - 1)}{T_M}}$$

where:

H = Haircut
H_M = Haircut under the minimum holding period
T_M = Minimum holding period for the type of transaction
N_R = Actual number of business days between re margining for capital market transactions or revaluation for secured transactions.

When a conventional bank licensee calculates the volatility on a T_N day holding period which is different from the specified minimum holding period T_M, the H_M will be calculated using the square root of time formula:

$$H_M = H_N \sqrt{\frac{T_M}{T_N}}$$

T_N = Holding period used by the bank for deriving H_N
H_N = Haircut based on the holding period T_N

CA-4.3 Collateral (continued)

CA-4.3.13 **For example, for conventional bank licensees using the standard CBB haircuts, the 10-business day haircuts provided in paragraph CA-4.3.7 will be the basis and this haircut will be scaled up or down depending on the type of transaction and the frequency of re-margining or revaluation using the formula below:**

$$H = H_{10}\sqrt{\frac{N_R + (T_M - 1)}{10}}$$

where:

H = Haircut
H_{10} = 10-business day standard CBB haircut for instrument

N_R = Actual number of business days between re-margining for capital
= Market transactions or revaluation for secured transactions.
T_M = Minimum holding period for the type of transaction

Conditions for Zero H

CA-4.3.14 For repo-style transactions where the following conditions are satisfied, and the counterparty is a core market participant, conventional bank licensees are not required to apply the haircuts specified in the comprehensive approach and may instead apply a haircut of zero. This carve-out will not be available for conventional bank licensees using the modelling approaches as described in Paragraphs CA-4.3.22 to CA-4.3.25:

(a) Both the exposure and the collateral are cash or a sovereign security or PSE security qualifying for a 0% risk weight in the standardised approach;
(b) Both the exposure and the collateral are denominated in the same currency;
(c) Either the transaction is overnight or both the exposure and the collateral are marked-to-market daily and are subject to daily re-margining;
(d) Following a counterparty's failure to re-margin, the time that is required between the last mark-to-market before the failure to re-margin and the liquidation[32] of the collateral is considered to be no more than four business days;
(e) The transaction is settled across a settlement system proven for that type of transaction;

[32] This does not require the bank to always liquidate the collateral but rather to have the capability to do so within the given time frame.

CA-4.3 Collateral (continued)

(f) The documentation covering the agreement is standard market documentation for repo-style transactions in the securities concerned;
(g) The transaction is governed by documentation specifying that if the counterparty fails to satisfy an obligation to deliver cash or securities or to deliver margin or otherwise defaults, then the transaction is immediately terminable; and
(h) Upon any default event, regardless of whether the counterparty is insolvent or bankrupt, the conventional bank licensee has the unfettered, legally enforceable right to immediately seize and liquidate the collateral for its benefit.

CA-4.3.15 Core market participants include the following entities:
(a) Sovereigns, central banks and PSEs;
(b) Banks and securities firms;
(c) Other financial companies (including insurance companies) eligible for a 20% risk weight in the standardised approach;
(d) Regulated mutual funds that are subject to capital or leverage requirements;
(e) Regulated pension funds; and
(f) Recognised clearing organisations.

CA-4.3.16 Where a supervisor has applied a specific carve-out to repo-style transactions in securities issued by its domestic government, then banks incorporated in Bahrain are allowed to adopt the same approach to the same transactions.

Treatment of Repo-style Transactions Covered under Master Netting Agreements

CA-4.3.17 **The effects of bilateral netting agreements covering repo-style securities financing transactions (SFTs) will be recognised on a counterparty-by-counterparty basis if the agreements are legally enforceable in each relevant jurisdiction upon the occurrence of an event of default and regardless of whether the counterparty is insolvent or bankrupt. In addition, netting agreements must:**

(a) Provide the non-defaulting party the right to terminate and close-out in a timely manner all transactions under the agreement upon an event of default, including in the event of insolvency or bankruptcy of the counterparty;
(b) Provide for the netting of gains and losses on transactions (including the value of any collateral) terminated and closed out under it so that a single net amount is owed by one party to the other;
(c) Allow for the prompt liquidation or setoff of collateral upon the event of default; and

CA-4.3 Collateral (continued)

(d) Be, together with the rights arising from the provisions required in (a) to (c) above, legally enforceable in each relevant jurisdiction upon the occurrence of an event of default and regardless of the counterparty's insolvency or bankruptcy.

CA-4.3.18 Netting across positions in the banking and trading book will only be recognised when the netted transactions fulfil the following conditions:
(a) All transactions are marked to market daily[41]; and
(b) The collateral instruments used in the transactions are recognised as eligible financial collateral in the banking book.

CA-4.3.19 The formula in Paragraph CA-4.3.3 will be adapted to calculate the capital requirements for transactions with netting agreements.

CA-4.3.20 For conventional bank licensees using the standard haircuts, the framework below will apply to take into account the impact of master netting agreements.

$$E^* = \max \{0, [(\sum(E) - \sum(C)) + \sum (E_s \times H_s) + \sum (E_{FX} \times H_{FX})]\}$$[42]

Where:

E^* = The exposure value after risk mitigation
E = Current value of the exposure
C = The value of the collateral received
E_s = Absolute value of the net position in a given security
H_s = Haircut appropriate to E_s
E_{FX} = Absolute value of the net position in a currency different from the settlement currency
H_{FX} = Haircut appropriate for currency mismatch

CA-4.3.21 The net long or short position of each security included in the netting agreement will be multiplied by the appropriate haircut. All other rules regarding the calculation of haircuts stated in Paragraphs CA4.3.3 to CA-4.3.16 equivalently apply for conventional bank licensees using bilateral netting agreements for repo-style transactions.

[41] The holding period for the haircuts will depend as in other repo-style transactions on the frequency of margining.
[42] The starting point for this formula is the formula in paragraph CA-4.3.3 which can also be presented as the following: E* = max {0, [(E – C) + (E x He) + (C x Hc) + (C x Hfx)]}

CA-4.3 Collateral (continued)

Use of Models

CA-4.3.22 As an alternative to the use of standard haircuts, CBB may allow conventional bank licensees to use a VaR models approach to reflect the price volatility of the exposure and collateral for repo-style transactions, taking into account correlation effects between security positions. This approach would apply to repo-style transactions covered by bilateral netting agreements on a counterparty-by-counterparty basis. At the discretion of CBB, firms are also eligible to use the VaR model approach for margin lending transactions, if the transactions are covered under a bilateral master netting agreement that meets the requirements of Paragraphs CA-4.3.17 and CA-4.3.18. The VaR models approach is available to conventional bank licensees that have received CBB's recognition for an internal market risk model under Chapter CA-14. Conventional bank licensees which have not received CBB's recognition for use of models under Chapter CA-14 can separately apply for CBB's recognition to use their internal VaR models for calculation of potential price volatility for repo-style transactions. Internal models will only be accepted when a conventional bank licensee can prove the quality of its model to CBB through the backtesting of its output using one year of historical data.

CA-4.3.23 The quantitative and qualitative criteria for recognition of internal market risk models for repo-style transactions and other similar transactions are in principle the same as in Chapter CA-14. With regard to the holding period, the minimum will be 5-business days for repo-style transactions, rather than the 10-business days in the Market Risk Amendment. For other transactions eligible for the VaR models approach, the 10-business day holding period will be retained. The minimum holding period should be adjusted upwards for market instruments where such a holding period would be inappropriate given the liquidity of the instrument concerned.

CA-4.3.24 The calculation of the exposure E* for banks using their internal model will be the following:

$$E^* = \max\{0, [(\sum E - \sum C) + \text{VaR output from internal model}]\}$$

In calculating capital requirements banks will use the previous business day's VaR number.

CA-4.3 Collateral (continued)

CA-4.3.25 [This paragraph was deleted in January 2015.]

The Simple Approach

Minimum Conditions

CA-4.3.26 **For collateral to be recognised in the simple approach, the collateral must be pledged for at least the life of the exposure and it must be marked to market and revalued with a minimum frequency of six months. Those portions of claims collateralised by the market value of recognised collateral receive the risk weight applicable to the collateral instrument. The risk weight on the collateralised portion will be subject to a floor of 20% except under the conditions specified in Paragraphs CA-4.3.27 to CA-4.3.29. The remainder of the claim must be assigned to the risk weight appropriate to the counterparty. A capital requirement will be applied to conventional bank licensees on either side of the collateralised transaction: for example, both repos and reverse repos will be subject to capital requirements.**

Exceptions to the Risk Weight Floor

CA-4.3.27 **Transactions which fulfil the criteria outlined in Paragraph CA-4.3.14 and are with a core market participant, as defined in Paragraph CA-4.3.15, receive a risk weight of 0%. If the counterparty to the transactions is not a core market participant the transaction must receive a risk weight of 10%.**

CA-4.3.28 **OTC derivative transactions subject to daily mark-to-market, collateralised by cash and where there is no currency mismatch receive a 0% risk weight. Such transactions collateralised by sovereign or PSE securities qualifying for a 0% risk weight in the standardised approach will receive a 10% risk weight.**

CA-4.3.29 **The 20% floor for the risk weight on a collateralised transaction will not be applied and a 0% risk weight can be applied where the exposure and the collateral are denominated in the same currency, and either:**

(a) The collateral is cash on deposit as defined in Paragraph CA-4.3.1(a); or

CA-4.3 Collateral (continued)

(b) The collateral is in the form of sovereign/PSE securities eligible for a 0% risk weight, and its market value has been discounted by 20%.

~~*Collateralised OTC Derivatives Transactions*~~

~~CA-4.3.30~~ ~~Under the Current Exposure Method, the calculation of the counterparty credit risk charge for an individual contract is as follows:~~

~~Counterparty charge = [(RC + add-on) – C_A] x r x 8%~~

~~Where:~~

~~RC = The replacement cost,~~
~~Add-on = The amount for potential future exposure calculated according to paragraph 45 of Appendix CA-2.~~
~~C_A = The volatility adjusted collateral amount under the comprehensive approach prescribed in Paragraphs CA-4.3.3 to CA-4.3.16, or zero if no eligible collateral is applied to the transaction, and~~
~~r = The risk weight of the counterparty.~~

~~CA-4.3.31~~ ~~When effective bilateral netting contracts are in place, RC is the net replacement cost and the add-on is A_{Net} as calculated according to paragraph 50 (i) to 50 (vi) of Appendix CA-2. The haircut for currency risk (H_{fx}) must be applied when there is a mismatch between the collateral currency and the settlement currency. Even in the case where there are more than two currencies involved in the exposure, collateral and settlement currency, a single haircut assuming a 10-business day holding period scaled up as necessary depending on the frequency of mark-to-market must be applied.~~

~~CA-4.3.32~~ ~~As an alternative to the Current Exposure Method for the calculation of the counterparty credit risk charge, conventional bank licensees may also use the Standardised Method.~~

CA-4.4 On-balance Sheet Netting

CA-4.4.1 Where a conventional bank licensee:

(a) Has a well-founded legal basis for concluding that the netting or offsetting agreement is enforceable in each relevant jurisdiction regardless of whether the counterparty is insolvent or bankrupt;

(b) Is able at any time to determine those assets and liabilities with the same counterparty that are subject to the netting agreement;

(c) Monitors and controls its roll-off risks; and

(d) Monitors and controls the relevant exposures on a net basis,

it may use the net exposure of loans and deposits as the basis for its capital adequacy calculation in accordance with the formula in Paragraph CA-4.3.3. Assets (loans) are treated as exposure and liabilities (deposits) as collateral. The haircuts will be zero except when a currency mismatch exists. A 10-business day holding period will apply when daily mark-to- market is conducted and all the requirements contained in Paragraphs CA-4.3.7, CA-4.3.13, and CA-4.6.1 to CA-4.6.4 will apply.

CA-4.5 Guarantees and Credit Derivatives

Operational Requirements

Operational Requirements Common to Guarantees and Credit Derivatives

CA-4.5.1 **A guarantee (counter-guarantee) or credit derivative must represent a direct claim on the protection provider and must be explicitly referenced to specific exposures or a pool of exposures, so that the extent of the cover is clearly defined and incontrovertible. Other than non-payment by a protection purchaser of money due in respect of the credit protection contract it must be irrevocable; there must be no clause in the contract that would allow the protection provider unilaterally to cancel the credit cover or that would increase the effective cost of cover as a result of deteriorating credit quality in the hedged exposure[43]. It must also be unconditional; there must be no clause in the protection contract outside the direct control of the conventional bank licensee that could prevent the protection provider from being obliged to pay out in a timely manner in the event that the original counterparty fails to make the payment(s) due.**

Additional Operational Requirements for Guarantees

CA-4.5.2 **In addition to the legal certainty requirements in Paragraphs CA-4.1.8 and CA-4.1.9, in order for a guarantee to be recognised, the following conditions must be satisfied:**

(a) On the qualifying default/non-payment of the counterparty, the conventional bank licensee may in a timely manner pursue the guarantor for any monies outstanding under the documentation governing the transaction. The guarantor may make one lump sum payment of all monies under such documentation to the conventional bank licensee, or the guarantor may assume the future payment obligations of the counterparty covered by the guarantee. The conventional bank licensee must have the right to receive any such payments from the guarantor without first having to take legal actions in order to pursue the counterparty for payment;

(b) The guarantee is an explicitly documented obligation assumed by the guarantor; and

[43] Note that the irrevocability condition does not require that the credit protection and the exposure be maturity matched; rather that the maturity agreed *ex ante* may not be reduced *ex post* by the protection provider. Paragraph CA-4.6.2 sets forth the treatment of call options in determining remaining maturity for credit protection.

CA-4.5 Guarantees and Credit Derivatives (continued)

(c) Except as noted in the following sentence, the guarantee covers all types of payments the underlying obligor is expected to make under the documentation governing the transaction, for example notional amount, margin payments etc. Where a guarantee covers payment of principal only, interests and other uncovered payments must be treated as an unsecured amount in accordance with Paragraph CA-4.5.10.

Additional Operational Requirements for Credit Derivatives

CA-4.5.3 In order for a credit derivative contract to be recognised, the following conditions must be satisfied:

(a) The credit events specified by the contracting parties must at a minimum cover:

(i) Failure to pay the amounts due under terms of the underlying obligation that are in effect at the time of such failure (with a grace period that is closely in line with the grace period in the underlying obligation);

(ii) Bankruptcy, insolvency or inability of the obligor to pay its debts, or its failure or admission in writing of its inability generally to pay its debts as they become due, and analogous events; and

(iii) Restructuring of the underlying obligation involving forgiveness or postponement of principal, interest or fees that results in a credit loss event (i.e. charge-off, specific provision or other similar debit to the profit and loss account). When restructuring is not specified as a credit event, refer to Paragraph CA-4.5.4;

(b) If the credit derivative covers obligations that do not include the underlying obligation, Subparagraph (g) governs whether the asset mismatch is permissible;

(c) The credit derivative shall not terminate prior to expiration of any grace period required for a default on the underlying obligation to occur as a result of a failure to pay, subject to the provisions of Paragraph CA-4.6.2;

CA-4.5 Guarantees and Credit Derivatives (continued)

(d) Credit derivatives allowing for cash settlement are recognised for capital purposes insofar as a robust valuation process is in place in order to estimate loss reliably. There must be a clearly specified period for obtaining post-credit- event valuations of the underlying obligation. If the reference obligation specified in the credit derivative for purposes of cash settlement is different than the underlying obligation, Subparagraph (g) below governs whether the asset mismatch is permissible;

(e) If the protection purchaser's right/ability to transfer the underlying obligation to the protection provider is required for settlement, the terms of the underlying obligation must provide that any required consent to such transfer may not be unreasonably withheld;

(f) The identity of the parties responsible for determining whether a credit event has occurred must be clearly defined. This determination must not be the sole responsibility of the protection seller. The protection buyer must have the right/ability to inform the protection provider of the occurrence of a credit event;

(g) A mismatch between the underlying obligation and the reference obligation under the credit derivative (i.e. the obligation used for purposes of determining cash settlement value or the deliverable obligation) is permissible if (1) the reference obligation ranks pari passu with or is junior to the underlying obligation, and (2) the underlying obligation and reference obligation share the same obligor (i.e. the same legal entity) and legally enforceable cross-default or cross-acceleration clauses are in place; and

(h) A mismatch between the underlying obligation and the obligation used for purposes of determining whether a credit event has occurred is permissible if (1) the latter obligation ranks pari passu with or is junior to the underlying obligation, and (2) the underlying obligation and reference obligation share the same obligor (i.e. the same legal entity) and legally enforceable cross-default or cross-acceleration clauses are in place.

CA-4.5 Guarantees and Credit Derivatives (continued)

CA-4.5.4 When the restructuring of the underlying obligation is not covered by the credit derivative, but the other requirements in Paragraph CA-4.5.3 are met, partial recognition of the credit derivative will be allowed. If the amount of the credit derivative is less than or equal to the amount of the underlying obligation, 60% of the amount of the hedge can be recognised as covered. If the amount of the credit derivative is larger than that of the underlying obligation, then the amount of eligible hedge is capped at 60% of the amount of the underlying obligation[44].

CA-4.5.5 Only credit default swaps and total return swaps that provide credit protection equivalent to guarantees will be eligible for recognition. The following exception applies. Where a conventional bank licensee buys credit protection through a total return swap and records the net payments received on the swap as net income, but does not record offsetting deterioration in the value of the asset that is protected (either through reductions in fair value or by an addition to reserves), the credit protection will not be recognised. The treatment of first-to-default and second-to-default products is covered separately in Paragraphs CA-4.7.2 to CA-4.7.5.

CA-4.5.6 Other types of credit derivatives are not eligible for recognition[45].

Range of Eligible Guarantors (Counter-Guarantors)/Protection Providers

CA-4.5.7 Credit protection given by the following entities will be recognised:

(a) Sovereign entities[46], PSEs, banks[47] and securities firms with a lower risk weight than the counterparty;

(b) Other entities that are externally rated except where credit protection is provided to a securitisation exposure. This would include credit protection provided by parent, subsidiary and affiliate companies when they have a lower risk weight than the obligor; and

[44] The 60% recognition factor is provided as an interim treatment, which the CBB may refine in the future.

[45] Cash funded credit linked notes issued by the bank against exposures in the banking book which fulfil the criteria for credit derivatives will be treated as cash collateralised transactions.

[46] This includes the Bank for International Settlements, the International Monetary Fund, the European Central Bank and the European Community, as well as those MDBs referred to in CA-3.2.8.

[47] This includes other MDBs.

CA-4.5 Guarantees and Credit Derivatives (continued)

(c) When credit protection is provided to a securitisation exposure, other entities that currently are externally rated BBB- or better and that were externally rated A- or better at the time the credit protection was provided. This would include credit protection provided by parent, subsidiary and affiliate companies when they have a lower risk weight than the obligor.

Risk Weights

CA-4.5.8 **The protected portion is assigned the risk weight of the protection provider. The uncovered portion of the exposure is assigned the risk weight of the underlying counterparty.**

CA-4.5.9 **Materiality thresholds on payments below which no payment is made in the event of loss are equivalent to retained first loss positions and must be deducted in full from the Total Capital of the conventional bank licensee purchasing the credit protection.**

Proportional Cover

CA-4.5.10 **Where the amount guaranteed, or against which credit protection is held, is less than the amount of the exposure, and the secured and unsecured portions are of equal seniority, i.e. the conventional bank licensee and the guarantor share losses on a pro-rata basis capital relief will be afforded on a proportional basis: i.e. the protected portion of the exposure will receive the treatment applicable to eligible guarantees/credit derivatives, with the remainder treated as unsecured.**

Tranched Cover

CA-4.5.11 Where the conventional bank licensee transfers a portion of the risk of an exposure in one or more tranches to a protection seller or sellers and retains some level of risk of the loan and the risk transferred and the risk retained are of different seniority, conventional bank licensees may obtain credit protection for either the senior tranches (e.g. second loss portion) or the junior tranche (e.g. first loss portion). In this case the rules as set out in Chapter CA-6 (Credit risk – securitisation framework) will apply.

CA-4.5 Guarantees and Credit Derivatives (continued)

Currency Mismatches

CA-4.5.12 **Where the credit protection is denominated in a currency different from that in which the exposure is denominated — i.e. there is a currency mismatch — the amount of the exposure deemed to be protected will be reduced by the application of a haircut H_{FX}, i.e.**

$$G_A = G \times (1 - H_{FX})$$

Where:

G = Nominal amount of the credit protection
H_{FX} = Haircut appropriate for currency mismatch between the credit protection and underlying obligation.

The appropriate haircut based on a 10-business day holding period (assuming daily marking-to-market) will be applied. If a conventional bank licensee uses the standard haircuts it will be 8%. The haircuts must be scaled up using the square root of time formula, depending on the frequency of revaluation of the credit protection as described in Paragraph CA-4.3.12.

Sovereign Guarantees and Counter-guarantees

CA-4.5.13 Portions of claims guaranteed by the entities detailed in Paragraph CA-3.2.1, where the guarantee is denominated in the domestic currency (and US$ in case of a guarantee provided by the Government of Bahrain and CBB) may get a 0% risk-weighting. A claim may be covered by a guarantee that is indirectly counter-guaranteed by such entities. Such a claim may be treated as covered by a sovereign guarantee provided that:

(a) The sovereign counter-guarantee covers all credit risk elements of the claim;
(b) Both the original guarantee and the counter-guarantee meet all operational requirements for guarantees, except that the counter-guarantee need not be direct and explicit to the original claim; and
(c) CBB is satisfied that the cover is robust and that no historical evidence suggests that the coverage of the counter-guarantee is less than effectively equivalent to that of a direct sovereign guarantee.

CA-4.6 Maturity Mismatches

CA-4.6.1 For the purposes of calculating risk-weighted assets, a maturity mismatch occurs when the residual maturity of a hedge is less than that of the underlying exposure.

Definition of Maturity

CA-4.6.2 The maturity of the underlying exposure and the maturity of the hedge should both be defined conservatively. The effective maturity of the underlying should be gauged as the longest possible remaining time before the counterparty is scheduled to fulfil its obligation, taking into account any applicable grace period. For the hedge, embedded options which may reduce the term of the hedge should be taken into account so that the shortest possible effective maturity is used. Where a call is at the discretion of the protection seller, the maturity will always be at the first call date. If the call is at the discretion of the protection buying bank but the terms of the arrangement at origination of the hedge contain a positive incentive for the bank to call the transaction before contractual maturity, the remaining time to the first call date will be deemed to be the effective maturity. For example, where there is a step-up in cost in conjunction with a call feature or where the effective cost of cover increases over time even if credit quality remains the same or increases, the effective maturity will be the remaining time to the first call.

Risk Weights for Maturity Mismatches

CA-4.6.3 **As outlined in Paragraph CA-4.2.24, hedges with maturity mismatches are only recognised when their original maturities are greater than or equal to one year. As a result, the maturity of hedges for exposures with original maturities of less than one year must be matched to be recognised. In all cases, hedges with maturity mismatches will not be recognised when they have a residual maturity of three months or less.**

CA-4.6 Maturity Mismatches (continued)

CA-4.6.4 When there is a maturity mismatch with recognised credit risk mitigants (collateral, on-balance sheet netting, guarantees and credit derivatives) the following adjustment will be applied.

$$Pa = P \times (t - 0.25) / (T - 0.25)$$

Where:

Pa = Value of the credit protection adjusted for maturity mismatch.

P = Credit protection (e.g. collateral amount, guarantee amount) adjusted for any haircuts.

T = Min (T, residual maturity of the credit protection arrangement) expressed in years.

T = Min (5, residual maturity of the exposure) expressed in years.

CA-4.7 Other Items Related to the Treatment of CRM Techniques

Treatment of Pools of CRM Techniques

CA-4.7.1 In the case where a conventional bank licensee has multiple CRM techniques covering a single exposure (e.g. a bank has both collateral and guarantee partially covering an exposure), the conventional bank licensee is required to subdivide the exposure into portions covered by each type of CRM technique (e.g. portion covered by collateral, portion covered by guarantee) and the risk-weighted assets of each portion must be calculated separately. When credit protection provided by a single protection provider has differing maturities, they must be subdivided into separate protection as well.

First-to-default and nth-to-default Credit Derivatives

CA-4.7.2 ~~There are cases where a conventional bank licensee obtains credit protection for a basket of reference names and where the first default among the reference names triggers the credit protection and the credit event also terminates the contract. In this case, the conventional bank licensee may recognise regulatory capital relief for the asset within the basket with the lowest risk-weighted amount, but only if the notional amount is less than or equal to the notional amount of the credit derivative.~~ First-to-default and all other nth-to-default credit derivatives (i.e. by which a bank obtains credit protection for a basket of reference names and where the first- or nth–to-default among the reference names triggers the credit protection and terminates the contract) are not eligible as a credit risk mitigation technique and therefore cannot provide any regulatory capital relief.

CA-4.7.3 With regard to the conventional bank licensee providing credit protection through ~~such an instrument~~ first-to-default credit derivatives, if the product has an external credit assessment from an eligible credit assessment institution, the risk weight in Paragraph CA-6.4.8 applied to securitisation tranches will be applied. If the product is not rated by an eligible external credit assessment institution, the risk weights of the assets included in the basket will be aggregated up to a maximum of 1250% and multiplied by the nominal amount of the protection provided by the credit derivative to obtain the risk-weighted asset amount.

CA-4.7 Other Items Related to the Treatment of CRM Techniques (continued)

~~*Second-to-default Credit Derivatives*~~

CA-4.7.4 ~~In the case where the second default among the assets within the basket triggers the credit protection, the conventional bank licensee obtaining credit protection through such a product will only be able to recognise any capital relief if first-default-protection has also be obtained or when one of the assets within the basket has already defaulted.~~

CA-4.7.5 For conventional bank licensees providing credit protection through such a product second-to-default credit derivatives, the capital treatment is the same as in Paragraph CA-4.7.3 above with one exception. The exception is that, in aggregating the risk weights, the asset with the lowest risk weighted amount can be excluded from the calculation.

MODULE	CA:	Capital Adequacy
CHAPTER	CA-5	Credit Risk – The Internal Ratings-Based Approach

CA-5.1 [This Chapter was deleted in January 2015.]

CA-5.1 Scope of counterparty credit risk charge

CA-5.1.1 This Chapter sets out the methods for computing the exposure amount under the standardised approach for counterparty credit risk (SA-CCR). Appendix CA-2 contains all the definitions and terminologies. Some transactions give rise to a bilateral risk of loss and therefore give rise to a counterparty credit risk charge. For example:

(a) A bank makes a loan to a borrower and receives collateral from the borrower[40].

(i) The bank is exposed to the risk that the borrower defaults and the sale of the collateral is insufficient to cover the loss on the loan.

(ii) The borrower is exposed to the risk that the bank defaults and does not return the collateral. Even in cases where the customer has the legal right to offset the amount it owes on the loan in compensation for the lost collateral, the customer is still exposed to the risk of loss at the outset of the loan because the value of the loan may be less than the value of the collateral the time of default of the bank.

(b) A bank borrows cash from a counterparty and posts collateral to the counterparty (or undertakes a transaction that is economically equivalent, such as the sale and repurchase (repo) of a security).

(i) The bank is exposed to the risk that its counterparty defaults and does not return the collateral that the bank posted.

(ii) The counterparty is exposed to the risk that the bank defaults and the amount the counterparty raises from the sale of the collateral that the bank posted is insufficient to cover the loss on the counterparty's loan to the bank.

(c) A bank borrows a security from a counterparty and posts cash to the counterparty as collateral (or undertakes a transaction that is economically equivalent, such as a reverse repo).

(i) The bank is exposed to the risk that its counterparty defaults and does not return the cash that the bank posted as collateral.

(ii) The counterparty is exposed to the risk that the bank defaults and the cash that the bank posted as collateral is insufficient to cover the loss of the security that the bank borrowed.

(d) A bank enters a derivatives transaction with a counterparty (e.g. it enters a swap transaction or purchases an option). The value of the transaction can vary over time with the movement of underlying market factors[41].

(i) The bank is exposed to the risk that the counterparty defaults when the derivative has a positive value for the bank.

(ii) The counterparty is exposed to the risk that the bank defaults when the derivative has a positive value for the counterparty.

[40] The bilateral risk of loss in this example arises because the bank receives, ie takes possession of, the collateral as part of the transaction. By contrast, collateralized loans where the collateral is not exchanged prior to default, do not give rise to a bilateral risk of loss; for example a corporate or retail loan secured on a property of the borrower where the bank may only take possession of the property when the borrower defaults does not give rise to counterparty credit risk.

[41] The counterparty credit risk rules capture the risk of loss to the bank from the default of the derivative counterparty. The risk of gains or losses on the changing market value of the derivative is captured by the market risk framework.

CA-5.1 Scope of counterparty credit risk charge (continued)

CA-5.1.2 **Banks must calculate a counterparty credit risk charge for all exposures that give rise to counterparty credit risk, with the exception of those transactions listed in Paragraph CA-5.2.6 below. The categories of transaction that give rise to counterparty credit risk are:**

(a) Over-the-counter (OTC) derivatives;
(b) Exchange-traded derivatives;
(c) Long settlement transactions; and
(d) Securities financing transactions.

CA-5.1.3 Transactions referred to in CA-5.1.2 generally exhibit the following abstract characteristics:

(a) The transactions generate a current exposure or market value;
(b) The transactions have an associated random future market value based on market variables;
(c) The transactions generate an exchange of payments or an exchange of a financial instrument (including commodities) against payment; and
(d) The transactions are undertaken with an identified counterparty against which a unique probability of default can be determined.

CA-5.1.4 Other common characteristics of the transactions to be covered may include the following:

(a) Collateral may be used to mitigate risk exposure and is inherent in the nature of some transactions;
(b) Short-term financing may be a primary objective in that the transactions mostly consist of an exchange of one asset for another (cash or securities) for a relatively short period of time, usually for the business purpose of financing. The two sides of the transactions are not the result of separate decisions, but form an indivisible whole to accomplish a defined objective;
(c) Netting may be used to mitigate the risk;
(d) Positions are frequently valued (most commonly on a daily basis), according to market variables; and
(e) Re-margining may be employed.

CA-5.1.5 **For the transaction types listed CA-5.1.2 above, banks must calculate their counterparty credit risk exposure, or exposure at default (EAD) using one of the methods set out in CA-5.2.1 to CA-5.2.2 below. The methods vary according to the type of the transaction, the counterparty to the transaction, and whether the bank has received supervisory approval to use the method (if such approval is required).**

MODULE	CA: Capital Adequacy
CHAPTER	CA-5: SA-CCR

CA-5.2 Methods of Calculation

CA-5.2.1 For exposures that are not cleared through a central counterparty (CCP) the following methods must be used to calculate the counterparty credit risk exposure:

(a) Standardised approach for measuring counterparty credit risk exposures (SA-CCR), which is set out in Section CA-5.3. This method is to be used for exposures arising from OTC derivatives, exchange-traded derivatives and long settlement transactions.

(b) The simple approach or comprehensive approach to the recognition of collateral, which are both set out in Chapter CA-4.

CA-5.2.2 For exposures that are cleared through a CCP, banks must apply the method set out Section CA-5.4. This method covers:

(a) The exposures of a bank to a CCPs when the bank is a clearing member of the CCP;

(b) The exposures of a bank to its clients, when the bank is a clearing members and act as an intermediary between the client and the CCP; and

(c) The exposures of a bank to a clearing member of a CCP, when the bank is a client of the clearing member and the clearing member is acting as an intermediary between the bank and the CCP

CA-5.2.3 Exposures to central counterparties arising from the settlement of cash transactions (equities, fixed income, spot foreign exchange and spot commodities), are covered under Appendix CA-4.

CA-5.2.4 Under the methods outlined above, the exposure amount or EAD for a given counterparty is equal to the sum of the exposure amounts or EADs calculated for each netting set with that counterparty, subject to the exception of EAD for a given OTC derivative counterparty which is defined as the greater of zero and the difference between the sum of EADs across all netting sets with the counterparty and the credit valuation adjustment (CVA) for that counterparty which has already been recognised by the bank as an incurred write-down (i.e. a CVA loss). This CVA loss is calculated without taking into account any offsetting debit valuation adjustments which have been deducted from CET1 as per Paragraph CA-2.1.2A. This reduction of EAD by incurred CVA losses does not apply to the determination of the CVA risk capital requirement.

CA-5.2 Methods of Calculation (continued)

CA-5.2.5 Under the methods outlined above, the exposure amount or EAD for a given counterparty is equal to the sum of the exposure amounts or EADs calculated for each netting set with that counterparty, subject to the exception of EAD for a given OTC derivative counterparty which is defined as the greater of zero and the difference between the sum of EADs across all netting sets with the counterparty and the credit valuation adjustment (CVA) for that counterparty which has already been recognised by the bank as an incurred write-down (i.e. a CVA loss). This CVA loss is calculated without taking into account any offsetting debit valuation adjustments which have been deducted from CET1 as per Paragraph CA-2.1.2A. This reduction of EAD by incurred CVA losses does not apply to the determination of the CVA risk capital requirement.

CA-5.2.6 After calculating counterparty credit risk exposures, or EAD, according to the methods outlined above, they must apply the standardised approach to credit risk, or, in the case of the exposures to CCPs, the capital requirements set out in Section CA-5.4. For counterparties to which the bank applies the standardised approach, the counterparty credit risk exposure amount will be risk weighted according to the relevant risk weight of the counterparty.

CA-5.2.7 As an exception to the scope requirements of CA-5.1.2 above, banks are not required to calculate a counterparty credit risk charge for credit derivative protection purchased by the bank against a banking book exposure, or against a counterparty credit risk exposure. In such cases, the bank will determine its capital requirement for the hedged exposure according to the criteria and general rules for the recognition of credit derivatives within the standardised approach. Banks are also not required to calculate a counterparty credit risk charge for Sold credit default swaps in the banking book where they are treated in the framework as a guarantee provided by the bank and subject to a credit risk charge for the full notional amount.

CA-5.3 Standardized Approach for Counterparty Credit Risk

CA-5.3.1 Under the SA-CCR, a bank will be required to calculate the amount of its CCR exposure in respect of its portfolio of derivative contracts with a counterparty as follows:
Where:
CCR exposure amount (EAD) = alpha * (RC + PFE)
Alpha = 1.4
RC is the replacement cost calculated in the manner described below; and
PFE is the potential future exposure calculated in the manner described below.
The CCR exposure amount for a margined netting set is capped at the CCR exposure amount of the same netting set calculated on an un-margined basis.

The replacement cost (RC) and the potential future exposure (PFE) components are calculated differently for margined and unmargined netting sets. Margined netting sets are netting sets covered by a margin agreement under which the bank's counterparty has to post variation margin; all other netting sets, including those covered by a one-way margin agreement where only the bank posts variation margin, are treated as unmargined for the purposes of the SA-CCR. The EAD for a margined netting set is capped at the EAD of the same netting set calculated on an unmargined basis.

CA-5.3.2 For un-margined transactions, the RC intends to capture the loss that would occur if a counterparty were to default and were closed out of its transactions immediately. The PFE add-on represents a potential conservative increase in exposure over a 1-year time horizon from the present date (i.e. the calculation date).

CA-5.3.3 For margined trades, the RC intends to capture the loss that would occur if a counterparty were to default at the present or at a future time, assuming that the closeout and replacement of transactions occur instantaneously. However, there may be a period (the margin period of risk) between the last exchange of collateral before default and replacement of the trades in the market. The PFE add-on represents the potential change in value of the trades during this time period.

CA-5.3.4 In both cases, in CA-5.3.2 and CA-5.3.3 above, the haircut applicable to non-cash collateral in the replacement cost formulation represents the potential change in value of the collateral during the appropriate time period (1 year for un-margined trades and the margin period of risk for margined trades).

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

CA-5.3.5 Replacement cost is calculated at the netting set level, whereas PFE add-ons are calculated for each asset class within a given netting set and then aggregated (see Paragraphs CA-5.3.17 to CA-5.3.54) below.

CA-5.3.6 Banks may net transactions (e.g. when determining the RC component of a netting set) subject to novation under which any obligation between a bank and its counterparty to deliver a given currency on a given value date is automatically amalgamated with all other obligations for the same currency and value date, legally substituting one single amount for the previous gross obligations. Banks may also net transactions subject to any legally valid form of bilateral netting not covered in the preceding sentence, including other forms of novation. In every such case where netting is applied, a bank must satisfy the CBB that it has:

(a) A netting contract with the counterparty or other agreement which creates a single legal obligation, covering all included transactions, so that the bank would have either a claim to receive or obligation to pay only the net sum of the positive and negative mark-to-market values of included individual transactions in the event a counterparty fails to perform due to any of the following: Default, bankruptcy, liquidation or similar circumstances;

(b) Written and reasoned legal reviews that, in the event of a legal challenge, the relevant courts and administrative authorities would find the bank's exposure to be such a net amount under:

(i) The law of the jurisdiction in which the counterparty is chartered and, if the foreign branch of a counterparty is involved, then also under the law of the jurisdiction in which the branch is located;

(ii) The law that governs the individual transactions; and

(iii) The law that governs any contract or agreement necessary to effect the netting.

(c) Procedures in place to ensure that the legal characteristics of netting arrangements are kept under review in light of the possible changes in relevant law.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Calculation of Replacement Cost

CA-5.3.7 There are two formulations of replacement cost, depending on whether the trades with a counterparty are subject to a margin agreement. Where a margin agreement exists, the formulation could apply both to bilateral transactions and central clearing relationships. The formulation also addresses the various arrangements that a licensee may have to post and/or receive collateral that may be referred to as initial margin.

Formulation for Un-margined Transactions

CA-5.3.8 For un-margined transactions (that is, where variation margin ('VM') is not exchanged, but collateral other than VM may be present), RC is defined as the greater of: (i) the current market value of the derivative contracts less net haircut collateral held by the bank (if any), and (ii) zero. This is consistent with the use of replacement cost as the measure of current exposure, meaning that when the bank owes the counterparty money it has no exposure to the counterparty if it can instantly replace its trades and sell collateral at current market prices.

Mathematically:

$$RC = \max \{V - C; 0\}$$

Where V is the value of the derivative transactions in the netting set and C is the haircut value of net collateral held, which is calculated in accordance with the NICA methodology defined in Paragraph CA-5.3.17. For this purpose, the value of non-cash collateral posted by the bank to its counterparty is increased and the value of the non-cash collateral received by the bank from its counterparty is decreased using haircuts (which are the same as those that apply to repo-style transactions) for the time periods described in Paragraph CA-5.3.4.

CA-5.3.9 In the above formulation, it is assumed that the replacement cost representing today's exposure to the counterparty cannot go less than zero. However, banks sometimes hold excess collateral (even in the absence of a margin agreement) or have out-of-the-money trades which can further protect the bank from the increase of the exposure. As discussed in Paragraphs CA-5.3.15 to CA-5.3.16, the SA-CCR would allow such over-collateralisation and negative mark-to-market value to reduce PFE, but would not affect replacement cost.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

CA-5.3.10 Bilateral transactions with a one-way margining agreement in favour of the bank's counterparty (that is, where a bank posts, but does not collect, collateral) must be treated as un-margined transactions.

Formulation for margined transactions

CA-5.3.11 The RC for margined transactions in the SA-CCR is defined as the greatest exposure that would not trigger a call for VM, taking into account the mechanics of collateral exchanges in margining agreements. Such mechanics include, for example, Threshold', 'Minimum Transfer Amount' and 'Independent Amount' in the standard industry documentation, which are factored into a call for VM.

CA-5.3.12 One objective of the SA-CCR is to more fully reflect the effect of margining agreements and the associated exchange of collateral in the calculation of CCR exposures. To avoid confusion surrounding the use of terms initial margin and independent amount which are used in various contexts and sometimes interchangeably, the term independent collateral amount ('ICA') is introduced.

CA-5.3.13 ICA represents (i) collateral (other than VM) posted by the counterparty that the bank 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 ('IA') parameter, as defined in standard industry documentation. ICA can change in response to factors such as the value of the collateral, or a change in the number of transactions in the netting set. Because both a bank and its counterparty may be required to post ICA, it is necessary to introduce a companion term, net independent collateral amount ('NICA'), to describe the amount of collateral that a bank may use to offset its exposure on the default of the counterparty. NICA does not include collateral that a bank has posted to a segregated, bankruptcy remote account, which, presumably, would be returned upon the bankruptcy of the counterparty. That is, NICA represents any collateral (segregated or unsegregated) posted by the counterparty less the unsegregated collateral posted by the bank. With respect to IA, NICA takes into account the differential of IA required for the bank minus IA required for the counterparty.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

For margined trades, the replacement cost is:
RC = max {V - C; TH + MTA - NICA; 0}

Where V and C are defined as in the un-margined formulation, TH is the positive threshold before the counterparty must send the bank collateral, and MTA is the minimum transfer amount applicable to the counterparty.
TH + MTA – NICA represents the largest exposure that would not trigger a VM call and it contains levels of collateral that need always to be maintained. For example, without initial margin or IA, the greatest exposure that would not trigger a variation margin call is the threshold plus any minimum transfer amount. In the adapted formulation, NICA is subtracted from TH + MTA. This makes the calculation more accurate by fully reflecting both the actual level of exposure that would not trigger a margin call and the effect of collateral held and/or posted by a bank. The calculation is floored at zero, recognising that the bank may hold NICA in excess of TH + MTA, which could otherwise result in a negative replacement cost.

PFE of a Netting Set

CA-5.3.14 The PFE add-on consists of: (i) an aggregate add-on component; and (ii) a multiplier that allows for the recognition of excess collateral or negative mark-to market value for the transactions within the netting set. The formula for PFE is as follows, where:

$$PFE = multiplier \cdot AddOn^{aggregate}$$

Where:

$AddOn^{aggregate}$ is the aggregate add-on component (See CA-5.3.18) and multiplier is defined as a function of three inputs: V, C and $AddOn^{aggregate}$

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Recognition of Excess Collateral and Negative Mark-to-market

CA-5.3.15 As a general principle, holding excess collateral (i.e. collateral greater than the net market value of the derivatives contracts) will reduce capital requirements for counterparty credit risk as it can offset potential increases in exposure represented by the add-on. Collateral may also reduce the replacement cost component of the exposure under the SA-CCR. The *PFE* component also reflects the risk-reducing property of excess collateral. A multiplier is applied to the *PFE* component that decreases as excess collateral increases, without reaching zero (the multiplier is floored at 5 percent of the *PFE* add-on).

CA-5.3.16 When the collateral held is less than the net market value of the derivative contracts ('under-collateralisation'), the current replacement cost is positive and the multiplier is equal to one (i.e. the PFE component is equal to the full value of the aggregate add-on). Where the collateral held is greater than the net market value of the derivative contracts (over-collateralisation'), the current replacement cost is zero and the multiplier is less than one (i.e. the PFE component is less than the full value of the aggregate add-on).This multiplier will also be activated when the current value of the derivative transactions is negative. This is because out-of-the-money transactions do not currently represent an exposure and have less chance to go in-the money.

Mathematically:

$$multiplier = \min\left\{1; floor + (1 floor) * exp\left[\frac{V - C}{2 * (1 - floor) * AddOn^{aggregate}}\right]\right\}$$

Where exp (…) equals to the exponential function, Floor is 5%, V is the value of the derivative transactions in the netting set, and C is the haircut value of net collateral held.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Aggregation Add-on and Asset Classes

CA-5.3.17 To calculate the aggregate add-on, banks must calculate add-ons for each asset class within the netting set. The SA-CCR uses the following five asset classes:

(a) Interest rate derivatives;
(b) Foreign exchange derivatives;
(c) Credit derivatives;
(d) Equity derivatives; and
(e) Commodity derivatives.

CA-5.3.18 Diversification benefits across asset classes are not recognised. Instead, the respective add-ons for each asset class are simply aggregated.

Mathematically:

$$\text{AddOn}^{\text{aggregate}} = \sum_{\text{assetclass}} AddOn\,(^{\text{assetclass}})$$

Allocation of Derivative Transactions to one or more Asset Classes

CA-5.3.19 The designation of a derivative transaction to an asset class is to be made on the basis of its primary risk driver (e.g. an interest rate curve for an interest rate swap, a reference entity for a credit default swap, a foreign exchange rate for a foreign exchange (FX) call option, etc.). When this primary risk driver is clearly identifiable, the transaction will fall into one of the asset classes described above. For more complex trades that may have more than one risk driver (e.g. multi-asset or hybrid derivatives), banks must take sensitivities and volatility of the underlying into account for determining the primary risk driver.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

General Steps for Calculating PFE add-on for each Asset Class

CA-5.3.20 For each transaction, the primary risk factor or factors need to be determined and attributed to one or more of the five asset classes: interest rate, foreign exchange, credit, equity or commodity. The add-on for each asset class is calculated using asset-class-specific formulas. Although the formulas for the asset class add-ons vary between asset classes, they all use the following general steps:

(1) The *effective notional (D*) must be calculated for each derivative (ie each individual trade) in the netting set. The effective notional is a measure of the sensitivity of the trade to movements in underlying risk factors (ie interest rates, exchange rates, credit spreads, equity prices and commodity prices). The effective notional is calculated as the product of the following parameters (ie D = d * MF * δ):

(a) *The adjusted notional* (d). The adjusted notional is a measure of the size of the trade. For derivatives in the foreign exchange asset class this is simply the notional value of the foreign currency leg of the derivative contract, converted to the domestic currency. For derivatives in the equity and commodity asset classes, it is simply the current price of the relevant share or unit of commodity multiplied by the number of shares /units that the derivative references. For derivatives in the interest rate and credit asset classes, the notional amount is adjusted by a measure of the duration of the instrument to account for the fact that the value of instruments with longer durations are more sensitive to movements in underlying risk factors (i.e. interest rates and credit spreads)

(b) *The maturity factor* (MF). The maturity factor is a parameter that takes account of the time period over which the potential future exposure is calculated. The calculation of the maturity factor varies depending on whether the netting set is margined or unmargined.

(c) *The supervisory delta* (δ). The supervisory delta is used to ensure that the effective notional take into account the direction of the trade, ie whether the trade is long or short, by having a positive or negative sign. It is also takes into account whether the trade has a non-linear relationship with the underlying risk factor (which is the case for options and collateralised debt obligation tranches).

(2) A supervisory factor (SF) is identified for each individual trade in the netting set. The supervisory factor is the supervisory specified change in value of the underlying risk factor on which the potential future exposure calculation is based, which has been calibrated to take into account the volatility of underlying risk factors.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

(3) The trades within each asset class are separated into supervisory specified hedging sets. The purpose of the hedging sets is to group together trades within the netting set where long and short positions should be permitted to offset each other in the calculation of potential future exposure.

(4) Aggregation formulas are applied to aggregate the effective notionals and supervisory factors across all trades within each hedging set and finally at the asset-class level to give the asset class level add-on. The method of aggregation varies between asset classes and for credit, equity and commodity derivatives it also involves the application of supervisory correlation parameters to capture diversification of trades and basis risk.

Time Period Parameters: M_i, E_i, S_i and T_i

CA-5.3.21 There are four time period parameters that are used in the SA-CCR (all expressed in years):

(1) For all asset classes, the maturity M_i of a contract is the time period (starting today) until the latest day when the contract may still be active. This time period appears in the maturity factor defined in CA-5.3.34 to CA-5.3.38 that scales down the adjusted notionals for unmargined trades for all asset classes. If a derivative contract has another derivative contract as its underlying (for example, a swaption) and may be physically exercised into the underlying contract (i.e. a bank would assume a position in the underlying contract in the event of exercise), then maturity of the contract is the time period until the final settlement date of the underlying derivative contract.

(2) For interest rate and credit derivatives, S_i is the period of time (starting today) until start of the time period referenced by an interest rate or credit contract. If the derivative references the value of another interest rate or credit instrument (e.g. swaption or bond option), the time period must be determined on the basis of the underlying instrument. S_i appears in the definition of supervisory duration defined in CA-5.3.24.

(3) For interest rate and credit derivatives, E_i is the period of time (starting today) until the end of the time period referenced by an interest rate or credit contract. If the derivative references the value of another interest rate or credit instrument (e.g. swaption or bond option), the time period must be determined on the basis of the underlying instrument. E_i appears in the definition of supervisory duration defined in CA-5.3.24.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

In addition, E_i is used for allocating derivatives in the interest rate asset class to maturity buckets, which are used in the calculation of the asset class add-on (see CA-5.3.42 (3)).

(4) For options in all asset classes, T_i is the time period (starting today) until the latest contractual exercise date as referenced by the contract. This period shall be used for the determination of the option's supervisory delta in CA-5.3.28.

CA-5.3.22 The table in Appendix 2 includes example transactions and provides each transaction's related maturity M_i, start date S_i and end date E_i. In addition, the option delta CA-5.3.28 depends on the latest contractual exercise date T_i (not separately shown in the table).

Trade-level adjusted notional (for trade): d_i

CA-5.3.23 The adjusted notionals are defined at the trade level and take into account both the size of a position and its maturity dependency, if any.

CA-5.3.24 For interest rate and credit derivatives, the trade-level adjusted notional is the product of the trade notional amount, converted to the domestic currency, and the supervisory duration SD_i which is given by the formula below (i.e. d = notional * SD_i). The calculated value of SD_i is floored at ten business days. If the start date has occurred (e.g. an ongoing interest rate swap), S_i must be set to zero.

$$SD_i = \frac{\exp(-0.05 * S_i) - \exp(-0.05 * E_i)}{0.05}$$

CA-5.3.25 For foreign exchange derivatives, the adjusted notional is defined as the notional of the foreign currency leg of the contract, converted to the domestic currency. If both legs of a foreign exchange derivative are denominated in currencies other than the domestic currency, the notional amount of each leg is converted to the domestic currency and the leg with the larger domestic currency value is the adjusted notional amount.

CA-5.3.26 For equity and commodity derivatives, the adjusted notional is defined as the product of the current price of one unit of the stock or commodity (e.g. a share of equity or barrel of oil) and the number of units referenced by the trade.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

CA-5.3.27 In cases where the trade notional amount is not stated clearly, banks must use the following rules to determine the trade notional amount:

(a) Where the notional is a formula of market values, the bank must enter the current market values to determine the trade notional amount;

(b) For all interest rate and credit derivatives with variable notional amounts specified in the contract such as amortising and accreting swaps, banks must use the average notional over the remaining life of the derivative as the trade notional amount. The average should be calculated as "time weighted". The averaging described in this paragraph does not cover transactions where the notional varies due to price changes (typically, FX, equity and commodity derivatives);

(c) Leveraged swaps 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 to determine the trade notional amount;

(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 to determine the trade notional amount; 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 equals the time until the next reset date.

CA-5.3.28 The supervisory delta adjustment (δ_i) parameters are also defined at the trade level and are applied to the adjusted notional amounts to reflect the direction of the transaction and its non-linearity. The delta adjustments for all instruments are set out in the tables below:

δ_i	Long in the primary risk factor	Short in the primary risk factor
Instruments that are not options or CDO tranches	+1	-1

The delta adjustments for options:

δ_i	Bought	Sold
Call Options	$+\Phi\left(\frac{\ln(P_i/K_i)+0.5*\sigma_i^2*T_i}{\sigma_i*\sqrt{T_i}}\right)$	$-\Phi\left(\frac{\ln(P_i/K_i)+0.5*\sigma_i^2*T_i}{\sigma_i*\sqrt{T_i}}\right)$
Put Options	$-\Phi\left(-\frac{\ln(P_i/K_i)+0.5*\sigma_i^2*T_i}{\sigma_i*\sqrt{T_i}}\right)$	$+\Phi\left(-\frac{\ln(P_i/K_i)+0.5*\sigma_i^2*T_i}{\sigma_i*\sqrt{T_i}}\right)$

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

The following parameters that banks must determine appropriately:
P_i : Underlying price (spot, forward, average, etc.)
K_i : Strike price
T_i : Latest contractual exercise date of the option
The supervisory volatility σ_i of an option is specified on the basis of supervisory factor applicable to the trade (see CA-5.3.51)
The symbol Φ represents the standard normal cumulative distribution function.

The delta adjustments for CDO tranches:

δ_i	Purchased (long protection)	Sold (short protection)
CDO tranches	$+\frac{15}{(1 + 14 * A_i) * (1 + 14 * D_i)}$	$-\frac{15}{(1 + 14 * A_i) * (1 + 14 * D_i)}$
The following are parameters that banks must determine appropriately: A_i : Attachment point of the CDO tranche D_i : Detachment point of the CDO tranche		

Effective notional for options

CA-5.3.29 For single-payment options the effective notional (i.e. D = d * MF * δ) is calculated using the following specifications:

(a) For European, Asian, American and Bermudan put and call options, the supervisory delta must be calculated using the simplified Black-Scholes formula referenced in Paragraph CA-5.3.29. In the case of Asian options, the underlying price must be set equal to the current value of the average used in the payoff. In the case of American and Bermudan options, the latest allowed exercise date must be used as the exercise date Ti in the formula.

(b) For Bermudan swaptions, the start date Si must be equal to the earliest allowed exercise date, while the end date Ei must be equal to the end date of the underlying swap.

(c) For digital options, the payoff of each digital option (bought or sold) with strike Ki must be approximated via the "collar" combination of bought and sold European options of the same type (call or put), with the strikes set equal to 0.95·Ki and 1.05·Ki. The size of the position in the collar components must be such that the digital payoff is reproduced

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

exactly outside the region between the two strikes. The effective notional is then computed for the bought and sold European components of the collar separately, using the option formulae for the supervisory delta referenced in CA-5.3.29 (the exercise date T and the current value of the underlying P of the digital option must be used). The absolute value of the digital-option effective notional must be capped by the ratio of the digital payoff to the relevant supervisory factor.

(d) If a trade's payoff can be represented as a combination of European option payoffs (e.g. collar, butterfly/calendar spread, straddle, strangle), each European option component must be treated as a separate trade.

(e) For the purposes of effective notional calculations, multiple-payment options may be represented as a combination of single-payment options. In particular, interest rate caps/floors may be represented as the portfolio of individual caplets /floorlets, each of which is a European option on the floating interest rate over a specific coupon period. For each caplet/floorlet, Si and Ti are the time periods starting from the current date to the start of the coupon period, while Ei is the time period starting from the current date to the end of the coupon period.

CA-5.3.30 Supervisory factors (SFi) are used, together with aggregation formulas, to convert effective notional amounts into the add-on for each hedging set. Each factor has been calibrated to result in an add-on that reflects the Effective EPE of a single at-the-money linear trade of unit notional and one-year maturity. This includes the estimate of realised volatilities assumed by supervisors for each underlying asset class.The way in which supervisory factors are used within the aggregation formulas varies between asset classes. The supervisory factors are listed in CA-5.3.51.

Hedging sets

CA-5.3.31 The hedging sets in the different asset classes are defined as follows, except for those described in Paragraphs CA-5.3.32 and CA-5.3.33:

(a) Interest rate derivatives consist of a separate hedging set for each currency;

(b) FX derivatives consist of a separate hedging set for each currency pair;

(c) Credit derivatives consist of a single hedging set;

(d) Equity derivatives consist of a single hedging set; and

(e) Commodity derivatives consist of four hedging sets defined for broad categories of commodity derivatives: energy, metals, agricultural and other commodities.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

CA-5.3.32 Derivatives that reference the basis between two risk factors and are denominated in a single currency[42] (basis transactions) must be treated within separate hedging sets within the corresponding asset class. There is a separate hedging set[43] for each pair of risk factors (i.e. for each specific basis). Examples of specific bases include 3-month RFR versus 6-month RFR, 3-month RFR versus 3-month T-Bill, 1-month RFR versus OIS rate, Brent Crude oil versus Henry Hub gas. For hedging sets consisting of basis transactions, the supervisory factor applicable to a given asset class must be multiplied by one-half.

CA-5.3.33 Derivatives that reference the volatility of a risk factor (volatility transactions) must be treated within separate hedging sets within the corresponding asset class. Volatility hedging sets must follow the same hedging set construction outlined in Paragraph CA-5.3.31 (for example, all equity volatility transactions form a single hedging set). Examples of volatility transactions include variance and volatility swaps, options on realised or implied volatility. For hedging sets consisting of volatility transactions, the supervisory factor applicable to a given asset class must be multiplied by a factor of five.

Maturity Factors

CA-5.3.34 The minimum time risk horizon for an unmargined transaction is the lesser of year and remaining maturity of the derivative contract for un-margined transactions, floored at 10 business days. Therefore, the calculation of the effective notional for an unmargined transaction includes the following maturity factor, where Mi is the remaining maturity of transaction i, floored at 10 business days:

$$MF_i^{(unmargined)} = \sqrt{\frac{min\{M_I; 1year\}}{1year}}$$

CA-5.3.35 The maturity parameter (Mi) is expressed in years but is subject to a floor of 10 business days. Banks should use standard market convention to convert business days into years, and vice versa. For example, 250 business days in a year, which results in a floor of 10/250 years for Mi.

[42] Derivatives with two floating legs that are denominated in different currencies (such as cross-currency swaps) are not subject to this treatment; rather, they should be treated as non-basis foreign exchange contracts.
[43] Within this hedging set, long and short positions are determined with respect to the basis.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

CA-5.3.36 For margined transactions, the maturity factor is calculated using the margin period of risk (MPOR), subject to specified floors. They must then use the higher of their estimated margin period of risk and the relevant floor in the calculation of the maturity factor (CA-5.3.38). The floors for the margin period of risk are as follows:

(a) Ten business days for non-centrally-cleared transactions subject to daily margin agreements.

(b) The sum of nine business days plus the re-margining period for non-centrally cleared transactions that are not subject daily margin agreements.

(c) The relevant floors for centrally cleared transactions are prescribed in the capital requirements for bank exposures to central counterparties (see Section CA-5.4).

CA-5.3.37 The following are exceptions to the floors on the minimum margin period of risk set out in CA-5.3.36 above:

(a) For netting sets consisting of more than 5000 transactions that are not with a central counterparty the floor on the margin period of risk is 20 business days.

(b) For netting sets containing one or more trades involving either illiquid collateral, or an OTC derivative that cannot be easily replaced, the floor on the margin period of risk is 20 business days[44].

(c) If a bank has experienced more than two margin call disputes on a particular netting set over the previous two quarters that have lasted longer than the applicable margin period of risk (before consideration of this provision), then the bank must reflect this history appropriately by doubling the applicable supervisory floor on the margin period of risk for that netting set for the subsequent two quarters.

CA-5.3.38 The calculation of the effective notional for a margined transaction includes the following maturity factor, where MPORi is the margin period of risk appropriate for the margin agreement containing the transaction i subject to the floors set out in CA-5.3.36 and CA-5.3.37.

$$MF_i^{(\text{margined})} = \frac{3}{2}\sqrt{\frac{MPOR_i}{1year}}$$

[44] "Illiquid collateral" and "OTC derivatives that cannot be easily replaced" must be determined in the context of stressed market conditions and will be characterised by the absence of continuously active markets where a counterparty would, within two or fewer days, obtain multiple price quotations that would not move the market or represent a price reflecting a market discount (in the case of collateral) or premium (in the case of an OTC derivative). Examples of situations where trades are deemed illiquid for this purpose include, but are not limited to, trades that are not marked daily and trades that are subject to specific accounting treatment for valuation purposes (eg OTC derivatives transactions referencing securities whose fair value is determined by models with inputs that are not observed in the market).

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

The margin period of risk (MPORi) is often expressed in days, but the calculation of the maturity factor for margined netting sets references 1 year in the denominator. Banks should use standard market convention to convert business days into years, and vice versa.

Supervisory correlation parameters

CA-5.3.39 The supervisory correlation parameters (ρ_i) only apply to the PFE add-on calculation for equity, credit and commodity derivatives, and are set out in Paragraph CA-5.3.51. For these asset classes, the supervisory correlation parameters are derived from a single-factor model and specify the weight between systematic and idiosyncratic components. This weight determines the degree of offset between individual trades, recognising that imperfect hedges provide some, but not perfect, offset. Supervisory correlation parameters do not apply to interest rate and foreign exchange derivatives.

Asset Class Level Add-ons

CA-5.3.40 As set out in CA-5.3.18, the aggregate add-on for a netting set ($AddOn^{aggregate}$) is calculated as the sum of the add-ons calculated for each asset class within the netting set. The sections that follow set out the calculation of the add-on for each asset class.

Add-on for Interest Rate Derivatives

CA-5.3.41 The calculation of the add-on for the interest rate derivative asset class captures the risk of interest rate derivatives of different maturities being imperfectly correlated. It does this by allocating trades to maturity buckets, in which full offsetting of long and short positions is permitted, and by using an aggregation formula that only permits limited offsetting between maturity buckets. This allocation of derivatives to maturity buckets and the process of aggregation (steps 3 to 5 below) are only used in the interest rate derivative asset class.

CA-5.3.42 The add-on for the interest rate derivative asset class ($AddOn^{IR}$) within a netting set is calculated using the following steps:

(1) Step 1: Calculate the effective notional for each trade in the netting set that is in the interest rate derivative asset class. This is calculated as the product of the following three terms:

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

(i) the adjusted notional of the trade (d); (ii) the supervisory delta adjustment of the trade (δ); and the maturity factor (MF). That is, for each trade i, the effective notional D is calculated as Di = di * MFi * δi.

(2) Step 2: Allocate the trades in the interest rate derivative asset class to hedging sets. In the interest rate derivative asset class the hedging sets consist of all the derivatives that reference the same currency.

(3) Step 3: Within each hedging set allocate each of the trades to the following three maturity buckets: less than one year (bucket 1), between one and five years (bucket 2) and more than five years (bucket 3).

(4) Step 4: Calculate the effective notional of each maturity bucket by adding together all the trade level effective notionals calculated in step 1 of the trades within the maturity bucket. Let D^{B1}, D^{B2} and D^{B3} be the effective notionals of buckets 1, 2 and 3 respectively.

(5) Step 5: Calculate the effective notional of the hedging set (EN_{HS}) by using either of the two following aggregation formulas (the latter is to be used if the bank chooses not to recognise offsets between long and short positions across maturity buckets):

$$Offset\ formula: EN_{HS} = \left[\left(D^{B1}\right)^2 + \left(D^{B2}\right)^2 + \left(D^{B3}\right)^2 + 1.4 * D^{B1} * D^{B2} + 1.4 * D^{B2} * D^{B3} + 0.6 * D^{B1} * D^{B3}\right]^{\frac{1}{2}}$$

$$No\ offset\ formula: EN_{HS} = \left|D^{B1}\right| + \left|D^{B2}\right| + \left|D^{B3}\right|$$

(6) Step 6: Calculate the hedging set level add-on ($AddOn_{HS}$) by multiplying the effective notional of the hedging set (EN_{HS}) by the prescribed supervisory factor (SF_{HS}). The prescribed supervisory factor in the interest rate asset class is set at 0.5%, which means that $AddOn_{HS} = EN_{HS} * 0.005$.

(7) Step 7: Calculate the asset class level add-on ($AddOn^{IR}$) by adding together all of the hedging set level add-ons calculated in step 6:

$$AddOn^{IR} = \sum_{HS} AddOn_{HS}$$

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Add-on for Foreign Exchange Derivatives

CA-5.3.43 The steps to calculate the add-on for the foreign exchange derivative asset class are similar to the steps for the interest rate derivative asset class, except that there is no allocation of trades to maturity buckets (which means that there is full offsetting of long and short positions within the hedging sets of the foreign exchange derivative asset class). The add-on for the foreign exchange derivative asset class ($AddOn^{FX}$) within a netting set is calculated using the following steps:

(1) Step 1: Calculate the effective notional for each trade in the netting set that is in the foreign exchange derivative asset class. This is calculated as the product of the following three terms: (i) the adjusted notional of the trade (d); (ii) the supervisory delta adjustment of the trade (δ); and (iii) the maturity factor (MF). That is, for each trade i, the effective notional D_i is calculated as $D_i = di * MFi * \delta i$.

(2) Step 2: Allocate the trades in the foreign exchange derivative asset class to hedging sets. In the foreign exchange derivative asset class the hedging sets consist of all the derivatives that reference the same currency pair.

(3) Step 3: Calculate the effective notional of each hedging set (EN_{HS}) by adding together the trade level effective notionals calculated in step 1.

(4) Step 4: Calculate the hedging set level add-on ($AddOn_{HS}$) by multiplying the absolute value of the effective notional of the hedging set (EN_{HS}) by the prescribed supervisory factor (SF_{HS}). The prescribed supervisory factor in the foreign exchange derivative asset class is set at 4%, which means that $AddOn_{HS} = |EN_{HS}| * 0.04$.

(5) Step 5: Calculate the asset class level add-on ($AddOn^{FX}$) by adding together all of the hedging set level add-ons calculated in step 5:

$$Addon^{FX} = \sum_{HS} AddOn_{HS}$$

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Add-on for Credit Derivatives

CA-5.3.44 The calculation of the add-on for the credit derivative asset class only gives full recognition of the offsetting of long and short positions for derivatives that reference the same entity (e.g. the same corporate issuer of bonds). Partial offsetting is recognised between derivatives that reference different entities in step 4 below. The formula used in step 4 is explained further in CA-5.3.46 to CA-5.3.47.

CA-5.3.45 The add-on for the credit derivative asset class ($AddOn^{Credit}$) within a netting set is calculated using the following steps:

(1) Step 1: Calculate the effective notional for each trade in the netting set that is in the credit derivative asset class. This is calculated as the product of the following three terms: (i) the adjusted notional of the trade (d); (ii) the supervisory delta adjustment of the trade (δ); and (iii) the maturity factor (MF). That is, for each trade i, the effective notional D_i is calculated as $D_i = d * MFi * \delta i$.

(2) Step 2: Calculate the combined effective notional for all derivatives that reference the same entity. Each separate credit index that is referenced by derivatives in the credit derivative asset class should be treated as a separate entity. The combined effective notional of the entity (EN_{entity}) is calculated entity by adding together the trade level effective notionals calculated in step 1 that reference that entity.

(3) Step 3: Calculate the add-on for each entity ($AddOn^{Credit}$) by multiplying the entity combined effective notional for that entity calculated in step 2 by the supervisory factor that is specified for that entity (SF_{entity}). The supervisory entity factors vary according to the credit rating of the entity in the case of single name derivatives, and whether the index is considered investment grade or non-investment grade in the case of derivatives that reference an index. The supervisory factors are set out in Paragraph CA-5.3.51.

(4) Step 4: Calculate the asset class level add-on ($AddOn^{Credit}$) by using the formula that follows. In the formula the summations are across all entities referenced by the derivatives, $AddOn_{entity}$ is the add-on amount calculated entity in step 3 for each entity referenced by the derivatives and ϱ_{entity} is the entity supervisory prescribed correlation factor corresponding to the entity.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

As set out in Paragraph CA-5.3.51, the correlation factor is 50% for single entities and 80% for indices.

$$AddOn^{Credit} = \left[\left(\sum_{entity} \rho_{entity} * AddOn_{entity}\right)^2 + \sum_{entity}\left(1-\left(\rho_{entity}\right)^2\right) * \left(AddOn_{entity}\right)^2\right]^{\frac{1}{2}}$$

CA-5.3.46 The formula to recognise partial offsetting in CA-5.3.45 (4) above, is a single-factor model, which divides the risk of the credit derivative asset class into a systematic component and an idiosyncratic component. The entity-level add-ons are allowed to offset each other fully in the systematic component; whereas, there is no offsetting benefit in the idiosyncratic component. These two components are weighted by a correlation factor which determines the degree of offsetting /hedging benefit within the credit derivatives asset class. The higher the correlation factor, the higher the importance of the systematic component, hence the higher the degree of offsetting benefits.

CA-5.3.47 A higher or lower correlation does not necessarily mean a higher or lower capital requirement. For portfolios consisting of long and short credit positions, a high correlation factor would reduce the charge. For portfolios consisting exclusively of long positions (or short positions), a higher correlation factor would increase the charge. If most of the risk consists of systematic risk, then individual reference entities would be highly correlated and long and short positions should offset each other. If, however, most of the risk is idiosyncratic to a reference entity, then individual long and short positions would not be effective hedges for each other.

Add-on for Equity Derivatives

CA-5.3.48 The calculation of the add-on for the equity derivative asset class is very similar to the calculation of the add-on for the credit derivative asset class. It only gives full recognition of the offsetting of long and short positions for derivatives that reference the same entity (e.g. the same corporate issuer of shares). Partial offsetting is recognised between derivatives that reference different entities in step 4 below.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

CA-5.3.49 The add-on for the equity derivative asset class ($AddOn^{Equity}$) within a netting set is calculated using the following steps:

(1) Step 1: Calculate the effective notional for each trade in the netting set that is in the equity derivative asset class. This is calculated as the product of the following three terms: (i) the adjusted notional of the trade (d); (ii) the supervisory delta adjustment of the trade (δ); and (iii) the maturity factor (MF). That is, for each trade i, the effective notional D_i is calculated as $D_i = d * MFi * \delta i$.

(2) Step 2: Calculate the combined effective notional for all derivatives that reference the same entity. Each separate credit index that is referenced by derivatives in the credit derivative asset class should be treated as a separate entity. The combined effective notional of the entity (EN_{entity}) is calculated entity by adding together the trade level effective notionals calculated in step 1 that reference that entity.

(3) Step 3: Calculate the add-on for each entity ($AddOn_{entity}$) by multiplying the entity combined effective notional for that entity calculated in step 2 by the supervisory factor that is specified for that entity (SF_{entity}). The supervisory entity factors are set out in Paragraph CA-5.3.51 and vary according to whether the entity is a single name (SF = 32%) or an index (SF =20%).

(4) Step 4: Calculate the asset class level add-on ($AddOn^{Equity}$) by using the formula that follows. In the formula the summations are across all entities referenced by the derivatives, $AddOn_{entity}$ is the add-on amount calculated entity in step 3 for each entity referenced by the derivatives and ϱ is the entity supervisory prescribed correlation factor corresponding to the entity. As set out in Paragraph CA-5.3.51, the correlation factor is 50% for single entities and 80% for indices.

$$AddOn^{Equity} = \left[\left(\sum_{entity} \rho_{entity} * AddOn_{entity}\right)^2 + \sum_{entity}\left(1-\left(\rho_{entity}\right)^2\right) * \left(AddOn_{entity}\right)^2\right]^{\frac{1}{2}}$$

(5) Banks are not permitted to make any modelling assumptions in the calculation of the PFE add-ons and must only use the two values of supervisory factors that are defined for equity derivatives, one for single entities and one for indices.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Add-on for Commodity Derivatives

CA-5.3.50 The calculation of the add-on for the commodity derivative asset class is similar to the calculation of the add-on for the credit and equity derivative asset classes. It recognises the full offsetting of long and short positions for derivatives that reference the same type of underlying commodity. It also allows partial offsetting between derivatives that reference different types of commodity, however, this partial offsetting is only permitted within each of the four hedging sets of the commodity derivative asset class, where the different commodity types are more likely to demonstrate some stable, meaningful joint dynamics. Offsetting between hedging sets is not recognised (e.g. a forward contract on crude oil cannot hedge a forward contract on corn). The add-on for the commodity derivative asset class ($AddOn^{Commodity}$) within a netting set is calculated using the following steps:

(1) Step 1: Calculate the effective notional for each trade in the netting set that is in the commodity derivative asset class. This is calculated as the product of the following three terms: (i) the adjusted notional of the trade (d); (ii) the supervisory delta adjustment of the trade (δ); and (iii) the maturity factor (MF). That is, for each trade i, the effective notional Di is calculated as $Di = di * MFi * \delta i$.

(2) Step 2: Allocate the trades in commodity derivative asset class to hedging sets. In the commodity derivative asset class there are four hedging sets consisting of derivatives that reference: energy, metals, agriculture and other commodities.

(3) Step 3: Calculate the combined effective notional for all derivatives with each hedging set that reference the same commodity type (e.g. all derivative that reference copper within the metals hedging set). The combined effective notional of the commodity type ($EN_{ComType}$) is calculated by adding together the trade level effective notionals calculated in step 1 that reference that commodity type.

(4) Step 4: Calculate the add-on for each commodity type ($AddOn_{ComType}$) within each hedging set by multiplying the combined effective notional for that commodity calculated in step 3 by the supervisory factor that is specified for that commodity type ($SF_{ComType}$). The supervisory factors are set out in Paragraph CA-5.3.51 and are set at 40% for electricity derivatives and 18% for derivatives that reference all other types of commodities.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

(5) Step 5: Calculate the add-on for each of the four commodity hedging sets ($AddOn_{HS}$) by using the formula that follows. In the formula the summations are across all commodity types within the hedging set, $AddOn_{ComType}$ is the add-on amount calculated in step 4 for each commodity type and $\varrho_{ComType}$ is the supervisory prescribed correlation factor corresponding to the commodity type. As set out in in Paragraph CA-5.3.51, the correlation factor is set at 40% for all commodity types.

$$AddOn_{HS} = \left[\left(\sum_{ComType} \rho_{ComType} * AddOn_{ComType}\right)^2 + \sum_{ComType}\left(1-\left(\rho_{ComType}\right)^2\right)*\left(AddOn_{ComType}\right)^2\right]^{\frac{1}{2}}$$

(6) Calculate the asset class level add-on ($AddOn^{Commodity}$) by adding together all of the hedging set level add-ons calculated in step 5:

$$AddOn^{Commodity} = \sum_{HS} AddOn_{HS}$$

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Supervisory factors, Correlations and Supervisory option volatility add-ons
Add-on for Commodity Derivatives

CA-5.3.51 The table below includes the supervisory factors, correlations and supervisory option volatility add-ons for each asset class and subclass:

Asset Class	Sub-class	Supervisory factor	Correlation	Supervisory Option
Interest Rate		0.50%	N/A	50%
Foreign Exchange		4.0%	N/A	15%
Credit, Single Name	AAA	0.38%	50%	100%
	AA	0.38%	50%	100%
	A	0.42%	50%	100%
	BBB	0.54%	50%	100%
	BB	1.06%	50%	100%
	B	1.6%	50%	100%
	CCC	6.0%	50%	100%
Credit, Index	IG	0.38%	80%	80%
	SG	1.06%	80%	80%
Equity, Single Name		32%	50%	120%
Equity, Index		20%	80%	75%
Commodity	Electricity	40%	40%	150%
	Oil/Gas	18%	40%	70%
	Metals	18%	40%	70%
	Agricultural	18%	40%	70%
	Other	18%	40%	70%

CA-5.3.52 For a hedging set consisting of basis transactions, the supervisory factor applicable to its relevant asset class must be multiplied by one-half. For a hedging set consisting of volatility transactions, the supervisory factor applicable to its relevant asset class must be multiplied by a factor of five.

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Treatment of Multiple Margin Agreements and Multiple Netting Sets

CA-5.3.53 If multiple margin agreements apply to a single netting set, the netting set must be divided into sub-netting sets that align with their respective margin agreement. This treatment applies to both RC and PFE components. If a single margin agreement applies to several netting sets, special treatment is necessary because it is problematic to allocate the common collateral to individual netting sets. The replacement cost at any given time is determined by the sum of two terms. The first term is equal to the unmargined current exposure of the bank to the counterparty aggregated across all netting sets within the margin agreement reduced by the positive current net collateral (ie collateral is subtracted only when the bank is a net holder of collateral). The second term is non-zero only when the bank is a net poster of collateral: it is equal to the current net posted collateral (if there is any) reduced by the unmargined current exposure of the counterparty to the bank aggregated across all netting sets within the margin agreement. Net collateral available to the bank should include both VM and NICA. Mathematically, RC for the entire margin agreement is calculated as follows, where:

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

(1) Where the summation NS ∈ MA is across the netting sets covered by the margin agreement (hence the notation)
(2) V_{NS} is the current mark-to-market value of the netting set NS and C_{MA} is the cash equivalent value of all currently available collateral under the margin agreement

Where a single margin agreement applies to several netting sets, collateral will be exchanged based on mark-to-market values that are netted across all transactions covered under the margin agreement, irrespective of netting sets. That is, collateral exchanged on a net basis may not be sufficient to cover PFE. In this situation, therefore, the PFE add-on must be calculated according to the unmargined methodology. Netting set-level PFEs are then aggregated using the following formula, where $PFE_{NS}^{(unmargined)}$ is the PFE add-on for the netting set NS calculated according to the unmargined requirements:

$$PFE_{MA} = \sum_{NS\in MA} PFE_{NS}^{(unmargined)}$$

CA-5.3 Standardized Approach for Counterparty Credit Risk (continued)

Treatment of Collateral taken outside of Netting Sets

CA-5.3.54 Eligible collateral which is taken outside a netting set, but is available to a bank to offset losses due to counterparty default on one netting set only, should be treated as an independent collateral amount associated with the netting set and used within the calculation of replacement cost when the netting set is unmargined and under when the netting set is margined. Eligible collateral which is taken outside a netting set, and is available to a bank to offset losses due to counterparty default on more than one netting set, should be treated as collateral taken under a margin agreement applicable to multiple netting sets, in which case the treatment under Paragraph CA-5.3.53 applies. If eligible collateral is available to offset losses on non-derivatives exposures as well as exposures determined using the SA-CCR, only that portion of the collateral assigned to the derivatives may be used to reduce the derivatives exposure.

CA-5.4 Capital Charge for CCPs

CA-5.4.1 This Section applies to exposures to central counterparties arising from over-the counter (OTC) derivatives, exchange-traded derivatives transactions, securities financing transactions (SFTs) and long settlement transactions. Exposures arising from the settlement of cash transactions (equities, fixed income, spot foreign exchange and spot commodities) are not subject to this treatment. When the clearing member-to-client leg of an exchange-traded derivatives transaction is conducted under a bilateral agreement, both the client bank and the clearing member are to capitalise that transaction as an OTC derivative. This treatment also applies to transactions between lower-level clients and higher-level clients in a multi-level client structure.

CA-5.4.2 Regardless of whether a central counterparty (CCP) is classified as a qualifying CCP (QCCP), a bank retains the responsibility to ensure that it maintains adequate capital for its exposures. Under the supervisory review process standard (SRP), a bank should consider whether it might need to hold capital in excess of the minimum capital requirements if, for example:

(1) Its dealings with a CCP give rise to more risky exposures;

(2) Where, given the context of that bank's dealings, it is unclear that the CCP meets the definition of a QCCP; or

(3) An external assessment such as an International Monetary Fund Financial Sector Assessment Program has found material shortcomings in the CCP or the regulation of CCPs, and the CCP and/or the CCP regulator have not since publicly addressed the issues identified.

Exposures to Qualifying CCPs: trade exposures

CA-5.4.3 Where the bank is acting as a clearing member, the bank should 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. This assessment will include potential future or contingent exposures resulting from future drawings on default fund commitments, and/or from secondary commitments to take over or replace offsetting transactions from clients of another clearing member in case of this clearing member defaulting or becoming insolvent.

CA-5.4 Capital Charge for CCPs (continued)

CA-5.4.4 **Where a bank acts as a clearing member of a CCP for its own purposes, a risk weight of 2% must be applied to the bank's trade exposure to the CCP in respect of OTC derivatives, exchange-traded derivative transactions, SFTs and long settlement transactions. Where the clearing member offers clearing services to clients, the 2% risk weight also applies to the clearing member's trade exposure to the CCP that arises when the clearing member is obligated to reimburse the client for any losses suffered due to changes in the value of its transactions if the CCP defaults. The risk weight applied to collateral posted to the CCP by the bank must be determined in accordance with paragraphs CA-5.4.8 to CA-5.4.10. The exposure amount of the bank's trade exposure must be calculated for each netting set in accordance with CA-5.2.1 using a minimum MPOR of 10 days. (See also CM-2.3.47)**

CA-5.4.5 The clearing member will always capitalise its exposure (including potential credit valuation adjustment, or CVA, risk exposure) to clients as bilateral trades, irrespective of whether the clearing member guarantees the trade or acts as an intermediary between the client and the CCP. However, to recognise the shorter close-out period for cleared client transactions, clearing members can capitalize the exposure to their clients applying a margin period of risk of at least five days in SA-CCR. The reduced exposure at default (EAD) should also be used for the calculation of the CVA capital requirement. If a clearing member collects collateral from a client for client cleared trades and this collateral is passed on to the CCP, the clearing member may recognise this collateral for both the CCP-clearing member leg and the clearing member-client leg of the client-cleared trade. Therefore, initial margin posted by clients to their clearing member mitigates the exposure the clearing member has against these clients.

CA-5.4.6 **Subject to the two conditions set out in CA-5.4.5 below being met, the treatment set out in CA-5.4.4 (i.e. the treatment of clearing member exposures to CCPs) also applies to the following:**

(a) A bank's exposure to a clearing member where:

(i) The bank is a client of the clearing member; and

(ii) The transactions arise as a result of the clearing member acting as a financial intermediary (i.e. the clearing member completes an offsetting transaction with a CCP)

(b) A bank's exposure to a CCP resulting from a transaction with the CCP where:

(i) The bank is a client of a clearing member; and

(ii) The clearing member guarantees the performance the bank's exposure to the CCP.

(c) Exposures of lower-level clients to higher-level clients in a multi-level client structure, provided that for all client levels in-between the two conditions in CA-5.4.5 below are met.

CA-5.4 Capital Charge for CCPs (continued)

CA-5.4.7 The two conditions to be met for treatment under CA-5.4.6 are below:

(1) The offsetting transactions are identified by the CCP as client transactions and collateral to support them is held by the CCP and/or the clearing member, as applicable, under arrangements that prevent any losses to the client due to: (a) the default or insolvency of the clearing member; (b) the default or insolvency of the clearing member's other clients; and (c) the joint default or insolvency of the clearing member and any of its other clients. Regarding the condition set out in this paragraph:

(a) Upon insolvency of the clearing member, there must be no legal impediment (other than through court order) to transfer the collateral belonging to the client of a defaulting clearing member to the CCP, to one or more other surviving clearing members or to the clients or client's nominee.

(b) The client must have conducted sufficient legal review and have a well-founded basis to conclude in the event of legal challenge, the relevant courts and administrative authorities would find that such arrangements mentioned above would be legal, valid, binding and enforceable under the relevant laws of the relevant jurisdiction(s).

(2) 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 CCP, or by the CCP, if the clearing member defaults or becomes insolvent. In such circumstances, the client positions and collateral with the CCP will be transferred at market value unless the client requests to close out the position at market value. Regarding the condition set out in this paragraph, if there is a clear precedent for transactions being ported at a CCP and industry intent for this practice to continue, then these factors must be considered when assessing if trades are highly likely to be ported. The fact that CCP documentation does not prohibit client trades from being ported is not sufficient to say they are highly likely to be ported.

CA-5.4 Capital Charge for CCPs (continued)

CA-5.4.8 Where a client is not protected from losses in the case that the clearing member and another client of the clearing member jointly default or become jointly insolvent, but all other conditions in the preceding paragraph are met, a risk weight of 4% will apply to the client's exposure to the clearing member, or to the higher-level client, respectively.

CA-5.4.9 Where a bank is a client of the clearing member and the requirements in CA-5.4.6 to CA-5.4.7 above are not met, the bank will capitalise its exposure (including potential CVA risk exposure) to the clearing member as a bilateral trade.

CA-5.4.10 Any assets or collateral posted to the CCP, and where such collateral is included in the definition of trade exposures and the entity holding the collateral is the CCP, the following risk weights apply where the assets or collateral is not held on a bankruptcy-remote basis:

(a) For banks that are clearing members a risk weight of 2% applies.

(b) For banks that are clients of clearing members:

(i) a 2% risk weight applies if the conditions established in CA-5.4.6 to CA-5.4.7 are met; or

(ii) a 4% risk weight applies if the conditions in CA-5.4.8 are met.

Where such collateral is included in the definition of trade exposures, there is no capital requirement for counterparty credit risk exposure (i.e. the related risk weight or EAD is equal to zero) if the collateral is: (a) held by a custodian; and (b) bankruptcy remote from the CCP.

Exposures to Non-Qualifying CCPs

CA-5.4.11 Banks must assign a risk-weight according to the category of the counterparty to their trade exposure to a non-qualifying CCP in accordance with the standardised approach in Chapter CA-3.

MODULE	CA: Capital Adequacy
CHAPTER	CA-6: Securitisation Framework

CA-6.1 Introduction to Securitisation

CA-6.1.1 **Conventional bank licensees must apply the securitisation framework for determining regulatory capital requirements on exposures arising from traditional and synthetic securitisations or similar structures that contain features common to both. Since securitisations may be structured in many different ways, the capital treatment of a securitisation exposure must be determined on the basis of its economic substance rather than its legal form. Licensees are encouraged to consult with the CBB when there is uncertainty about whether a given transaction should be considered a securitisation. For example, transactions involving cash flows from real estate (e.g. rents) may be considered specialised lending exposures, if warranted.**

Terminologies used in Securitisation

CA-6.1.2 The following definitions are used in Chapter CA-6:

(a) Asset-backed commercial paper (ABCP) securitisation — a securitisation that predominantly issues commercial paper to third-party investors with an original maturity of one year or less and is backed by assets or other exposures held in a bankruptcy-remote, special purpose vehicle;

(b) Clean-up call — an option that permits the securitisation exposures to be called before all of the underlying exposures in the pool or securitisation exposures have been repaid or have matured. In the case of a traditional securitisation, this is generally accomplished by the purchase of the remaining securitisation exposures once the pool balance or outstanding securities have fallen below some specified level. In the case of a synthetic securitisation, a clean-up call may take the form of a clause that extinguishes the credit protection;

(c) Credit enhancement — a contractual arrangement in which a bank or other entity retains or assumes a securitisation exposure and provides some degree of protection against credit losses to other parties holding a securitisation exposure;

(d) Credit-enhancing interest-only strip – an on-balance sheet asset that:

(i) Represents a valuation of cash flows related to future margin income, and

(ii) Is subordinated.

(e) Early amortisation provision — a mechanism in a securitisation of revolving credit facilities that, once triggered, accelerates the reduction of the investor interest in the underlying exposures and allows investors to be paid out, in full or in part, prior to the originally stated maturity of the securities issued;

(f) Excess spread (or future margin income) — finance charge collections and other income received by the SPV net of certificate interest, servicing fees, charge-offs, and other expenses;

(g) Facility — a contractual arrangement between a bank and an SPV for purposes including, but not limited to, the provision of liquidity or other funding, a servicer cash advance or a derivatives transaction in relation to a securitisation;

CA-6.1 Introduction to Securitisation (continued)

(h) Gain on sale — an increase in a bank's equity capital or assets as a result of originating exposures into a securitisation, such as recognition of capitalised expected future margin or servicing income, a profit on the sale of exposures or purchase of a residual income unit;

(i) Implicit support — support provided by a bank to a securitisation in excess of its predetermined contractual obligations;

(j) Liquidity facility — a facility provided by a bank to an SPV for the primary purpose of funding any timing mismatches between receipts of funds on underlying exposures and payments on securities issued by the SPV or to cover the inability of the SPV to roll-over securities due to market disruption;

(k) Managing bank — a bank that manages a securitisation. This includes undertaking responsibility for the day-to-day administration of the SPV, allocation of collections, calculation of payments and preparation of investor reports. A managing bank may also manage swaps, liquidity and other facilities and events such as the issuance, rollover/refinancing or calling of securities;

(l) Non-senior securities — debt securities issued in a securitisation which are non-senior securitisation exposures;

(m) Non-senior securitisation exposure — an exposure, such a liquidity facility provided to the securitisation vehicle, that is subordinated to another securitisation exposure;

(n) Originating bank — with respect to a securitisation, a bank that:

(i) Directly or indirectly originates underlying exposures in the pool;

(ii) Is the managing or advising bank for an ABCP securitisation; or

(iii) Provides a facility (other than a derivatives transaction) or credit enhancement to an ABCP securitisation;

(o) Pool — the underlying exposure or exposures that are securitised by way of assignment or the transfer of rights and obligations to, or by way of rights and obligations held directly in its name by, an SPV. The pool may consist of, but need not be limited to, loans, bonds or equities;

(p) Resecuritisation exposure — a securitisation exposure in which at least one of the underlying exposures in the pool is a securitisation exposure. An exposure to one or more resecuritisation exposures is a resecuritisation exposure. An exposure resulting from retranching of a securitisation exposure is not a resecuritisation exposure if the bank is able to demonstrate that the cash flows to and from the bank replicate in all circumstances and conditions an exposure to a securitisation of a pool of assets that contains no securitisation exposures;

(q) Securitisation — a financing structure where the cash flow from a pool is used to make payments on obligations to at least two tranches or classes of creditors (typically holders of debt securities), with each tranche or class entitled to receive payments from the pool before or after another class of creditors, thereby reflecting different levels of credit risk;

CA-6.1 Introduction to Securitisation (continued)

(r) Securitisation exposure — on-balance sheet and off-balance sheet risk positions held by a bank arising from a securitisation including, but not limited to, investments in securities issued by an SPV, asset-backed securities, mortgage-backed securities, credit enhancements, liquidity and other funding facilities and derivatives transactions such as interest rate or currency swaps and credit derivatives. Reserve accounts, such as cash collateral accounts, recorded as an asset by the originating bank must also be treated as securitisation exposures;

(s) Securitisation of revolving credit facilities — a securitisation in which one or more underlying exposures represent, directly or indirectly, current or future draws on a revolving credit facility;

(t) Self-securitisation — a securitisation which is solely for the purpose of using the securities created as collateral in order to obtain funding via a repurchase agreement with Central Bank of Bahrain (CBB);

(u) Seller interest — a senior or pari passu with a senior interest held by an originating bank of a securitisation of revolving credit facilities that is collateralised by the revolving pool of underlying exposures, equivalent in size to the total asset pool less the investor interest;

(v) Senior securities — debt securities issued in a securitisation which are senior securitisation exposures;

(w) Senior securitisation exposure — a securitisation exposure effectively backed or secured by a first claim on the entire amount of the assets in the underlying pool. Securitisation exposures with different maturities that share pro rata loss allocation with senior securitisation exposures so that they benefit from the same level of credit enhancement, are themselves senior securitisation exposures;

(x) SPV — a special purpose vehicle that purchases and holds, or otherwise holds directly in its name, the pool for the purpose of a securitisation. It is a corporation, trust or other entity the structure of which is intended to isolate the SPV from the credit risk of an originator or seller of exposures. The SPV's acquisition of exposures held in the pool is typically funded by debt issued by the SPV, including through the issue of securities or units by the SPV;

(y) Servicing bank — a service provider that administers a pool for an SPV. This may include calculating account balances in relation to securitised loans as well as preparing borrowers' statements, collecting payments and calculating write-offs in relation to such loans;

(z) Synthetic securitisation — a securitisation whereby the credit risk, or part of the credit risk, of a pool is transferred through the use of funded (e.g. credit linked notes) or unfunded (e.g. credit default swaps) credit derivatives or guarantees that serve to hedge the credit risk of the portfolio; and

(aa) Traditional securitisation —a structure where the cash flow from an underlying pool of exposures is used to service at least two different stratified risk positions or tranches reflecting different degrees of credit risk. Payments to the investors depend upon the performance of the specified underlying exposures, as opposed to being derived from an obligation of the entity originating those exposures. The stratified/tranched structures that characterise securitisations differ from ordinary senior/subordinated debt instruments in that junior securitization tranches can absorb losses without interrupting contractual payments to more senior tranches, whereas subordination in a senior/subordinated debt structure is a matter of priority of rights to the proceeds of liquidation.

CA-6.1 Introduction to Securitisation (continued)

Due Diligence Requirements

CA-6.1.3 Conventional bank licensees must comply with the below due diligence requirements in order to use the risk weight approaches of the securitisation framework. Otherwise, the bank must assign a 1250% risk weight to any securitisation exposure for which it cannot perform the required level of due diligence:

(a) Banks must, on an ongoing basis, have a comprehensive understanding of the risk characteristics of its individual securitisation exposures, whether on- or off-balance sheet, as well as the risk characteristics of the pools underlying its securitisation exposures;

(b) Banks must be able to access performance information on the underlying pools on an ongoing basis in a timely manner. Such information may include, as appropriate: exposure type; percentage of loans 30, 60 and 90 days past due; default rates; prepayment rates; loans in foreclosure; property type; occupancy; average credit score or other measures of creditworthiness; average loan-to-value ratio; and industry and geographical diversification. For resecuritisations, banks must have information not only on the underlying securitisation tranches, such as the issuer name and credit quality, but also on the characteristics and performance of the pools underlying the securitisation tranches; and

(c) Banks must have a thorough understanding of all structural features of a securitisation transaction that would materially impact the performance of the bank's exposures to the transaction, such as the contractual waterfall and waterfall-related triggers, credit enhancements, liquidity enhancements, market value triggers, and deal-specific definitions of default.

CA-6.2 Operational Requirements for the Recognition of Risk Transference

CA-6.2.1 Conventional bank licensees may exclude underlying exposures from the calculation of risk-weighted assets only if all of the following conditions have been met. Banks meeting these conditions must still hold regulatory capital against any securitisation exposures they retain.

(a) Significant credit risk associated with the underlying exposures has been transferred to third parties;

(b) The transferor does not maintain effective or indirect control over the transferred exposures. The exposures are legally isolated from the transferor in such a way (e.g. through the sale of assets or through sub-participation) that the exposures are put beyond the reach of the transferor and its creditors, even in bankruptcy or receivership (an internal or external legal opinion must be obtained to confirm true sale). The transferor's retention of servicing rights to the exposures will not necessarily constitute indirect control of the exposures. The transferor is deemed to have maintained effective control over the transferred credit risk exposures if it:

(i) Is able to repurchase from the transferee the previously transferred exposures in order to realise their benefits; or

(ii) Is obligated to retain the risk of the transferred exposures;

(c) The securities issued are not obligations of the transferor. Thus, investors who purchase the securities only have claim to the underlying exposures;

(d) The transferee is an SPV and the holders of the beneficial interests in that entity have the right to pledge or exchange them without restriction, unless such restriction is imposed by a risk retention requirement;

(e) Clean-up calls that meet the conditions set out in Paragraph CA-6.2.5;

(f) The securitisation does not contain clauses that:

(i) Require the originating bank to alter the underlying exposures such that the pool's credit quality is improved unless this is achieved by selling exposures to independent and unaffiliated third parties at market prices;

(ii) Allow for increases in a retained first-loss position or credit enhancement provided by the originating bank after the transaction's inception; or

(iii) Increase the yield payable to parties other than the originating bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the underlying pool; and

(g) There must be no termination options/triggers except eligible clean-up calls, termination for specific changes in tax and regulation or early amortisation provisions such as those set out in Paragraph CA-6.2.4.

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CA-6.2 Operational Requirements for the Recognition of Risk Transference (continued)

CA-6.2.2 For synthetic securitisations, the use of credit risk mitigation (CRM) techniques (i.e. collateral, guarantees and credit derivatives) for hedging the underlying exposure may be recognised for risk-based capital purposes only if the conditions outlined below are satisfied:

(a) Credit risk mitigants must comply with the requirements set out in Chapter CA-4;

(b) Eligible collateral is limited to that specified in Paragraph CA-4.3.1. Eligible collateral pledged by SPVs may be recognised;

(c) Eligible guarantors are defined in Paragraph CA-4.5.7. Banks must not recognise SPVs as eligible guarantors in the securitisation framework.

(d) Banks must transfer significant credit risk associated with the underlying exposures to third parties;

(e) The instruments used to transfer credit risk must not contain terms or conditions that limit the amount of credit risk transferred, such as those provided below:

(i) Clauses that materially limit the credit protection or credit risk transference (e.g. an early amortisation provision in a securitisation of revolving credit facilities that effectively subordinates the bank's interest; significant materiality thresholds below which credit protection is deemed not to be triggered even if a credit event occurs; or clauses that allow for the termination of the protection due to deterioration in the credit quality of the underlying exposures);

(ii) Clauses that require the originating bank to alter the underlying exposures to improve the pool's average credit quality;

(iii) Clauses that increase the banks' cost of credit protection in response to deterioration in the pool's quality;

(iv) Clauses that increase the yield payable to parties other than the originating bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the reference pool; and

(v) Clauses that provide for increases in a retained first-loss position or credit enhancement provided by the originating bank after the transaction's inception;

(f) A legal opinion is obtained that confirms the enforceability of the contract; and

(g) Clean-up calls that meet the conditions set out in Paragraph CA-6.2.5.

CA-6.2 Operational Requirements for the Recognition of Risk Transference (continued)

CA-6.2.3 A securitisation transaction is deemed to fail the operational requirements set out in this Section if the bank:

(a) Originates/sponsors a securitisation transaction that includes one or more revolving credit facilities, and

(b) The securitisation transaction incorporates an early amortisation or similar provision that, if triggered, would:

(i) Subordinate the bank's senior or pari passu interest in the underlying revolving credit facilities to the interest of other investors;

(ii) Subordinate the bank's subordinated interest to an even greater degree relative to the interests of other parties; or

(iii) In other ways increases the bank's exposure to losses associated with the underlying revolving credit facilities.

CA-6.2.4 If a securitisation transaction contains one of the following examples of an early amortisation provision and meets the operational requirements set forth in Paragraphs CA-6.2.1 or CA-6.2.2, an originating bank may exclude the underlying exposures associated with such a transaction from the calculation of risk-weighted assets, but must still hold regulatory capital against any securitisation exposures they retain in connection with the transaction:

(a) Replenishment structures where the underlying exposures do not revolve and the early amortisation ends the ability of the bank to add new exposures;

(b) Transactions of revolving credit facilities containing early amortisation features that mimic term structures (i.e. where the risk on the underlying revolving credit facilities does not return to the originating bank) and where the early amortisation provision in a securitisation of revolving credit facilities does not effectively result in subordination of the originator's interest;

(c) Structures where a bank securitises one or more revolving credit facilities and where investors remain fully exposed to future drawdowns by borrowers even after an early amortisation event has occurred; or

(d) The early amortisation provision is solely triggered by events not related to the performance of the underlying assets or the selling bank, such as material changes in tax laws or regulations.

CA-6.2 Operational Requirements for the Recognition of Risk Transference (continued)

CA-6.2.5 For securitisation transactions that include a clean-up call, no capital will be required due to the presence of a clean-up call if the following conditions are met:

(a) The exercise of the clean-up call must not be mandatory, in form or in substance, but rather must be at the discretion of the originating bank;

(b) The clean-up call must not be structured to avoid allocating losses to credit enhancements or positions held by investors or otherwise structured to provide credit enhancement; and

(c) The clean-up call must only be exercisable when 10% or less of the original underlying portfolio or securities issued remains, or, for synthetic securitisations, when 10% or less of the original reference portfolio value remains.

CA-6.2.6 Securitisation transactions that include a clean-up call that does not meet all of the criteria stated in Paragraph CA-6.2.5 result in a capital requirement for the originating bank. For a traditional securitisation, the underlying exposures must be treated as if they were not securitised. Additionally, banks must not recognise in regulatory capital any gain on sale (CA-2.4.8). For synthetic securitisations, the bank purchasing protection must hold capital against the entire amount of the securitised exposures as if they did not benefit from any credit protection. If a synthetic securitisation incorporates a call (other than a clean-up call) that effectively terminates the transaction and the purchased credit protection on a specific date, the bank must treat the transaction in accordance with Paragraph CA-6.3.13.

CA-6.2.7 If a clean-up call, when exercised, is found to serve as a credit enhancement, the exercise of the clean-up call must be considered a form of implicit support provided by the bank and must be treated in accordance with Paragraph CA-6.3.7.

CA-6.3 Treatment of Securitisation Exposures

CA-6.3.1 Conventional bank licensees must hold regulatory capital for credit risk against its securitisation exposures, including credit risk mitigation (CRM) (i.e. eligible collateral, guarantees and credit derivatives) provided by the bank to a securitisation exposure or to an underlying pool of exposures. The exposure amount of a securitisation exposure for regulatory capital purposes is the sum of the on-balance sheet amount of the exposure (including the drawn amount of a facility), net of purchase price discounts and specific provisions, and the off-balance sheet exposure amount (including the undrawn amount of a facility), if any. General provisions on underlying securitised exposures are not to be taken into account in any calculation.

CA-6.3.2 Securitisation exposures must be risk weighted. The risk-weighted asset amount of a securitisation exposure is calculated by multiplying the exposure amount by the appropriate risk weight. Securitisation exposures will be treated differently depending on the type of underlying exposures and/or on the type of information available to the bank. Banks must use the Securitisation External Ratings-Based Approach (SEC-ERBA) the exposure has an external credit assessment that meets the operational requirements for an external credit assessment, or there is an inferred rating that meets the operational requirements for inferred ratings. Where a bank that cannot use the SEC-ERBA for its exposure it must use the Standardised Approach (SEC-SA).

CA-6.3.3 The exposure amount of off-balance sheet securitisation exposures must be measured as follows:

(a) For off-balance sheet exposures subject to CRM, the treatment in paragraphs 6.3.10 to 6.3.11;

(b) For derivatives transactions other than credit derivatives, the measurement approach set out for counterparty credit risk under Chapter CA-5;

(c) For all other exposures, by applying a CCF of 100 per cent.

Overlapping Exposures

CA-6.3.4 A bank's exposure A overlaps another exposure B if in all circumstances the bank will preclude any loss for the bank on exposure B by fulfilling its obligations with respect to exposure A. For example, if a bank provides full credit support to some notes and holds a portion of these notes, its full credit support obligation precludes any loss from its exposure to the notes. If a bank can verify that fulfilling its obligations with respect to exposure A will preclude a loss from its exposure to B under any circumstance, the bank does not need to calculate risk-weighted assets for its exposure B.

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CA-6.3 Treatment of Securitisation Exposures (continued)

CA-6.3.5 **To arrive at an overlap, a bank may, for the purposes of calculating capital requirements, split or expand its exposures. For example, a liquidity facility may not be contractually required to cover defaulted assets or may not fund an ABCP programme in certain circumstances. For capital purposes, such a situation would not be regarded as an overlap to the notes issued by that ABCP conduit. However, the bank may calculate risk-weighted assets for the liquidity facility as if it were expanded (either in order to cover defaulted assets or in terms of trigger events) to preclude all losses on the notes. In such a case, the bank would only need to calculate capital requirements on the liquidity facility.**

CA-6.3.6 **Overlap could also be recognised between relevant capital charges for exposures in the trading book and capital charges for exposures in the banking book, provided that the bank is able to calculate and compare the capital charges for the relevant exposures.**

Implicit Support

CA-6.3.7 **Where a bank provides implicit support to a securitisation, it must, at a minimum, hold capital against all of the underlying exposures associated with the securitisation transaction as if they had not been securitised. Additionally, banks would not be permitted to recognise in regulatory capital any gain on sale (CA-2.4.8). When a bank believes that the future actions it takes with respect to a securitisation structure may meet the definition of implicit support, the bank must inform the CBB along with a determination of the ensuing regulatory capital impact.**

CA-6.3.8 The provision of implicit or non-contractual support by an institution can include the following:

(a) the purchase of deteriorating credit exposures;
(b) purchasing assets from the underlying pool at above market prices;
(c) increasing the originator-provided first loss position; or
(d) an institution indirectly through other lending arrangements achieving the same result.

Such support signals to the market that there is no clean break for the securitised assets and therefore the exclusion of these assets from the originator's calculation of regulatory capital is not justified.

CA-6.3 Treatment of Securitisation Exposures (continued)

Caps for Securitisation Exposures

CA-6.3.9 Banks may apply a "look-through" approach to senior securitisation exposures, whereby the senior securitisation exposure could receive a maximum risk weight equal to the exposure weighted-average risk weight applicable to the underlying exposures, provided that the bank has knowledge of the composition of the underlying exposures at all times. An originating or sponsor bank using the SEC-ERBA or SEC-SA for a securitisation exposure may apply a maximum capital requirement for the securitisation exposures it holds equal to the capital requirement that would have been assessed against the underlying exposures had they not been securitised. Where the risk weight cap results in a lower risk weight than the floor risk weight of 15%, the risk weight resulting from the cap should be used. In applying the capital charge cap, the entire amount of any gain on sale and credit-enhancing interest-only strips arising from the securitisation transaction must be deducted in accordance with Paragraph CA-2.4.8.

Credit Risk Mitigation for Securitisation Exposures

CA-6.3.10 Banks may recognise full (or pro rata) credit protection purchased on a securitisation exposure when calculating capital requirements in accordance with the CRM framework provided the credit protection meets the eligibility requirements in Chapter CA-4. SPVs cannot be recognised as eligible guarantors. In the case of tranched credit protection, the original securitisation tranche will be decomposed into protected and unprotected sub-tranches. For the guaranteed/protected portion, capital requirements will be calculated according to the applicable CRM framework and for the resulting unprotected exposure(s), capital requirements will be calculated in accordance with this Chapter.

CA-6.3.11 Where a bank provides full (or pro rata) credit protection to a securitisation exposure, the bank must calculate its capital requirements as if it directly holds the portion of the securitisation exposure on which it has provided credit protection. In the case of tranched credit protection, the protection provider must calculate its capital requirement as if directly exposed to the particular sub-tranche of the securitisation exposure on which it is providing protection. The relevant risk weights for the different sub-tranches will be calculated subject to the following:

(a) For the sub-tranche of highest priority, the bank will use the risk weight of the original securitisation exposure;

CA-6.3 Treatment of Securitisation Exposures (continued)

(b) For a sub-tranche of lower priority:

(i) Banks must infer a rating from one of the subordinated tranches in the original transaction. The risk weight of the sub-tranche of lower priority will then be determined by applying the inferred rating and the SEC-ERBA. Thickness input T will be computed for the sub-tranche of lower priority only;

(ii) Where it is not possible to infer a rating, the risk weight for the sub-tranche of lower priority will be computed using the SEC-SA wherein the parameters A and D will be calculated separately for each of the subtranches as if the latter would have been directly issued as separate tranches at the inception of the transaction. The value of K_{SA} will be computed on the underlying portfolio of the original transaction. The risk weight for this sub-tranche will be obtained as the greater of a) the risk weight determined through the application of the SEC-SA with the adjusted A, D points and b) the SEC-ERBA risk weight of the original securitization exposure prior to recognition of protection; and

(iii) A lower-priority sub-tranche must be treated as a non-senior securitisation exposure even if the original securitisation exposure prior to protection qualifies as senior.

Maturity Mismatches

CA-6.3.12 A maturity mismatch exists when the residual maturity of a hedge is less than that of the underlying exposure. When protection is bought on a securitisation exposure(s), for the purpose of setting regulatory capital against a maturity mismatch, the capital requirement will be determined in accordance with Section CA-4.6. When the exposures being hedged have different maturities, the longest maturity must be used.

CA-6.3.13 When protection is bought on the securitised assets, maturity mismatches may arise in the context of synthetic securitisations (when, for example, a bank uses credit derivatives to transfer part or all of the credit risk of a specific pool of assets to third parties). When the credit derivatives unwind, the transaction will terminate. This implies that the effective maturity of all the tranches of the synthetic securitisation may differ from that of the underlying exposures. Banks that synthetically securitise exposures held on their balance sheet by purchasing tranched credit protection must treat such maturity mismatches in the following manner:

(a) For securitisation exposures that are assigned a risk weight of 1250%, maturity mismatches are not taken into account; and

CA-6.3 Treatment of Securitisation Exposures (continued)

(b) For all other securitisation exposures, the bank must apply the maturity mismatch treatment set forth in Section CA-4.6. When the exposures being hedged have different maturities, the longest maturity

Simple, Transparent and Comparable (STC) Securitisations

CA-6.3.14 **Only traditional securitisations including exposures to ABCP conduits and exposures to transactions financed by ABCP conduits fall within the scope of the simple, transparent and comparable (STC) framework. Exposures to securitisations that are STC-compliant can be subject to alternative capital treatment described in this Chapter. For regulatory capital purposes, the following will be considered STC-compliant:**

(a) Exposures to non-ABCP, traditional securitisations that meet the criteria in Appendix CA-24; and

(b) Exposures to ABCP conduits and/or transactions financed by ABCP conduits, where the conduit and/or transactions financed by it meet the criteria in Appendix CA-24.

CA-6.3.15 The STC criteria in Appendix CA-24 should be met at all times. Checking the compliance with some of the criteria might only be necessary at origination (or at the time of initiating the exposure, in case of guarantees or liquidity facilities) to an STC securitisation. Notwithstanding, banks are expected to take into account developments that may invalidate the previous compliance assessment, for example deficiencies in the frequency and content of the investor reports, in the alignment of interest, or changes in the transaction documentation at variance with relevant STC criteria. In cases where the pool is dynamic, the compliance with the criteria will be subject to dynamic checks every time that assets are added to the pool.

CA-6.3.16 **The originator/sponsor must disclose to investors all necessary information at the transaction level to allow investors to determine whether the securitisation is STC compliant. Based on the information provided by the originator/sponsor, the investor must make its own assessment of the securitisation's STC compliance status as defined in Paragraph CA-6.3.14 before applying the alternative capital treatment. For retained positions where the originator has achieved significant risk transfer in accordance with Section CA-6.2, the determination shall be made only by the originator retaining the position.**

CA-6.4 Standardised Approach (SEC-SA)

CA-6.4.1 **To calculate the regulatory capital requirement for a securitisation exposure using the standardised approach (SEC-SA), a bank would use the Supervisory Formula Approach for which the bank must determine the following inputs:**

(a) The capital charge had the underlying exposures not been securitised (KSA);

(b) The ratio of delinquent underlying exposures to total underlying exposures in the pool (W);

(c) The tranche attachment point (A); and

(d) The tranche detachment point (D).

Definition of K_{SA}

CA-6.4.2 K_{SA} is defined as the weighted-average capital charge of the entire portfolio of underlying exposures, calculated using the ratio of risk-weighted asset amounts to the sum of the exposure amounts of underlying exposures, multiplied by 8%. This calculation should reflect the effects of any credit risk mitigant that is applied to the underlying exposures (either individually or to the entire pool), and hence benefits all of the securitisation exposures. K_{SA} is expressed as a decimal between zero and one (that is, a weighted-average risk weight of 100% means that K_{SA} would equal 0.08).

CA-6.4.3 For structures involving an SPV (SPE), all of the SPV's exposures related to the securitisation are to be treated as exposures in the pool. Exposures related to the securitisation that are treated as exposures in the pool include assets in which the SPV may have invested, comprising reserve accounts, cash collateral accounts and claims against counterparties resulting from interest rate or currency swaps. A bank may exclude the SPV's exposures from the pool for capital calculation purposes if the bank can demonstrate that the risk of the SPV's exposures is immaterial or that it does not affect the bank's securitisation exposure.

CA-6.4.4 In the case of funded synthetic securitisations, any proceeds of the issuances of credit-linked notes or other funded obligations of the SPV that serve as collateral for the repayment of the securitisation exposure, and for which the bank cannot demonstrate that they are immaterial, must be included in the calculation of KSA if the default risk of the collateral is subject to the tranched loss allocation.

CA-6.4.5 In cases where a bank has set aside a specific provision or has a non-refundable purchase price discount on an exposure in the pool, KSA must be calculated using the gross amount of the exposure without the specific provision and/or non-refundable purchase price discount.

CA-6.4 Standardised Approach (SEC-SA) (continued)

Definition of delinquent underlying exposures (W)

CA-6.4.6 Delinquent underlying exposures are underlying exposures that are 90 days or more past due, subject to bankruptcy or insolvency proceedings, in the process of foreclosure, held as real estate owned or in default, where default is defined within the securitisation transaction documents.

CA-6.4.7 The variable (W) represents the ratio of the sum of the nominal amount of delinquent underlying exposures to the nominal amount of underlying exposures.

CA-6.4.8 The inputs K_{SA} and W are used as inputs to calculate K_A, as follows:

$$K_A = (1 - W) \times K_{SA} + 0.5W$$

CA-6.4.9 In case a bank is not aware of the delinquency status for no more than 5% of underlying exposures in the pool, the bank may use the standardized approach by adjusting its calculation of K_A as follows:

$$K_A = \frac{Exposure_{Subpool\ where\ W\ known}}{Exposure_{Total}} \times K_A^{Subpool\ where\ W\ known} + \frac{Exposure_{Subpool\ where\ W\ unknown}}{Exposure_{Total}}$$

Exposure is the exposure amount determined under standardised approach to Credit Risk.

CA-6.4.10 If the bank is not aware of the delinquency status for more than 5% of the underlying pool, the securitisation exposure must the securitisation exposure must be risk weighted at 1250%.

Definition of attachment point (A) and detachment point (D)

CA-6.4.11 The attachment point (A) represents the threshold at which losses within the underlying pool would first be allocated to the securitisation exposure. This input, which is a decimal value between zero and one, equals the greater of:

(a) Zero; and

(b) The ratio of (i) the outstanding balance of all underlying assets in the securitisation less the outstanding balance of all tranches that rank senior or pari passu to the tranche that contains the securitisation exposure of the bank (including the exposure itself) to (ii) the outstanding balance of all underlying assets in the securitisation.

CA-6.4 Standardised Approach (SEC-SA) (continued)

CA-6.4.12 The detachment point (D) represents the threshold at which losses within the underlying pool result in a total loss of principal for the tranche in which a securitisation exposure resides. This input, which is a decimal value between zero and one, equals the greater of:

(a) Zero; and

(b) The ratio of (i) the outstanding balance of all underlying assets in the securitisation less the outstanding balance of all tranches that rank senior to the tranche that contains the securitisation exposure of the bank to (ii) the outstanding balance of all underlying assets in the securitisation.

CA-6.4.13 For the calculation of A and D, overcollateralisation and funded reserve accounts must be recognised as tranches; and the assets forming these reserve accounts must be recognised as underlying assets. Only the loss-absorbing part of the funded reserve accounts that provide credit enhancement can be recognised as tranches and underlying assets. Unfunded reserve accounts, such as those to be funded from future receipts from the underlying exposures (eg unrealised excess spread) and assets that do not provide credit enhancement like pure liquidity support, currency or interest-rate swaps, or cash collateral accounts related to these instruments must not be included in the above calculation of A and D. Banks should take into consideration the economic substance of the transaction and apply these definitions conservatively in the light of the structure.

Capital requirements as calculated under the Supervisory Formula Approach

CA-6.4.14 The capital charge under the standardised approach is calculated as follows:

$$K_{SSFA(K_A)} = \frac{e^{a \times u} - e^{a \times l}}{a \times (u - l)}$$

where:

$KSSFA(K_A)$ is the capital requirement per unit of the securitisation exposure, e is the base of the natural logarithm and the variables a, u, and l are defined as follows:

$$a = -\frac{1}{p \times K_A}$$

$$u = D - K_A$$

$$l = \max[(A - K_A), 0]]$$

The supervisory parameter p in the context of the SEC-SA is set equal to 1 for a securitisation exposure that is not a resecuritisation exposure.

CA-6.4 Standardised Approach (SEC-SA) (continued)

CA.6.4.15 The risk weight assigned to a securitisation exposure is calculated as follows:

(a) When D for a securitisation exposure is less than or equal to K_A, the exposure must be assigned a risk weight of 1250%;

(b) When A for a securitisation exposure is greater than or equal to K_A, the risk weight of the exposure, expressed as a percentage, equals $K_{SSFA}(K_A)$ multiplied by 12.5; and

(c) When A is less than K_A and D is greater than K_A, the applicable risk weight is calculated according to the following formula:

$$RW = \left(\frac{K_A - A}{D - A} X\ 12.5\right) + \left(\frac{D - K_A}{D - A}\ X\ 12.5\ X\ K_{SSFA}(K_A)\right)$$

CA-6.4.16 The risk weight for market risk hedges such as currency or interest rate swaps will be inferred from a securitisation exposure that is pari passu to the swaps or, if such an exposure does not exist, from the next subordinated tranche.

CA-6.4.17 The resulting risk weight is subject to a floor risk weight of 15%. Moreover, when a bank applies the SEC-SA to an unrated junior exposure in a transaction where the more senior tranches (exposures) are rated and therefore no rating can be inferred for the junior exposure, the resulting risk weight under SEC-SA for the junior unrated exposure shall not be lower than the risk weight for the next more senior rated exposure.

Resecuritisation Exposures

CA-6.4.18 For resecuritisation exposures, banks must apply the SEC-SA with the following adjustments:

(a) The capital requirement of the underlying securitisation exposures is calculated using the securitisation framework;

(b) Delinquencies (W) are set to zero for any exposure to a securitisation tranche in the underlying pool; and

(c) The supervisory parameter p is set equal to 1.5, rather than 1 as for securitisation exposures.

CA-6.4.19 If the underlying portfolio of a resecuritisation consists in a pool of exposures to securitisation tranches and to other assets, the exposures to securitisation tranches should be separated from exposures to assets that are not securitisations. The K_A parameter should be calculated for each subset individually, applying separate W parameters calculated in accordance with Paragraph CA-6.4.7 in the subsets where the exposures are to assets that are not securitisation tranches, and set to zero where the exposures are to securitisation tranches. The K_A for the resecuritisation exposure is then obtained as the nominal exposure weighted-average of the K_A's for each subset considered.

CA-6.4.20 The resulting risk weight is subject to a floor risk weight of 100%.

CA-6.4.21 The caps described Paragraph CA-6.3.9 cannot be applied to resecuritisation exposures.

CA-6.4 Standardised Approach (SEC-SA) (continued)

Alternative capital treatment for term STC securitisations and short-term STC securitisations

CA-6.4.22 Securitisation transactions that are assessed as STC compliant for capital purposes as defined in Paragraph CA-6.3.13 can be subject to alternative standardised approach under the securitisation framework as follows:

(a) The supervisory parameter p in the context of the SEC-SA is set equal to 0.5 for an exposure to an STC securitisation; and

(b) The resulting risk weight is subject to a floor risk weight of 10% for senior tranches, and 15% for non-senior tranches.

Securitisations of Non-Performing Loans

CA-6.4.23 A non-performing loan securitisation (NPL securitisation) means a securitisation where the underlying pool's variable W, as defined in Paragraph CA-6.4.7, is equal to or higher than 90% at the origination cut-off date and at any subsequent date on which assets are added to or removed from the underlying pool due to replenishment, restructuring or any other relevant reason. The underlying pool of exposures of an NPL securitisation may only comprise loans, loan-equivalent financial instruments or tradable instruments used for the sole purpose of loan sub-participation. Loan-equivalent financial instruments include, for example, bonds not listed on a trading venue. For the avoidance of doubt, an NPL securitisation may not be backed by exposures to other securitisations.

CA-6.4.24 The risk weight applicable to exposures to NPL securitisations is floored at 100%.

CA-6.4.25 Banks may apply a risk weight of 100% to the senior tranche of an NPL securitisation provided that the NPL securitisation is a traditional securitisation and the sum of the non-refundable purchase price discounts (NRPPD), is equal to or higher than 50% of the outstanding balance of the pool of exposures.

CA-6.4.26 For the purposes of Paragraph CA-6.4.26, NRPPD is the difference between the outstanding balance of the exposures in the underlying pool and the price at which these exposures are sold by the originator to the securitisation entity, when neither originator nor the original lender are reimbursed for this difference. In cases where the originator underwrites tranches of the NPL securitisation for subsequent sale, the NRPPD may include the differences between the nominal amount of the tranches and the price at which these tranches are first sold to unrelated third parties. For any given piece of a securitisation tranche, only its initial sale from the originator to investors is taken into account in the determination of NRPPD. The purchase prices of subsequent re-sales are not considered.

CA-6.5 External-Ratings-Based Approach (SEC-ERBA)

CA-6.5.1 **For a securitisation exposure that is externally rated, or for which an inferred rating is available, the risk-weighted asset amount of a securitisation exposure must be calculated by multiplying the securitisation exposure amount by the appropriate risk weight in this Section.**

Short-term ratings

CA-6.5.2 For securitisation exposures with short-term ratings, or when an inferred rating based on a short-term rating is available, the following risk weights will apply:

Credit rating grade	1	2	3	4
Risk weight	15%	50%	100%	1250%

Table 1: Short-term credit rating grades and corresponding risk weights

Long-term ratings

CA-6.5.3 For securitisation exposures with long-term ratings, or when an inferred rating based on a long-term rating is available, the risk weights depend on:

(a) The external rating grade or an available inferred rating;
(b) The seniority of the position;
(c) The tranche maturity; and
(d) In the case of non-senior tranches, the tranche thickness.

Specifically, for exposures with long-term ratings, risk weights will be determined according to Table 2 below and will be adjusted for tranche maturity and tranche thickness for non-senior tranches.

CA-6.5 External-Ratings-Based Approach (SEC-ERBA) (continued)

Credit rating grade	Senior securitisation exposure		Non-senior securitisation exposure	
	Tranche maturity (*MT*)		Tranche maturity (*MT*)	
	1 year	5 years	1 year	5 years
1	15%	20%	15%	70%
2	15%	30%	15%	90%
3	25%	40%	30%	120%
4	30%	45%	40%	140%
5	40%	50%	60%	160%
6	50%	65%	80%	180%
7	60%	70%	120%	210%
8	75%	90%	170%	260%
9	90%	105%	220%	310%
10	120%	140%	330%	420%
11	140%	160%	470%	580%
12	160%	180%	620%	760%
13	200%	225%	750%	860%
14	250%	280%	900%	950%
15	310%	340%	1050%	1050%
16	380%	420%	1130%	1130%
17	460%	505%	1250%	1250%
18	1250%	1250%	1250%	1250%

Table 2: Long-term credit rating grades and corresponding risk weights

CA-6.5 External-Ratings-Based Approach (SEC-ERBA) (continued)

CA-6.5.4 For credit risk regulatory capital purposes, tranche maturity (M_T) is the tranche's remaining effective maturity in years and can be measured as either:

(a) The weighted-average maturity of the contractual cash flows of the tranche:

$$M_T = \frac{\sum_t t \times CF_t}{\sum_t CF_t}$$

where:

CF_t denotes the cash flows (principal, interest payments and fees) contractually payable by the borrower in period t. The contractual payments must be unconditional and must not be dependent on the actual performance of the securitised assets. If such unconditional contractual payment dates are not available, the final legal maturity shall be used.; or

(b) On the basis of final legal maturity of the tranche, calculated as:

$$M_T = 1 + (M_L - 1) \times 0.8$$

where:

M_L is the final legal maturity of the tranche.

CA-6.5.5 In all cases, M_T is subject to a floor of one year and a cap of five years.

CA-6.5.6 When determining the maturity of a securitisation exposure, a bank must take into account the maximum period of time it is exposed to potential losses from the securitised exposures.

CA-6.5.7 Where a bank provides a commitment, the bank must calculate the maturity of the securitisation exposure resulting from the commitment as the sum of the contractual maturity of the commitment and the longest maturity of the assets to which the bank would be exposed after a draw has occurred. If those assets are revolving, the longest contractually possible remaining maturity of the asset that might be added during the revolving period applies, rather than the (longest) maturity of the assets currently in the pool. The same treatment applies to all other instruments where the risk of the commitment/protection provider is not limited to losses realised until the maturity of that instrument (e.g. total return swaps).

CA-6.5.8 For credit protection instruments that are only exposed to losses that occur up to the maturity of that instrument, a bank may apply the contractual maturity of the instrument and need not look-through to the protected position.

CA-6.5 External-Ratings-Based Approach (SEC-ERBA) (continued)

CA-6.5.9 The risk weight assigned to a securitisation exposure when applying the SEC-ERBA is calculated as follows:

(a) To account for tranche maturity, banks shall use linear interpolation between the risk weights for one and five years.

(b) To account for tranche thickness, banks shall calculate the risk weight for non-senior tranches as follows, where T equals tranche thickness, and is measured as D minus A:

$$\textit{Risk weight} = (\textit{risk weight from table after adjusting for maturity}) \times (1 - \min(T, 50\%))$$

CA-6.5.10 In the case of market risk hedges such as currency or interest rate swaps, the risk weight will be inferred from a securitisation exposure that is pari passu to the swaps or, if such an exposure does not exist, from the next subordinated tranche.

CA-6.5.11 The resulting risk weight is subject to a floor risk weight of 15%. In addition, the resulting risk weight should never be lower than the risk weight corresponding to a senior tranche of the same securitisation with the same rating and maturity.

Mapping of rating grades for Standard and Poor's, Moody's and Fitch

CA-6.5.12 For the purposes of Table 1 of this section, where the ECAI is Standard and Poor's, Moody's or Fitch, the ratings are to be mapped to the relevant credit rating grades as shown in Table 3 below.

Table 3: Recognised short-term ratings and equivalent credit rating grades

Credit rating grade	Standard and Poor's	Moody's	Fitch
1	A1	P1	F1
2	A2	P2	F2
3	A3	P3	F3
4	All other ratings	All other ratings	All other ratings

CA-6.5 External-Ratings-Based Approach (SEC-ERBA) (continued)

CA-6.5.13 For the purposes of Table 2 of this section, where the ECAI is Standard and Poor's, Moody's or Fitch, the ratings are to be mapped to the relevant credit rating grades as shown in Table 4 below.

Table 4: Recognised long-term ratings and equivalent credit rating grades

Credit rating grade	Standard and Poor's	Moody's	Fitch
1	AAA	Aaa	AAA
2	AA+	Aa1	AA+
3	AA	Aa2	AA
4	AA-	Aa3	AA-
5	A+	A1	A+
6	A	A2	A
7	A-	A3	A-
8	BBB+	Baa1	BBB+
9	BBB	Baa2	BBB
10	BBB-	Baa3	BBB-
11	BB+	Ba1	BB+
12	BB	Ba2	BB
13	BB-	Ba3	BB-
14	B+	B1	B+
15	B	B2	B
16	B-	B3	B-
17	CCC+/CCC/CCC-	Caa1/Caa2/Caa3	CCC
18	Below CCC-	Below Caa3	Below CCC

CA-6.5 External-Ratings-Based Approach (SEC-ERBA) (continued)

Operational Requirements for use of External Credit Assessments

CA-6.5.14 The following operational criteria concerning the use of external credit assessments apply in the securitisation framework:

(a) To be eligible for risk-weighting purposes, the external credit assessment must take into account and reflect the entire amount of credit risk exposure the bank has with regard to all payments owed to it. For example, if a bank is owed both principal and interest, the assessment must fully take into account and reflect the credit risk associated with timely repayment of both principal and interest;

(b) The external credit assessments must be from an eligible external credit assessment institution (ECAI) acceptable to the CBB. Moreover, an eligible credit assessment, procedures, methodologies, assumptions and the key elements underlying the assessments must be publicly available, on a non-selective basis and free of charge. In other words, a rating must be published in an accessible form and included in the ECAI's transition matrix. Also, loss and cash flow analysis as well as sensitivity of ratings to changes in the underlying rating assumptions should be publicly available. Consequently, ratings that are made available only to the parties to a transaction do not satisfy this requirement;

(c) Eligible ECAIs must have a demonstrated expertise in assessing securitisations, which may be evidenced by strong market acceptance;

(d) Where two or more eligible ECAIs can be used and these assess the credit risk of the same securitisation exposure differently, banks must use the ECAIs acceptable to the CBB and their ratings consistently for all types of exposures. Banks are not allowed to "cherry-pick" the ratings provided by different ECAIs and to arbitrarily change the use of ECAIs;

(e) Where credit risk mitigation (CRM) is provided to specific underlying exposures or the entire pool by an eligible guarantor as defined in Chapter CA-4 and is reflected in the external credit assessment assigned to a securitisation exposure(s), the risk weight associated with that external credit assessment should be used. In order to avoid any double-counting, no additional capital recognition is permitted. If the CRM provider is not recognised as an eligible guarantor, the covered securitisation exposures should be treated as unrated;

CA-6.5 External-Ratings-Based Approach (SEC-ERBA) (continued)

(f) In the situation where a credit risk mitigant solely protects a specific securitisation exposure within a given structure (eg asset-backed security tranche) and this protection is reflected in the external credit assessment, the bank must treat the exposure as if it is unrated and then apply the CRM treatment outlined in Chapter CA-4 to recognise the hedge; and

(g) A bank is not permitted to use any external credit assessment for risk-weighting purposes where the assessment is at least partly based on unfunded support provided by the bank. For example, if a bank buys asset-backed commercial paper (ABCP) where it provides an unfunded securitisation exposure extended to the ABCP programme (eg liquidity facility or credit enhancement), and that exposure plays a role in determining the credit assessment on the ABCP, the bank must treat the ABCP as if it were not rated. The bank must continue to hold capital against the other securitisation exposures it provides (e.g. against the liquidity facility and/or credit enhancement).

Operational Requirements for Inferred Ratings

CA-6.5.15 Banks must infer a rating for an unrated position and use the SEC-ERBA provided that the below requirements are met. These requirements are intended to ensure that the unrated position is pari passu or senior in all respects to an externally-rated securitisation exposure termed the "reference securitisation exposure":

(a) The reference securitisation exposure (eg asset-backed security) must rank pari passu or be subordinate in all respects to the unrated securitisation exposure. Credit enhancements, if any, must be taken into account when assessing the relative subordination of the unrated exposure and the reference securitisation exposure. For example, if the reference securitisation exposure benefits from any third-party guarantees or other credit enhancements that are not available to the unrated exposure, then the latter may not be assigned an inferred rating based on the reference securitisation exposure;

(b) The maturity of the reference securitisation exposure must be equal to or longer than that of the unrated exposure;

(c) On an ongoing basis, any inferred rating must be updated continuously to reflect any subordination of the unrated position or changes in the external rating of the reference securitisation exposure;

(d) The external rating of the reference securitisation exposure must satisfy the general requirements for recognition of external ratings as stipulated in Paragaraph CA-6.5.14.

CA-6.5 External-Ratings-Based Approach (SEC-ERBA) (continued)

Alternative capital treatment for term STC securitisations and short-term STC securitisations

CA-6.5.16 Securitisation transactions that are assessed as STC compliant for capital purposes as defined in Paragraph CA-6.3.13 can be subject to alternative SEC-ERBA under the securitisation framework in accordance with Paragraphs CA-6.5.17 – CA-6.5.19.

CA-6.5.17 For exposures with short-term ratings, or when an inferred rating based on a short-term rating is available, the following risk weights will apply:

Credit rating grade	1	2	3	4
Risk weight	10%	30%	60%	1250%

Table 5: Short-term credit rating grades and corresponding risk weights

CA-6.5.18 For exposures with long-term ratings, risk weights will be determined according to Table 6 and will be adjusted for tranche maturity and tranche thickness for non-senior tranches:

Credit rating grade	Senior securitisation exposure		Non-senior securitisation exposure	
	Tranche maturity (*MT*)		Tranche maturity (*MT*)	
	1 year	5 years	1 year	5 years
1	10%	10%	15%	40%
2	10%	15%	15%	55%
3	15%	20%	15%	70%
4	15%	25%	25%	80%
5	20%	30%	35%	95%
6	30%	40%	60%	135%
7	35%	40%	95%	170%
8	45%	55%	150%	225%
9	55%	65%	180%	255%
10	70%	85%	270%	345%
11	120%	135%	405%	500%
12	135%	155%	535%	655%
13	170%	195%	645%	740%
14	225%	250%	810%	855%
15	280%	305%	945%	945%
16	340%	380%	1015%	1015%
17	415%	455%	1250%	1250%
18	1250%	1250%	1250%	1250%

Table 6: Long-term credit rating grades and corresponding risk weights

CA-6.5.19 The resulting risk weight is subject to a floor risk weight of 10% for senior tranches, and 15% for non-senior tranches.

Calculation of risk-weighted assets using the LTA

Consider a fund that replicates an equity index. Moreover, assume the following:

- Bank uses the Standardised Approach for credit risk when calculating its capital requirements;
- Bank owns 20% of the shares of the fund;
- The fund holds short term (less than one year) forward contracts that are cleared through a qualifying central counterparty (with a notional amount of $100); and
- The fund presents the following balance sheet:

Assets

Cash $20
Government bonds (AAA rated) $30
Variation margin receivable – forward contracts $50

Liabilities
Notes payable $5

Equity
Shares $95

Balance sheet exposures of $100 will be risk weighted according to the risk weights applied for cash (RW=0%), government bonds (RW=0%), and centrally-cleared equity forward positions (RW=2%). The underlying risk weight for equity exposures (RW=100%) is applied to the notional amount of the forward contracts and there is a charge for counterparty credit risk. There is no CVA charge assessed since the forward contracts are cleared through a central counterparty.

The leverage of the fund is 100/95≈1.05.

Therefore, the risk-weighted assets for the bank's equity investment in the fund are calculated as follows:

$$\frac{(RWAcash + RWAbonds + RWAunderlying + RWAforward + RWACCR) * \textbf{Leverage} * \textbf{Equity Investment}}{\textbf{Total Assets}_{fund}} =$$

(($20*0% + $30*0% + $100*100% + $50*2% + $100*6%*2%)/100) * 1.05 * (20%*95) = $20.17

Calculation of risk-weighted assets using the MBA

Consider a fund with assets of $100, where it is stated in the mandate that the fund replicates an equity index. In addition to being permitted to invest its assets in either cash or equities, the mandate allows the fund to take long positions in equity index futures up to a maximum nominal amount equivalent to the size of the fund's balance sheet ($100). This means that the total on balance sheet and off-balance sheet exposures of the fund can reach $200. Consider also that a maximum financial leverage of 1.1 applies according to the mandate. The bank holds 20% of the shares of the fund, which represents an investment of $18.18.

First, the on-balance sheet exposures of $100 will be risk weighted according to the risk weights applied for equity exposures (RW=100%), i.e. $RWA_{on\text{-}balance} = \$100 * 100\% = \$100$.

Second, we assume that the fund has exhausted its limit on derivative positions, ie $100 notional amount, which would be weighted with the risk weight associated with the underlying of the derivative position, which in this example is 100% for publicly-traded equity holdings. The total risk-weighted assets related to the maximum notional amount underlying the derivative positions are hence $RWA_{underlying} = \$100 * 100\% = \$100$.

Third, we would calculate the counterparty credit risk associated with the derivative contract. If we do not know the replacement cost related to the futures contract, we would approximate it by the maximum notional amount, i.e. $100 and also calculate the add-on by applying a 15% conversion factor, resulting in an exposure amount of $115. Assuming the futures contract is cleared through a qualifying CCP, a risk weight of 2% applies, so that $RWA_{CCR} = \$115 * 2\% = \$2.3$. There is no CVA charge assessed since the futures contract is cleared through a central counterparty.

The RWA of the fund is hence obtained by adding $RWA_{on\text{-}balance}$, $RWA_{underlying}$ and RWA_{CCR}, ie $202.3.

Leverage adjustment

The RWA ($202.3) will be divided by the total assets of the fund ($100) resulting in an average risk- weight of 202.3%. The average risk-weight is then scaled up by a factor of 1.1 to reflect financial leverage = 202.3%*1.1 = 222.53%. Finally, as the bank invested $18.18 in the equity of the fund, its total RWAs associated with its equity investment amount to $18.18 * 222.53% = $40.46.

Calculation of the leverage adjustment

Consider a fund with assets of $100 that invests in corporate debt. Assume that the fund is highly levered with equity of $5 and debt of $95. Such a fund would have financial leverage of 100/5=20.

Consider the following two cases:

Case 1: Fund specialises in low-rated corporate debt

Assets

Cash $ 10
A+ to A- bonds $ 20
BBB+ to BB- bonds $ 30
Below BB- bonds $ 40

The average risk weight of the fund is ($10*0% + $20*50% + $30*100% + $40*150%)/$100 = 100%. The financial leverage of 20 would result in a risk weight of 2000% for the banks' investment in this highly levered fund, however, this is capped at a conservative risk weight of 1,250%.

Case 2: Fund specialises in high-rated corporate debt

Assets

Cash $ 5
AAA to AA- bonds $ 75
A+ to A- bonds $ 20

The average risk weight of the fund is ($5*0% + $75*20% + $20*50%)/$100 = 25%. The financial leverage of 20 results in a risk weight of 500%.

The above example illustrates that the rate at which the 1,250% cap is reached depends on the underlying riskiness of the portfolio (as judged by the average risk weight) as captured by Basel II Standardised Approach risk weights or the IRB methods. Therefore, for a "risky" portfolio (100% average risk weight), the 1,250% limit is reached fairly quickly with a leverage of 12.5x, while for a "low risk" portfolio (25% average risk weight) this limit is reached at a leverage of 50x.

MODULE	CA: Capital Adequacy
CHAPTER	Appendix 2: Examples of Standardised Approach for Counterparty Credit Risk

Instrument	M_i	S_i	E_i
Interest rate or credit default swap maturing in 10 years	10 years	0	10 years
10-year interest rate swap, forward starting in 5 years	15 years	5 years	15 years
Forward rate agreement for time period starting in 6 months and ending in 12 months	1 year	0.5 year	1 year
Cash-settled European swaption referencing 5-year interest rate swap with exercise date in 6 months	0.5 year	0.5 year	5.5 years
Physically-settled European swaption referencing 5-year interest rate swap with exercise date in 6 months	5.5 years	0.5 year	5.5 years
10-year Bermudan swaption with annual exercise dates	10 years	1 year	10 years
Interest rate cap or floor specified for semi-annual interest rate with maturity 5 years	5 years	0	5 years
Option on a bond maturing in 5 years with the latest exercise date in 1 year	1 year	1 year	5 years
3-month Eurodollar futures that matures in 1 year	1 year	1 year	1.25 years
Futures on 20-year treasury bond that matures in 2 years	2 years	2 years	22 years
6-month option on 2-year futures on 20-year treasury bond	2 years	2 years	22 years