



Guideline

Subject: Capital Adequacy Requirement (CAR) – Simpler Approaches

No: A Effective Date: November 2007

Subsection 485(1) of the *Bank Act* (BA) and subsection 473(1) of the *Trust and Loan Companies Act* (TLCA) require banks and trust and loan companies to maintain adequate capital. The CAR Guideline is not made pursuant to subsection 485(1) of the BA or to subsection 473(1) of the TLCA. However, the capital standards set out in this guideline provide the framework within which the Superintendent assesses whether a bank or a trust or loan company maintains adequate capital pursuant to the acts. For this purpose, the Superintendent has established two minimum standards: assets to capital multiple, and risk-based capital ratio. The first test provides an overall measure of the adequacy of an institution's capital. The second measure focuses on risk faced by the institution. Notwithstanding that a bank or a trust or loan company may meet these standards, the Superintendent may direct a bank to increase its capital under subsection 485(3) of the BA, or a trust or loan company to increase its capital under subsection 473(3) of the TLCA.

Canada, as a member of the Basel Committee on Banking Supervision, participated in the development of the framework, *Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version* (June 2006). This domestic guidance is based on the Basel II framework. It also encompasses and updates relevant parts of the 1988 Basel Accord and the 1996 amendment to the Accord that sets out a framework for calculating the capital requirements for market risk.

Certain parts of the Guideline reference the Basel II framework document directly. These segments contain boxed-in text (called OSFI Notes) setting out if, or how, the requirement is to be implemented by Canadian banks and trust or loan companies.

This guideline contains the requirements pertaining to the simpler approaches under the Basel II framework. That is, the Standardized Approach to credit risk and the Basic Indicator Approach and Standardized Approach to operational risk. Institutions that have been approved to implement the Foundation Internal Ratings Based (IRB) and Advanced IRB approaches to credit risk and the Advanced Measurement Approaches (AMA) to operational risk should refer to the CAR Guideline A-1 to determine how their capital requirements are calculated.

Market risk requirements apply only to institutions where the greater of the value of trading book assets or the value of trading book liabilities is at least 10% of total assets and exceeds \$1 billion. Institutions subject to these requirements should refer to Chapter 8 of the CAR Guideline A-1.



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Chapter 1. Overview

Outlined below is an overview of capital adequacy requirements for banks and federally regulated trust or loan companies and for bank holding companies incorporated or formed under Part XV of the *Bank Act*, collectively referred to as institutions.

Whenever the term “provision” is encountered in this guideline, it should be read as “allowance for credit loss” with the exception of chapter 6 where it should be read as “charge for impairment”.

1.1. Scope of application

These capital adequacy requirements apply on a consolidated basis. The consolidated entity includes all subsidiaries (entities that are controlled and joint ventures where generally accepted accounting principles require pro-rata consolidation) except insurance subsidiaries or other regulated financial institutions whose leverage is inappropriate for a deposit-taking institution and that, because of their size, would have a material impact on the leverage of the consolidated entity.

1.2. The assets to capital multiple

Institutions are expected to meet an assets to capital multiple test on a continuous basis. The assets to capital multiple is calculated by dividing the institution’s total assets, including specified off-balance sheet items, by the sum of its adjusted net tier 1 capital and adjusted tier 2 capital as defined in section 2.5 of this guideline. All items that are deducted from capital are excluded from total assets. Tier 3 capital is excluded from the test.

Off-balance sheet items for this test are direct credit substitutes¹, including letters of credit and guarantees, transaction-related contingencies, trade-related contingencies and sale and repurchase agreements, as described in chapter 3. These are included at their notional principal amount. In the case of derivative contracts, where institutions have legally binding netting agreements (meeting the criteria established in chapter 3, Netting of Forwards, Swaps, Purchased Options and Other Similar Derivatives) the resulting on-balance sheet amounts can be netted for the purpose of calculating the assets to capital multiple.

Under this test, total assets should be no greater than 20 times capital, although this multiple can be exceeded with the Superintendent's prior approval to an amount no greater than 23 times. Alternatively, the Superintendent may prescribe a lower multiple. In setting the assets to capital multiple for individual institutions, the Superintendent will consider such factors as operating and management experience, strength of parent, earnings, diversification of assets, type of assets and appetite for risk.

¹ When an institution, acting as an agent in a securities lending transaction, provides a guarantee to its client, the guarantee does not have to be included as a direct credit substitute for the assets to capital multiple if the agent complies with the collateral requirements of Guideline B-4, Securities Lending.

OSFI will consider applications for authorized multiples in excess of 20 times from institutions that demonstrate that, in substance, they:

- 1) meet or exceed their risk-based capital targets (e.g., 7% and 10%)
- 2) have total capital² of a significant size (e.g., \$100 million) and have well-managed operations that focus primarily on a very low risk market segment
- 3) have a four-quarter average ratio of adjusted risk-weighted assets to adjusted net on- and off-balance sheet assets³ that is less than 60%
- 4) have adequate capital management processes and procedures⁴
- 5) have been at “stage 0”⁵ for at least four consecutive quarters
- 6) have no undue risk concentrations

Requests for increases for particular institutions should be addressed to the Legislation and Approvals Division in Ottawa and should also include a business case that, at minimum, sets out:

- the institution’s own assessment of its risk profile and general financial condition, and an explanation of why these factors justify a higher assets to capital multiple
- growth projections by business line
- what percentage of total assets these business lines are expected to account for
- the expected impact of the projected growth on profitability and risk-based capital ratios

Increased authorized multiples will not exceed 23 times capital.

If an institution exceeds its increased authorized multiple or allows its risk-based capital ratios to drop below the OSFI risk-based capital targets, OSFI will reduce the institution’s authorized multiple and will require the institution to file with OSFI an action plan for achieving the reduced multiple. The institution will be required to operate at or below the original level for four consecutive quarters before being reconsidered for an increase to its multiple.

² Total capital as reported on Schedule 3.

³ The adjusted ratio of risk-weighted assets to net on- and off-balance sheet assets is used as a proxy for asset quality and is calculated by dividing:
Total risk-weighted assets by Net on- and off-balance sheet assets per Schedule 1 + Credit equivalent amount of OTC derivatives contracts per Schedule 39 (this includes contracts subject to and contracts not subject to permissible netting).

The ratio should be calculated using data from the four previous consecutive quarters.

⁴ Institutions with adequate capital management processes and procedures can demonstrate that they have management reports that allow tracking of compliance with the assets to capital multiple and risk-based capital ratio targets between quarter ends.

⁵ Refer to the *Guide to Intervention for Federal Financial Institutions* for further details. “Stage 0” means: “No problems/Normal activities -- Routine supervisory and regulatory activities pursuant to mandates of OSFI and CDIC. In addition, both agencies conduct research and analyze industry-wide issues and trends, appropriate to their respective functions”

For two years after an institution receives an increase to its authorized multiple, it will be expected to be able to provide, at the request of the OSFI relationship manager, information demonstrating that:

- It continues to meet the six pre-conditions required for the initial application.
- Its risk profile, including the balance sheet structure, remains essentially the same as that shown in the business case used to justify the increase.

1.3. Calculation of minimum capital requirements

Institutions are expected to meet minimum risk-based capital requirements for exposure to credit risk, operational risk and, where they have significant trading activity, market risk. Total risk-weighted assets are determined by multiplying the capital requirements for market risk and operational risk by 12.5 (i.e., the reciprocal of the minimum capital ratio of 8%) and adding the resulting figures to risk-weighted assets for credit risk. The capital ratio is calculated by dividing regulatory capital by total risk-weighted assets. The minimum capital requirements, which must be maintained on a continuous basis, are a tier 1 capital ratio of 4% and a total capital ratio of 8%.

$$\text{Risk Based Capital Ratio} = \frac{\text{Capital}}{\text{Credit RWA} + 12.5 \times \text{Operational Risk} + 12.5 \times \text{Market Risk}}$$

Where:

Capital = Adjusted net tier 1 capital per section 2 if calculating the tier 1 capital ratio, or total capital per section 2 after applying all deductions and limitations if calculating the total capital ratio.

Credit RWA = Risk-weighted assets for credit risk determined using the Standardized approach in chapter 3.

Operational Risk = The operational risk capital charge calculated using one of the approaches in chapter 6.

Market Risk = The market risk capital charge (if applicable) using one or a combination of the standardized or internal models approaches set out in chapter 8 of CAR Guideline A-1.

1.4. Regulatory capital

The three primary considerations for defining the consolidated capital of an institution for purposes of measuring capital adequacy are:

- its permanence
- its being free of mandatory fixed charges against earnings
- its subordinated legal position to the rights of depositors and other creditors of the institution

Total capital comprises three tiers. Tier 1 (core capital) comprises the highest quality capital elements. Tier 2 elements (supplementary capital) fall short in meeting either of the first two

capital properties listed above, but contribute to the overall strength of a company as a going concern. The definition of tier 2 capital differentiates between what are referred to as hybrid (tier 2A) and limited life (tier 2B) instruments. Tier 3 capital is used only to meet market risk capital requirements.

The capital elements comprising the three tiers, as well as the various limits, restrictions and deductions to which they are subject, are described in chapter 2.

1.5. Total risk weighted assets

1.5.1. Credit risk approaches

1.5.1.1. Standardized approach

Smaller institutions may use the standardized approach as described in chapter 3. Under this approach, assessments from qualifying rating agencies are used to determine risk weights for:

- Claims on sovereigns and central banks
- Claims on non-central government public sector entities (PSEs)
- Claims on multilateral development banks (MDBs)
- Claims on banks and securities firms
- Claims on corporates

On-balance sheet exposures under the standardized approach are measured at book value, with the exception of:

- loans fair valued under fair value option, fair value hedge, and available for sale accounting, and
- debt securities valued under available for sale accounting.

The above instruments should instead be measured at amortized cost. All exposures subject to the standardized approach are risk-weighted net of specific allowances.

1.5.2. Operational risk approaches

There are two approaches to operational risk described in this guideline: the Basic Indicator Approach and the Standardized Approach.

The Basic Indicator Approach requires institutions to calculate operational risk capital requirements by applying a factor of 15% to a three-year average of positive annual gross income.

The Standardized Approach divides institutions' activities into eight business lines. The capital requirement is calculated by applying a factor to a three-year average of annual gross income for each business line. Individual business line requirements are added to arrive at the capital requirement for operational risk.

Chapter 2. Definition of Capital

For capital adequacy purposes, the reported values of liabilities and capital instruments (including preferred shares, innovative instruments and subordinated debt) should not reflect the effects of changes in an institution's own creditworthiness that have occurred subsequent to issuance. Consistent with the treatment of liabilities and capital instruments, the amount of retained earnings reported for capital adequacy purposes should exclude accumulated after-tax fair value gains or losses arising from changes to an institution's own credit risk under the Fair Value Option.

2.1. Tier 1 capital

Tier 1 capital is restricted to the following elements, subject to requirements established by the Superintendent:

- Common shareholders' equity, defined as common shares, contributed surplus⁶, and retained earnings⁷
- Qualifying non-cumulative perpetual preferred shares
- Qualifying innovative instruments
- Qualifying non-controlling interests arising on consolidation from tier 1 capital instruments
- Accumulated net after-tax foreign currency translation adjustment reported in Other Comprehensive Income (OCI)
- Accumulated net after-tax unrealized loss on available-for-sale equity securities reported in OCI

Tier 1 capital instruments are intended to be permanent. Where tier 1 preferred shares provide for redemption by the issuer after five years with supervisory approval, OSFI would not normally prevent such redemptions by healthy and viable institutions, when the instrument is or has been replaced by equal or higher quality capital, including an increase in retained earnings, or if the institution is downsizing. The redemption or purchase for cancellation of tier 1 capital instruments requires the prior approval of the Superintendent.

⁶ Where repayment is subject to the Superintendent's approval.

⁷ Unrealized fair value gains and losses for assets meeting the criteria in OSFI's Accounting Guideline D-10 Accounting for Financial Instruments Designated as Fair Value Option will be included in the determination of tier 1 capital through retained earnings. Institutions are expected to meet OSFI's criteria in Accounting Guideline D-10, which includes the Basel Committee on Banking Supervision's guidance. Institutions are expected to have in place appropriate risk management systems prior to initial application of the Fair Value Option for a particular activity or purpose and on an ongoing basis per the Basel Committee on Banking Supervision's guidance. Consistent with the treatment of liabilities and capital instruments, the amount of retained earnings reported for capital adequacy purposes should exclude accumulated after-tax fair value gains or losses arising from changes to an institution's own credit risk under the Fair Value Option.

2.1.1. Preferred shares (Tier 1)

Preferred shares will be judged to qualify as tier 1 instruments based on whether, in form and in substance, they are:

- subordinated
- permanent
- free of mandatory fixed charges

2.1.1.1. Subordination

Preferred shares must be subordinated to depositors and unsecured creditors of the institution. If preferred shares are issued by a subsidiary or intermediate holding company for the funding of the institution and are to qualify for capital at the consolidated entity (non-controlling interest), the terms and conditions of the issue, as well as the intercompany transfer, must ensure that investors are placed in the same position as if the instrument was issued by the institution.

2.1.1.2. Permanence

To ensure that preferred shares are permanent in nature, the following features are **not** permitted:

- retraction by the holder
- obligation for the issuer to redeem shares
- redemption within the first five years of issuance
- any step-up⁸ representing a pre-set increase at a future date in the dividend (or distribution) rate

Any conversion other than to common shares of the issuer or redemption is subject to supervisory approval and:

- redemption can only be for cash or the equivalent.
- conversion privileges cannot be structured to effectively provide either a redemption of or return on the original investment.

For example, an issue would not be considered non-cumulative if it had a conversion feature that compensates for undeclared dividends or provides a return of capital.

⁸ An increase over the initial rate after taking into account any swap spread between the original reference index and the new reference index.

2.1.1.3. Free of mandatory fixed charges

Preferred shares included in tier 1 capital are **not** permitted to offer the following features:

- cumulative dividends
- dividends influenced by the credit standing of the institution
- compensation to preferred shareholders other than a dividend
- sinking or purchase funds

In addition, the non-declaration of a dividend shall not trigger restrictions on the issuer other than the need to seek approval of the holders of the preferred shares before paying dividends on other shares or before retiring other shares. Non-declaration of a dividend would not preclude the issuer from making the preferred shares voting or, with the prior approval of the Superintendent, making payment in common shares.

To conform to accepted practice, in the event of non-declaration of a dividend, institutions may seek the approval of the holders of preferred shares before:

- paying dividends on any shares ranking junior to the preferred shares (other than stock dividends in any shares ranking junior to the preferred shares)
- redeeming, purchasing, or otherwise retiring any share ranking junior to the preferred shares (except out of the net cash proceeds of a substantially concurrent issue of shares ranking junior to the preferred shares)
- redeeming, purchasing or otherwise retiring less than all such preferred shares
- except pursuant to any purchase obligation, sinking fund, retraction privilege or mandatory redemption provisions attached to any series of preferred shares, redeeming, purchasing or otherwise retiring any shares ranking on a parity with such preferred shares

2.1.1.4. Examples of acceptable features

Outlined below are examples of certain preferred share features that may be acceptable in tier 1 capital instruments:

- a simple call feature that allows the issuer to call the instrument, provided the issue cannot be redeemed in the first five years and, after that, only with prior supervisory approval
- a dividend that floats at some fixed relationship to an index or the highest of several indices, as long as the index or indices are linked to general market rates and not to the financial condition of the borrower
- a dividend rate that is fixed for a period of years and then shifts to a rate that floats over an index, plus an additional amount tied to the increase in common share dividends if the index is not based on the institution's financial condition and the increase is not automatic, not a step-up, nor of an exploding rate nature

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- conversion of preferred shares to common shares where the minimum conversion value or the way it is to be calculated is established at the date of issue. Examples of conversion prices are: a specific dollar price; a ratio of common to preferred share prices; and a value related to the common share price at time of conversion.

2.1.1.5. Examples of unacceptable features

Examples of preferred share features that will not be acceptable in tier 1 capital are:

- an exploding rate preferred share, where the dividend rate is fixed or floating for a period and then sharply increases to an uneconomically high level
- an auction rate preferred share or other dividend reset mechanism in which the dividend is reset periodically based, in whole or part, on the issuer's credit rating or financial condition
- a dividend-reset mechanism that does not specify a cap, consistent with the institution's credit quality at the original date of issue

2.1.2. *Qualifying innovative instruments (Tier 1)*

Refer to Appendix 2-I as well as advisories issued in April 2003, July 2003 and February 2004.

2.2. **Tier 2 capital**

Tier 2 capital instruments must not contain restrictive covenants or default clauses that would allow the holder to trigger acceleration of repayment in circumstances other than the insolvency, bankruptcy or winding-up of the issuer. Further, the debt agreement must normally be subject to Canadian law. However, OSFI may waive this requirement, in whole or in part, provided the institution can show that an equivalent degree of subordination can be achieved as under Canadian law. In all cases, the prior consent of OSFI must be obtained where law other than Canadian law will apply. Instruments issued prior to year-end 1994 are grandfathered. Tier 2 capital instruments with a purchase for cancellation clause will be deemed to mature on the date this clause becomes effective unless the purchase requires the prior approval of the Superintendent.

2.2.1. *Hybrid capital instruments (Tier 2A)*

Hybrid capital includes instruments that are essentially permanent in nature and that have certain characteristics of both equity and debt, including:

- Cumulative perpetual preferred shares
- Qualifying 99-year debentures
- Qualifying non-controlling interests arising on consolidation from tier 2 hybrid capital instruments
- General allowances (see section 2.2.2.)

Hybrid capital instruments must, at a minimum, have the following characteristics:

- unsecured, subordinated and fully paid up
- not redeemable at the initiative of the holder
- may be redeemable by the issuer after an initial term of five years with the prior consent of the Superintendent
- available to participate in losses without triggering a cessation of ongoing operations or the start of insolvency proceedings
- allow service obligations to be deferred (as with cumulative preferred shares) where the profitability of the institution would not support payment

Where hybrid instruments provide for redemption by the issuer after five years with supervisory approval, OSFI would not normally prevent such redemptions by healthy and viable institutions when the instrument is or has been replaced by equal or higher quality capital, including an increase in retained earnings, or if the institution is downsizing.

Hybrid capital instruments issued in conjunction with a repackaging arrangement that are deemed by the Superintendent to be an effective amortization are to be treated as limited life instruments subject to their conforming with the criteria for tier 2B instruments. Repackaging arrangements vary, but normally involve above-market coupons and a step-down in interest rates after a specified period. Economically, therefore, they can be regarded as involving disguised capital repayment. To qualify for tier 2A, capital should not have a limited life.

Perpetual⁹ debentures meeting the criteria for hybrid capital instruments¹⁰ and with the following characteristics will be eligible for tier 2A capital:

- unsecured, subordinated and fully paid up
- not redeemable at the initiative of the holder. They may be redeemed at the initiative of the issuer after an initial term of five years with the prior consent of the Superintendent.
- available to participate in losses while the issuer is still a going concern. Therefore, if the retained earnings of the issuer are negative, then the principal amount of the debt and unpaid interest must automatically convert to common or perpetual preferred shares.
- must allow the issuer to defer principal and interest payments if the issuer does not report a net profit for the most recent combined four quarters and the issuer eliminates cash dividends on its common and preferred stock. Under no circumstances will the deferral of interest be allowed to compound.
- must not contain provisions for any form of compensation in respect of any unpaid payments, except subject to prior approval of the Superintendent.

⁹ Perpetual includes debentures with a 99-year term.

¹⁰ Bank debentures meeting the criteria of former guideline G-14 continue to be eligible for tier 2A capital.

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- free from special restrictive covenants or default clauses that would allow the holder to trigger acceleration of repayment in circumstances other than insolvency

2.2.1.1. Step-ups in tier 2A capital

OSFI defines a step-up as a pre-set increase at a specified future date in the dividend or distribution rate to be paid on a capital instrument. It would be acceptable to include in Tier 2A capital preferred shares or perpetual subordinated debentures with moderate step-ups, provided the following conditions are met:

- The step-up cannot result in an increase of more than 100 basis points over the initial rate.
- The step-up must be calculated using the “swap spread” methodology outlined in Appendix 2-1.
- The step-up cannot occur before 10 years from the date on which the capital is issued.
- The terms of the instrument must not provide for more than one step-up over the life of the instrument.
- The step-up cannot be combined with any other feature that causes an economic incentive to redeem.
- The instrument meets all of the other conditions for Tier 2A treatment set out above.

2.2.2. *General allowances (Tier 2A)*

2.2.2.1. Banks using the standardized approach

- include general allowances in tier 2A capital to a limit of 1.25% of credit risk-weighted assets with prior written approval from OSFI

2.2.3. *Unrealized gain on available-for-sale equity securities (Tier 2A)*

Tier 2A includes the accumulated net after-tax unrealized gain on available-for-sale equity securities.

2.2.4. *Limited life instruments (Tier 2B)*

Limited life instruments are not permanent and include:

- limited life redeemable preferred shares
- qualifying capital instruments issued in conjunction with a repackaging arrangement
- other debentures and subordinated debt
- qualifying non-controlling interests arising on consolidation from tier 2 limited life instruments

Limited life capital instruments must, at a minimum, have the following characteristics:

- subordination to deposit obligations and other senior creditors
- an initial minimum term greater than, or equal to, five years

Redemption at the option of the issuer is permitted in the first five years with the prior written consent of OSFI. Such redemptions by healthy and viable institutions would not normally be prevented when the instrument is or has been replaced by equal or higher quality capital, including an increase in retained earnings, or if the institution is downsizing.

Term subordinated debt and term preferred shares with imbedded step-ups may be included in tier 2B capital subject to the following requirements:

- The step-up must be calculated using the “swap spread” methodology.
- The step-up cannot be combined with any other feature that causes an economic incentive to redeem.
- The terms of the instrument must not provide for more than one step-up over the life of the instrument.
- The instrument must not have a step-up of any amount in the first five years.
- Capital instruments with step-ups greater than 100 basis points will be treated for amortization purposes as term debt that matures at the date the step-up comes into effect.

In the case of trust or loan companies, limited life debt instruments issued to a parent company, either directly or indirectly, will be included in tier 2B capital only with the prior approval of the Superintendent. Before granting approval, the Superintendent will consider the rationale provided by the parent for not providing equity capital or not raising tier 2B capital from external sources. The Superintendent will also want to be assured that the interest rate is reasonable and that failure to meet debt servicing obligations on the tier 2B debt provided by the parent would not, either now or in the future, be likely to result in the parent company being unable to meet its own debt servicing obligations¹¹, and would not trigger cross-default clauses under the covenants of other borrowing agreements of either the institution or the parent.

2.3. Tier 3 capital

Tier 3 capital may only be used to satisfy a portion of the market risk capital requirements.

Tier 3 capital is subordinated debt that is subject to the following conditions:

- minimum original maturity of two years
- payment of either interest or principal (even at maturity) shall be deferred if such payment would cause the institution to fall below the minimum capital requirement
- not redeemable before maturity without prior approval by OSFI

¹¹ Including the principal amount of debt owed.

In addition, tier 3 capital instruments must not contain restrictive covenants or default clauses that would allow the holder to trigger acceleration of repayment in circumstances other than the insolvency, bankruptcy or winding-up of the issuer. Further, the debt agreement must normally be subject to Canadian law. However, OSFI may waive this requirement, in whole or in part, provided the institution can show that an equivalent degree of subordination can be achieved as under Canadian law. In all cases, the prior consent of OSFI must be obtained where law other than Canadian law will apply.

OSFI would not normally expect to give consent to any repayment or redemption of subordinated debt within two years from the date of issuance. Repayment or redemption will only be granted when OSFI is satisfied that the institution's capital will be adequate after repayment and is likely to remain so. Unlike tier 2 capital, tier 3 subordinated debt does not have to be amortized over its life.

2.4. *Qualifying non-controlling interests*

Non-controlling interests, including subordinated debt issued to independent investors, arising on consolidation will be included in the respective categories, provided:

- The instruments meet the criteria applicable to that category.
- They do not effectively rank equally or ahead of the deposits of the institution due to a parent company guarantee or by any other contractual means.

If a subsidiary issues capital instruments for the funding of the institution or that are substantially in excess of its own requirements, the terms and conditions of the issue, as well as the intercompany transfer, must ensure that investors are placed in the same position as if the instrument was issued by the institution in order for it to qualify as capital on consolidation. This can only be achieved by the subsidiary using the proceeds of the issue to purchase a similar instrument from the parent. Since subsidiaries cannot buy shares in the parent, it is likely that this treatment will only be applicable to subordinated debt. In addition, to qualify as capital for the consolidated entity, the debt held by third parties cannot effectively be secured by other assets, such as cash, held by the subsidiary.

2.5. *Deductions/limitations*

All items that are deducted from capital are excluded from total assets in calculating the assets to capital multiple and are risk-weighted at 0% in the risk-based capital adequacy framework. If changes in the balance sheet value of a deducted item have not been recognized in regulatory capital, the amount deducted for the item should be its amortized cost rather than the value reported on the balance sheet.

2.5.1. *Deductions from tier 1 capital*

- Goodwill related to consolidated subsidiaries, subsidiaries deconsolidated for regulatory capital purposes, and the proportional share of goodwill in joint ventures subject to proportional consolidation
- Identified intangible assets in excess of 5% of gross tier 1 capital. This rule applies to identified intangible assets purchased directly or acquired in conjunction with or

arising from the acquisition of a business. These include, but are not limited to, trademarks, core deposit intangibles, mortgage servicing rights and purchased credit card relationships. Identified intangible assets include those related to consolidated subsidiaries and subsidiaries deconsolidated for regulatory capital purposes and the proportional share in joint ventures subject to proportional consolidation

Net tier 1 capital is defined as gross tier 1 capital less the above two deductions.

- 50% of investments in unconsolidated entities in which the institution has a substantial investment¹²
- 50% of investments in subsidiaries deconsolidated for regulatory capital purposes, net of goodwill and identified intangibles that were deducted from tier 1 capital
- 50% of other facilities that are treated as capital by unconsolidated subsidiaries and by unconsolidated entities in which the institution has a substantial investment
- Back-to-back placements of new tier 1 capital, arranged either directly or indirectly, between financial institutions
- 50% of payments made under non-DvP trades plus replacement costs where contractual payment or delivery is late by five days or more (see Annex 3)
- Deductions from tier 2 capital in excess of total tier 2 capital available (see section 2.5.2)

2.5.1.1. Securitization-related deductions – all banks

- Increases in equity capital resulting from securitization transactions (e.g., capitalized future margin income, gains on sale)
- 50% of credit-enhancing interest-only strips, net of any increases in equity capital resulting from securitization transactions

2.5.1.2. Securitization-related Deductions – Banks using the Standardized Approach

- For third party investors, 50% of investments in securitization exposures with long-term credit ratings B+ and below, and in unrated exposures

¹² The term “substantial investment” as used in this guideline means an investment that falls within either or both of the following categories:

- investments that are defined to be a substantial investment under section 10 of the *Bank Act* or the *Trust and Loan Companies Act*
- investments in common equity and other tier 1 qualifying instruments of a financial institution that, taken together, represent ownership of greater than 25 percent of that financial institution’s total outstanding tier 1 qualifying instruments

Goodwill related to substantial investments in unconsolidated entities that is not otherwise deducted for regulatory purposes represents a diminution in the quality of tier 1 capital and will be subject to supervisory scrutiny in the assessment of the strength of capital ratios against industry wide target ratios. Institutions will not be required to report goodwill related to substantial investments on a regular basis, but must be able to produce this information if requested by OSFI.

- For third party investors, 50% of investments in securitization exposures with short-term credit ratings below A-3/P-3/R-3 and in unrated exposures
- For originating banks, 50% of retained securitization exposures that are rated below investment grade (below BBB-), or that are unrated
- Exceptions to the requirement to deduct unrated securitization exposures are made for the most senior exposure in a securitization, exposures that are in a second loss position or better in asset-backed commercial paper (ABCP) programmes, and eligible liquidity facilities. Refer to chapter 5, paragraphs 571 to 579 for requirements.

2.5.2. *Deductions from tier 2 capital*

- 50% of investments in unconsolidated subsidiaries and in unconsolidated entities in which the institution has a substantial investment
- 50% of investments in subsidiaries deconsolidated for regulatory capital purposes, net of goodwill and identified intangibles that were deducted from tier 1 capital
- 50 % of other facilities that are treated as capital by unconsolidated subsidiaries and by unconsolidated entities in which the institution has a substantial investment
- Back-to-back placements of new tier 2 capital, arranged either directly or indirectly, between financial institutions
- 50% of payments made under non-DvP trades plus replacement costs where contractual payment or delivery is late by five days or more (see Annex 3)

Adjusted net tier 1 capital is defined as gross tier 1 capital less all tier 1 deductions.

2.5.2.1. Securitization-related deductions – all banks

- 50% of credit-enhancing interest-only strips, net of any increases in equity capital resulting from securitization transactions

2.5.2.2. Securitization-related deductions – banks using the standardized approach

- For third party investors, 50% of investments in securitization exposures with long-term credit ratings B+ and below, and in unrated exposures
- For third party investors, 50% of investments in securitization exposures with short-term credit ratings below A-3/P-3/R-3 and in unrated exposures
- For originating banks, 50% of retained securitization exposures that are rated below investment grade (below BBB-), or that are unrated

Adjusted tier 2 capital is defined as tier 2 capital less all tier 2 deductions, but may not be lower than zero. If the total of all tier 2 deductions exceeds tier 2 capital available, the excess must be deducted from tier 1.

2.5.3. *Limitations*

Common shareholders' equity (i.e., common shares and retained earnings) should be the predominant form of an institution's tier 1 capital.

The following limitations will apply to capital elements after the specified deductions and adjustments:

- A strongly capitalized institution should not have innovative instruments and non-cumulative perpetual preferred shares that, in aggregate, exceed 25% of net tier 1 capital.
- Innovative instruments shall not, at the time of issuance, comprise more than 15% of net tier 1 capital. If at any time this limit is breached, the institution must immediately notify OSFI and provide an acceptable plan showing how the institution proposes to quickly eliminate the excess.
- The amount of capital, net of amortization, included in tier 2 and used to meet credit and operational risk capital requirements shall not exceed 100% of net tier 1 capital.
- Limited life instruments, net of amortization, included in tier 2B capital shall not exceed a maximum of 50% of net tier 1 capital.
- Tier 2 and tier 3 capital used to meet the market risk capital requirements must not – in total – exceed 200% of the net tier 1 capital used to meet the market risk capital requirements.
- Tier 2 and tier 3 capital cannot – in total – normally exceed 100% of the institution's net tier 1 capital. This limit cannot be exceeded without OSFI's express permission, which will only normally be granted where an institution engages mainly in business that is subject to the market risk capital charge.

Any capital instruments and limited life instruments issued in excess of these limitations will not be counted as capital for the purpose of these tests; however, they will be taken into account when reviewing the overall strength of the institution.

2.6. *Early redemption*

Redemption of a tier 1 preferred share or a tier 2A hybrid instrument at the option of the issuer is not permitted within the first five years of issuance.¹³ There are, however, certain circumstances under which OSFI would consider redemption during this period. These circumstances are limited to:

- tax laws change, adversely affecting the tax advantage of the preferred shares/hybrid instrument
- OSFI's capital adequacy requirements change, such that the preferred shares/hybrid instrument could no longer be included in calculating the risk-based capital of the institution on a consolidated basis

¹³ As noted above, redemption of tier 2B instruments at the option of the issuer is permitted in the first five years with the prior written consent of OSFI.

- a restructuring resulting from a major acquisition or merger where the instrument is immediately exchanged for a capital-qualifying instrument of the continuing institution with identical terms and conditions and capital attributes

Superintendent approval is required for redemption at any time.

2.7. Hedging of subordinated debentures

When a institution issues subordinated debentures and fully hedges (both in terms of duration and amount) these debentures against movements in another currency and the hedge is subordinate to the interest of the depositors, the institution should report the Canadian dollar value of the instrument, net of the accrued receivable or payable on the hedge. For limited life subordinated debentures (tier 2B), a hedge to within the last three years to maturity will qualify as a full hedge; hedges to a call date or to a period greater than three years before maturity will not.

In addition, the institution should disclose information of the hedging arrangement, the amount of the translation gains/losses and the accounting treatment accorded the translation gains/losses in a note to the capital adequacy return.

Subordinated debentures denominated in a foreign currency that are not fully hedged, or where the hedge is not subordinated, should be translated into Canadian dollars at the value at the time of reporting.

2.8. Amortization

Tier 2 capital components are subject to straight-line amortization in the final five years prior to maturity or the effective dates governing holders' retraction rights. Hence, as redeemable preferred shares and subordinated debentures of the institution or non-controlling interest preferred shares and qualifying subsidiary debt instruments approach maturity, redemption or retraction, such outstanding balances are to be amortized based on the following criteria:

<i>Years to Maturity</i>	<i>Included in Capital</i>
5 years or more	100%
4 years and less than 5 years	80%
3 years and less than 4 years	60%
2 years and less than 3 years	40%
1 year and less than 2 years	20%
Less than 1 year	0%

Similarly, for capital instruments that have sinking funds, amortization of the amount paid into the sinking fund should begin five years before it is made. This is required because the amount in the sinking fund is not subordinated to the rights of depositors.

Note:

Where the redemption is not subject to the Superintendent's approval, amortization should begin after year 5 for a 20-year debenture or share that can be redeemed at the institution's option any time after the first 10 years. This would not apply when redemption requires the Superintendent's approval.

Where there is an option for the issuer to redeem an instrument subject to the Superintendent's approval, the instrument would be subject to straight-line amortization in the final five years to maturity.

Amortization should be computed at the end of each fiscal quarter based on the "years to maturity" schedule (above). Thus, amortization would begin during the first quarter that ends within five calendar years of maturity. For example, if an instrument matures on October 31, 2000, 20% amortization of the issue would occur November 1, 1995 and be reflected in the January 31, 1996 capital adequacy return. An additional 20% amortization would be reflected in each subsequent January 31 return.

Appendix 2-I - Principles Governing Inclusion of Innovative Instruments in Tier 1 Capital

A. *Application*

The principles in this Appendix take effect immediately. Given the nature of the subject matter covered in this Appendix, OSFI will continue to review the principles in light of any issues arising from their application to specific transactions. OSFI plans to revisit the Appendix as its experience develops. Subsequent amendments to the principles, if any, will not disqualify approvals granted under this Appendix.

For the purposes of this Appendix, “innovative instrument” means an instrument issued by a Special Purpose Vehicle (SPV), which is a consolidated non-operating entity whose primary purpose is to raise capital. A non-operating entity cannot have depositors or policyholders.

This Appendix applies to indirect issues done through an SPV. To qualify as capital, direct issues must meet the conditions set out in the Office’s Guidelines on *Minimum Continuing Capital and Surplus Requirements (MCCSR)* or *Capital Adequacy Requirements (CAR)*, as applicable. Note that step-ups are not permitted in directly issued Tier 1 instruments.

In this Appendix, FRFI means:

- the operating federally regulated life insurance company that has policyholders (Life Company); or
- the operating bank or the operating federally regulated trust or loan company that has depositors (DTI) and with whom the SPV is consolidated.

In this Appendix, an Asset-Based Structure is one where the assets of the SPV do not include an instrument issued by the FRFI. A Loan-Based Structure is one where the SPV’s primary asset is an instrument issued by the FRFI.

B. *Limits on innovative instruments in tier 1 capital*

Principle #1: OSFI expects FRFIs to meet capital requirements without undue reliance on innovative instruments.

Common shareholders' equity (i.e., common shares, retained earnings and participating account surplus, as applicable) should be the predominant form of a FRFI's Tier 1 capital.

1(a) Innovative instruments must not, at the time of issuance, make up more than 15% of a FRFI's net Tier 1 capital. Any excess cannot be included in regulatory capital.

If, at any time after issuance, a FRFI's ratio of innovative instruments to net Tier 1 capital exceeds 15%, the FRFI must immediately notify OSFI. The FRFI must also provide a plan, acceptable to OSFI, showing how the FRFI proposes to eliminate the excess quickly. A FRFI will generally be permitted to include such excesses in its Tier 1 capital until such time as the excess is eliminated in accordance with its plan.

1(b) A strongly capitalized FRFI should not have innovative instruments and perpetual non-cumulative preferred shares that, in aggregate, exceed 25% of its net Tier 1 capital. Tier 1-qualifying preferred shares issued in excess of this limit can be included in Tier 2 capital.

1(c) For the purposes of this principle, "net Tier 1 capital" means Tier 1 capital available after deductions for goodwill etc., as set out in OSFI's MCCSR or CAR Guideline, as applicable.

C. *General principles for innovative instruments*

Innovative instruments may be included in Tier 1 capital (subject to the limits set out in Principle #1), provided they meet certain requirements. The following principles will govern their inclusion:

Principle #2: The nature of inter-company instruments issued by the FRFI in connection with the raising of Tier 1 capital by way of innovative instruments must not compromise the Tier 1 qualities of the innovative instrument.

2 (a) An SPV should not, at any time, hold assets that materially exceed the amount of the innovative instrument. For Asset-Based Structures, OSFI will consider the excess to be material if it exceeds 25% of the innovative instrument(s) and, for Loan-Based Structures, the excess will be considered to be material if it exceeds 3% of the innovative instrument(s). Amounts in excess of these thresholds require the Superintendent's approval.

2 (b) The following minimum standards apply to inter-company instruments issued by the FRFI when raising Tier 1 capital by way of an innovative instrument:

1) Inter-company instruments must be permanent; they may contain a maturity date provided the term to maturity is at least 30 years. If, at maturity, the proceeds are not used to repay the innovative instrument, the SPV must reinvest the proceeds in assets acquired from the FRFI.

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- 2) Failure to make payments or to meet covenants must not cause acceleration of repayment of the inter-company instrument.
 - 3) The inter-company instrument must not be secured or covered by a guarantee or other arrangement that legally or economically results in a priority ahead of the claims of policyholders/depositors.
- 2 (c) Life Companies wishing to include an Asset-Based Structure in Tier 1 capital pursuant to this Appendix must satisfy OSFI that, after the assets have been transferred to the SPV, there will be sufficient cash flows available to support actuarial liabilities within the FRFI and the valuation of the FRFI's actuarial liabilities will not be materially affected.

Principle #3: Innovative instruments must allow FRFIs to absorb losses within the FRFIs on an ongoing basis.

- 3 (a) Innovative instruments must enable the FRFIs to absorb losses without triggering the cessation of ongoing operations or the start of insolvency proceedings. The ability to absorb losses must be present well before there is any serious deterioration in the FRFI's financial position.
- 3 (b) The method used to achieve loss absorption within the FRFI must be transparent and must not raise any uncertainty about the availability of capital for this purpose. Any of the following mechanisms would be acceptable, provided OSFI receives a high degree of assurance that they will function appropriately:
 - 1) Mandatory write-down of the innovative instrument.
 - 2) Automatic conversion into Tier 1-qualifying preferred shares of the FRFI. Automatic conversion must occur, at a minimum, upon the occurrence of any of the following events (Loss Absorption Events):
 - a) an application for a winding-up order in respect of the FRFI pursuant to the *Winding-up and Restructuring Act (Canada)* is filed by the Attorney General of Canada or a winding-up order in respect of the FRFI pursuant to that Act is granted by a court; or
 - b) the Superintendent advises the FRFI in writing that the Superintendent has taken control of the FRFI or its assets pursuant to the *Insurance Companies Act, Bank Act* or *Trust & Loan Companies Act*, as applicable; or
 - c) the Superintendent advises the FRFI in writing that the Superintendent is of the opinion that, in the case of a Life Company, it has a net Tier 1 capital ratio of less than 75% or a MCCR ratio of less than 120%¹⁴, or, in the case of an institution, it has a Tier 1 capital ratio of less than 5.0% or a Total Capital ratio of less than 8.0%; or
 - d) the FRFI's Board of Directors advises the Superintendent in writing that, in the case of a Life Company, the FRFI has a net Tier 1 capital ratio of less than 75% or a MCCR ratio of less than 120%, or, in the case of a

¹⁴ Tier 1 capital ratio is calculated as: $(\text{Tier 1 capital available after tier 1 deductions} \div \text{Total capital required}) \times 100$. MCCR Ratio is calculated as: $(\text{Total capital available} \div \text{Total capital required}) \times 100$.

institution, it has a Tier 1 capital ratio of less than 5.0% or a Total Capital ratio of less than 8.0%; or

- e) the Superintendent directs the FRFI, pursuant to the *Insurance Companies Act*, *Bank Act* or *Trust & Loan Companies Act*, as applicable, to increase its capital or provide additional liquidity and the FRFI elects to cause the exchange as a consequence of the issuance of such direction or the FRFI does not comply with such direction to the satisfaction of the Superintendent within the time specified.

If the Tier 1-qualifying preferred shares issued pursuant to an automatic conversion contain a feature allowing the holder to convert into common shares at future market values, such a feature must be structured to ensure that the investors would absorb losses. Accordingly, the right to convert must be structured to ensure that the holder cannot exercise the conversion right while a Loss Absorption Event is continuing.

The dividend rate on the Tier 1-qualifying preferred shares issued pursuant to the automatic conversion must be established at the time the innovative instrument is issued and must not exceed the market rate for such shares as at that date.

- 3) Another method that is consistent with Principle #4 and approved by the Superintendent.

Principle #4: Innovative instruments must absorb losses in liquidation.

- 4 (a) Innovative instruments must achieve, through conversion or other means (for example, a mechanism that ensures investors will receive distributions consistent with preferred shareholders of the FRFI), a priority after the claims of policyholders/depositors, other creditors and subordinated debt holders of the FRFI in a liquidation.
- 4 (b) Innovative instruments must not be secured or covered by a guarantee or other arrangement that legally or economically results in a claim ranking equal to or prior to the claims of policyholders/depositors, other creditors and subordinated debt holders of the FRFI in a liquidation.

Principle #5: Innovative instruments must not contain any feature that may impair the permanence of the instrument.

- 5 (a) For the purposes of this principle, a step-up is defined as a pre-set increase at a future date in the dividend (or distribution) rate to be paid on an innovative instrument. Moderate step-ups in innovative instruments are permitted only if the moderate step-up occurs at least 10 years after the issue date and if it results in an increase over the initial rate not exceeding the greater of:
 - 1) 100 basis points, less the swap spread between the initial index basis and the stepped-up index basis; and
 - 2) 50 per cent of the initial credit spread, less the swap spread between the initial index basis and the stepped-up basis.

The terms of the innovative instrument should provide for no more than one rate step-up over the life of the instrument. The swap spread should be fixed as of the pricing date

and should reflect the differential in pricing on that date between the initial reference security or rate and the stepped-up reference security or rate.

- 5 (b) A step-up feature cannot be combined with any other feature that creates an economic incentive to redeem.
- 5 (c) A redemption feature after an initial five-year period is acceptable in an innovative instrument on the condition that the redemption requires both the prior approval of the Superintendent and the replacement of the innovative instrument with capital of the same or better quality, unless the Superintendent determines that the FRFI has capital that is more than adequate to cover its risks.

An innovative instrument may be redeemed during the initial five-year period, with the Superintendent's approval, upon the occurrence of tax or regulatory (including legislative) changes affecting one or more components of the transaction. It is highly unlikely that the Superintendent would approve redemption of an innovative instrument in the initial five-year period due to a tax reassessment.

The purchase for cancellation of an innovative instrument requires the prior approval of the Superintendent.

- 5 (d) Innovative instruments must not contain a maturity date or other feature that requires the instrument to be paid in cash. The instrument may contain the right of holders, at their option, to exchange their innovative instrument for Tier 1-qualifying preferred shares of the FRFI, provided the dividend rate is established at the time the innovative instrument is issued and it does not exceed the market rate for such shares as at that date.
- 5 (e) An innovative instrument must not contain a feature allowing the holder to convert the innovative instrument directly into common shares of the FRFI or of other entities. Conversions into common shares are permitted only if the conversion occurs first into Tier 1-qualifying preferred shares of the FRFI which are then convertible into common shares of the FRFI or its OSFI-regulated holding company, and provided OSFI is satisfied that the innovative instrument is issued in a market where the conversion feature is widely accepted.

Principle #6: Innovative instruments must be free from mandatory fixed charges.

- 6 (a) The FRFI, through the SPV, must have discretion over the amount and timing of distributions. Rights to receive distributions must clearly be non-cumulative and must not provide for compensation in lieu of undeclared distributions. The FRFI must have full access to undeclared payments.
- 6 (b) Distributions may be paid only in cash.
- 6 (c) Distributions may not be reset based on the future credit standing of the FRFI.

Principle #7: Innovative instruments must be issued and fully paid-for in money, or, with the approval of the Superintendent, in property.

Principle #8: Innovative instruments, even if not issued as shares, may be included in Tier 1 capital.

Principle #9: The main features of an innovative instrument must be easily understood and publicly disclosed.

- 9 (a) For the purposes of this principle, OSFI will consider the main features of an innovative instrument to be easily understood where:
- 1) the legal (including tax) and regulatory risks arising out of the innovative instrument have been minimized to the satisfaction of the Superintendent. The likelihood of failing this test increases as the number of entities placed between the investors and the ultimate recipient of the proceeds increases, as the number of jurisdictions involved increases, and/or if the assets of the FRFI are transferred to an entity outside Canada; and
 - 2) the manner by which the innovative instrument meets the Tier 1 capital requirements and the main features of the instrument are, in the opinion of the Superintendent, transparent to a reasonably sophisticated investor.
- 9 (b) The main features of innovative instruments, including those features designed to achieve Tier 1 capital status (for example, the triggers and mechanisms used to achieve loss absorption), must be publicly disclosed in the FRFI's annual report to shareholders.

D. Grandfathering

Principle #10: For purposes of Principle #1, FRFIs exceeding the “25 per cent limit” as of the date of the release of this Appendix can continue to include the excess in Tier 1 capital if the excess also existed at July 30, 1999, but may only do so until July 30, 2004 unless otherwise permitted in writing by the Superintendent. Excesses created subsequent to July 30, 1999 are not grandfathered for purposes of Principle #1, unless otherwise permitted in writing by the Superintendent. All existing innovative instruments and Tier 1-qualifying preferred shares must continue to be included in the computation of a FRFI's position relative to the 15 per cent and 25 per cent limits going forward.

Appendix 2-II - List of Advisories

Advisory	Date
Guidance Note – Investments by Federally Regulated Financial Institutions in Mutual Fund Entities	December 1999
Guidance Note – Capital Instruments – Guideline A, Capital Adequacy Requirements	June 2000
Guidance Note – Dividend Reset Features in Tier 1 Preferred Shares and Step-ups in Tier 2B Capital	May 2001
Tier 1 Capital Clarifications	April 2003
Innovative Tier 1 Instruments and Accounting Guideline 15 (AcG 15)	July 2003
Section 3860 of the CICA Handbook and the Regulatory Capital Treatment of Preferred Shares and Innovative Tier Instruments	February 2004
Moderate Step-ups in Tier 2A Capital and Automatic Conversion Triggers in Tier 2A – Qualifying Debentures	June 2004
Ruling 2005-01: Capital Structure – Conversion of subordinated debt	2005
Letter from Julie Dickson regarding Innovative Tier 1 and Other Regulatory Capital Quality Issues – Canadian Bankers Association	October 2005
Innovative Tier 1 and Other Capital Clarifications – Revised Version	June 2007
Transition for Certain Definition of Capital Elements of Basel II	January 2008

Chapter 3. Credit Risk - Standardized Approach

Note that all exposures subject to the standardized approach should be risk-weighted net of specific allowances.

3.1. Risk Weight Categories

On-balance sheet and off-balance sheet credit equivalent amounts

Individual claims

3.1.1. Claims on sovereigns

Claims on sovereigns and their central banks are risk weighted as follows:

Credit Assessment ¹⁵	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk Weight	0%	20%	50%	100%	150%	100%

National supervisors may allow a lower risk weight to be applied to banks' exposures to their sovereign (or central bank) of incorporation denominated in domestic currency and funded¹⁶ in that currency.¹⁷ Institutions operating in Canada that have exposures to sovereigns meeting the above criteria may use the preferential risk weight assigned to those sovereigns by their national supervisors.

3.1.2. Claims on unrated sovereigns

For claims on sovereigns that are unrated, institutions may use country risk scores assigned by Export Credit Agencies (ECAs). Consensus risk scores assigned by ECAs participating in the "Arrangement on Officially Supported Export Credits" and available on the OECD website¹⁸, correspond to risk weights as follows:

ECA risk scores	0-1	2	3	4 to 6	7
Risk weight	0%	20%	50%	100%	150%

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

¹⁵ This notation refers to the methodology used by Standard and Poor's. Refer to section 3.7.2.1. to determine the applicable risk weight for other rating agency methodologies.

¹⁶ This is to say that the bank would also have corresponding liabilities denominated in the domestic currency.

¹⁷ This lower risk weight may be extended to the risk weighting of collateral and guarantees. See section 4.1.3. and 4.1.5.

¹⁸ The consensus country risk classification is available on the OECD's website (<http://www.oecd.org>) in the Export Credit Arrangement web page of the Trade Directorate.

3.1.3. Claims on non-central government public sector entities (PSEs)

PSEs are defined as:

- entities directly and wholly-owned by a government,
- school boards, hospitals, universities and social service programs that receive regular government financial support, and
- municipalities.

Claims on PSEs receive a risk weight that is one category higher than the sovereign risk weight:

Credit Assessment of sovereign	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Sovereign Risk Weight	0%	20%	50%	100%	150%	100%
PSE risk weight	20%	50%	100%	100%	150%	100%

There are two exceptions to the above:

(i) Claims on the following entities will receive the same risk weight as the Government of Canada:

- All provincial and territorial governments and agents of the federal, provincial or territorial government whose debts are, by virtue of their enabling legislation, obligations of the parent government

(ii) Claims on the following entities will be treated like claims on corporates:

- Entities that are, in the judgement of the host government, significantly in competition with the private sector. Institutions should look to the host government to confirm whether an entity is a PSE in competition with the private sector.

PSEs in foreign jurisdictions should be given the same capital treatment as that applied by the national supervisor in the jurisdiction of origin.

3.1.4. Claims on multilateral development banks (MDBs)

Claims on MDBs that meet the following criteria receive a risk weight of 0%:

- very high quality long-term issuer ratings, i.e. a majority of an MDB's external assessments must be AAA,
- shareholder structure is comprised of a significant proportion of sovereigns with long-term issuer credit assessments of AA- or better, or the majority of the MDB's fund-raising is in the form of paid-in equity/capital and there is little or no leverage,

- strong shareholder support demonstrated by the amount of paid-in capital contributed by the shareholders; the amount of further capital the MDBs have the right to call, if required, to repay their liabilities; and continued capital contributions and new pledges from sovereign shareholders,
- adequate level of capital and liquidity (a case-by-case approach is necessary in order to assess whether each MDB's capital and liquidity are adequate), and
- strict statutory lending requirements and conservative financial policies, which would include among other conditions a structured approval process, internal creditworthiness and risk concentration limits (per country, sector, and individual exposure and credit category), large exposures approval by the board or a committee of the board, fixed repayment schedules, effective monitoring of use of proceeds, status review process, and rigorous assessment of risk and provisioning to loan loss reserve.

MDBs currently eligible for 0% risk weight are¹⁹:

- International Bank for Reconstruction and Development (IBRD)
- International Finance Corporation (IFC)
- Asian Development Bank (ADB)
- African Development Bank (AfDB)
- European Bank for Reconstruction and Development (EBRD)
- Inter-American Development Bank (IADB)
- European Investment Bank (EIB)
- European Investment Fund (EIF)
- Nordic Investment Bank (NIB)
- Caribbean Development Bank (CDB)
- Islamic Development Bank (IDB)
- Council of Europe Development Bank (CEDB)

Otherwise, the following risk weights apply:

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

¹⁹ In addition, OSFI will allow banks to apply a 0% risk weight to claims on the International Finance Facility for Immunisation (IFFIm) similar to the treatment for eligible multilateral development banks.

3.1.5. *Claims on deposit taking institutions and banks*

Canadian deposit taking institutions (DTIs) include federally and provincially regulated institutions that take deposits and lend money. These include banks, trust or loan companies and co-operative credit societies.

The term bank refers to those institutions that are regarded as banks in the countries in which they are incorporated and supervised by the appropriate banking supervisory or monetary authority. In general, banks will engage in the business of banking and have the power to accept deposits in the regular course of business.

For banks incorporated in countries other than Canada, the definition of bank will be that used in the capital adequacy regulations of the host jurisdiction.

The following risk weights apply to claims on DTIs and banks:

Credit assessment of Sovereign	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
DTI/bank risk weight	20%	50%	100%	100%	150%	100%

Claims on parents of DTIs that are non-financial institutions are treated as corporate exposures.

3.1.6. *Claims on securities firms*

Claims on securities firms may be treated as claims on banks provided these firms are subject to supervisory and regulatory arrangements comparable to those under Basel II framework (including, in particular, risk-based capital requirements).²⁰ Otherwise, such claims would follow the rules for claims on corporates.

3.1.7. *Claims on corporates*

The table provided below illustrates the risk weighting of rated corporate claims, including claims on insurance companies. The standard risk weight for unrated claims on corporates will be 100%. No claim on an unrated corporate may be given a risk weight preferential to that assigned to its sovereign of incorporation.

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

²⁰ That is, capital requirements that are comparable to those applied to banks in this Framework. Implicit in the meaning of the word “comparable” is that the securities firm (but not necessarily its parent) is subject to consolidated regulation and supervision with respect to any downstream affiliates.

Institutions may choose to apply a 100% risk weight to all corporate exposures. However, if an institution chooses to adopt this option, it must use the 100% risk weight for all of its corporate exposures.

3.1.8. Claims included in the regulatory retail portfolios

Retail claims are risk-weighted at 75%.

To be included in the regulatory retail portfolio, claims must meet the following four criteria:

- Orientation criterion — the exposure is to an individual person or persons or to a small business.
- Product criterion — 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. instalment loans, auto loans and leases, student and educational loans, personal finance) and small business facilities and commitments. Securities (such as bonds and equities), whether listed or not, are specifically excluded from this category. Mortgage loans are excluded to the extent that they qualify for treatment as claims secured by residential property.
- Granularity criterion — the supervisor must be satisfied that the regulatory retail portfolio is sufficiently diversified to a degree that reduces the risks in the portfolio, warranting the 75% risk weight.
- Low value of individual exposures — the maximum aggregated retail exposure to one counterpart cannot exceed an absolute threshold of CAD \$1.25 million. Small business loans extended through or guaranteed by an individual are subject to the same exposure threshold.

Residential construction loans meeting the above criteria are risk-weighted at 75%. Residential construction loans that do not meet the above criteria must be treated as a corporate exposure subject to the risk weights in section 3.1.7.

3.1.9. Claims secured by residential property

Mortgages on residential property that is or will be occupied by the borrower, or that is rented, are risk weighted at 35%.

Qualifying residential mortgages include:

- loans secured by first mortgages on individual condominium residences and one-to four-unit residences made to a person(s) or guaranteed by a person(s), provided that such loans are not 90 days or more past due and do not exceed a loan-to-value ratio of 80%, and
- collateral mortgages (first and junior) on individual condominium residences or one-to four-unit residential dwellings, provided that such loans are made to a person(s) or guaranteed by a person(s), where no other party holds a senior or intervening lien on the property to which the collateral mortgage applies and such loans are not more than 90 days past due and do not, collectively, exceed a loan-to-value ratio of 80%.

Investments in hotel properties and time-shares are excluded from the definition of qualifying residential property.

Uninsured collateral mortgages that would otherwise qualify as residential mortgages, except that their loan-to-value ratio exceeds 80%, receive a risk weight of 75%.

Residential mortgages insured under the NHA or equivalent provincial mortgage insurance programs are risk weighted at 0%. Where a mortgage is comprehensively insured by a private sector mortgage insurer that has a backstop guarantee provided by the Government of Canada (for example, a guarantee made pursuant to subsection 193(1) of the Budget Implementation Act of 2006), institutions may recognize the risk-mitigating effect of the guarantee by reporting the portion of the exposure that is covered by the Government of Canada backstop as if this portion were directly guaranteed by the Government of Canada. The remainder of the exposure should be treated as a corporate-guaranteed mortgage in accordance with the rules set out in chapter 4.

3.1.10. Mortgage-backed securities

0% Risk weight

- NHA mortgage-backed securities that are guaranteed by the Canada Mortgage and Housing Corporation (CMHC), in recognition of the fact that obligations incurred by CMHC are legal obligations of the Government of Canada.

35% Risk weight

- mortgage-backed securities that are fully and specifically secured against qualifying residential mortgages (see 3.1.9.).

100% Risk weight

- amounts receivable resulting from the sale of mortgages under NHA mortgage-backed securities programs.

3.1.11. Pass-through type mortgage-backed securities

Mortgage-backed securities that are of pass-through type and are effectively a direct holding of the underlying assets shall receive the risk-weight of the underlying assets, provided that all the following conditions are met:

- The underlying mortgage pool contains only mortgages that are fully performing when the mortgage-backed security is created.
- The securities must absorb their pro-rata share of any losses incurred.
- A special-purpose vehicle should be established for securitization and administration of the pooled mortgage loans.
- The underlying mortgages are assigned to an independent third party for the benefit of the investors in the securities who will then own the underlying mortgages.
- The arrangements for the special-purpose vehicle and trustee must provide that the following obligations are observed:

-
- If a mortgage administrator or a mortgage servicer is employed to carry out administration functions, the vehicle and trustee must monitor the performance of the administrator or servicer.
 - The vehicle and/or trustee must provide detailed and regular information on structure and performance of the pooled mortgage loans.
 - The vehicle and trustee must be legally separate from the originator of the pooled mortgage loans.
 - The vehicle and trustee must be responsible for any damage or loss to investors created by their own or their mortgage servicer's mismanagement of the pooled mortgages.
 - The trustee must have a first priority charge on underlying assets on behalf of the holders of the securities.
 - The agreement must provide for the trustee to take clearly specified steps in cases when the mortgagor defaults.
 - The holder of the security must have a pro-rata share in the underlying mortgage assets or the vehicle that issues the security must have only liabilities related to the issuing of the mortgage-backed security.
 - The cash flows of the underlying mortgages must meet the cash flow requirements of the security without undue reliance on any reinvestment income.
 - The vehicle or trustee may invest cash flows pending distribution to investors only in short-term money market instruments (without any material reinvestment risk) or in new mortgage loans.

Mortgage-backed securities that do not meet these conditions will receive a risk-weight of 100%. Stripped mortgage-backed securities or different classes of securities (senior/junior debt, residual tranches) that bear more than their pro-rata share of losses will automatically receive a 100% risk weight.

Where the underlying pool of assets is comprised of assets that would attract different risk weights, the risk weight of the securities will be the highest risk weight associated with risk-weighted assets.

For the treatment of mortgage-backed securities issued in tranches, refer to chapter 5, Structured Products.

3.1.12. Repurchase and reverse repurchase agreements

A securities repurchase (repo) is an agreement whereby a transferor agrees to sell securities at a specified price and repurchase the securities on a specified date and at a specified price. Since the transaction is regarded as a financing for accounting purposes, the securities remain on the balance sheet. Given that these securities are temporarily assigned to another party, the risk weighted assets associated with this exposure should be the higher of risk-weighted assets calculated using:

-
- the risk weight of the security, or
 - the risk weight of the counterparty to the transaction, recognizing any eligible collateral; see Chapter 4.

A reverse repurchase agreement is the opposite of a repurchase agreement, and involves the purchase and subsequent resale of a security. Reverse repos are treated as collateralised loans, reflecting the economic reality of the transaction. The risk is therefore to be measured as an exposure to the counterparty. If the asset temporarily acquired is a security that qualifies as eligible collateral per chapter 4, the risk-weighted exposure may be reduced accordingly.

3.1.13. Securities lending

In securities lending, institutions can act as principal to the transaction by lending their own securities or as an agent by lending securities on behalf of their clients.

When the institution lends its own securities, the credit risk is based on the higher of:

- the credit risk of the instrument lent, and
- the counterparty credit risk of the borrower of the securities. This risk could be reduced if the institution held eligible collateral (refer to chapter 4). Where the institution lends securities through an agent and receives an explicit guarantee of the return of the securities, the institution's counterparty is the agent.

When the institution, acting as agent, lends securities on behalf of the client and guarantees that the securities lent will be returned or the institution will reimburse the client for the current market value, the credit risk is based on the counterparty credit risk of the borrower of the securities. This risk could be reduced if the institution held eligible collateral (see chapter 4).

3.1.14. Claims secured by commercial real estate

Commercial mortgages are risk-weighted at 100%.

3.1.15. Past due loans

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

- 150% risk weight when specific provisions are less than 20% of the outstanding amount of the loan.
- 100% risk weight when specific provisions are more than 20% and less than 100% of the outstanding amount of the loan.

For the purpose of defining the secured portion of the past due loan, eligible collateral and guarantees will be the same as for credit risk mitigation purposes (see chapter 4). For risk-weighting purposes, past due retail loans are to be excluded from the overall regulatory retail portfolio when assessing the granularity criterion specified in 3.1.6.

Qualifying residential mortgage loans that are past due for more than 90 days will be risk weighted at 100%, net of specific provisions.

3.1.16. Higher-risk categories

The following claims will be risk weighted at 150% or higher:

- claims on sovereigns, PSEs, banks, and securities firms rated below B-,
- claims on corporates rated below BB-,
- past due loans as set out above, and
- securitisation tranches that are rated between BB+ and BB- will be risk weighted at 350% as set out in paragraph 567 in chapter 5 of this guideline.

3.1.17. Other assets

0% Risk weight

- cash and gold bullion held in the institution's own vaults or on an allocated basis to the extent backed by bullion liabilities,
- unrealized gains and accrued receivables on foreign exchange and interest rate-related off-balance sheet transactions where they have been included in the off-balance sheet calculations, and
- all deductions from capital, as specified in chapter 2.

20% Risk weight

- cheques and other items in transit.

100% Risk weight

- premises, plant and equipment and other fixed assets,
- real estate and other investments (including non-consolidated investment participation in other companies),
- investments in equity or regulatory capital instruments issued by banks or securities firms, unless deducted from capital as set out in chapter 2,
- future income tax assets,
- prepaid expenses such as property taxes and utilities,
- deferred charges such as mortgage origination costs, and
- all other assets.

3.2. Categories of off-balance sheet instruments

The definitions in this section apply to off-balance sheet instruments. The term “off-balance sheet instruments”, as used in this guideline, encompasses guarantees, commitments, derivatives, and similar contractual arrangements whose full notional principal amount may not necessarily be reflected on the balance sheet. Such instruments are subject to a capital charge irrespective of whether they have been recorded on the balance sheet at market value.

Institutions should closely monitor securities, commodities, and foreign exchange transactions that have failed, starting the first day they fail. A capital charge to failed transactions should be calculated in accordance with Annex 3. With respect to unsettled securities, commodities, and foreign exchange transactions that are not processed through a delivery-versus-payment (DvP) or payment-versus-payment (PvP) mechanism, institutions should calculate a capital charge as set forth in Annex 3.

The credit equivalent amount of Securities Financing Transactions (SFT)²¹ and OTC derivatives that expose a bank to counterparty credit risk²² is to be calculated under the rules set forth in Annex 4²³. Annex 4 applies to all OTC derivatives held in the trading book.

3.2.1. *Direct credit substitutes*

Direct credit substitutes include guarantees or equivalent instruments backing financial claims. With a direct credit substitute, the risk of loss to the institution is directly dependent on the creditworthiness of the counterparty.

Examples of direct credit substitutes include:

- guarantees given on behalf of customers to stand behind the financial obligations of the customer and to satisfy these obligations should the customer fail to do so; for example, guarantees of:
 - payment for existing indebtedness for services
 - payment with respect to a purchase agreement
 - lease, loan or mortgage payments
 - payment of uncertified cheques
 - remittance of (sales) tax to the government
 - payment of existing indebtedness for merchandise purchased
 - payment of an unfunded pension liability
 - reinsurance of financial obligations,

²¹ Securities Financing Transactions (SFT) are transactions such as repurchase agreements, reverse repurchase agreements, security lending and borrowing, and wholesale margin lending transactions, where the value of the transactions depends on the market valuations and the transactions are often subject to margin agreements.

²² 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 an institution's exposure to credit risk through a loan, where the exposure to credit risk is unilateral and only the lending institution 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.

²³ Annex 4 is based on the treatment of counterparty credit risk set out in Part 1 of the BCBS paper The Application of Basel II to Trading Activities and the Treatment of Double Default Effects (July 2005).

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- standby letters of credit or other equivalent irrevocable obligations, serving as financial guarantees, such as letters of credit supporting the issue of commercial paper,
 - risk participation in bankers' acceptances and risk participation in financial letters of credit. Risk participation constitutes guarantees by the participating institutions such that, if there is a default by the underlying obligor, they will indemnify the selling institution for the full principal and interest attributable to them,
 - securities lending transactions, where the institution is liable to its customer for any failure to recover the securities lent, and
 - Credit derivatives in the banking book where a bank is selling credit protection.

3.2.2. *Transaction-related contingencies*

Transaction-related contingencies relate to the ongoing business activities of a counterparty, where the risk of loss to the reporting institution depends on the likelihood of a future event that is independent of the creditworthiness of the counterparty. Essentially, transaction-related contingencies are guarantees that support particular performance of non-financial or commercial contracts or undertakings, rather than supporting customers' general financial obligations. Performance-related guarantees specifically exclude items relating to non-performance of financial obligations.

Performance-related and non-financial guarantees include items such as:

- performance bonds, warranties and indemnities. Performance standby letters of credit represent obligations backing the performance of non-financial or commercial contracts or undertakings. These include arrangements backing:
 - subcontractors' and suppliers' performance
 - labour and material contracts
 - delivery of merchandise, bids or tender bonds
 - guarantees of repayment of deposits or prepayments in cases of non-performance,
- customs and excise bonds. The amount recorded for such bonds should be the reporting institution's maximum liability.

3.2.3. *Trade-related contingencies*

These include short-term, self-liquidating trade-related items such as commercial and documentary letters of credit issued by the institution that are, or are to be, collateralized by the underlying shipment.

Letters of credit issued on behalf of a counterparty back-to-back with letters of credit of which the counterparty is a beneficiary ("back-to-back" letters) should be reported as documentary letters of credit.

Letters of credit advised by the institution for which the institution is acting as reimbursement agent should not be considered as a risk asset.

3.2.4. Sale and Repurchase Agreements

A repurchase agreement is a transaction that involves the sale of a security or other asset with the simultaneous commitment by the seller that, after a stated period of time, the seller will repurchase the asset from the original buyer at a pre-determined price. A reverse repurchase agreement consists of the purchase of a security or other asset with the simultaneous commitment by the buyer that, after a stated period of time, the buyer will resell the asset to the original seller at a pre-determined price. In any circumstance where they are not reported on-balance sheet, they should be reported as an off-balance sheet exposure with a 100% credit conversion factor.

3.2.5. Forward Asset Purchases²⁴

A commitment to purchase a loan, security, or other asset at a specified future date, usually on prearranged terms.

3.2.6. Forward/Forward Deposits

An agreement between two parties whereby one will pay and other receive an agreed rate of interest on a deposit to be placed by one party with the other at some pre-determined date in the future. Such deposits are distinct from future forward rate agreements in that, with forward/forwards, the deposit is actually placed.

3.2.7. Partly Paid Shares and Securities

Transactions where only a part of the issue price or notional face value of a security purchased has been subscribed and the issuer may call for the outstanding balance (or a further instalment), either on a date pre-determined at the time of issue or at an unspecified future date.

3.2.8. Note Issuance/Revolving Underwriting Facilities

These are arrangements whereby a borrower may issue short-term notes, typically three to six months in maturity, up to a prescribed limit over an extended period of time, commonly by means of repeated offerings to a tender panel. If at any time the notes are not sold by the tender at an acceptable price, an underwriter (or group of underwriters) undertakes to buy them at a prescribed price.

3.2.9. Future/Forward Rate Agreements

These are arrangements between two parties where at some pre-determined future date a cash settlement will be made for the difference between the contracted rate of interest and the current market rate on a pre-determined notional principal amount for a pre-determined period.

²⁴ This does not include a spot transaction that is contracted to settle within the normal settlement period.

3.2.10. Interest Rate Swaps

In an interest rate swap, two parties contact to exchange interest service payments on the same amount of notional indebtedness. In most cases, fixed interest rate payments are provided by one party in return for variable rate payments from the other and vice versa. However, it is possible that variable interest payments may be provided in return for other variable interest rate payments.

3.2.11. Interest Rate Options and Currency Options

An option is an agreement between two parties where the seller of the option for compensation (premium/fee) grants the buyer the future right, but not the obligation, to buy from the seller, or to sell to the seller, either on a specified date or during a specified period, a financial instrument or commodity at a price agreed when the option is arranged. Other forms of interest rate options include interest rate cap agreements and collar (floor/ceiling) agreements.

Options traded on exchanges may be excluded where they are subject to daily margining requirements.

3.2.12. Forward Foreign Exchange Contracts

A forward foreign exchange contract is an agreement between an institution and a counterparty in which the institution agrees to sell to or purchase from the counterparty a fixed amount of foreign currency at a fixed rate of exchange for delivery and settlement on a specified date in the future or within a fixed optional period.

3.2.13. Cross Currency Swaps

A cross currency swap is a transaction in which two parties exchange currencies and the related interest flows for a period of time. Cross currency swaps are used to swap fixed interest rate indebtedness in different currencies.

3.2.14. Cross Currency Interest Rate Swaps

Cross currency interest rate swaps combine the elements of currency and interest rate swaps.

3.2.15. Financial and Foreign Currency Futures

A future is a standardized contractual obligation to make or take delivery of a specified quantity of a commodity (financial instrument, foreign currency, etc.) on a specified future date at a specified future price established in a central regulated marketplace. Precious Metals Contracts and Financial Contracts on Commodities

3.2.16. Precious Metals Contracts and Financial Contracts on Commodities

Precious metals contracts and financial contracts on commodities can involve spot, forward, futures and option contracts. Precious metals are mainly gold, silver, and platinum. Commodities are bulk goods such as grains, metals and foods traded on a commodities exchange or on the spot market. For capital purposes, gold contracts are treated the same as foreign exchange contracts.

3.2.17. *Non-equity Warrants*

Non-equity warrants include cash settlement options/contracts whose values are determined by the movements in a given underlying index, product, or foreign exchange over time. Where non-equity warrants or the hedge for such warrants expose the financial institution to counterparty credit risk, the credit equivalent amount should be determined using the current exposure method for exchange rate contracts.

3.3. *Credit conversion factors*

The face amount (notional principal amount) of off-balance sheet instruments does not always reflect the amount of credit risk in the instrument. To approximate the potential credit exposure of non-derivative instruments, the notional amount is multiplied by the appropriate credit conversion factor (CCF) to derive a **credit equivalent amount**²⁵. The credit equivalent amount is treated in a manner similar to an on-balance sheet instrument and is assigned the risk weight appropriate to the counterparty or, if relevant, the guarantor or collateral. The categories of credit conversion factors are outlined below.

100% Conversion factor

- Direct credit substitutes (general guarantees of indebtedness and guarantee-type instruments, including standby letters of credit serving as financial guarantees for, or supporting, loans and securities),
- Acquisitions of risk participation in bankers' acceptances and participation in direct credit substitutes (for example, standby letters of credit),
- Sale and repurchase agreements,
- Forward agreements (contractual obligations) to purchase assets, including financing facilities with certain drawdown, and
- Written put options on specified assets with the characteristics of a credit enhancement²⁶.

50% Conversion factor

- Transaction-related contingencies (for example, bid bonds, performance bonds, warranties, and standby letters of credit related to a particular transaction),
- Commitments with an original maturity exceeding one year, including underwriting commitments and commercial credit lines, and
- Revolving underwriting facilities (RUFs), note issuance facilities (NIFs) and other similar arrangements.

²⁵ See 3.4., “Forwards, Swaps, Purchased Options and Other Similar Derivatives”.

²⁶ Written put options (where premiums are paid upfront) expressed in terms of market rates for currencies or financial instruments bearing no credit or equity risk are excluded from the framework.

20% Conversion factor

- Short-term, self-liquidating trade-related contingencies, including commercial/documentary letters of credit (Note: a 20% CCF is applied to both issuing and confirming banks),
- Commitments with an original maturity of one year or less, and

0% Conversion factor

- Commitments that are unconditionally cancellable at any time without prior notice.

3.4. Forwards, swaps, purchased options and other similar derivative contracts

The treatment of forwards, swaps, purchased options and other similar derivatives needs special attention because institutions are not exposed to credit risk for the full face value of their contracts (notional principal amount), but only to the potential cost of replacing the cash flow (on contracts showing a positive value) if the counterparty defaults. The credit equivalent amounts are calculated using the current exposure method and are assigned the risk weight appropriate to the counterparty. As an alternative to the current exposure method, institutions may calculate the credit equivalent amount using the internal modelling method, subject to supervisory approval. See Annex 4 for details on these two methods.

The add-on applied in calculating the credit equivalent amount depends on the maturity of the contract and on the volatility of the rates and prices underlying that type of instrument. Instruments traded on exchanges may be excluded where they are subject to daily receipt and payment of cash variation margin. Options purchased over the counter are included with the same conversion factors as other instruments.

Institutions should closely monitor securities, commodities, and foreign exchange transactions that have failed, starting the first day they fail. A capital charge for failed transactions should be calculated in accordance with Annex 3. With respect to unsettled securities, commodities, and foreign exchange transactions that are not processed through a delivery-versus-payment (DvP) or payment-versus-payment (PvP) mechanism, institutions should calculate a capital charge as set forth in Annex 3.

3.4.1. Interest rate contracts

These include:

- single-currency interest rate swaps
- basis swaps
- forward rate agreements and products with similar characteristics
- interest rate futures
- interest rate options purchased

3.4.2. *Foreign exchange rate contracts*

These include:

- gold contracts²⁷
- cross-currency swaps
- cross-currency interest rate swaps
- outright forward foreign exchange contracts
- currency futures
- currency options purchased

3.4.3. *Equity contracts*

These include:

- futures
- forwards
- swaps
- purchased options
- similar contracts based on both individual equities as well as on equity indices

3.4.4. *Precious metals (i.e., silver, platinum, and palladium) contracts*

These include:

- futures
- forwards
- swaps
- purchased options
- similar contracts based on precious metals

3.4.5. *Contracts on other commodities*

These include:

- futures
- forwards
- swaps
- purchased options
- similar derivatives contracts based on energy contracts, agricultural contracts, base metals (e.g., aluminium, copper, and zinc)
- other non-precious metal commodity contracts

²⁷ Gold contracts are treated the same as foreign exchange rate contracts for the purpose of calculating credit risk.

3.5. *Netting of forwards, swaps, purchased options and other similar derivatives*

Institutions may net contracts that are subject to novation or any other legally valid form of netting. Novation refers to a written bilateral contract between two counterparties under which any obligation to each other to deliver a given currency on a given 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.

Institutions that wish to net transactions under either novation or another form of bilateral netting will need to satisfy OSFI²⁸ that the following conditions are met:

- The institution has executed a written, bilateral netting contract or agreement with each counterparty that creates a single legal obligation, covering all included bilateral transactions subject to netting. The result of such an arrangement would be that the institution only has one obligation for payment or one claim to receive funds based on the net sum of the positive and negative mark-to-market values of all of the transactions with that counterparty in the event that counterparty fails to perform due to any of the following: default, bankruptcy, liquidation or similar circumstances.
- The institution must have written and reasoned legal opinions that, in the event of any legal challenge, the relevant courts or administrative authorities would find the exposure under the netting agreement to be the net amount under the laws of all relevant jurisdictions. In reaching this conclusion, legal opinions must address the validity and enforceability of the entire netting agreement under its terms.
 - The laws of “all relevant jurisdictions” are: a) the law of the jurisdictions where the counterparties are chartered and, if the foreign branch of a counterparty is involved, the laws of the jurisdiction in which the branch is located b) the law governing the individual transactions; and c) the law governing any contracts or agreements required to effect netting.
 - A legal opinion must be generally recognised as such by the legal community in the firm’s home country or by a memorandum of law that addresses all relevant issues in a reasoned manner.
- The institution has internal procedures to verify that, prior to including a transaction in a netting set, the transaction is covered by legal opinions that meet the above criteria.
- The institution must have procedures in place to update legal opinions as necessary to ensure continuing enforceability of the netting arrangements in light of possible changes in relevant law.
- The institution maintains all required documentation in its files.

Any contract containing a walkaway clause will not be eligible to qualify for netting for the purpose of calculating capital requirements. A walkaway clause is a provision within the

²⁸ If any supervisor is dissatisfied about enforceability under the laws of its country, neither counterparty can net the contracts for capital purposes.

contract that permits a non-defaulting counterparty to make only limited payments, or no payments, to the estate of the defaulter, even if the defaulter is a net creditor.

Institutions that are approved to estimate their exposures to CCR using the internal model method may use the cross-product netting rules as set out in Annex 4. Cross-product netting of repo-style transactions against OTC derivative transactions is not permitted under the current exposure method.

Credit exposure on bilaterally netted forwards, swaps, purchased options and other similar derivatives transactions is calculated as the sum of the net mark-to-market replacement cost, if positive, plus an add-on for potential future credit exposure based on the notional principal of the individual underlying contracts. However, for purposes of calculating potential future credit exposure of contracts subject to legally enforceable netting agreements in which notional principal is equivalent to cash flows, notional principal is defined as the net receipts falling due on each value date in each currency. The reason that these contracts are treated as a single contract is that offsetting contracts in the same currency maturing on the same date will have lower potential future exposure as well as lower current exposure. For multilateral netting schemes, current exposure (i.e., replacement cost) is a function of the loss allocation rules of the clearing-house.

The calculation of the gross add-ons should be based on the legal cash flow obligations in all currencies. This is calculated by netting all receivable and payable amounts in the same currency for each value date. The netted cash flow obligations are converted to the reporting currency using the current forward rates for each value date. Once converted, the amounts receivable for the value date are added together and the gross add-on is calculated by multiplying the receivable amount by the appropriate add-on factor.

The potential future credit exposure for netted transactions (A_{Net}) equals the sum of: (i) 40% of the add-on as presently calculated (A_{Gross})²⁹; and (ii) 60% of the add-on multiplied by the ratio of net current replacement cost to positive current replacement cost (NPR)³⁰.

Where

NPR = level of net replacement cost/level of positive replacement cost for transactions subject to legally enforceable netting agreements.

The calculation of NPR can be made on a counterparty-by-counterparty basis or on an aggregate basis for all transactions, subject to legally enforceable netting agreements. On a counterparty-by-counterparty basis a unique NPR is calculated for each counterparty. On an aggregate basis, one NPR is calculated and applied to all counterparties.

²⁹ A_{Gross} equals the sum of the potential future credit exposures (i.e., notional principal amount of each transaction times the appropriate add-on factor from Annex 4) for all transactions subject to legally enforceable netting agreements.

³⁰ Positive replacement cost is referred to as gross replacement cost in BIS documents; similarly the NPR is referred to as the NGR.

3.5.1. Steps for determining the credit equivalent amount of netted contracts

- 1) For each counterparty subject to bilateral netting, determine the add-ons and replacement costs of each transaction. A worksheet similar to that set out below could be used for this purpose.

Counterparty 1					
Transaction	Notional Principal Amount 1	Add-on Factor (ref. 4-3-2) 2	Potential Credit Exposure $1 \times 2 = 3$	Positive Replacement Cost 4	Negative Replacement Cost 5
1					
2					
3					
Etc.					
Total			A_{Gross}	R^+	R^-

- 2) Calculate the net replacement cost for each counterparty; it is equal to the greater of:
 - zero; or
 - the sum of the positive and negative replacement costs ($R^+ + R^-$) (note: negative replacement costs for one counterparty cannot be used to offset positive replacement costs for another counterparty).
- 3) Calculate the NPR.

For institutions using the counterparty-by-counterparty basis, the NPR is the net replacement cost (from step 2) divided by the positive replacement cost (amount R^+ calculated in step 1).

For institutions using the aggregate basis, the NPR is the sum of the net replacement costs of all counterparties subject to bilateral netting divided by the sum of the positive replacement costs for all counterparties subject to bilateral netting.

A simple example of calculating the NPR ratio is set out below:

Transaction	Counterparty 1		Counterparty 2		Counterparty 3	
	Notional amount	Mark to Market Value	Notional amount	Mark to market value	Notional amount	Mark to market value
Transaction 1	100	10	50	8	30	-3
Transaction 2	100	-5	50	2	30	1
Positive replacement cost (R^+)		10		10		1

Net replacement cost (NR)		5		10		0
NPR (per counterparty)	0.5		1		0	
NPR (aggregate)	$\Sigma NR / \Sigma R^+ = 15/21 = 0.71$					

4) Calculate A_{Net} .

A_{Net} must be calculated for each counterparty subject to bilateral netting; however, the NPR applied will depend on whether the institution is using the counterparty-by-counterparty basis or the aggregate basis. The institution must choose which basis it will use and use it consistently for all netted transactions.

A_{Net} is:

For netted contracts where the net replacement cost is > 0

$$(.4 * A_{Gross}) + (.6 * A_{Gross} * NPR)$$

For netted contracts where the net replacement cost is $= 0$

$$.4 * A_{Gross}$$

5) Calculate the credit equivalent amount for each counterparty by adding the net replacement cost (step 2) and A_{Net} (step 4). Aggregate the counterparties by risk weight and enter the total credit equivalent amount on Schedule 40.

Note: Contracts may be subject to netting among different types of derivative instruments (e.g., interest rate, foreign exchange, equity, etc.). If this is the case, allocate the net replacement cost to the types of derivative instrument by pro-rating the net replacement cost among those instrument types which have a gross positive replacement cost.

3.6. Commitments

Commitments are arrangements that obligate an institution, at a client's request, to:

- extend credit in the form of loans or participations in loans, lease financing receivables, mortgages, overdrafts, acceptances, letters of credit, guarantees or loan substitutes, or
- purchase loans, securities, or other assets

Normally, commitments involve a written contract or agreement and some form of consideration, such as a commitment fee.

3.6.1. Credit conversion factors

The credit conversion factor applied to a commitment is dependent on its maturity. Longer maturity commitments are considered to be of higher risk because there is a longer period

between credit reviews and less opportunity to withdraw the commitment if the credit quality of the drawer deteriorates.

Conversion factors apply to commitments as set out below.

0% Conversion factor

- Commitments that are unconditionally cancellable at any time by the institution without notice or that effectively provide for automatic cancellation due to deterioration in the borrower's creditworthiness. This implies that the institution conducts a formal review of the facility at least annually, thus giving it an opportunity to take note of any perceived deterioration in credit quality. Retail commitments are unconditionally cancellable if the term permits the institution to cancel them to the full extent allowable under consumer protection and related legislation.

20% Conversion factor

- Commitments with an original maturity of one year and under.

50% Conversion factor

- Commitments with an original maturity of over one year,
- NIFs and RUFs,
- the undrawn portion of a commitment to provide a loan that will be drawn down in a number of tranches, some less than and some over one year, and
- forward commitments (where the institution makes a commitment to issue a commitment) if the loan can be drawn down more than one year after the institution's initial undertaking is signed.

3.6.2. *Maturity*

Institutions should use original maturity (as defined below) to report these instruments.

3.6.2.1. *Original maturity*

The maturity of a commitment should be measured from the date when the commitment was accepted by the customer, regardless of whether the commitment is revocable or irrevocable, conditional or unconditional, until the earliest date on which:

- the commitment is scheduled to expire, or
- the institution can, at its option, unconditionally cancel the commitment.

A material adverse change clause is not considered to give sufficient protection for a commitment to be considered unconditionally cancellable.

Where the institution commits to granting a facility at a future date (a forward commitment), the original maturity of the commitment is to be measured from the date the commitment is accepted until the final date that drawdowns are permitted.

3.6.2.2. Renegotiations of a commitment

If both parties agree, a commitment may be renegotiated before its term expires. If the renegotiation process involves a credit assessment of the customer consistent with the institution's credit standards, and provides the institution with the total discretion to renew or extend the commitment and to change any other terms and conditions of the commitment, then on the date of acceptance by the customer of the revised terms and conditions, the original commitment may be deemed to have matured and a new commitment begun. If new terms are not reached, the original commitment will remain in force until its original maturity date.

This process must be clearly documented.

In syndicated and participated transactions, a participating institution must be able to exercise its renegotiation rights independent of the other syndicate members.

Where these conditions are not met, the original start date of the commitment must be used to determine maturity.

3.6.3. *Specific types of commitments*

3.6.3.1. Undated/open-ended commitments

A 0% credit conversion factor is applied to undated or open-ended commitments, such as unused credit card lines, personal lines of credit, and overdraft protection for personal chequing accounts that are unconditionally cancellable at any time.

3.6.3.2. Evergreen commitments

Open-ended commitments that are cancellable by the financial institution at any time subject to a notice period do not constitute unconditionally cancellable commitments and are converted at 50%. Long-term commitments must be cancellable without notice to be eligible for the 0% conversion factor.

3.6.3.3. Commitments drawn down in a number of tranches

A 50% credit conversion factor is applied to a commitment to provide a loan (or purchase an asset) to be drawn down in a number of tranches, some one year and under and some over one year. In these cases, the ability to renegotiate the terms of later tranches should be regarded as immaterial. Often these commitments are provided for development projects from which the institution may find it difficult to withdraw without jeopardizing its investment.

Where the facility involves unrelated tranches, and where conversions are permitted between the over- and under-one year tranches (i.e., where the borrower may make ongoing selections as to how much of the commitment is under one year and how much is over), then the entire commitment should be converted at 50%.

Where the facility involves unrelated tranches with no conversion between the over- and under-one year tranches, each tranche may be converted separately, depending on its maturity.

3.6.3.4. Commitments for fluctuating amounts

For commitments that vary in amount over the life of the commitment, such as the financing of a business subject to seasonal variation in cash flow, the conversion factor should apply to the maximum unutilized amount that can be drawn under the remaining period of the facility.

3.6.3.5. Commitment to provide a loan with a maturity of over one year

A commitment to provide a loan that has a maturity of over one year but that must be drawn down within a period of less than one year may be treated as an under-one-year instrument, as long as any undrawn portion of the facility is automatically cancelled at the end of the drawdown period.

However, if through any combination of options or drawdowns, repayments and redrawdowns, etc., the client can access a line of credit past one year, with no opportunity for the institution to unconditionally cancel the commitment within one year, the commitment shall be converted at 50%.

3.6.3.6. Commitments for off-balance sheet transactions

Where there is a commitment to provide an off-balance sheet item, banks are to apply the lower of the two applicable credit conversion factors.

3.7. *External credit assessments and the mapping process*

This is an extract from the Basel II framework, *Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version* (June 2006), that applies to Canadian institutions. The extract has been annotated to indicate OSFI's position on items of national discretion.

3.7.1. *External credit assessments*

3.7.1.1. The recognition process

90. National supervisors are responsible for determining whether an external credit assessment institution (ECAI) meets the criteria listed in the paragraph below. The assessments of ECAIs may be recognised on a limited basis, e.g. by type of claims or by jurisdiction. The supervisory process for recognising ECAIs should be made public to avoid unnecessary barriers to entry.

OSFI Notes

OSFI conducted a process to determine which of the major international rating agencies would be recognized. It included completion of a self-assessment template and submission of data required to complete a mapping exercise (see paragraph 92). As a result of this process, OSFI will permit banks to recognize credit ratings from the following rating agencies for capital adequacy purposes:

- DBRS
- Moody's Investors Service

-
- | |
|---|
| <ul style="list-style-type: none">• Standard and Poor's (S&P)• Fitch Rating Services |
|---|

3.7.1.2. Eligibility criteria

91. An ECAI must satisfy each of the following six criteria.

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 recognised by supervisors, an assessment methodology for each market segment, including rigorous backtesting, must have been established for at least one year and preferably three years.

Independence: An ECAI should be independent 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 or the shareholder structure of the assessment institution may be seen as creating a conflict of interest.

International access/Transparency: The individual assessments should be available to both domestic and foreign institutions with legitimate interests and at equivalent terms. In addition, the general methodology used by the ECAI should be publicly available.

Disclosure: An ECAI should disclose the following information: 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.

Resources: An ECAI should 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 should be based on methodologies combining qualitative and quantitative approaches.

Credibility: To some extent, credibility is derived from the criteria above. In addition, the reliance on an ECAI's external credit assessments by independent parties (investors, insurers, trading partners) is evidence of the credibility of the assessments of an ECAI. The credibility of an ECAI is also underpinned by 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.

3.7.2. Implementation considerations

3.7.2.1. The mapping process

92. Supervisors will be responsible for assigning eligible ECAIs' assessments to the risk weights available under the standardised risk weighting framework, i.e. deciding which assessment categories correspond to which risk weights. The mapping process should be objective and should result in a risk weight assignment consistent with that of the level of credit risk reflected in the tables above. It should cover the full spectrum of risk weights.

Long-term rating				
Standardized Risk Weight Category	DBRS	Moody's	S&P	Fitch
Long Term				
1 (AAA to AA-)	AAA to AA(low)	Aaa to Aa3	AAA to AA-	AAA to AA-
2 (A+ to A-)	A(high) to A(low)	A1 to A3	A+ to A-	A+ to A-
3 (BBB+ to BBB-)	BBB(high) to BBB(low)	Baa1 to Baa3	BBB+ to BBB-	BBB+ to BBB-
4 (BB+ to B-)	BB(high) to B(low)	Ba1 to B3	BB+ to B-	BB+ to B-
5 (Below B-)	CCC or lower	Below B3	Below B-	Below B-

93. When conducting such a mapping process, factors that supervisors should assess include, among others, the size and scope of the pool of issuers that each ECAI covers, the range and meaning of the assessments that it assigns, and the definition of default used by the ECAI. In order to promote a more consistent mapping of assessments into the available risk weights and help supervisors in conducting such a process, Annex 2 of the revised framework provides guidance as to how such a mapping process may be conducted.

94. Banks must use the chosen ECAIs and their ratings consistently for each type of claim, for both risk weighting and risk management purposes. Banks will not be allowed to “cherry-pick” the assessments provided by different ECAIs.

95. Banks must disclose 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 supervisors through the mapping process as well as the aggregated risk-weighted assets for each risk weight based on the assessments of each eligible ECAI.

3.7.2.2. Multiple assessments

96. If there is only one assessment by an ECAI chosen by a bank for a particular claim, that assessment should be used to determine the risk weight of the claim.

97. If there are two assessments by ECAIs chosen by a bank which map into different risk weights, the higher risk weight will be applied.

98. If there are three or more assessments with different risk weights, the assessments corresponding to the two lowest risk weights should be referred to and the higher of those two risk weights will be applied.

3.7.2.3. Issuer versus issues assessment

99. Where a bank 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 bank's claim is not an investment in a specific assessed issue, the following general principles apply.

- In circumstances where the borrower has a specific assessment for an issued debt - but the bank'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 bank's unassessed 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 unassessed claim will receive the risk weight for unrated claims.
- 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 unassessed 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 unassessed claim on the same counterparty will be assigned the same risk weight as is applicable to the low quality assessment.

100. Whether the bank 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 bank has with regard to all payments owed to it.³¹

101. In order to avoid any double counting of credit enhancement factors, no supervisory 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 114).

3.7.2.4. Domestic currency and foreign currency assessments

102. 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 would be used for exposures in foreign currency. Domestic currency ratings, if separate, would only be used to risk weight claims denominated in the domestic currency.³²

³¹ 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.

³² However, when an exposure arises through a bank'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 national supervisory authorities to be effectively mitigated. To qualify, MDBs must have preferred creditor status recognised in the market and be included in Chapter 3. 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. [see action points of September 2004 CTF meeting]

3.7.2.5. Short-term/long-term assessments

103. 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 105. 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 banks' exposures to specific short-term facilities, such as a particular issuance of commercial paper:

Credit assessment	A-1/P-1³³	A-2/P-2	A-3/P-3	Others³⁴
Risk weight	20%	50%	100%	150%

Short-term rating				
Standardized Risk Weight Category	DBRS	Moody's	S&P	Fitch
Short Term				
1 (A-1/P-1)	R-1(high) to R-1(low)	P-1	A-1+, A-1	F1+, F1
2 (A-2/P-2)	R-2(high) to R-2(low)	P-2	A-2	F2
3 (A-3/P-3)	R-3	P-3	A-3	F3
4 Others	Below R-3	NP	All short-term ratings below A-3	Below F3

104. 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, should also receive a 150% risk weight, unless the bank uses recognised credit risk mitigation techniques for such claims.

105. In cases where national supervisors have decided to apply option 2 under the standardised approach to short term interbank claims to banks in their jurisdiction, the interaction with specific short-term assessments is expected to be the following:

³³ The notations follow the methodology used by Standard & Poors and by Moody's Investors Service. The A-1 rating of Standard & Poors includes both A-1+ and A-1-.

³⁴ This category includes all non-prime and B or C ratings.

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- The general preferential treatment for short-term claims, as defined under paragraphs 62 and 64, applies to all claims on banks of up to three months original maturity when there is no specific short-term claim assessment.
 - 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.
 - When a specific short-term assessment for a short term claim on a bank maps into a less favourable (higher) risk weight, the general short-term preferential treatment for interbank claims cannot be used. All unrated short-term claims should receive the same risk weighting as that implied by the specific short-term assessment.

106. When a short-term assessment is to be used, the institution making the assessment needs to meet all of the eligibility criteria for recognising ECAs as presented in paragraph 91 in terms of its short-term assessment.

3.7.2.6. Level of application of the assessment

107. External assessments for one entity within a corporate group cannot be used to risk weight other entities within the same group.

3.7.2.7. Unsolicited ratings

108. As a general rule, banks should use *solicited* ratings from eligible ECAs. National supervisory authorities may, however, allow banks to use *unsolicited* ratings in the same way as solicited ratings. However, there may be the potential for ECAs to use unsolicited ratings to put pressure on entities to obtain solicited ratings. Such behaviour, when identified, should cause supervisors to consider whether to continue recognising such ECAs as eligible for capital adequacy purposes.

OSFI Notes

Banks may not rely on any unsolicited rating in determining an asset's risk weight.

Annex 1 - The 15% of Tier 1 Limit on Innovative Instruments

1. This annex is meant to clarify the calculation of the 15% limit on innovative instruments agreed by the Committee in its press release of October 1998.

2. Innovative instruments will be limited to 15% of Tier 1 capital, net of goodwill. To determine the allowable amount of innovative instruments, banks and supervisors should multiply the amount of non-innovative Tier 1 by 17.65%. This number is derived from the proportion of 15% to 85% (i.e. $15\%/85\% = 17.65\%$).

3. As an example, take a bank with €75 of common equity, €15 of non-cumulative perpetual preferred stock, €5 of minority interest in the common equity account of a consolidated subsidiary, and €10 of goodwill. The net amount of non-innovative Tier 1 is $€75+€15+€5-€10 = €85$.

4. The allowable amount of innovative instruments this bank may include in Tier 1 capital is $€85 \times 17.65\% = €15$. If the bank issues innovative Tier 1 instruments up to its limit, total Tier 1 will amount to $€85 + €15 = €100$. The percentage of innovative instruments to total Tier 1 would equal 15%.

Annex 3 - Capital treatment for failed trades and non-DvP transactions

The capital requirement for failed trades and non-DvP transactions outlined in this Annex applies in addition to (i.e. it does not replace) the requirements for the transactions themselves under this framework.

I. Overarching principles

1. Banks should continue to develop, implement and improve systems for tracking and monitoring the credit risk exposures arising from unsettled and failed transactions as appropriate for producing management information that facilitates action on a timely basis.
2. Transactions settled through a delivery-versus-payment system (DvP)³⁵, providing simultaneous exchanges of securities for cash, expose firms to a risk of loss on the difference between the transaction valued at the agreed settlement price and the transaction valued at current market price (i.e. positive current exposure). Transactions where cash is paid without receipt of the corresponding receivable (securities, foreign currencies, gold, or commodities) or, conversely, deliverables were delivered without receipt of the corresponding cash payment (non-DvP, or free-delivery) expose firms to a risk of loss on the full amount of cash paid or deliverables delivered. The current rules set out specific capital charges that address these two kinds of exposures.
3. The following capital treatment is applicable to all transactions on securities, foreign exchange instruments, and commodities that give rise to a risk of delayed settlement or delivery. This includes transactions through recognised clearing houses that are subject to daily mark-to-market and payment of daily variation margins and that involve a mismatched trade. Repurchase and reverse-repurchase agreements as well as securities lending and borrowing that have failed to settle are excluded from this capital treatment³⁶.
4. In cases of a system wide failure of a settlement or clearing system, a national supervisor may use its discretion to waive capital charges until the situation is rectified.
5. Failure of a counterparty to settle a trade in itself will not be deemed a default for purposes of credit risk under this guideline.
6. In applying a risk weight to failed free-delivery exposures, banks using the IRB approach for credit risk may assign PDs to counterparties for which they have no other banking book exposure on the basis of the counterparty's external rating. Banks using the Advanced IRB approach may use a 45% LGD in lieu of estimating LGDs so long as they apply it to all failed trade exposures. Alternatively, banks using the IRB approach may opt to apply the standardised approach risk weights or a 100% risk weight.

³⁵ For the purpose of this guideline, DvP transactions include payment-versus-payment (PvP) transactions.

³⁶ All repurchase and reverse-repurchase agreements as well as securities lending and borrowing, including those that have failed to settle, are treated in accordance with Annex 4 or the sections on credit risk mitigation of this guideline.

II. Capital requirements

7. For DvP transactions, if the payments have not yet taken place five business days after the settlement date, firms must calculate a capital charge by multiplying the positive current exposure of the transaction by the appropriate factor, according to the Table 1 below.

Table 1

Number of working days after the agreed settlement date	Corresponding risk multiplier
From 5 to 15	8%
From 16 to 30	50%
From 31 to 45	75%
46 or more	100%

A reasonable transition period may be allowed for firms to upgrade their information system to be able to track the number of days after the agreed settlement date and calculate the corresponding capital charge.

8. For non-DvP transactions (i.e. free deliveries), after the first contractual payment/delivery leg, the bank that has made the payment will treat its exposure as a loan if the second leg has not been received by the end of the business day³⁷. This means that a bank under the IRB approach will apply the appropriate IRB formula set out in this guideline, for the exposure to the counterparty, in the same way as it does for all other banking book exposures. Similarly, banks under the standardised approach will use the standardised risk weights set forth in this guideline. However, when exposures are not material, banks may choose to apply a uniform 100% risk-weight to these exposures, in order to avoid the burden of a full credit assessment. If five business days after the second contractual payment/delivery date the second leg has not yet effectively taken place, the bank that has made the first payment leg will deduct from capital the full amount of the value transferred plus replacement cost, if any. This treatment will apply until the second payment/delivery leg is effectively made.

³⁷ If the dates when two payment legs are made are the same according to the time zones where each payment is made, it is deemed that they are settled on the same day. For example, if a bank in Tokyo transfers Yen on day X (Japan Standard Time) and receives corresponding US Dollar via CHIPS on day X (US Eastern Standard Time), the settlement is deemed to take place on the same value date.

Annex 4 - Treatment of counterparty credit risk and cross-product netting

1. This rule identifies permissible methods for estimating the Exposure at Default (EAD) or the exposure amount for instruments with counterparty credit risk (CCR) under this guideline.³⁸ Banks may seek supervisory approval to make use of an internal modelling method meeting the requirements and specifications identified herein. As alternatives banks may also use the standardised method or the current exposure method.

I. Definitions and general terminology

2. This section defines terms that will be used throughout this text.

A. General terms

- **Counterparty Credit Risk (CCR)** is the risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flows. An economic loss would occur if the transactions or portfolio of transactions with the counterparty has a positive economic value at the time of default. 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, CCR 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.

B. Transaction types

- **Long Settlement Transactions** are transactions where a counterparty undertakes to deliver a security, a commodity, or a foreign exchange amount against cash, other financial instruments, or commodities, or vice versa, at a settlement or delivery date that is contractually specified as more than the lower of the market standard for this particular instrument and five business days after the date on which the bank enters into the transaction.
- **Securities Financing Transactions (SFTs)** are transactions such as repurchase agreements, reverse repurchase agreements, security lending and borrowing, and margin lending transactions, where the value of the transactions depends on market valuations and the transactions are often subject to margin agreements.
- **Margin Lending Transactions** are transactions in which a bank extends credit in connection with the purchase, sale, carrying or trading of securities. Margin lending transactions do not include other loans that happen to be secured by securities collateral. Generally, in margin lending transactions, the loan amount is collateralised by securities whose value is greater than the amount of the loan.

C. Netting sets, hedging sets, and related terms

- **Netting Set** is a group of transactions with a single counterparty that are subject to a legally enforceable bilateral netting arrangement and for which netting is recognised for regulatory capital purposes under chapters 3 and 4 or the Cross-Product Netting Rules

³⁸ In the present document, the terms “exposure at default” and “exposure amount” are used together in order to identify measures of exposure under both an IRB and a standardised approach for credit risk.

set forth in this annex. Each transaction that is not subject to a legally enforceable bilateral netting arrangement that is recognised for regulatory capital purposes should be interpreted as its own netting set for the purpose of these rules.

- **Risk Position** is a risk number that is assigned to a transaction under the CCR standardised method (set out in this annex) using a regulatory algorithm.
- **Hedging Set** is a group of risk positions from the transactions within a single netting set for which only their balance is relevant for determining the exposure amount or EAD under the CCR standardised method.
- **Margin Agreement** is a contractual agreement or provisions to an agreement under which one counterparty must supply collateral to a second counterparty when an exposure of that second counterparty to the first counterparty exceeds a specified level.
- **Margin Threshold** is the largest amount of an exposure that remains outstanding until one party has the right to call for collateral.
- **Margin Period of Risk** is the time period from the last exchange of collateral covering a netting set of transactions with a defaulting counterpart until that counterpart is closed out and the resulting market risk is re-hedged.
- **Effective Maturity under the Internal Model Method** for a netting set with maturity greater than one year is the ratio of the sum of expected exposure over the life of the transactions in a netting set discounted at the risk-free rate of return divided by the sum of expected exposure over one year in a netting set discounted at the risk-free rate. This effective maturity may be adjusted to reflect rollover risk by replacing expected exposure with effective expected exposure for forecasting horizons under one year. The formula is given in paragraph 38.
- **Cross-Product Netting** refers to the inclusion of transactions of different product categories within the same netting set pursuant to the Cross-Product Netting Rules set out in this annex.
- **Current Market Value (CMV)** refers to the net market value of the portfolio of transactions within the netting set with the counterparty. Both positive and negative market values are used in computing CMV.

D. Distributions

- **Distribution of Market Values** is the forecast of the probability distribution of net market values of transactions within a netting set for some future date (the forecasting horizon) given the realised market value of those transactions up to the present time.
- **Distribution of Exposures** is the forecast of the probability distribution of market values that is generated by setting forecast instances of negative net market values equal to zero (this takes account of the fact that, when the bank owes the counterparty money, the bank does not have an exposure to the counterparty).
- **Risk-Neutral Distribution** is a distribution of market values or exposures at a future time period where the distribution is calculated using market implied values such as implied volatilities.

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- **Actual Distribution** is a distribution of market values or exposures at a future time period where the distribution is calculated using historic or realised values such as volatilities calculated using past price or rate changes.

E. Exposure measures and adjustments

- **Current Exposure** is the larger of zero, or the market value of a transaction or portfolio of transactions within a netting set with a counterparty that would be lost upon the default of the counterparty, assuming no recovery on the value of those transactions in bankruptcy. Current exposure is often also called Replacement Cost.
- **Peak Exposure** is a high percentile (typically 95% or 99%) of the distribution of exposures at any particular future date before the maturity date of the longest transaction in the netting set. A peak exposure value is typically generated for many future dates up until the longest maturity date of transactions in the netting set.
- **Expected Exposure** is the mean (average) of the distribution of exposures at any particular future date before the longest-maturity transaction in the netting set matures. An expected exposure value is typically generated for many future dates up until the longest maturity date of transactions in the netting set.
- **Effective Expected Exposure** at a specific date is the maximum expected exposure that occurs at that date or any prior date. Alternatively, it may be defined for a specific date as the greater of the expected exposure at that date, or the effective exposure at the previous date. In effect, the Effective Expected Exposure is the Expected Exposure that is constrained to be non-decreasing over time.
- **Expected Positive Exposure (EPE)** is the weighted average over time of expected exposures where the weights are the proportion that an individual expected exposure represents of the entire time interval. When calculating the minimum capital requirement, the average is taken over the first year or, if all the contracts in the netting set mature before one year, over the time period of the longest-maturity contract in the netting set.
- **Effective Expected Positive Exposure (Effective EPE)** is the weighted average over time of effective expected exposure over the first year, or, if all the contracts in the netting set mature before one year, over the time period of the longest-maturity contract in the netting set where the weights are the proportion that an individual expected exposure represents of the entire time interval.
- **Credit Valuation Adjustment** is an adjustment to the mid-market valuation of the portfolio of trades with a counterparty. This adjustment reflects the market value of the credit risk due to any failure to perform on contractual agreements with a counterparty. This adjustment may reflect the market value of the credit risk of the counterparty or the market value of the credit risk of both the bank and the counterparty.
- **One-Sided Credit Valuation Adjustment** is a credit valuation adjustment that reflects the market value of the credit risk of the counterparty to the firm, but does not reflect the market value of the credit risk of the bank to the counterparty.

F. CCR-related risks

- **Rollover Risk** is the amount by which expected positive exposure is understated when future transactions with a counterpart are expected to be conducted on an ongoing

basis, but the additional exposure generated by those future transactions is not included in calculation of expected positive exposure.

- **General Wrong-Way Risk** arises when the probability of default of counterparties is positively correlated with general market risk factors.
- **Specific Wrong-Way Risk** arises when the exposure to a particular counterpart is positively correlated with the probability of default of the counterparty due to the nature of the transactions with the counterparty.

II. Scope of application

3. The methods for computing the exposure amount under the standardised approach for credit risk or EAD under the internal ratings-based (IRB) approach to credit risk described in this annex are applicable to SFTs and OTC derivatives.

4. Such instruments generally exhibit the following abstract characteristics:

- The transactions generate a current exposure or market value.
- The transactions have an associated random future market value based on market variables.
- The transactions generate an exchange of payments or an exchange of a financial instrument (including commodities) against payment.
- The transactions are undertaken with an identified counterparty against which a unique probability of default can be determined³⁹.

5. Other common characteristics of the transactions to be covered may include the following:

- Collateral may be used to mitigate risk exposure and is inherent in the nature of some transactions.
- 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.
- Netting may be used to mitigate the risk.
- Positions are frequently valued (most commonly on a daily basis), according to market variables.
- Remargining may be employed.

6. An exposure value of zero for counterparty credit risk can be attributed to derivative contracts or SFTs that are outstanding with a central counterparty (e.g. a clearing house). This does not apply to counterparty credit risk exposures from derivative transactions and SFTs that have been rejected by the central counterparty. Furthermore, an exposure value of zero can be attributed to banks' credit risk exposures to central counterparties that result from the derivative

³⁹ Transactions for which the probability of default is defined on a pooled basis are not included in this treatment of CCR.

transactions, SFTs or spot transactions that the bank has outstanding with the central counterparty. This exemption extends in particular to credit exposures from clearing deposits and from collateral posted with the central counterparty. A central counterparty is an entity that interposes itself between counterparties to contracts traded within one or more financial markets, becoming the legal counterparty such that it is the buyer to every seller and the seller to every buyer. In order to qualify for the above exemptions, the central counterparty CCR exposures with all participants in its arrangements must be fully collateralized on a daily basis, thereby providing protection for the central counterparty's CCR exposures. Assets held by a central counterparty as a custodian on the bank's behalf would not be subject to a capital requirement for counterparty credit risk exposure.

7. Under the two methods identified in this annex, when a bank purchases credit derivative protection against a banking book exposure, or against a counterparty credit risk exposure, it will determine its capital requirement for the hedged exposure subject to the criteria and general rules for the recognition of credit derivatives, i.e. substitution or double default rules as appropriate. Where these rules apply, the exposure amount or EAD for counterparty credit risk from such instruments is zero.

8. The exposure amount or EAD for counterparty credit risk is zero 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.

9. Under the two methods identified in this annex, 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.

III. Cross-product netting rules⁴⁰

10. Banks that receive approval to estimate their exposures to CCR using the internal model method may include within a netting set SFTs, or both SFTs and OTC derivatives subject to a legally valid form of bilateral netting that satisfies the following legal and operational criteria for a Cross-Product Netting Arrangement (as defined below). The bank must also have satisfied any prior approval or other procedural requirements that its national supervisor determines to implement for purposes of recognising a Cross-Product Netting Arrangement.

Legal Criteria

11. The bank has executed a written, bilateral netting agreement with the counterparty that creates a single legal obligation, covering all included bilateral master agreements and transactions ("Cross-Product Netting Arrangement"), such that the bank would have either a claim to receive or obligation to pay only the net sum of the positive and negative (i) close-out values of any included individual master agreements and (ii) mark-to-market values of any included individual transactions (the "Cross-Product Net Amount"), in the event a counterparty fails to perform due to any of the following: default, bankruptcy, liquidation or similar circumstances.

⁴⁰ These Cross-Product Netting Rules apply specifically to netting across SFTs, or to netting across both SFTs and OTC derivatives, for purposes of regulatory capital computation under IMM. They do not revise or replace the rules that apply to recognition of netting within the OTC derivatives, repo-style transaction, and margin lending transaction product categories under this guideline. The rules in this guideline continue to apply for purposes of regulatory capital recognition of netting within product categories under IMM or other relevant methodology.

12. The bank has written and reasoned legal opinions that conclude with a high degree of certainty that, in the event of a legal challenge, relevant courts or administrative authorities would find the firm's exposure under the Cross-Product Netting Arrangement to be the Cross-Product Net Amount under the laws of all relevant jurisdictions. In reaching this conclusion, legal opinions must address the validity and enforceability of the entire Cross-Product Netting Arrangement under its terms and the impact of the Cross-Product Netting Arrangement on the material provisions of any included bilateral master agreement.

- The laws of "all relevant jurisdictions" are: (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.
- A legal opinion must be generally recognised as such by the legal community in the firm's home country or a memorandum of law that addresses all relevant issues in a reasoned manner.

13. The bank has internal procedures to verify that, prior to including a transaction in a netting set, the transaction is covered by legal opinions that meet the above criteria.

14. The bank undertakes to update legal opinions as necessary to ensure continuing enforceability of the Cross-Product Netting Arrangement in light of possible changes in relevant law.

15. The Cross-Product Netting Arrangement does not include a walkaway clause. A walkaway clause is a provision which permits a non-defaulting counterparty to make only limited payments, or no payment at all, to the estate of the defaulter, even if the defaulter is a net creditor.

16. Each included bilateral master agreement and transaction included in the Cross-Product Netting Arrangement satisfies applicable legal requirements for recognition of (i) bilateral netting of derivatives contracts in chapter 3, or (ii) credit risk mitigation techniques in chapter 4.

17. The bank maintains all required documentation in its files.

Operational Criteria

18. The supervisory authority is satisfied that the effects of a Cross-Product Netting Arrangement are factored into the firm's measurement of a counterparty's aggregate credit risk exposure and that the bank manages its counterparty credit risk on such basis.

19. Credit risk to each counterparty is aggregated to arrive at a single legal exposure across products covered by the Cross-Product Netting Arrangement. This aggregation must be factored into credit limit and economic capital processes.

IV. Approval to adopt an internal modelling method to estimate EAD

20. A bank (meaning the individual legal entity or a group) that wishes to adopt an internal modelling method to measure exposure or EAD for regulatory capital purposes must seek approval from its supervisor. The internal modelling method is available both for banks that adopt the internal ratings-based approach to credit risk and for banks for which the standardised approach to credit risk applies to all of their credit risk exposures. The bank must meet all of the

requirements given in Section V of this annex and must apply the method to all of its exposures that are subject to counterparty credit risk, except for long settlement transactions.

21. A bank may also choose to adopt an internal modelling method to measure CCR for regulatory capital purposes for its exposures or EAD to only OTC derivatives, to only SFTs, or to both, subject to the appropriate recognition of netting specified above. The bank must apply the method to all relevant exposures within that category, except for those that are immaterial in size and risk. During the initial implementation of the internal models method, a bank may use the current exposure method for a portion of its business. The bank must submit a plan to its supervisor to bring all material exposures for that category of transactions under the internal model method.

22. For all OTC derivative transactions and for all long settlement transactions for which a bank has not received approval from its supervisor to use the internal models method, the bank must use the current exposure method.

23. Exposures or EAD arising from long settlement transactions can be determined using any of the two methods identified in this document regardless of the methods chosen for treating OTC derivatives and SFTs. In computing capital requirements for long settlement transactions banks that hold permission to use the internal ratings-based approach may opt to apply the risk weights under the standardised approach for credit risk on a permanent basis and irrespective to the materiality of such positions.

24. After adoption of the internal model method, the bank must comply with the above requirements on a permanent basis. Only under exceptional circumstances or for immaterial exposures can a bank revert to the current exposure method for all or part of its exposure. The bank must demonstrate that reversion to a less sophisticated method does not lead to an arbitrage of the regulatory capital rules.

V. Internal Model Method: measuring exposure and minimum requirements

A. Exposure amount or EAD under the internal model method

25. CCR exposure or EAD is measured at the level of the netting set as defined in Sections I and III of this annex. A qualifying internal model for measuring counterparty credit exposure must specify the forecasting distribution for changes in the market value of the netting set attributable to changes in market variables, such as interest rates, foreign exchange rates, etc. The model then computes the firm's CCR exposure for the netting set at each future date given the changes in the market variables. For margined counterparties, the model may also capture future collateral movements. Banks may include eligible financial collateral as defined in paragraphs 146 and chapter 8 in their forecasting distributions for changes in the market value of the netting set, if the quantitative, qualitative and data requirements for internal model method are met for the collateral.

26. To the extent that a bank recognises collateral in exposure amount or EAD via current exposure, a bank would not be permitted to recognise the benefits in its estimates of LGD. As a result, the bank would be required to use an LGD of an otherwise similar uncollateralised facility. In other words, the bank would be required to use an LGD that does not include collateral that is already included in EAD.

27. Under the Internal Model Method, the bank need not employ a single model. Although the following text describes an internal model as a simulation model, no particular form of model is required. Analytical models are acceptable so long as they are subject to supervisory review, meet all of the requirements set forth in this section and are applied to all material exposures subject to a CCR-related capital charge as noted above, with the exception of long settlement transactions, which are treated separately, and with the exception of those exposures that are immaterial in size and risk.

28. Expected exposure or peak exposure measures should be calculated based on a distribution of exposures that accounts for the possible non-normality of the distribution of exposures, including the existence of leptokurtosis (“fat tails”), where appropriate.

29. When using an internal model, exposure amount or EAD is calculated as the product of alpha times Effective EPE, as specified below:

$$\text{EAD} = \alpha \times \text{Effective EPE} \quad (1)$$

30. Effective EPE (“Expected Positive Exposure”) is computed by estimating expected exposure (EE_t) as the average exposure at future date t , where the average is taken across possible future values of relevant market risk factors, such as interest rates, foreign exchange rates, etc. The internal model estimates EE at a series of future dates $t_1, t_2, t_3 \dots$ ⁴¹ Specifically, “Effective EE” is computed recursively as

$$\text{Effective } EE_k = \max(\text{Effective } EE_{k-1}, EE_k) \quad (2)$$

where the current date is denoted as t_0 and Effective EE_{t_0} equals current exposure.

31. In this regard, “Effective EPE” is the average Effective EE during the first year of future exposure. If all contracts in the netting set mature before one year, EPE is the average of expected exposure until all contracts in the netting set mature. Effective EPE is computed as a weighted average of Effective EE :

$$\text{Effective EPE} = \sum_{k=1}^{\min(1\text{year}, \text{maturity})} \text{Effective } EE_{t_k} \times \Delta t_k \quad (3)$$

where the weights $\Delta t_k = t_k - t_{k-1}$ allows for the case when future exposure is calculated at dates that are not equally spaced over time.

32. Alpha (α) is set equal to 1.4.

33. Supervisors have the discretion to require a higher alpha based on a firm’s CCR exposures. Factors that may require a higher alpha include the low granularity of counterparties; particularly high exposures to general wrong-way risk; particularly high correlation of market values across counterparties; and other institution-specific characteristics of CCR exposures.

⁴¹ In theory, the expectations should be taken with respect to the actual probability distribution of future exposure and not the risk-neutral one. Supervisors recognise that practical considerations may make it more feasible to use the risk-neutral one. As a result, supervisors will not mandate which kind of forecasting distribution to employ.

B. Own estimates for alpha

34. Banks may seek approval from their supervisors to compute internal estimates of alpha subject to a floor of 1.2, where alpha equals the ratio of economic capital from a full simulation of counterparty exposure across counterparties (numerator) and economic capital based on EPE (denominator), assuming they meet certain operating requirements. Eligible banks must meet all the operating requirements for internal estimates of EPE and must demonstrate that their internal estimates of alpha capture in the numerator the material sources of stochastic dependency of distributions of market values of transactions or of portfolios of transactions across counterparties (e.g. the correlation of defaults across counterparties and between market risk and default).

35. In the denominator, EPE must be used as if it were a fixed outstanding loan amount.

36. To this end, banks must ensure that the numerator and denominator of alpha are computed in a consistent fashion with respect to the modelling methodology, parameter specifications and portfolio composition. The approach used must be based on the firm's internal economic capital approach, be well-documented and be subject to independent validation. In addition, banks must review their estimates on at least a quarterly basis, and more frequently when the composition of the portfolio varies over time. Banks must assess the model risk.

37. Where appropriate, volatilities and correlations of market risk factors used in the joint simulation of market and credit risk should be conditioned on the credit risk factor to reflect potential increases in volatility or correlation in an economic downturn. Internal estimates of alpha should take account of the granularity of exposures.

C. Maturity

38. If the original maturity of the longest-dated contract contained in the set is greater than one year, the formula for effective maturity (M) in paragraph 320 is replaced with the following:

$$M = \frac{\sum_{k=1}^{t_k \leq 1 \text{ year}} \text{Effective } EE_k \times \Delta t_k \times df_k + \sum_{t_k > 1 \text{ year}}^{maturity} EE_k \times \Delta t_k \times df_k}{\sum_{k=1}^{t_k \leq 1 \text{ year}} \text{Effective } EE_k \times \Delta t_k \times df_k}$$

where df_k is the risk-free discount factor for future time period t_k and the remaining symbols are defined above. Similar to the treatment under corporate exposures, M has a cap of five years⁴².

39. For netting sets in which all contracts have an original maturity of less than one year, the formula for effective maturity (M) in paragraph 320 is unchanged and a floor of one year applies, with the exception of short-term exposures as described in paragraphs 321 to 323.

⁴² Conceptually, M equals the effective credit duration of the counterparty exposure. A bank that uses an internal model to calculate a one-sided credit valuation adjustment (CVA) can use the effective credit duration estimated by such a model in place of the above formula with prior approval of its supervisor.

D. Margin agreements

40. If the netting set is subject to a margin agreement and the internal model captures the effects of margining when estimating EE, the model's EE measure may be used directly in equation (2). Such models are noticeably more complicated than models of EPE for unmargined counterparties. As such, they are subject to a higher degree of supervisory scrutiny before they are approved, as discussed below.

41. A bank that can model EPE without margin agreements but cannot achieve the higher level of modelling sophistication to model EPE with margin agreements can use the following method for margined counterparties. The method is a simple and conservative approximation to Effective EPE and sets Effective EPE for a margined counterparty equal to the lesser of:

- The threshold, if positive, under the margin agreement plus an add-on that reflects the potential increase in exposure over the margin period of risk. The add-on is computed as the expected increase in the netting set's exposure beginning from current exposure of zero over the margin period of risk.⁴³ A supervisory floor of five business days for netting sets consisting only of repo-style transactions subject to daily remargining and daily mark-to-market, and 10 business days for all other netting sets is imposed on the margin period of risk used for this purpose;
- Effective EPE without a margin agreement.

E. Model validation

42. Because counterparty exposures are driven by movements in market variables, the validation of an EPE model is similar to the validation of a Value-at-Risk (VaR) model that is used to measure market risk. Therefore, in principle, the qualitative standards of the Market Risk Amendment for the use of VaR models should be carried over to EPE models. However, an EPE model has additional elements that require validation:

- Interest rates, foreign exchange rates, equity prices, commodities, and other market risk factors must be forecast over long time horizons for measuring counterparty exposure. The performance of the forecasting model for market risk factors must be validated over a long time horizon. In contrast, VaR for market risk is measured over a short time horizon (typically, one to ten days).
- The pricing models used to calculate counterparty exposure for a given scenario of future shocks to market risk factors must be tested as part of the model validation process. These pricing models may be different from those used to calculate VaR over a short horizon. Pricing models for options must account for the nonlinearity of option value with respect to market risk factors.
- An EPE model must capture transaction-specific information in order to aggregate exposures at the level of the netting set. Banks must verify that transactions are assigned to the appropriate netting set within the model.
- An EPE model must also include transaction-specific information in order to capture the effects of margining. It must take into account both the current amount of margin and

⁴³ In other words, the add-on equals EE at the end of the margin period of risk assuming current exposure of zero. Since no roll-off of transactions would be occurring as part of this EE calculation, there would be no difference between EE and Effective EE.

margin that would be passed between counterparties in the future. Such a model must account for the nature of margin agreements (unilateral or bilateral), the frequency of margin calls, the margin period of risk, the minimum threshold of unmargined exposure the bank is willing to accept, and the minimum transfer amount. Such a model must either model the mark-to-market change in the value of collateral posted or apply this guideline's rules for collateral.

43. Static, historical backtesting on representative counterparty portfolios must be part of the model validation process. At regular intervals as directed by its supervisor, a bank must conduct such backtesting on a number of representative counterparty portfolios (actual or hypothetical). These representative portfolios must be chosen based on their sensitivity to the material risk factors and correlations to which the bank is exposed.

44. Starting at a particular historical date, backtesting of an EPE model would use the internal model to forecast each portfolio's probability distribution of exposure at various time horizons. Using historical data on movements in market risk factors, backtesting then computes the actual exposures that would have occurred on each portfolio at each time horizon assuming no change in the portfolio's composition. These realised exposures would then be compared with the model's forecast distribution at various time horizons. The above must be repeated for several historical dates covering a wide range of market conditions (e.g. rising rates, falling rates, quiet markets, volatile markets). Significant differences between the realised exposures and the model's forecast distribution could indicate a problem with the model or the underlying data that the supervisor would require the bank to correct. Under such circumstances, supervisors may require additional capital. Unlike the backtesting requirement for VaR models prescribed under the Market Risk Amendment, no particular statistical test is specified for backtesting of EPE models.

45. Under the internal model method, a measure that is more conservative than Effective EPE (e.g., a measure based on peak rather than average exposure) for every counterparty may be used in place of alpha times Effective EPE in equation (1) with the prior approval of the supervisor. The degree of relative conservatism will be assessed upon initial supervisory approval and subject to periodic validation.

46. Banks using an EPE model or a VaR model (as described in paragraphs 178 to 181) must meet the above validation requirements.

F. Operational requirements for EPE models

47. In order to be eligible to adopt an internal model for estimating EPE arising from CCR for regulatory capital purposes, a bank must meet the following operational requirements. These include meeting the requirements related to the qualifying standards on CCR Management, a use test, stress testing, identification of wrong-way risk, and internal controls.

Qualifying standards on CCR Management

48. The bank must satisfy its supervisor that, in addition to meeting the operational requirements identified in paragraphs 49 to 69 below, it adheres to sound practices for CCR management.

Use test

49. The distribution of exposures generated by the internal model used to calculate effective EPE must be closely integrated into the day-to-day CCR management process of the bank. For

example, the bank could use the peak exposure from the distributions for counterparty credit limits or expected positive exposure for its internal allocation of capital. The internal model's output must accordingly play an essential role in the credit approval, counterparty credit risk management, internal capital allocations, and corporate governance of banks that seek approval to apply such models for capital adequacy purposes. Models and estimates designed and implemented exclusively to qualify for the internal models method are not acceptable.

50. A bank must have a credible track record in the use of internal models that generate a distribution of exposures to CCR. Thus, the bank must demonstrate that it has been using an internal model to calculate the distributions of exposures upon which the EPE calculation is based that meets broadly the minimum requirements for at least one year prior to supervisory approval.

51. Banks employing the internal model method must have an independent control unit that is responsible for the design and implementation of the firm's CCR management system, including the initial and on-going validation of the internal model. This unit must control input data integrity and produce and analyse reports on the output of the firm's risk measurement model, including an evaluation of the relationship between measures of risk exposure and credit and trading limits. This unit must be independent from business credit and trading units; it must be adequately staffed; it must report directly to senior management of the firm. The work of this unit should be closely integrated into the day-to-day credit risk management process of the firm. Its output should accordingly be an integral part of the process of planning, monitoring and controlling the firm's credit and overall risk profile.

52. The internal model used to generate the distribution of exposures must be part of a counterparty risk management framework that includes the identification, measurement, management, approval and internal reporting of counterparty risk.⁴⁴ This framework must include the measurement of usage of credit lines (aggregating counterparty exposures with other credit exposures) and economic capital allocation. In addition to EPE (a measure of future exposure), a bank must measure and manage current exposures. Where appropriate, the bank must measure current exposure gross and net of collateral held. The use test is satisfied if a bank uses other counterparty risk measures, such as peak exposure or potential future exposure (PFE), based on the distribution of exposures generated by the same model to compute EPE.

53. A bank is not required to estimate or report EE daily, but to meet the use test it must have the systems capability to estimate EE daily, if necessary, unless it demonstrates to its supervisor that its exposures to CCR warrant some less frequent calculation. It must choose a time profile of forecasting horizons that adequately reflects the time structure of future cash flows and maturity of the contracts. For example, a bank may compute EE on a daily basis for the first ten days, once a week out to one month, once a month out to eighteen months, once a quarter out to five years and beyond five years in a manner that is consistent with the materiality and composition of the exposure.

54. Exposure must be measured out to the life of all contracts in the netting set (not just to the one year horizon), monitored and controlled. The bank must have procedures in place to

⁴⁴ This section draws heavily on the Counterparty Risk Management Policy Group's paper, *Improving Counterparty Risk Management Practices* (June 1999); a copy can be found online at <http://www.mfainfo.org/washington/derivatives/Improving%20Counterparty%20risk.pdf>.

identify and control the risks for counterparties where exposure rises beyond the one-year horizon. Moreover, the forecasted increase in exposure must be an input into the firm's internal economic capital model.

Stress testing

55. A bank must have in place sound stress testing processes for use in the assessment of capital adequacy. These stress measures must be compared against the measure of EPE and considered by the bank as part of its internal capital adequacy assessment process. Stress testing must also involve identifying possible events or future changes in economic conditions that could have unfavourable effects on a firm's credit exposures and assessment of the firm's ability to withstand such changes. Examples of scenarios that could be used are; (i) economic or industry downturns, (ii) market-place events, or (iii) decreased liquidity conditions.

56. The bank must stress test its counterparty exposures including jointly stressing market and credit risk factors. Stress tests of counterparty risk must consider concentration risk (to a single counterparty or groups of counterparties), correlation risk across market and credit risk (for example, a counterparty for which a large market move would result in a large exposure, a material deterioration in credit quality, or both), and the risk that liquidating the counterparty's positions could move the market. Such stress tests must also consider the impact on the firm's own positions of such market moves and integrate that impact in its assessment of counterparty risk.

Wrong-way risk

57. Banks must be aware of exposures that give rise to a greater degree of general wrong-way risk.

58. A bank is said to be exposed to "specific wrong-way risk" if future exposure to a specific counterparty is expected to be high when the counterparty's probability of default is also high. For example, a company writing put options on its own stock creates wrong-way exposures for the buyer that is specific to the counterparty. A bank must have procedures in place to identify, monitor and control cases of specific wrong way risk, beginning at the inception of a trade and continuing through the life of the trade.

Integrity of Modelling Process

59. Other operational requirements focus on the internal controls needed to ensure the integrity of model inputs; specifically, the requirements address the transaction data, historical market data, frequency of calculation, and valuation models used in measuring EPE.

60. The internal model must reflect transaction terms and specifications in a timely, complete, and conservative fashion. Such terms include, but are not limited to, contract notional amounts, maturity, reference assets, collateral thresholds, margining arrangements, netting arrangements, etc. The terms and specifications must reside in a secure database that is subject to formal and periodic audit. The process for recognising netting arrangements must require signoff by legal staff to verify the legal enforceability of netting and be input into the database by an independent unit. The transmission of transaction terms and specifications data to the internal model must also be subject to internal audit and formal reconciliation processes must be in place between the internal model and source data systems to verify on an ongoing basis that transaction terms and specifications are being reflected in EPE correctly or at least conservatively.

61. The internal model must employ current market data to compute current exposures. When using historical data to estimate volatility and correlations, at least three years of historical data must be used and must be updated quarterly or more frequently if market conditions warrant. The data should cover a full range of economic conditions, such as a full business cycle. A unit independent from the business unit must validate the price supplied by the business unit. The data must be acquired independently of the lines of business, must be fed into the internal model in a timely and complete fashion, and maintained in a secure database subject to formal and periodic audit. Banks must also have a well-developed data integrity process to scrub the data of erroneous and/or anomalous observations. To the extent that the internal model relies on proxy market data, for example for new products where three years of historical data may not be available, internal policies must identify suitable proxies and the bank must demonstrate empirically that the proxy provides a conservative representation of the underlying risk under adverse market conditions. If the internal model includes the effect of collateral on changes in the market value of the netting set, the bank must have adequate historical data to model the volatility of the collateral

62. The EPE model (and modifications made to it) must be subject to an internal model validation process. The process must be clearly articulated in firms' policies and procedures. The validation process must specify the kind of testing needed to ensure model integrity and identify conditions under which assumptions are violated and may result in an understatement of EPE. The validation process must include a review of the comprehensiveness of the EPE model, for example such as whether the EPE model covers all products that have a material contribution to counterparty risk exposures.

63. The use of an internal model to estimate EPE, and hence the exposure amount or EAD, of positions subject to a CCR capital charge will be conditional upon the explicit approval of the firm's supervisory authority. Home and host country supervisory authorities of banks that carry out material trading activities in multiple jurisdictions will work co-operatively to ensure an efficient approval process.

64. In the revised Framework and in prior documents, the Committee has issued guidance regarding the use of internal models to estimate certain parameters of risk and determine minimum capital charges against those risks. Supervisors will require that banks seeking to make use of internal models to estimate EPE meet similar requirements regarding, for example, the integrity of the risk management system, the skills of staff that will rely on such measures in operational areas and in control functions, the accuracy of models, and the rigour of internal controls over relevant internal processes. As an example, banks seeking to make use of an internal model to estimate EPE must demonstrate that they meet the Committee's general criteria for banks seeking to make use of internal models to assess market risk exposures, but in the context of assessing counterparty credit risk.⁴⁵

65. Pillar 2 of the revised Framework provides general background and specific guidance to cover counterparty credit risks that may not be fully covered by the Pillar 1 process.

66. No particular form of model is required to qualify to make use of an internal model. Although this text describes an internal model as a simulation model, other forms of models, including analytic models, are acceptable subject to supervisory approval and review. Banks

⁴⁵ *Amendment to the Capital Accord to Incorporate Market Risk*, Basel Committee on banking Supervision (1996), Part B.1., "General Criteria."

that seek recognition for the use of an internal model that is not based on simulations must demonstrate to their supervisors that the model meets all operational requirements.

67. For a bank that qualifies to net transactions, the bank must have internal procedures to verify that, prior to including a transaction in a netting set, the transaction is covered by a legally enforceable netting contract that meets the applicable requirements of chapters 3 and 4, or the Cross-Product Netting Rules set forth in this annex.

68. For a bank that makes use of collateral to mitigate its CCR, the bank must have internal procedures to verify that, prior to recognising the effect of collateral in its calculations, the collateral meets the appropriate legal certainty standards as set out in chapter 4.

VII. Current Exposure Method

91. Banks that do not have approval to apply the internal models method may use the current exposure method as identified in paragraphs 186, 187 and 317. The current exposure method is to be applied to OTC derivatives only; SFTs are subject to the treatments set out under the Internal Model Method of this Annex or chapter 4.

92. Institutions should calculate the credit equivalent amount these contracts using the **current exposure method** by adding

- the amount for potential future credit exposure (or "add-on") of all contracts (this is calculated by multiplying the notional principal amounts by the add-on factors in the following table)
- the replacement cost (obtained by "marking to market") of all its contracts with positive value.

Add-on Factors					
Residual Maturity	Interest Rate	Foreign Exchange Rate and Gold	Equity	Precious Metals Except Gold	Other Commodities
One year or less	0.0%	1.0%	6.0%	7.0%	10.0%
Over one year to five years	0.5%	5.0%	8.0%	7.0%	12.0%
Over five years	1.5%	7.5%	10.0%	8.0%	15.0%

A worksheet similar to that set out below could be used to determine the risk-weighted equivalent of non-netted contracts:

Type of Contract	Notional Principal Amount 1	Positive Replacement Cost (MTM) 2	Add-On Factor % 3	Potential Credit Exposure 1 x 3 = 4	Credit Equivalent 2 + 4 = 5	Risk Weight % 6	Risk-Weighted Equivalent 5 x 6 = 7
Interest Rate							
≤ 1 year			0.0			0	
			0.0			20	
			0.0			50	
			0.0			100	
			0.0			150	
> 1 year ≤ 5 years			0.5			0	
			0.5			20	
			0.5			50	
			0.5			100	
			0.5			150	
>5 years			1.5			0	
			1.5			20	
			1.5			50	
			1.5			100	
			1.5			150	
Foreign Exchange Rate and Gold							
≤ 1 year			1.0			0	
			1.0			20	
			1.0			50	
			1.0			100	
			1.0			150	
> 1 year ≤ 5 years			5.0			0	
			5.0			20	
			5.0			50	
			5.0			100	
			5.0			150	
> 5 years			7.5			0	
			7.5			20	
			7.5			50	
			7.5			100	
			7.5			150	
Equity							
≤ 1 year			6.0			0	
			6.0			20	
			6.0			50	
			6.0			100	
			6.0			150	
> 1 year ≤ 5 years			8.0			0	
			8.0			20	
			8.0			50	
			8.0			100	
			8.0			150	
> 5 years			10.0			0	
			10.0			20	
			10.0			50	

Type of Contract	Notional Principal Amount 1	Positive Replacement Cost (MTM) 2	Add-On Factor % 3	Potential Credit Exposure 1 x 3 = 4	Credit Equivalent 2 + 4 = 5	Risk Weight % 6	Risk-Weighted Equivalent 5 x 6 = 7
			10.0 10.0			100 150	
Precious Metals Except Gold							
≤1 year			7.0 7.0 7.0 7.0 7.0			0 20 50 100 150	
> 1 year ≤ 5 years			7.0 7.0 7.0 7.0			0 20 50 100 150	
> 5 years			8.0 8.0 8.0 8.0 8.0			0 20 50 100 150	
Other Commodities							
≤1 year			10.0 10.0 10.0 10.0 10.0			0 20 50 100 150	
> 1 year ≤ 5 years			12.0 12.0 12.0 12.0 12.0			0 20 50 100 150	
> 5 years			15.0 15.0 15.0 15.0 15.0			0 20 50 100 150	

Notes to the matrix and worksheet:

- Instruments traded on exchanges may be excluded where they are subject to daily margining requirements.
- For contracts with multiple exchanges of principal, the factors are to be multiplied by the number of remaining payments in the contract.
- For contracts that are structured to settle outstanding exposure following specified payment dates and where the terms are reset such that the market value of the contract is zero on these specified dates, the residual maturity would be set equal to the time until the next reset date. In the case of interest rate contracts with remaining maturities of more than one year and that meet these criteria, the add-on factor is

subject to a floor of 0.5%.

- Contracts not covered by any of the rows of this matrix are to be treated as "other commodities."
- No potential credit exposure would be calculated for single currency floating/floating interest rate swaps; the credit exposure on these contracts would be evaluated solely on the basis of their mark-to-market value (replacement cost).
- The add-ons are based on effective rather than stated notional amounts. In the event that the stated notional amount is leveraged or enhanced by the structure of the transaction, institutions must use the actual or effective notional amount when determining potential future exposure. For example, a stated notional amount of \$1 million with payments calculated at two times LIBOR would have an effective notional amount of \$2 million.
- Potential credit exposure is to be calculated for all OTC contracts (with the exception of single currency-floating/floating interest rate swaps), regardless whether the replacement cost is positive or negative.

93. Banks can obtain capital relief for collateral as defined in paragraphs 146 and chapter 8. The methodology for the recognition of eligible collateral follows that of the applicable approach for credit risk.

94. The counterparty credit risk exposure amount or EAD for single name credit derivative transactions in the trading book will be calculated using the potential future exposure add-on factors set out in chapter 8.

95. To determine capital requirements for hedged banking book exposures, the treatment for credit derivatives in this guideline applies to qualifying credit derivative instruments.

96. Where a credit derivative is an n^{th} -to-default transaction (such as a first-to-default transaction), the treatment specified in chapter 8 applies.

Chapter 4. Credit Risk Mitigation

Standardized Banks

This chapter contains an extract from the Basel II framework, *Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version* (June 2006) that applies to Canadian institutions. The extract has been annotated to indicate OSFI's position on items of national discretion.

Certain paragraphs have been moved for ease of use.

4.1. Standardised approach

4.1.1. Overarching issues

(i) Introduction

109. 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.

110. Where these techniques meet the requirements for legal certainty as described in paragraph 117 and 118 below, the revised approach to CRM allows a wider range of credit risk mitigants to be recognised for regulatory capital purposes than is permitted under the 1988 Accord.

(ii) General remarks

111. The framework set out in this chapter is applicable to the banking book exposures in the standardised approach and the IRB approach.

112. The comprehensive approach for the treatment of collateral (see paragraphs 130 to 138 and 145 to 177) will also be applied to calculate the counterparty risk charges for OTC derivatives and repo-style transactions booked in the trading book.

113. No transaction in which CRM techniques are used should receive a higher capital requirement than an otherwise identical transaction where such techniques are not used.

OSFI Notes

This limit on the capital requirement applies to collateralized and guaranteed transactions. It does not apply to repo-style transactions under the comprehensive approach for which both sides of the transaction (collateral received and posted) have been taken into account in calculating the exposure amount.

114. The effects of CRM will not be double counted. Therefore, no additional supervisory recognition of CRM for regulatory capital purposes will be granted on claims for which an issue-specific rating is used that already reflects that CRM. As stated in paragraph 100 of the section on the standardised approach, principal-only ratings will also not be allowed within the framework of CRM.

115. 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. Therefore, it is imperative that banks employ robust procedures and processes to control these risks, 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 bank's use of CRM techniques and its interaction with the bank's overall credit risk profile. Where these risks are not adequately controlled, supervisors may impose additional capital charges or take other supervisory actions as outlined in Pillar 2.

116. The Pillar 3 requirements must also be observed for banks to obtain capital relief in respect of any CRM techniques.

(iii) Legal certainty

117. In order for banks to obtain capital relief for any use of CRM techniques, the following minimum standards for legal documentation must be met.

118. 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. Banks 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.

4.1.2. Overview of Credit Risk Mitigation Techniques⁴⁶

(i) Collateralised transactions

119. A collateralised transaction is one in which:

- banks have a credit exposure or potential credit exposure; and
- that credit exposure or potential credit exposure is hedged in whole or in part by collateral posted by a counterparty⁴⁷ or by a third party on behalf of the counterparty.

120. Where banks take eligible financial collateral (e.g. cash or securities, more specifically defined in paragraphs 145 and 146 below), 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

121. Banks may opt for either the simple approach, which, similar to the 1988 Accord, 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

⁴⁶ See Annex 8 for an overview of methodologies for the capital treatment of transactions secured by financial collateral under the standardised approach.

⁴⁷ 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.

effectively reducing the exposure amount by the value ascribed to the collateral. Banks 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.

OSFI Notes

Institutions using the Standardized Approach may use either the simple approach or the comprehensive approach using supervisory haircuts.

122. However, before capital relief will be granted in respect of any form of collateral, the standards set out below in paragraphs 123 to 126 must be met under either approach.

123. In addition to the general requirements for legal certainty set out in paragraphs 117 and 118, the legal mechanism by which collateral is pledged or transferred must ensure that the bank 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 banks must take all steps necessary to fulfil those requirements under the law applicable to the bank'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.

124. 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.

125. Banks 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.

126. Where the collateral is held by a custodian, banks must take reasonable steps to ensure that the custodian segregates the collateral from its own assets.

127. A capital requirement will be applied to a bank 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.

128. Where a bank, acting as an 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 bank is the same as if the bank had entered into the transaction as a principal. In such circumstances, a bank will be required to calculate capital requirements as if it were itself the principal.

OSFI Notes

Transactions where a bank acts as an agent and provides a guarantee to the customer should be treated as a direct credit substitute unless the transaction is covered by a master netting arrangement.

The simple approach

129. 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 182 to 185.

The comprehensive approach

130. In the comprehensive approach, when taking collateral, banks will need to calculate their adjusted exposure to a counterparty for capital adequacy purposes in order to take account of the effects of that collateral. Using haircuts, banks 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,⁴⁸ 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 and for the collateral it will be lower.

131. 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.

132. Where the volatility-adjusted exposure amount is greater than the volatility-adjusted collateral amount (including any further adjustment for foreign exchange risk), banks shall 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 147 to 150.

135. The size of the individual haircuts will depend on the type of instrument, type of transaction and the frequency of marking-to-market and remargining. For example, repo-style transactions subject to daily marking-to-market and to daily remargining will receive a haircut based on a 5-business day holding period and secured lending transactions with daily mark-to-market and no remargining 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.

136. For certain types of repo-style transactions (broadly speaking government bond repos as defined in paragraphs 170 and 171) supervisors may allow banks using standard supervisory haircuts or own-estimate haircuts not to apply these in calculating the exposure amount after risk mitigation.

137. 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 173.

⁴⁸ Exposure amounts may vary where, for example, securities are being lent.

(ii) On-balance sheet netting

139. Where banks 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 188.

(iii) Guarantees and credit derivatives

140. Where guarantees or credit derivatives are direct, explicit, irrevocable and unconditional, and supervisors are satisfied that banks fulfil certain minimum operational conditions relating to risk management processes they may allow banks to take account of such credit protection in calculating capital requirements.

141. A range of guarantors and protection providers are recognised. As under the 1988 Accord, 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.

142. Detailed operational requirements are given below in paragraphs 189 to 193.

(iv) Maturity mismatch

143. 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 202 to 205. Under the simple approach for collateral maturity mismatches will not be allowed.

(v) Miscellaneous

144. Treatments for pools of credit risk mitigants and first- and second-to-default credit derivatives are given in paragraphs 206 to 210 below.

4.1.3. Collateral

(i) Eligible financial collateral

145. 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.^{49, 50}
-
- (b) Gold.
-
- (c) Debt securities rated by a recognised external credit assessment institution where these are either:
- at least BB- when issued by sovereigns or PSEs that are treated as sovereigns by the national supervisor; or
 - at least BBB- when issued by other entities (including banks and securities firms); or
 - 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:
- issued by a bank; and
 - listed on a recognised exchange; and
 - classified as senior debt; and
 - 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; and
 - 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) and;
 - the supervisor 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:
- a price for the units is publicly quoted daily; and
 - the UCITS/mutual fund is limited to investing in the instruments listed in this paragraph.⁵¹
-

⁴⁹ 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.

⁵⁰ 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.

146. The following collateral instruments are eligible for recognition in the comprehensive approach:

-
- (a) All of the instruments in paragraph 145;

 - (b) Equities (including convertible bonds) which are not included in a main index but which are listed on a recognised exchange;

 - (c) UCITS/mutual funds which include such equities.
-

(ii) The comprehensive approach

Calculation of capital requirement

147. For a collateralised transaction, the exposure amount after risk mitigation is calculated as follows:

$$E^* = \max \{0, [E \times (1 + H_e) - C \times (1 - H_c - H_{fx})]\}$$

where:

E* = the exposure value after risk mitigation

E = current value of the exposure

H_e = haircut appropriate to the exposure

C = the current value of the collateral received

H_c = haircut appropriate to the collateral

H_{fx} = haircut appropriate for currency mismatch between the collateral and exposure

148. The exposure amount after risk mitigation will be multiplied by the risk weight of the counterparty to obtain the risk-weighted asset amount for the collateralised transaction.

149. The treatment for transactions where there is a mismatch between the maturity of the counterparty exposure and the collateral is given in paragraphs 202 to 205.

⁵¹ However, the use or potential use by a UCITS/mutual fund of derivative instruments solely to hedge investments listed in this paragraph and paragraph 146 shall not prevent units in that UCITS/mutual fund from being eligible financial collateral.

150. 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 basket and H_i the haircut applicable to that asset.

Standard supervisory haircuts

151. These are the standard supervisory haircuts (assuming daily mark-to-market, daily remargining and a 10-business day holding period), expressed as percentages:

Issue rating for debt securities	Residual Maturity	Sovereigns ^{52, 53}	Other issuers ⁵⁴
AAA to AA-/A-1	≤ 1 year	0.5	1
	>1 year, ≤ 5 years	2	4
	> 5 years	4	8
A+ to BBB-/ A-2/A-3/P-3 and unrated bank securities per para. 145(d)	≤ 1 year	1	2
	>1 year, ≤ 5 years	3	6
	> 5 years	6	12
BB+ to BB-	All	15	
Main index equities (including convertible bonds) and Gold		15	
Other equities (including convertible bonds) listed on a recognised exchange		25	
UCITS/Mutual funds		Highest haircut applicable to any security in which the fund can invest	
Cash in the same currency ⁵⁵		0	

152. The standard supervisory 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)

153. For transactions in which the bank lends non-eligible instruments (e.g. non-investment grade corporate debt securities), the haircut to be applied on the exposure should be the same as the one for equity traded on a recognised exchange that is not part of a main index.

⁵² Includes PSEs which are treated as sovereigns by the national supervisor.

⁵³ Multilateral development banks receiving a 0% risk weight will be treated as sovereigns.

⁵⁴ Includes PSEs which are not treated as sovereigns by the national supervisor.

⁵⁵ Eligible cash collateral specified in paragraph 145 (a).

Adjustment for different holding periods and non daily mark-to-market or remargining

166. For some transactions, depending on the nature and frequency of the revaluation and remargining 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.

167. 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 remargining
Other capital market transactions	ten business days	daily remargining
Secured lending	twenty business days	daily revaluation

168. When the frequency of remargining or revaluation is longer than the minimum, the minimum haircut numbers will be scaled up depending on the actual number of business days between remargining 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 remargining for capital market transactions or revaluation for secured transactions.

When a bank 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

169. For example, for banks using the standard supervisory haircuts, the 10-business day haircuts provided in paragraph 151 will be the basis and this haircut will be scaled up or down

depending on the type of transaction and the frequency of remargining 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 supervisory haircut for instrument

N_R = actual number of business days between remargining for capital market transactions or revaluation for secured transactions.

T_M = minimum holding period for the type of transaction

Conditions for zero H

170. For repo-style transactions where the following conditions are satisfied, and the counterparty is a *core market participant*, supervisors may choose not to apply the haircuts specified in the comprehensive approach and may instead apply a haircut of zero.

-
- (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;⁵⁶
-
- (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 remargining;
-
- (d) Following a counterparty's failure to remargin, the time that is required between the last mark-to-market before the failure to remargin and the liquidation⁵⁷ 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;
-
- (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 bank has the unfettered, legally enforceable right to immediately seize and liquidate the collateral for its benefit.
-

⁵⁶ Note that where a supervisor has designated domestic-currency claims on its sovereign or central bank to be eligible for a 0% risk weight in the standardised approach, such claims will satisfy this condition.

⁵⁷ 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.

OSFI Notes

The carve-out applies for repos of Government of Canada securities and securities issued by Canadian provinces and territories subject to confirmation that the above criteria are met.

171. *Core market participants* may include, at the discretion of the national supervisor, 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.
-

OSFI Notes

OSFI recognises the entities listed above as “core market participants” for purposes of the carve-out.

172. Where a supervisor applies a specific carve-out to repo-style transactions in securities issued by its domestic government, then other supervisors may choose to allow banks incorporated in their jurisdiction to adopt the same approach to the same transactions.

OSFI Notes

Canadian banks may apply carve-outs permitted by other G-10 supervisors to repo-style transactions in securities issued by their domestic governments to business in those markets.

Treatment of repo-style transactions covered under master netting agreements

173. The effects of bilateral netting agreements covering repo-style transactions 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
 - (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.
-

174. 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;⁵⁸ and
 - (b) The collateral instruments used in the transactions are recognised as eligible financial collateral in the banking book.
-

175. The formula in paragraph 147 will be adapted to calculate the capital requirements for transactions with netting agreements.

176. For banks using the standard supervisory haircuts or own-estimate haircuts, the framework below will apply to take into account the impact of master netting agreements.

$$E^* = \max \{0, [(\sum(E) - \sum(C)) + \sum (E_s \times H_s) + \sum (E_{fx} \times H_{fx})]\}^{59}$$

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

⁵⁸ The holding period for the haircuts will depend as in other repo-style transactions on the frequency of margining.

⁵⁹ The starting point for this formula is the formula in paragraph 147 which can also be presented as the following:
 $E^* = (E-C) + (E \times H_e) + (C \times H_c) + (C \times H_{fx})$.

177. The intention here is to obtain a net exposure amount after netting of the exposures and collateral and have an add-on amount reflecting possible price changes for the securities involved in the transactions and for foreign exchange risk if any. 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 147 to 172 equivalently apply for banks using bilateral netting agreements for repo-style transactions.

(iii) The simple approach

Minimum conditions

182. 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 183 to 185. The remainder of the claim should be assigned to the risk weight appropriate to the counterparty. A capital requirement will be applied to banks 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

183. Transactions which fulfil the criteria outlined in paragraph 170 and are with a core market participant, as defined in 171, receive a risk weight of 0%. If the counterparty to the transactions is not a core market participant the transaction should receive a risk weight of 10%.

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

185. 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:

- the collateral is cash on deposit as defined in paragraph 145 (a); or
- 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%.

(iv) Collateralised OTC derivatives transactions

186. Under the Current Exposure Method, the calculation of the counterparty credit risk charge for an individual contract will be as follows:

$$\text{counterparty charge} = [(\text{RC} + \text{add-on}) - C_A] \times r \times 8\%$$

where:

RC = the replacement cost,

add-on = the amount for potential future exposure calculated under the 1988 Accord,

-
- C_A = the volatility adjusted collateral amount under the comprehensive approach prescribed in paragraphs 147 to 172, or zero if no eligible collateral is applied to the transaction, and
- r = the risk weight of the counterparty.

187. When effective bilateral netting contracts are in place, RC will be the net replacement cost and the add-on will be A_{Net} as calculated under the 1988 Accord. The haircut for currency risk (Hfx) should 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 will be applied.

187 (i). As an alternative to the Current Exposure Method for the calculation of the counterparty credit risk charge, banks may also use (subject to supervisory approval) the Internal Model Method as set out in Annex 4 of this guideline.

4.1.4. *On-balance sheet netting*

188. Where a bank,

- (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 147. 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 151, 169, and 202 to 205 will apply.

4.1.5. *Guarantees and credit derivatives*

(i) Operational requirements

Operational requirements common to guarantees and credit derivatives

189. 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.⁶⁰ It must also be unconditional; there should be no clause in the protection contract outside the direct control of the bank 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

190. In addition to the legal certainty requirements in paragraphs 117 and 118 above, 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 bank 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 bank, or the guarantor may assume the future payment obligations of the counterparty covered by the guarantee. The bank 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.
-
- (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 should be treated as an unsecured amount in accordance with paragraph 198.
-

Additional operational requirements for credit derivatives

191. 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:
- 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);
 - 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
 - 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,
-

⁶⁰ 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 203 sets forth the treatment of call options in determining remaining maturity for credit protection.

refer to paragraph 192.

- (b) If the credit derivative covers obligations that do not include the underlying obligation, section (g) below 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 203.
 - (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, section (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.
 - (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.
-

192. When the restructuring of the underlying obligation is not covered by the credit derivative, but the other requirements in paragraph 191 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.⁶¹

⁶¹ The 60% recognition factor is provided as an interim treatment, which the Committee intends to refine prior to implementation after considering additional data.

193. 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 bank 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 207 to 210.

194. Other types of credit derivatives will not be eligible for recognition at this time.⁶²

(ii) Range of eligible guarantors (counter-guarantors)/protection providers

195. Credit protection given by the following entities will be recognised:

- sovereign entities,⁵⁰ PSEs, banks⁶⁴ and securities firms with a lower risk weight than the counterparty;
- other entities rated A- or better. This would include credit protection provided by parent, subsidiary and affiliate companies when they have a lower risk weight than the obligor.

OSFI Notes

Guarantees provided by a parent or unconsolidated affiliate of an institution will not reduce the risk weighting of the assets of the subsidiary institution in Canada. This treatment follows the principle that parent company guarantees are not a substitute for capital. An exception is made for self-liquidating trade-related transactions that have a tenure of 360 days or less, are market-driven and are not structured to avoid the requirements of OSFI guidelines. The requirement that the transaction be "market-driven" necessitates that the guarantee or letter of credit is requested and paid for by the customer and/or that the market requires the guarantee in the normal course.

(iii) Risk weights

196. 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.

197. 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 capital of the bank purchasing the credit protection.

Proportional cover

198. 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 bank and the guarantor share losses on a pro-rata basis capital relief will be afforded on a

⁶² 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.

⁵⁰ 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 Chapter 3.

⁶⁴ This includes other MDBs.

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

199. Where the bank 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, banks 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 5 (Structured Credit Products) will apply.

(iv) Currency mismatches

200. 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 bank uses the supervisory 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 168.

OSFI Notes

A currency mismatch occurs when the currency a bank receives differs from the currency of the collateral held. A currency mismatch always occurs when a bank receives payments in more than one currency under a single contract.

(v) Sovereign guarantees and counter-guarantees

201. As specified in paragraph 54, a lower risk weight may be applied at national discretion to a bank's exposures to the sovereign (or central bank) where the bank is incorporated and where the exposure is denominated in domestic currency and funded in that currency. National authorities may extend this treatment to portions of claims guaranteed by the sovereign (or central bank), where the guarantee is denominated in the domestic currency and the exposure is funded in that currency. A claim may be covered by a guarantee that is indirectly counter-guaranteed by a sovereign. 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) the supervisor 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.
-

4.1.6. *Maturity mismatches*

202. 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.

(i) **Definition of maturity**

203. 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.

(ii) **Risk weights for maturity mismatches**

204. As outlined in paragraph 143, 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 no longer be recognised when they have a residual maturity of three months or less.

205. 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

4.1.7. *Other items related to the treatment of CRM techniques*

(i) Treatment of pools of CRM techniques

206. In the case where a bank has multiple CRM techniques covering a single exposure (e.g. a bank has both collateral and guarantee partially covering an exposure), the bank will be 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.

(ii) First-to-default credit derivatives

207. There are cases where a bank 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 bank 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.

208. With regard to the bank providing credit protection through such an instrument, if the product has an external credit assessment from an eligible credit assessment institution, the risk weight in paragraph 567 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.

(iii) Second-to-default credit derivatives

209. In the case where the second default among the assets within the basket triggers the credit protection, the bank 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.

210. For banks providing credit protection through such a product, the capital treatment is the same as in paragraph 208 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.

Annex 10 - Overview of Methodologies for the Capital Treatment of Transactions Secured by Financial Collateral under the Standardised and IRB Approaches

1. The rules set forth in the standardised approach – Credit Risk Mitigation (CRM), for collateralised transactions generally determine the treatment under the standardised approach for claims in the banking book that are secured by financial collateral of sufficient quality.
2. Collateralised exposures that take the form of repo-style transactions (i.e. repo/reverse repos and securities lending/borrowing) are subject to special considerations. Such transactions that are held in the trading book are subject to a counterparty risk capital charge as described below. Further, all banks must follow the methodology in the CRM section, which is outlined below, for repo-style transactions booked in either the banking book or trading book that are subject to master netting agreements if they wish to recognise the effects of netting for capital purposes.

Standardised Approach

3. Banks under the standardised approach may use either the simple approach or the comprehensive approach for determining the appropriate risk weight for a transaction secured by eligible financial collateral. Under the simple approach, the risk weight of the collateral substitutes for that of the counterparty. Apart from a few types of very low risk transactions, the risk weight floor is 20%.
4. Under the comprehensive approach, eligible financial collateral reduces the amount of the exposure to the counterparty. The amount of the collateral is decreased and, where appropriate, the amount of the exposure is increased through the use of haircuts, to account for potential changes in the market prices of securities and foreign exchange rates over the holding period. This results in an adjusted exposure amount, E^* . Where the supervisory holding period for calculating the haircut amounts differs from the holding period set down in the rules for that type of collateralised transaction, the haircuts are to be scaled up or down as appropriate. Once E^* is calculated, the standardised bank will assign that amount a risk weight appropriate to the counterparty.

Special Considerations for Repo-Style Transactions

5. Repo-style transactions booked in the trading book, will, like OTC derivatives held in the trading book, be subject to a counterparty credit risk charge. In calculating this charge, a bank under the standardised approach must use the comprehensive approach to collateral; the simple approach will not be available.
6. The capital treatment for repo-style transactions that are not subject to master netting agreements is the same as that for other collateralised transactions. However, for banks using the comprehensive approach, national supervisors have the discretion to determine that a haircut of zero may be used where the transaction is with a core market participant and meets certain other criteria (so-called carve-out treatment). Where repo-style transactions are subject to a master netting agreement whether they are held in the banking book or trading book, a bank may choose not to recognise the netting effects in calculating capital. In that case, each transaction will be subject to a capital charge as if there were no master netting agreement.
7. If a bank wishes to recognise the effects of master netting agreements on repo-style transactions for capital purposes, it must apply the treatment the CRM section sets forth in that

regard on a counterparty-by-counterparty basis. This treatment would apply to all repo-style transactions subject to master netting agreements regardless of whether the transactions are held in the banking or trading book. Under this treatment, the bank would calculate E^* as the sum of the net current exposure on the contract plus an add-on for potential changes in security prices and foreign exchange rates.

8. The calculated E^* is in effect an unsecured loan equivalent amount that would be used for the exposure amount under the standardised approach.

Appendix 4-I - Credit Derivatives - Product Types

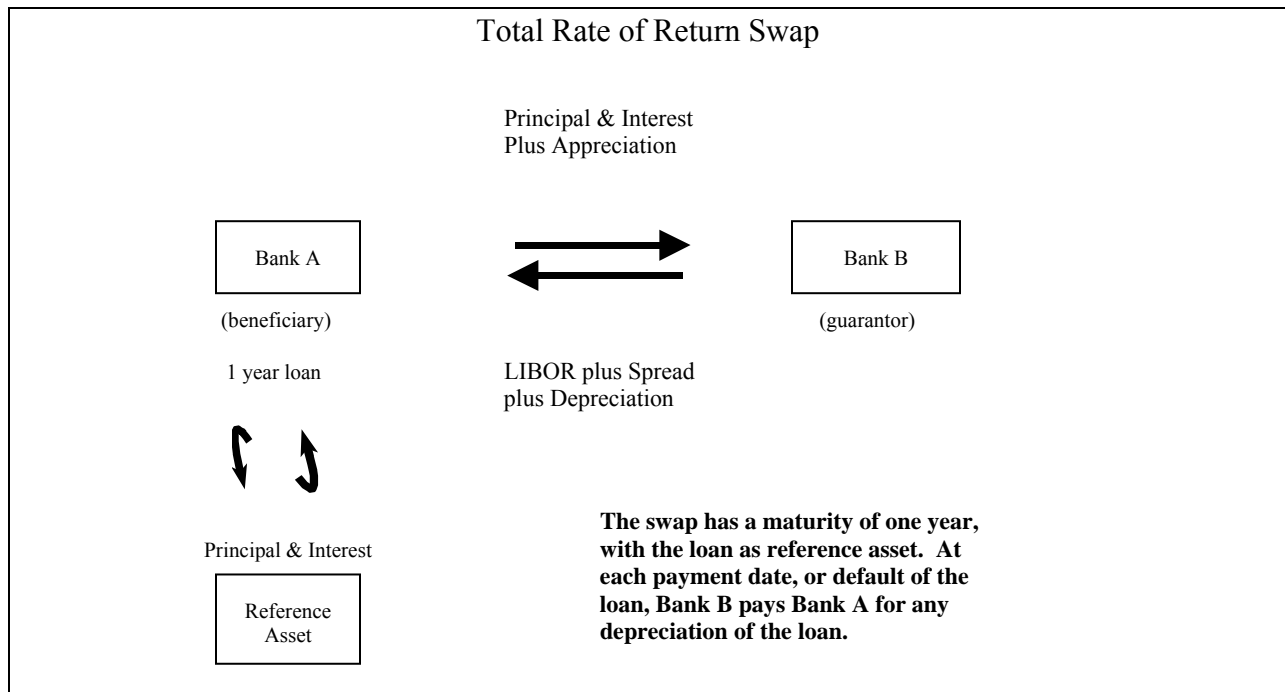
Description of Credit Derivatives

The most widely used types of credit derivatives are credit default products and total rate-of-return (TROR) swaps. While the timing and structure of the cash flows associated with credit default and TROR swaps differ, the economic substance of both arrangements seek to transfer the credit risk of the asset(s) referenced in the transaction.

Another less common form of credit derivative is the credit-linked note, which is an obligation that is based on a reference asset. Credit-linked notes are similar to structured notes with embedded credit derivatives. Credit indicators on the reference asset rather than market price factors influence the payment of interest and principal. If there is a credit event, the repayment of the note's principal is based on the price of the reference asset.

Total Rate-of-Return Swap

In a total rate-of-return (TROR) swap, illustrated below, the beneficiary (Bank A) agrees to pay the guarantor (Bank B) the total return on the reference asset, which consists of all contractual payments, as well as any appreciation in the market value of the reference asset. To complete the swap arrangement, the guarantor agrees to pay LIBOR plus a spread and any depreciation to the beneficiary. The guarantor in a TROR swap could be viewed as having synthetic ownership of the reference asset since it bears the risks and rewards of ownership over the term of the swap.



At each payment exchange date (including when the swap matures) -- or upon default, at which point the swap may terminate -- any depreciation or appreciation in the amortized value of the

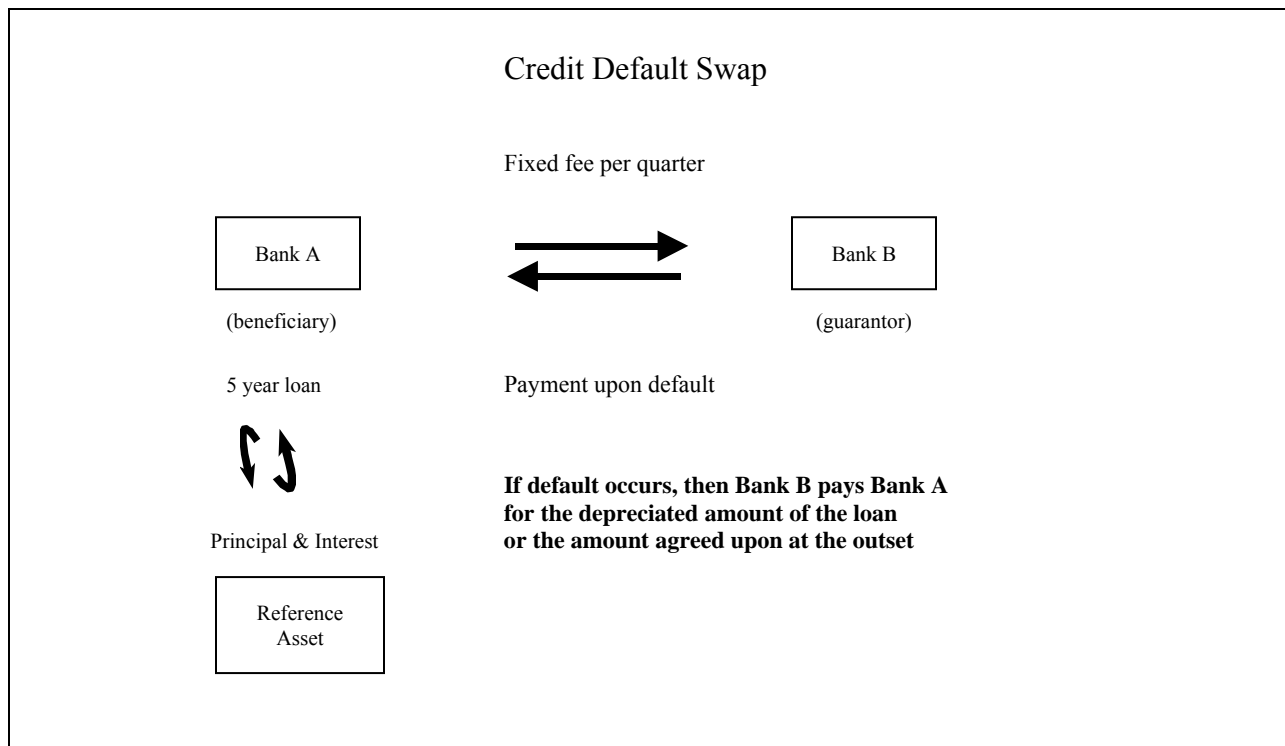
reference asset is calculated as the difference between the notional principal balance of the reference asset and the "dealer price."

The dealer price is generally determined either by referring to a market quotation source or by polling a group of dealers and reflects changes in the credit profile of the reference obligor and reference asset.

If the dealer price is less than the notional amount (i.e., the hypothetical original price of the reference asset) of the contract, then the guarantor must pay the difference to the beneficiary, absorbing any loss caused by a decline in the credit quality of the reference asset. Thus, a TROR swap differs from a standard direct credit substitute in that the guarantor is guaranteeing not only against default of the reference obligor, but also against a deterioration in that obligor's credit quality, which can occur even if there is no default.

Credit Default Swaps/Products

The purpose of a credit default swap, as its name suggests, is to provide protection against credit losses associated with a default on a specified reference asset. The swap purchaser (beneficiary) swaps the credit risk with the provider of the swap (guarantor). While the transaction is called a swap, it is very similar to a guarantee.

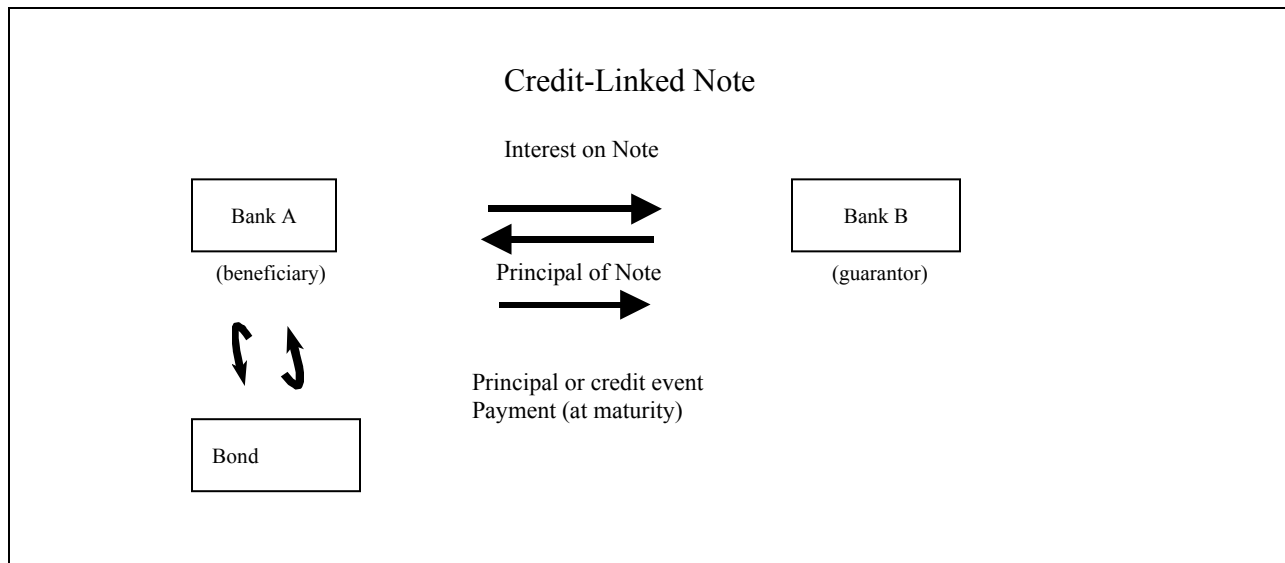


In a credit default swap, the beneficiary (Bank A) agrees to pay to the guarantor (Bank B) a fee typically amounting to a certain number of basis points on the par value of the reference asset, either quarterly or annually. In return, the guarantor agrees to pay the beneficiary an agreed upon, market-based, post-default amount or a predetermined fixed percentage of the value of the

reference asset if there is a default. The guarantor makes no payment until there is a default. A default is strictly defined in the contract to include, for example, bankruptcy, insolvency, or payment default, and the default event must be publicly verifiable. In some instances, the guarantor need not make payments to the beneficiary until a pre-established amount of loss has been exceeded in conjunction with a default event. This event is often referred to as the maturity of the swap. The amount owed by the guarantor is the difference between the reference asset's initial principal (or notional) amount and the actual market value of the defaulted, reference asset. The method for establishing the post-default market value of the reference asset should be set out in the contract. Often, the market value of the defaulted reference asset may be determined by sampling dealer quotes. The guarantor may have the option to purchase the defaulted underlying asset and pursue a workout with the borrower directly. Alternatively, the swap may call for a fixed payment in the event of default, for example, 15 per cent of the notional value of the reference asset. The treatment of credit default swaps could differ from a guarantee depending upon the definition of default, the term, and the extent of coverage.

Credit-Linked Notes

In a credit-linked note, the beneficiary (Bank A) agrees to pay the guarantor (Bank B) the interest on an issued note referenced to a bond. The guarantor has in this case paid the principal on the note to the issuing bank. If there is no default on the reference bond, the note simply matures at the end of the period. If a credit event occurs on the bond, the note is redeemed, based on the default recovery.



A credit-linked note is a securitized version of a credit default swap. The difference between a credit default swap and a credit-linked note is that the beneficiary bank receives the principal payment from the guarantor when the contract is originated.

Through the purchase of the credit-linked note, the guarantor (Bank B) assumes the risk of the bond and funds this exposure through the purchase of the note. The guarantor bank takes on the exposure to the beneficiary (Bank A) to the full amount of the funding it has provided. The beneficiary bank hedges its risk on the bond without acquiring any additional credit exposure. Many variations of this product are available.

Credit Spread Products

Credit derivative products can also go beyond the credit transfer products described above to include various forms of credit spread products or index related products. These types of instruments tend not to be credit risk management vehicles but rather options that are traded on the credit quality or credit migration of the underlying assets. In these cases, the bank is not transferring or hedging its risk but rather attempting to profit from changes in spreads. These products should be treated identically to other option products under Chapter 8 of CAR Guideline A-1.

Chapter 5. Structured Credit Products

This chapter contains an extract from the Basel II framework, *Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version* (June 2006) that applies to Canadian institutions. The extract has been annotated to indicate OSFI's position on items of national discretion.

The Securitisation framework and Supervisory review process for securitization, have been extracted in their entirety.

OSFI's accounting requirements for asset securitizations are set out in Guidelines D-4, *Transfers of Financial Assets*, and D-8, *Accounting for Transfers of Receivables Including Securitizations*.

Accounting requirements for NHA mortgage-backed securities transactions are addressed in Guidelines D-3, *Accounting for NHA-insured MBS*, and D-8, *Accounting for Transfers of Receivables Including Securitizations*.

5.1. Securitisation Framework

Scope and definitions of transactions covered under the securitisation framework

538. Banks 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. Similarly, supervisors will look to the economic substance of a transaction to determine whether it should be subject to the securitisation framework for purposes of determining regulatory capital. Banks are encouraged to consult with their national supervisors 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.

539. A *traditional securitisation* is 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 securitisation 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.

OSFI Notes

In its simplest form, asset securitization is the transformation of generally illiquid assets into securities that can be traded in the capital markets. The asset securitization process generally begins with the segregation of financial assets into pools that are relatively homogeneous with respect to their cash flow characteristics and risk profiles, including both credit and market risks. These pools of assets are then sold to a bankruptcy-remote entity, generally referred to as a

special-purpose entity (SPE), which issues asset-backed securities (ABS) to investors to finance the purchase. ABS are financial instruments that may take a variety of forms, including commercial paper, term debt and certificates of beneficial ownership. The cash flow from the underlying assets supports repayment of the ABS. Various forms of enhancement are used to provide credit protection for investors in the ABS.

Securitizations typically split the risk of credit losses from the underlying assets into tranches that are distributed to different parties. Each loss position functions as an enhancement if it protects the more senior positions in the structure from loss.

An institution may perform one or more functions in an asset securitization transaction. It may:

- invest in a debt instrument issued by an SPE,
- provide enhancements,
- provide liquidity support,
- set up, or cause to be set up, an SPE,
- collect principal and interest payments on the assets and transmit those funds to an SPE, investors in the SPE securities or a trustee representing them, and
- provide clean-up calls.

540. A *synthetic securitisation* is a structure with at least two different stratified risk positions or tranches that reflect different degrees of credit risk where credit risk of an underlying pool of exposures is transferred, in whole or in part, 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. Accordingly, the investors' potential risk is dependent upon the performance of the underlying pool.

OSFI Notes

Refer to chapter 4 - Credit Risk Mitigation for capital guidance on credit derivatives.

541. Banks' exposures to a securitisation are hereafter referred to as "securitisation exposures". Securitisation exposures can include but are not restricted to the following: asset-backed securities, mortgage-backed securities, credit enhancements, liquidity facilities, interest rate or currency swaps, credit derivatives and tranching cover as described in paragraph 199. Reserve accounts, such as cash collateral accounts, recorded as an asset by the originating bank must also be treated as securitisation exposures.

542. Underlying instruments in the pool being securitised may include but are not restricted to the following: loans, commitments, asset-backed and mortgage-backed securities, corporate bonds, equity securities, and private equity investments. The underlying pool may include one or more exposures.

5.2. Definitions and general terminology

5.2.1. Originating bank

543. For risk-based capital purposes, a bank is considered to be an originator with regard to a certain securitisation if it meets either of the following conditions:

- (a) The bank originates directly or indirectly underlying exposures included in the securitisation; or
- (b) The bank serves as a sponsor of an asset-backed commercial paper (ABCP) conduit or similar programme that acquires exposures from third-party entities. In the context of such programmes, a bank would generally be considered a sponsor and, in turn, an originator if it, in fact or in substance, manages or advises the programme, places securities into the market, or provides liquidity and/or credit enhancements.

OSFI Notes

An institution is considered the supplier of the assets in any of the following circumstances:

- the assets are held on the balance sheet of the institution at any time prior to being transferred to an SPE,
- the institution lends to an SPE in order for that SPE to grant a loan to a borrower as though it were the institution*, or
- the institution enables** an SPE to directly originate assets that are financed with ABS.

OSFI reserves the right to adopt a look-through approach to determine the originator of the assets. The look-through approach may also be used to ensure appropriate capital is maintained by an institution in a securitization transaction.

* This method of lending is known as remote origination. The institution is regarded as the supplier because the SPE is creating an asset that is branded by the institution. The institution will incur reputational risk through the association with the product.

** For example, by providing credit approvals or administrative support.

5.2.2. Asset-backed commercial paper (ABCP) programme

544. An asset-backed commercial paper (ABCP) programme predominately issues commercial paper with an original maturity of one year or less that is backed by assets or other exposures held in a bankruptcy-remote, special purpose entity.

5.2.3. Clean-up call

545. A clean-up call is an option that permits the securitisation exposures (e.g. asset-backed securities) to be called before all of the underlying exposures or securitisation exposures have been repaid. In the case of traditional securitisations, this is generally accomplished by repurchasing the remaining securitisation exposures once the pool balance or outstanding securities have fallen below some specified level. In the case of a synthetic transaction, the clean-up call may take the form of a clause that extinguishes the credit protection.

5.2.4. Credit enhancement

546. A credit enhancement is a contractual arrangement in which the bank retains or assumes a securitisation exposure and, in substance, provides some degree of added protection to other parties to the transaction.

OSFI Notes

An enhancement is an arrangement provided to an SPE to cover the losses associated with the pool of assets. Enhancement is a method of protecting investors in the event that cash flows from the underlying assets are insufficient to pay the interest and principal due for the ABS in a timely manner. Enhancement is used to improve or support the credit rating on more senior tranches, and therefore the pricing and marketability of the ABS.

Common examples of these facilities include: recourse provisions; senior/subordinated security structures; subordinated standby lines of credit; subordinated loans; third party equity; swaps that are structured to provide an element of enhancement; and any amount of liquidity facilities in excess of 103% of the face value of outstanding paper. In addition, these facilities include any temporary financing facility, other than qualifying servicer advances, provided by an institution to an enhancer or to an SPE to bridge the gap between the date a claim is made against a third party enhancer and when payment is received.

5.2.5. Credit-enhancing interest-only strip

547. A credit-enhancing interest-only strip (I/O) is an on-balance sheet asset that (i) represents a valuation of cash flows related to future margin income, and (ii) is subordinated.

5.2.6. Early amortisation

548. Early amortisation provisions are mechanisms that, once triggered, allow investors to be paid out prior to the originally stated maturity of the securities issued. For risk-based capital purposes, an early amortisation provision will be considered either controlled or non-controlled. A controlled early amortisation provision must meet all of the following conditions.

- (a) The bank must have an appropriate capital/liquidity plan in place to ensure that it has sufficient capital and liquidity available in the event of an early amortisation.
- (b) Throughout the duration of the transaction, including the amortisation period, there is the same pro rata sharing of interest, principal, expenses, losses and recoveries based on the bank's and investors' relative shares of the receivables outstanding at the beginning of each month.
- (c) The bank must set a period for amortisation that would be sufficient for at least 90% of the total debt outstanding at the beginning of the early amortisation period to have been repaid or recognised as in default; and
- (d) The pace of repayment should not be any more rapid than would be allowed by straight-line amortisation over the period set out in criterion (c).

OSFI Notes

Securitization documentation should clearly state that early amortization cannot be precipitated by regulatory actions affecting the supplier of assets.

549. An early amortisation provision that does not satisfy the conditions for a controlled early amortisation provision will be treated as a non-controlled early amortisation provision.

5.2.7. *Excess spread*

550. Excess spread is generally defined as gross finance charge collections and other income received by the trust or special purpose entity (SPE, specified in paragraph 552) minus certificate interest, servicing fees, charge-offs, and other senior trust or SPE expenses.

5.2.8. *Implicit support*

551. Implicit support arises when a bank provides support to a securitisation in excess of its predetermined contractual obligation.

5.2.9. *Special purpose entity (SPE)*

552. An SPE is a corporation, trust, or other entity organised for a specific purpose, the activities of which are limited to those appropriate to accomplish the purpose of the SPE, and the structure of which is intended to isolate the SPE from the credit risk of an originator or seller of exposures. SPEs are commonly used as financing vehicles in which exposures are sold to a trust or similar entity in exchange for cash or other assets funded by debt issued by the trust.

OSFI Notes

OSFI expects an institution to minimize its exposure to risk arising from its relationship with an SPE. An institution that sets up, or causes to be set up, an SPE will not have to hold capital as a result of this activity if the following conditions are met:

- the institution does not own any share capital in a company, nor is it the beneficiary of a trust, used as an SPE for purchasing and securitizing financial assets. For this purpose, share capital includes all classes of common and preferred share capital.
- the institution's name is not included in the name of a company or trust used as an SPE, nor is any connection implied with the institution by, for example, using a symbol closely associated with the institution. If, however, the institution is performing a specific function for a particular transaction or transactions (e.g., collecting and transmitting payments or providing enhancement), this may be indicated in the offering circular (subject to the *Name Use Regulations*).
- the institution does not have any of its directors, officers or employees on the board of a company used as an SPE, unless the SPE's board has at least three members. Where the board consists of three or more members, the institution may not have more than one director. Where the SPE is a trust, the beneficiary and the indenture trustee and/or the issuer trustee must be third parties independent of the institution.
- the institution does not lend to the SPE on a subordinated basis, except as otherwise provided herein*.

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- the institution does not support, except as provided elsewhere in this guideline, any losses suffered by the SPE, or investors in it, or bear any of the recurring expenses of the SPE.

Where an institution does not meet all of these conditions, it is required to hold capital against all debt instruments issued to third parties by the SPE.

- * A loan provided by an institution to an SPE to cover initial transaction or set-up costs is a deduction from capital as long as the loan is capped at its original amount; amortized over the life of the securities issued by the SPE; and the loan is not available as a form of enhancement to the assets or securities issued.

5.3. Operational requirements for the recognition of risk transference

553. The following operational requirements are applicable to both the standardised and IRB approaches of the securitisation framework.

5.3.1. Operational requirements for traditional securitisations

554. An originating bank may exclude securitised 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 securitised exposures has been transferred to third parties.
- (b) The transferor does not maintain effective or indirect control over the transferred exposures. The assets are legally isolated from the transferor in such a way (e.g. through the sale of assets or through subparticipation) that the exposures are put beyond the reach of the transferor and its creditors, even in bankruptcy or receivership. These conditions must be supported by an opinion provided by a qualified legal counsel.

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. The transferor's retention of servicing rights to the exposures will not necessarily constitute indirect control of the exposures.

- (c) The securities issued are not obligations of the transferor. Thus, investors who purchase the securities only have claim to the underlying pool of exposures.
- (d) The transferee is an SPE and the holders of the beneficial interests in that entity have the right to pledge or exchange them without restriction.
- (e) Clean-up calls must satisfy the conditions set out in paragraph 557.
- (f) The securitisation does not contain clauses that (i) require the originating bank to alter systematically the underlying exposures such that the pool's weighted average credit quality is improved unless this is achieved by selling assets 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.

5.3.2. *Operational requirements for synthetic securitisations*

555. For synthetic securitisations, the use of 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 as set out in chapter 4 of this Framework.
- (b) Eligible collateral is limited to that specified in paragraphs 145 and 146. Eligible collateral pledged by SPEs may be recognised.
- (c) Eligible guarantors are defined in paragraph 195. Banks may not recognise SPEs as eligible guarantors in the securitisation framework.
- (d) Banks must transfer significant credit risk associated with the underlying exposure to third parties.
- (e) The instruments used to transfer credit risk may not contain terms or conditions that limit the amount of credit risk transferred, such as those provided below:
 - Clauses that materially limit the credit protection or credit risk transference (e.g. significant materiality thresholds below which credit protection is deemed not to be triggered even if a credit event occurs or those that allow for the termination of the protection due to deterioration in the credit quality of the underlying exposures);
 - Clauses that require the originating bank to alter the underlying exposures to improve the pool's weighted average credit quality;
 - Clauses that increase the banks' cost of credit protection in response to deterioration in the pool's quality;
 - 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
 - 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) An opinion must be obtained from a qualified legal counsel that confirms the enforceability of the contracts in all relevant jurisdictions.
- (g) Clean-up calls must satisfy the conditions set out in paragraph 557.

556. For synthetic securitisations, the effect of applying CRM techniques for hedging the underlying exposure are treated according to paragraphs 109 to 210. In case there is a maturity mismatch, the capital requirement will be determined in accordance with paragraphs 202 to 205. When the exposures in the underlying pool have different maturities, the longest maturity must be taken as the maturity of the pool. 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 the tranches of the synthetic securitisation may differ from that of the underlying exposures. Originating banks of synthetic securitisations must treat such maturity mismatches in the following manner. A bank using the standardised approach for securitisation must deduct all retained positions that are unrated or rated below investment grade. Accordingly, when deduction is required, maturity mismatches are not taken into account. For all other securitisation exposures, the bank must apply the maturity mismatch treatment set forth in paragraphs 202 to 205.

OSFI Notes

The following apply to both traditional and synthetic securitizations:

- An institution should understand the inherent risks of the activity, be competent in structuring and managing such transactions, and have adequate staffing of the functions involved in the transactions.
- The terms and conditions of all transactions between the institution and the SPE should be at least at market terms and conditions (and any fees are paid in a timely manner) and meet the institution's normal credit standards. The Credit Committee or an equally independent committee should approve individual transactions.
- An institution's capital and liquidity plans should take into account the potential need to finance an increase in assets on its balance sheet as a result of early amortization or maturity events. If OSFI finds the planning inadequate, it may increase the institution's capital requirements.
- The capital requirements for asset securitization transactions will be limited to those set out in this guideline if the institution provides only the level of support (enhancement or liquidity) committed to in the various agreements that define and limit the levels of losses to be borne by the institution.

5.3.3. Operational requirements and treatment of clean-up calls

557. 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: (i) 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; (ii) 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 (iii) the clean-up call must only be exercisable when 10% or less of the original underlying portfolio, or securities issued remain, or, for synthetic securitisations, when 10% or less of the original reference portfolio value remains.

OSFI Notes

An agreement that permits an institution to purchase the remaining assets in a pool when the balance of those assets is equal to or less than 10% of the original pool balance is considered a clean-up call and no capital is required. However, a clean-up call that permits the remaining loans to be repurchased when their balance is greater than 10% of the original pool balance or permits the purchase of non-performing loans is considered a first loss enhancement.

558. Securitisation transactions that include a clean-up call that does not meet all of the criteria stated in paragraph 557 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, as defined in paragraph 562. 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 556 and paragraphs 202 to 205.

559. 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 the supervisory guidance pertaining to securitisation transactions.

5.4. Treatment of securitisation exposures

5.4.1. Calculation of capital requirements

560. Banks are required to hold regulatory capital against all of their securitisation exposures, including those arising from the provision of credit risk mitigants to a securitisation transaction, investments in asset-backed securities, retention of a subordinated tranche, and extension of a liquidity facility or credit enhancement, as set forth in the following sections. Repurchased securitisation exposures must be treated as retained securitisation exposures.

(i) Deduction

561. When a bank is required to deduct a securitisation exposure from regulatory capital, the deduction must be taken 50% from Tier 1 and 50% from Tier 2 with the one exception noted in paragraph 562. Credit enhancing I/Os (net of the amount that must be deducted from Tier 1 as in paragraph 562) are deducted 50% from Tier 1 and 50% from Tier 2. Deductions from capital may be calculated net of any specific provisions taken against the relevant securitisation exposures.

562. Banks must deduct from Tier 1 any increase in equity capital resulting from a securitisation transaction, such as that associated with expected future margin income (FMI) resulting in a gain-on-sale that is recognised in regulatory capital. Such an increase in capital is referred to as a “gain-on-sale” for the purposes of the securitisation framework.

(ii) Implicit support

564. When a bank provides implicit support to a securitisation, it must, at a minimum, hold capital against all of the 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, as defined in paragraph 562. Furthermore, the bank is required to disclose publicly that (a) it has provided non-contractual support and (b) the capital impact of doing so.

5.4.2. Operational requirements for use of external credit assessments

565. The following operational criteria concerning the use of external credit assessments apply in the standardised and IRB approaches of the securitisation framework:

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- (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 ECAI as recognised by the bank's national supervisor in accordance with paragraphs 90 to 108 with the following exception. In contrast with bullet three of paragraph 91, an eligible credit assessment must be publicly available. In other words, a rating must be published in an accessible form and included in the ECAI's transition matrix. Consequently, ratings that are made available only to the parties to a transaction do not satisfy this requirement.
 - (c) Eligible ECAs must have a demonstrated expertise in assessing securitisations, which may be evidenced by strong market acceptance.
 - (d) A bank must apply external credit assessments from eligible ECAs consistently across a given type of securitisation exposure. Furthermore, a bank cannot use the credit assessments issued by one ECAI for one or more tranches and those of another ECAI for other positions (whether retained or purchased) within the same securitisation structure that may or may not be rated by the first ECAI. Where two or more eligible ECAs can be used and these assess the credit risk of the same securitisation exposure differently, paragraphs 96 to 98 will apply.
 - (e) Where CRM is provided directly to an SPE by an eligible guarantor defined in paragraph 195 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 in paragraph 195, the covered securitisation exposures should be treated as unrated.
 - (f) In the situation where a credit risk mitigant is not obtained by the SPE but rather applied to a specific securitisation exposure within a given structure (e.g. ABS tranche), the bank must treat the exposure as if it is unrated and then use the CRM treatment outlined in chapter 4, to recognise the hedge.

5.4.3. *Standardised approach for securitisation exposures*

(i) **Scope**

566. Banks that apply the standardised approach to credit risk for the type of underlying exposure(s) securitised must use the standardised approach under the securitisation framework.

(ii) **Risk weights**

567. The risk-weighted asset amount of a securitisation exposure is computed by multiplying the amount of the position by the appropriate risk weight determined in accordance with the following tables. For off-balance sheet exposures, banks must apply a CCF and then risk weight the resultant credit equivalent amount. If such an exposure is rated, a CCF of 100% must be applied. For positions with long-term ratings of B+ and below and short-term ratings other than A-1/P-1, A-2/P-2, A-3/P-3, deduction from capital as defined in paragraph 561 is required.

Deduction is also required for unrated positions with the exception of the circumstances described in paragraphs 571 to 575.

Long-term rating category⁶⁵

External Credit Assessment	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to BB-	B+ and below or unrated
Risk Weight	20%	50%	100%	350%	Deduction

Short-term rating category

External Credit Assessment	A-1/P-1	A-2/P-2	A-3/P-3	All other ratings or unrated
Risk Weight	20%	50%	100%	Deduction

OSFI Notes

The correspondence of OSFI-recognized rating agency long- and short-term ratings to the rating categories in the Framework, described in sections 3.7.2.1 and 3.7.2.5, applies to this section as well. Note that the risk weights assigned to the rating categories in this section are in some cases different from those assigned to the rating categories in section 3.7.2.

568. The capital treatment of positions retained by originators, liquidity facilities, credit risk mitigants, and securitisations of revolving exposures are identified separately. The treatment of clean-up calls is provided in paragraphs 557 to 559.

Investors may recognise ratings on below-investment grade exposures

569. Only third-party investors, as opposed to banks that serve as originators, may recognise external credit assessments that are equivalent to BB+ to BB- for risk weighting purposes of securitisation exposures.

Originators to deduct below-investment grade exposures

570. Originating banks as defined in paragraph 543 must deduct all retained securitisation exposures rated below investment grade (i.e. BBB-).

(iii) Exceptions to general treatment of unrated securitisation exposures

571. As noted in the tables above, unrated securitisation exposures must be deducted with the following exceptions: (i) the most senior exposure in a securitisation, (ii) exposures that are in a second loss position or better in ABCP programmes and meet the requirements outlined in paragraph 574, and (iii) eligible liquidity facilities.

⁶⁵ The rating designations used in the following charts are for illustrative purposes only and do not indicate any preference for, or endorsement of, any particular external assessment system.

Treatment of unrated most senior securitisation exposures

572. If the most senior exposure in a securitisation of a traditional or synthetic securitisation is unrated, a bank that holds or guarantees such an exposure may determine the risk weight by applying the “look-through” treatment, provided the composition of the underlying pool is known at all times. Banks are not required to consider interest rate or currency swaps when determining whether an exposure is the most senior in a securitisation for the purpose of applying the “look-through” approach.

573. In the look-through treatment, the unrated most senior position receives the average risk weight of the underlying exposures subject to supervisory review. Where the bank is unable to determine the risk weights assigned to the underlying credit risk exposures, the unrated position must be deducted.

Treatment of exposures in a second loss position or better in ABCP programmes

574. Deduction is not required for those unrated securitisation exposures provided by sponsoring banks to ABCP programmes that satisfy the following requirements:

- (a) The exposure is economically in a second loss position or better and the first loss position provides significant credit protection to the second loss position;
- (b) The associated credit risk is the equivalent of investment grade or better; and
- (c) The bank holding the unrated securitisation exposure does not retain or provide the first loss position.

575. Where these conditions are satisfied, the risk weight is the greater of (i) 100% or (ii) the highest risk weight assigned to any of the underlying individual exposures covered by the facility.

Risk weights for eligible liquidity facilities

576. For eligible liquidity facilities as defined in paragraph 578 and where the conditions for use of external credit assessments in paragraph 565 are not met, the risk weight applied to the exposure’s credit equivalent amount is equal to the highest risk weight assigned to any of the underlying individual exposures covered by the facility.

(iv) Credit conversion factors for off-balance sheet exposures

577. For risk-based capital purposes, banks must determine whether, according to the criteria outlined below, an off-balance sheet securitisation exposure qualifies as an ‘eligible liquidity facility’ or an ‘eligible servicer cash advance facility’. All other off-balance sheet securitisation exposures will receive a 100% CCF.

Eligible liquidity facilities

578. Banks are permitted to treat off-balance sheet securitisation exposures as eligible liquidity facilities if the following minimum requirements are satisfied:

- (a) The facility documentation must clearly identify and limit the circumstances under which it may be drawn. Draws under the facility must be limited to the amount that is likely to be repaid fully from the liquidation of the underlying exposures and any seller-provided credit enhancements. In addition, the facility must not cover any losses

incurred in the underlying pool of exposures prior to a draw, or be structured such that draw-down is certain (as indicated by regular or continuous draws);

- (b) The facility must be subject to an asset quality test that precludes it from being drawn to cover credit risk exposures that are in default as defined in paragraphs 452 to 459. In addition, if the exposures that a liquidity facility is required to fund are externally rated securities, the facility can only be used to fund securities that are externally rated investment grade at the time of funding;
- (c) The facility cannot be drawn after all applicable (e.g. transaction-specific and programme-wide) credit enhancements from which the liquidity would benefit have been exhausted; and
- (d) Repayment of draws on the facility (i.e. assets acquired under a purchase agreement or loans made under a lending agreement) must not be subordinated to any interests of any note holder in the programme (e.g. ABCP programme) or subject to deferral or waiver.

579. Where these conditions are met, the bank may apply a 20% CCF to the amount of eligible liquidity facilities with an original maturity of one year or less, or a 50% CCF if the facility has an original maturity of more than one year. However, if an external rating of the facility itself is used for risk-weighting the facility, a 100% CCF must be applied.

Eligible liquidity facilities available only in the event of market disruption

580. Banks may apply a 0% CCF to eligible liquidity facilities that are only available in the event of a general market disruption (i.e. whereupon more than one SPE across different transactions are unable to roll over maturing commercial paper, and that inability is not the result of an impairment in the SPEs' credit quality or in the credit quality of the underlying exposures). To qualify for this treatment, the conditions provided in paragraph 578 must be satisfied. Additionally, the funds advanced by the bank to pay holders of the capital market instruments (e.g. commercial paper) when there is a general market disruption must be secured by the underlying assets, and must rank at least *pari passu* with the claims of holders of the capital market instruments.

Treatment of overlapping exposures

581. A bank may provide several types of facilities that can be drawn under various conditions. The same bank may be providing two or more of these facilities. Given the different triggers found in these facilities, it may be the case that a bank provides duplicative coverage to the underlying exposures. In other words, the facilities provided by a bank may overlap since a draw on one facility may preclude (in part) a draw under the other facility. In the case of overlapping facilities provided by the same bank, the bank does not need to hold additional capital for the overlap. Rather, it is only required to hold capital once for the position covered by the overlapping facilities (whether they are liquidity facilities or credit enhancements). Where the overlapping facilities are subject to different conversion factors, the bank must attribute the overlapping part to the facility with the highest conversion factor. However, if overlapping facilities are provided by different banks, each bank must hold capital for the maximum amount of the facility.

Eligible servicer cash advance facilities

582. Subject to national discretion, if contractually provided for, servicers may advance cash to ensure an uninterrupted flow of payments to investors so long as the servicer is entitled to full reimbursement and this right is senior to other claims on cash flows from the underlying pool of exposures. At national discretion, such undrawn servicer cash advances or facilities that are unconditionally cancellable without prior notice may be eligible for a 0% CCF.

OSFI Notes

(i) Collecting and transmitting payments

An institution whose only involvement with a particular asset securitization transaction is to collect interest and principal payments on the underlying assets and transmit these funds to the SPE or investors in the SPE securities (or a trustee representing them) should be under no obligation to remit funds to the SPE or the investors unless and until the funds are received from the obligors. Where this condition is met, this activity does not attract any capital.

An institution that is collecting interest and principal payments on the underlying assets and transmitting these funds to the SPE or investors in the SPE securities (or a trustee representing them) may also:

- structure transactions,
- analyse the underlying assets,
- perform due diligence and credit reviews,
- monitor the credit quality of the portfolio of underlying assets, and
- provide servicer advances (see conditions outlined in (ii) below).

In this role, an institution should:

- comply with the conditions specified for an institution setting up an SPE,
- have evidence available in its records that its legal advisers are satisfied that the terms of the asset securitization protect it from any liability to investors in the SPE (except normal contractual obligations relating to its role in collecting and transmitting payments), and
- ensure that any offering circular contains a highly visible, unequivocal statement that the institution, serving in this capacity, does not stand behind the issue or the SPE and will not make good on any losses in the portfolio.

Where an institution that is not making servicer advances meets all these conditions, this activity does not attract any capital.

Where an institution does not meet all these conditions, it is required to maintain capital against all debt instruments issued to third parties by the SPE.

(ii) Making servicer advances

An institution may be contractually obligated to provide funds to an SPE to ensure an uninterrupted flow of payments to investors in the SPE's securities, solely under the unusual

circumstance that payments from the underlying assets have not been received due to temporary timing differences. An institution that provides such support is typically referred to as a servicing agent and the funds provided are typically referred to as servicer advances. Where an institution acts as a servicing agent, OSFI expects the following conditions to be met:

- Servicer advances are not made to offset shortfalls in cash flow that arise from assets in default.
- The credit facility under which servicer advances are funded is unconditionally cancellable by the servicing agent.
- The total value of cash advances is limited to the total amount transferable for that collection period.
- Servicer advances rank ahead of all claims by investors in SPE securities, expenses and other cash allocations.
- The repayment of servicer advances comes from subsequent collections or the available enhancement facilities.
- Servicer advances are repaid within thirty-one business days from the day the cash is advanced.
- The servicing agent performs an assessment of the likelihood of repayment of servicer advances prior to each advance and such advances should only be made if prudent lending standards are met.

Where these conditions and the conditions in section (i) are all met, institutions should treat undrawn facilities as off-balance sheet commitments. Drawn facilities will be treated as on-balance sheet loans.

In all other circumstances, the facilities will be treated as first loss enhancements.

(v) Treatment of credit risk mitigation for securitisation exposures

583. The treatment below applies to a bank that has obtained a credit risk mitigant on a securitisation exposure. Credit risk mitigants include guarantees, credit derivatives, collateral and on-balance sheet netting. Collateral in this context refers to that used to hedge the credit risk of a securitisation exposure rather than the underlying exposures of the securitisation transaction.

584. When a bank other than the originator provides credit protection to a securitisation exposure, it must calculate a capital requirement on the covered exposure as if it were an investor in that securitisation. If a bank provides protection to an unrated credit enhancement, it must treat the credit protection provided as if it were directly holding the unrated credit enhancement.

Collateral

585. Eligible collateral is limited to that recognised under the standardised approach for CRM (paragraphs 145 and 146). Collateral pledged by SPEs may be recognised.

Guarantees and credit derivatives

586. Credit protection provided by the entities listed in paragraph 195 may be recognised. SPEs cannot be recognised as eligible guarantors.

587. Where guarantees or credit derivatives fulfil the minimum operational conditions as specified in paragraphs 189 to 194, banks can take account of such credit protection in calculating capital requirements for securitisation exposures.

588. Capital requirements for the guaranteed/protected portion will be calculated according to CRM for the standardised approach as specified in paragraphs 196 to 201.

Maturity mismatches

589. For the purpose of setting regulatory capital against a maturity mismatch, the capital requirement will be determined in accordance with paragraphs 202 to 205. When the exposures being hedged have different maturities, the longest maturity must be used.

(vi) Capital requirement for early amortisation provisions

Scope

590. As described below, an originating bank is required to hold capital against all or a portion of the investors' interest (i.e. against both the drawn and undrawn balances related to the securitised exposures) when:

- (a) It sells exposures into a structure that contains an early amortisation feature; and
- (b) The exposures sold are of a revolving nature. These involve exposures where the borrower is permitted to vary the drawn amount and repayments within an agreed limit under a line of credit (e.g. credit card receivables and corporate loan commitments).

591. The capital requirement should reflect the type of mechanism through which an early amortisation is triggered.

592. For securitisation structures wherein the underlying pool comprises revolving and term exposures, a bank must apply the relevant early amortisation treatment (outlined below in paragraphs 594 to 605) to that portion of the underlying pool containing revolving exposures.

593. Banks are not required to calculate a capital requirement for early amortisations in the following situations:

- (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 assets containing early amortisation features that mimic term structures (i.e. where the risk on the underlying facilities does not return to the originating bank);
- (c) Structures where a bank securitises one or more credit line(s) and where investors remain fully exposed to future draws by borrowers even after an early amortisation event has occurred;

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

Maximum capital requirement

594. For a bank subject to the early amortisation treatment, the total capital charge for all of its positions will be subject to a maximum capital requirement (i.e. a 'cap') equal to the greater of (i) that required for retained securitisation exposures, or (ii) the capital requirement that would apply had the exposures not been securitised. In addition, banks must deduct the entire amount of any gain-on-sale and credit enhancing I/Os arising from the securitisation transaction in accordance with paragraphs 561 to 563.

Mechanics

595. The originator's capital charge for the investors' interest is determined as the product of (a) the investors' interest, (b) the appropriate CCF (as discussed below), and (c) the risk weight appropriate to the underlying exposure type, as if the exposures had not been securitised. As described below, the CCFs depend upon whether the early amortisation repays investors through a controlled or non-controlled mechanism. They also differ according to whether the securitised exposures are uncommitted retail credit lines (e.g. credit card receivables) or other credit lines (e.g. revolving corporate facilities). A line is considered uncommitted if it is unconditionally cancellable without prior notice.

(vii) Determination of CCFs for controlled early amortisation features

596. An early amortisation feature is considered controlled when the definition as specified in paragraph 548 is satisfied.

Uncommitted retail exposures

597. For uncommitted retail credit lines (e.g. credit card receivables) in securitisations containing controlled early amortisation features, banks must compare the three-month average excess spread defined in paragraph 550 to the point at which the bank is required to trap excess spread as economically required by the structure (i.e. excess spread trapping point).

598. In cases where such a transaction does not require excess spread to be trapped, the trapping point is deemed to be 4.5 percentage points.

599. The bank must divide the excess spread level by the transaction's excess spread trapping point to determine the appropriate segments and apply the corresponding conversion factors, as outlined in the following table.

Controlled early amortisation features		
	Uncommitted	Committed
Retail credit lines	3-month average excess spread Credit Conversion Factor (CCF)	
	133.33% of trapping point or more	0% CCF
	less than 133.33% to 100% of trapping point	1% CCF
	less than 100% to 75% of trapping point	2% CCF
	less than 75% to 50% of trapping point	10% CCF
	less than 50% to 25% of trapping point	20% CCF
	less than 25%	40% CCF
Non-retail credit lines	90% CCF	90% CCF

600. Banks are required to apply the conversion factors set out above for controlled mechanisms to the investors' interest referred to in paragraph 595.

Other exposures

601. All other securitised revolving exposures (i.e. those that are committed and all non-retail exposures) with controlled early amortisation features will be subject to a CCF of 90% against the off-balance sheet exposures.

(viii) Determination of CCFs for non-controlled early amortisation features

602. Early amortisation features that do not satisfy the definition of a controlled early amortisation as specified in paragraph 548 will be considered non-controlled and treated as follows.

Uncommitted retail exposures

603. For uncommitted retail credit lines (e.g. credit card receivables) in securitisations containing non-controlled early amortisation features, banks must make the comparison described in paragraphs 597 and 598:

604. The bank must divide the excess spread level by the transaction's excess spread trapping point to determine the appropriate segments and apply the corresponding conversion factors, as outlined in the following table.

Non-controlled early amortisation features		
	Uncommitted	Committed
Retail credit lines	3-month average excess spread Credit Conversion Factor (CCF)	
	133.33% or more of trapping point	0% CCF
	less than 133.33% to 100% of trapping point	5% CCF
	less than 100% to 75% of trapping point	15% CCF
	less than 75% to 50% of trapping point	50% CCF
	less than 50% of trapping point	100% CCF
Non-retail credit lines	100% CCF	100% CCF

Other exposures

605. All other securitised revolving exposures (i.e. those that are committed and all non-retail exposures) with non-controlled early amortisation features will be subject to a CCF of 100% against the off-balance sheet exposures.

Appendix 5-I - Pillar 2 Considerations

OSFI Notes

Some of the items identified in the supervisory review process for securitization are sufficiently detailed that they may be addressed by a set of operational requirements or a specific capital treatment. For this reason, the Pillar 2 requirements for securitization set out in the Basel II framework are included in Chapter 5. Institutions are encouraged to consider both Pillar 1 and Pillar 2 requirements when undertaking securitization transactions.

Supervisory review process for securitisation

784. Further to the Pillar 1 principle that banks should take account of the economic substance of transactions in their determination of capital adequacy, supervisory authorities will monitor, as appropriate, whether banks have done so adequately. As a result, regulatory capital treatments for specific securitisation exposures might differ from those specified in Pillar 1 of the Framework, particularly in instances where the general capital requirement would not adequately and sufficiently reflect the risks to which an individual banking organisation is exposed.

785. Amongst other things, supervisory authorities may review where relevant a bank's own assessment of its capital needs and how that has been reflected in the capital calculation as well as the documentation of certain transactions to determine whether the capital requirements accord with the risk profile (e.g. substitution clauses). Supervisors will also review the manner in which banks have addressed the issue of maturity mismatch in relation to retained positions in their economic capital calculations. In particular, they will be vigilant in monitoring for the structuring of maturity mismatches in transactions to artificially reduce capital requirements. Additionally, supervisors may review the bank's economic capital assessment of actual correlation between assets in the pool and how they have reflected that in the calculation. Where supervisors consider that a bank's approach is not adequate, they will take appropriate action. Such action might include denying or reducing capital relief in the case of originated assets, or increasing the capital required against securitisation exposures acquired.

Significance of risk transfer

786. Securitisation transactions may be carried out for purposes other than credit risk transfer (e.g. funding). Where this is the case, there might still be a limited transfer of credit risk. However, for an originating bank to achieve reductions in capital requirements, the risk transfer arising from a securitisation has to be deemed significant by the national supervisory authority. If the risk transfer is considered to be insufficient or non-existent, the supervisory authority can require the application of a higher capital requirement than prescribed under Pillar 1 or, alternatively, may deny a bank from obtaining any capital relief from the securitisations. Therefore, the capital relief that can be achieved will correspond to the amount of credit risk that is effectively transferred. The following includes a set of examples where supervisors may have concerns about the degree of risk transfer, such as retaining or repurchasing significant amounts of risk or "cherry picking" the exposures to be transferred via a securitisation.

787. Retaining or repurchasing significant securitisation exposures, depending on the proportion of risk held by the originator, might undermine the intent of a securitisation to transfer credit risk. Specifically, supervisory authorities might expect that a significant portion of the

credit risk and of the nominal value of the pool be transferred to at least one independent third party at inception and on an ongoing basis. Where banks repurchase risk for market making purposes, supervisors could find it appropriate for an originator to buy part of a transaction but not, for example, to repurchase a whole tranche. Supervisors would expect that where positions have been bought for market making purposes, these positions should be resold within an appropriate period, thereby remaining true to the initial intention to transfer risk.

788. Another implication of realising only a non-significant risk transfer, especially if related to good quality unrated exposures, is that both the poorer quality unrated assets and most of the credit risk embedded in the exposures underlying the securitised transaction are likely to remain with the originator. Accordingly, and depending on the outcome of the supervisory review process, the supervisory authority may increase the capital requirement for particular exposures or even increase the overall level of capital the bank is required to hold.

Market innovations

789. As the minimum capital requirements for securitisation may not be able to address all potential issues, supervisory authorities are expected to consider new features of securitisation transactions as they arise. Such assessments would include reviewing the impact new features may have on credit risk transfer and, where appropriate, supervisors will be expected to take appropriate action under Pillar 2. A Pillar 1 response may be formulated to take account of market innovations. Such a response may take the form of a set of operational requirements and/or a specific capital treatment.

Provision of implicit support

790. Support to a transaction, whether contractual (i.e. credit enhancements provided at the inception of a securitised transaction) or non-contractual (implicit support) can take numerous forms. For instance, contractual support can include over collateralisation, credit derivatives, spread accounts, contractual recourse obligations, subordinated notes, credit risk mitigants provided to a specific tranche, the subordination of fee or interest income or the deferral of margin income, and clean-up calls that exceed 10 percent of the initial issuance. Examples of implicit support include the purchase of deteriorating credit risk exposures from the underlying pool, the sale of discounted credit risk exposures into the pool of securitised credit risk exposures, the purchase of underlying exposures at above market price or an increase in the first loss position according to the deterioration of the underlying exposures.

791. The provision of implicit (or non-contractual) support, as opposed to contractual credit support (i.e. credit enhancements), raises significant supervisory concerns. For traditional securitisation structures the provision of implicit support undermines the clean break criteria, which when satisfied would allow banks to exclude the securitised assets from regulatory capital calculations. For synthetic securitisation structures, it negates the significance of risk transference. By providing implicit support, banks signal to the market that the risk is still with the bank and has not in effect been transferred. The institution's capital calculation therefore understates the true risk. Accordingly, national supervisors are expected to take appropriate action when a banking organisation provides implicit support.

792. When a bank has been found to provide implicit support to a securitisation, it will be required to hold capital against all of the underlying exposures associated with the structure as if they had not been securitised. It will also be required to disclose publicly that it was found to have provided non-contractual support, as well as the resulting increase in the capital charge

(as noted above). The aim is to require banks to hold capital against exposures for which they assume the credit risk, and to discourage them from providing non-contractual support.

793. If a bank is found to have provided implicit support on more than one occasion, the bank is required to disclose its transgression publicly and national supervisors will take appropriate action that may include, but is not limited to, one or more of the following:

- The bank may be prevented from gaining favourable capital treatment on securitised assets for a period of time to be determined by the national supervisor;
- The bank may be required to hold capital against all securitised assets as though the bank had created a commitment to them, by applying a conversion factor to the risk weight of the underlying assets;
- For purposes of capital calculations, the bank may be required to treat all securitised assets as if they remained on the balance sheet;
- The bank may be required by its national supervisory authority to hold regulatory capital in excess of the minimum risk-based capital ratios.

794. Supervisors will be vigilant in determining implicit support and will take appropriate supervisory action to mitigate the effects. Pending any investigation, the bank may be prohibited from any capital relief for planned securitisation transactions (moratorium). National supervisory response will be aimed at changing the bank's behaviour with regard to the provision of implicit support, and to correct market perception as to the willingness of the bank to provide future recourse beyond contractual obligations.

Residual risks

795. As with credit risk mitigation techniques more generally, supervisors will review the appropriateness of banks' approaches to the recognition of credit protection. In particular, with regard to securitisations, supervisors will review the appropriateness of protection recognised against first loss credit enhancements. On these positions, expected loss is less likely to be a significant element of the risk and is likely to be retained by the protection buyer through the pricing. Therefore, supervisors will expect banks' policies to take account of this in determining their economic capital. Where supervisors do not consider the approach to protection recognised is adequate, they will take appropriate action. Such action may include increasing the capital requirement against a particular transaction or class of transactions.

Call provisions

796. Supervisors expect a bank not to make use of clauses that entitles it to call the securitisation transaction or the coverage of credit protection prematurely if this would increase the bank's exposure to losses or deterioration in the credit quality of the underlying exposures.

797. Besides the general principle stated above, supervisors expect banks to only execute clean-up calls for economic business purposes, such as when the cost of servicing the outstanding credit exposures exceeds the benefits of servicing the underlying credit exposures.

798. Subject to national discretion, supervisory authorities may require a review prior to the bank exercising a call which can be expected to include consideration of:

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- The rationale for the bank's decision to exercise the call; and
 - The impact of the exercise of the call on the bank's regulatory capital ratio.

799. The supervisory authority may also require the bank to enter into a follow-up transaction, if necessary, depending on the bank's overall risk profile, and existing market conditions.

800. Date related calls should be set at a date no earlier than the duration or the weighted average life of the underlying securitisation exposures. Accordingly, supervisory authorities may require a minimum period to elapse before the first possible call date can be set, given, for instance, the existence of up-front sunk costs of a capital market securitisation transaction.

Early amortisation

801. Supervisors should review how banks internally measure, monitor, and manage risks associated with securitisations of revolving credit facilities, including an assessment of the risk and likelihood of early amortisation of such transactions. At a minimum, supervisors should ensure that banks have implemented reasonable methods for allocating economic capital against the economic substance of the credit risk arising from revolving securitisations and should expect banks to have adequate capital and liquidity contingency plans that evaluate the probability of an early amortisation occurring and address the implications of both scheduled and early amortisation. In addition, the capital contingency plan should address the possibility that the bank will face higher levels of required capital under the early amortisation Pillar 1 capital requirement.

802. Because most early amortisation triggers are tied to excess spread levels, the factors affecting these levels should be well understood, monitored, and managed, to the extent possible (see paragraphs 790 to 794 on implicit support), by the originating bank. For example, the following factors affecting excess spread should generally be considered:

- Interest payments made by borrowers on the underlying receivable balances;
- Other fees and charges to be paid by the underlying obligors (e.g. late-payment fees, cash advance fees, over-limit fees);
- Gross charge-offs;
- Principal payments;
- Recoveries on charged-off loans;
- Interchange income;
- Interest paid on investors' certificates;
- Macroeconomic factors such as bankruptcy rates, interest rate movements, unemployment rates; etc.

803. Banks should consider the effects that changes in portfolio management or business strategies may have on the levels of excess spread and on the likelihood of an early amortisation event. For example, marketing strategies or underwriting changes that result in lower finance charges or higher charge-offs, might also lower excess spread levels and increase the likelihood of an early amortisation event.

804. Banks should use techniques such as static pool cash collections analyses and stress tests to better understand pool performance. These techniques can highlight adverse trends or

potential adverse impacts. Banks should have policies in place to respond promptly to adverse or unanticipated changes. Supervisors will take appropriate action where they do not consider these policies adequate. Such action may include, but is not limited to, directing a bank to obtain a dedicated liquidity line or raising the early amortisation credit conversion factor, thus, increasing the bank's capital requirements.

805. While the early amortisation capital charge described in Pillar 1 is meant to address potential supervisory concerns associated with an early amortisation event, such as the inability of excess spread to cover potential losses, the policies and monitoring described in this section recognise that a given level of excess spread is not, by itself, a perfect proxy for credit performance of the underlying pool of exposures. In some circumstances, for example, excess spread levels may decline so rapidly as to not provide a timely indicator of underlying credit deterioration. Further, excess spread levels may reside far above trigger levels, but still exhibit a high degree of volatility which could warrant supervisory attention. In addition, excess spread levels can fluctuate for reasons unrelated to underlying credit risk, such as a mismatch in the rate at which finance charges reprice relative to investor certificate rates. Routine fluctuations of excess spread might not generate supervisory concerns, even when they result in different capital requirements. This is particularly the case as a bank moves in or out of the first step of the early amortisation credit conversion factors. On the other hand, existing excess spread levels may be maintained by adding (or designating) an increasing number of new accounts to the master trust, an action that would tend to mask potential deterioration in a portfolio. For all of these reasons, supervisors will place particular emphasis on internal management, controls, and risk monitoring activities with respect to securitisations with early amortisation features.

806. Supervisors expect that the sophistication of a bank's system in monitoring the likelihood and risks of an early amortisation event will be commensurate with the size and complexity of the bank's securitisation activities that involve early amortisation provisions.

807. For controlled amortisations specifically, supervisors may also review the process by which a bank determines the minimum amortisation period required to pay down 90% of the outstanding balance at the point of early amortisation. Where a supervisor does not consider this adequate it will take appropriate action, such as increasing the conversion factor associated with a particular transaction or class of transactions.

Chapter 6. Operational Risk

This chapter contains an extract from the Basel II framework, *Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version* (June 2006) that applies to Canadian institutions. The extract has been annotated to indicate OSFI's position on items of national discretion.

6.1. Definition of operational risk

644. Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk,⁶⁶ but excludes strategic and reputational risk.

6.2. The measurement methodologies

645. The framework outlined below presents three methods for calculating operational risk capital charges in a continuum of increasing sophistication and risk sensitivity: (i) the Basic Indicator Approach; (ii) the Standardised Approach; and (iii) Advanced Measurement Approaches (AMA).

646. Banks are encouraged to move along the spectrum of available approaches as they develop more sophisticated operational risk measurement systems and practices. Qualifying criteria for the Standardised Approach are presented below.

OSFI Notes

Qualifying criteria for the AMA can be found in Chapter 7 of CAR Guideline A-1.

647. Internationally active banks and banks with significant operational risk exposures (for example, specialised processing banks) are expected to use an approach that is more sophisticated than the Basic Indicator Approach and that is appropriate for the risk profile of the institution.⁶⁷ A bank will be permitted to use the Basic Indicator or Standardised Approach for some parts of its operations and an AMA for others provided certain minimum criteria are met, see paragraphs 680 to 683.

648. A bank will not be allowed to choose to revert to a simpler approach once it has been approved for a more advanced approach without supervisory approval. However, if a supervisor determines that a bank using a more advanced approach no longer meets the qualifying criteria for this approach, it may require the bank to revert to a simpler approach for some or all of its operations, until it meets the conditions specified by the supervisor for returning to a more advanced approach.

⁶⁶ Legal risk includes, but is not limited to, exposure to fines, penalties, or punitive damages resulting from supervisory actions, as well as private settlements.

⁶⁷ Supervisors will review the capital requirement produced by the operational risk approach used by a bank (whether Basic Indicator Approach, Standardised Approach or AMA) for general credibility, especially in relation to a firm's peers. In the event that credibility is lacking, appropriate supervisory action under Pillar 2 will be considered.

6.2.1. The Basic Indicator Approach

649. Banks using the Basic Indicator Approach must hold capital for operational risk equal to the average over the previous three years of a fixed percentage (denoted alpha) of positive annual gross income. Figures for any year in which annual gross income is negative or zero should be excluded from both the numerator and denominator when calculating the average.⁶⁸

The charge may be expressed as follows:

$$K_{BIA} = [\Sigma(GI_{1...n} \times \alpha)]/n$$

Where

K_{BIA} = the capital charge under the Basic Indicator Approach

GI = annual gross income, where positive, over the previous three years

n = number of the previous three years for which gross income is positive

α = 15%, which is set by the Committee, relating the industry wide level of required capital to the industry wide level of the indicator.

OSFI Notes

Newly incorporated institutions using the Basic Indicator Approach having fewer than 12 quarters of gross income data should calculate the operational risk capital charge using available gross income data to develop proxies for the missing portions of the required three years' data. Institutions should refer to the reporting instructions for OSFI's capital adequacy return for further guidance.

650. Gross income is defined as net interest income plus net non-interest income.⁶⁹ It is intended that this measure should: (i) be gross of any provisions (e.g. for unpaid interest); (ii) be gross of operating expenses, including fees paid to outsourcing service providers;⁷⁰ (iii) exclude realised profits/losses from the sale of securities in the banking book;⁷¹ and (iv) exclude extraordinary or irregular items as well as income derived from insurance.

OSFI Notes

Institutions should refer to the reporting instructions for the capital adequacy return for the definition of gross income to be used when calculating operational risk capital under the Basic Indicator Approach or the Standardized Approach.

The gross income definition excludes extraordinary items as reported under line 33 on the Consolidated Statement of Income. Extraordinary items should be reported on the basis of

⁶⁸ If negative gross income distorts a bank's Pillar 1 capital charge, supervisors will consider appropriate supervisory action under Pillar 2.

⁶⁹ As defined by national supervisors and/or national accounting standards.

⁷⁰ In contrast to fees paid for services that are outsourced, fees received by banks that provide outsourcing services shall be included in the definition of gross income.

⁷¹ Realised profits/losses from securities classified as "held to maturity" and "available for sale", which typically constitute items of the banking book (e.g. under certain accounting standards), are also excluded from the definition of gross income.

Canadian generally accepted accounting principles (GAAP). Where an institution reports an extraordinary item on its Consolidated Statement of Income (P3) return and including that item in the definition of Gross Income would have had a material impact on the calculation of operational risk regulatory capital, the institution should provide its OSFI relationship manager with an explanation of the nature and significance of the extraordinary item.

OSFI Notes

Institutions should perform a reconciliation between the gross income reported on the capital adequacy return and the amounts reported on the Consolidated Statement of Income (P3) regulatory return. In addition, OSFI expects institutions to perform a reconciliation between the gross income amount reported on the capital adequacy return and amounts reported on the audited financial statements. This information should be available to OSFI upon request.

These reconciliations should identify any items that are excluded from the operational risk calculation as per the definition of gross income but are included in the Consolidated Statement of Income (P3) regulatory return or audited financial statements.

OSFI Notes

When an institution makes a material acquisition, the operational risk capital calculation should be adjusted to reflect those activities. Since the gross income calculation is based on a rolling 12-quarter average, the most recent four quarters of gross income for the acquired business should be based on actual gross income amounts reported by the acquired business. Estimates may be used for the previous eight quarters when actual amounts are not available.

For institutions using the Basic Indicator Approach, actual gross income amounts must be used for the most recent four quarters. Estimates may be used for the previous eight quarters when actual amounts are not available.

When an institution makes a divestiture, the gross income calculation may be adjusted, with supervisory approval, to reflect this divestiture.

651. As a point of entry for capital calculation, no specific criteria for use of the Basic Indicator Approach are set out in this Framework. Nevertheless, banks using this approach are encouraged to comply with the Committee's guidance on *Sound Practices for the Management and Supervision of Operational Risk*, February 2003.

6.2.2. The Standardised Approach^{72,73}

652. In the Standardised Approach, banks' activities are divided into eight business lines: corporate finance, trading & sales, retail banking, commercial banking, payment & settlement, agency services, asset management, and retail brokerage. The business lines are defined in detail in Annex 8.

653. Within each business line, gross income is a broad indicator that serves as a proxy for the scale of business operations and thus the likely scale of operational risk exposure within each of these business lines. The capital charge for each business line is calculated by multiplying gross income by a factor (denoted beta) assigned to that business line. Beta serves as a proxy for the industry-wide relationship between the operational risk loss experience for a given business line and the aggregate level of gross income for that business line. It should be noted that in the Standardised Approach gross income is measured for each business line, not the whole institution, i.e. in corporate finance, the indicator is the gross income generated in the corporate finance business line.

⁷² The Committee intends to reconsider the calibration of the Basic Indicator and Standardised Approaches when more risk-sensitive data are available to carry out this recalibration. Any such recalibration would not be intended to affect significantly the overall calibration of the operational risk component of the Pillar 1 capital charge.

⁷³ **The Alternative Standardised Approach**

At national supervisory discretion a supervisor can choose to allow a bank to use the Alternative Standardised Approach (ASA) provided the bank is able to satisfy its supervisor that this alternative approach provides an improved basis by, for example, avoiding double counting of risks. Once a bank has been allowed to use the ASA, it will not be allowed to revert to use of the Standardised Approach without the permission of its supervisor. It is not envisaged that large diversified banks in major markets would use the ASA.

Under the ASA, the operational risk capital charge/methodology is the same as for the Standardised Approach except for two business lines – retail banking and commercial banking. For these business lines, loans and advances – multiplied by a fixed factor 'm' – replaces gross income as the exposure indicator. The betas for retail and commercial banking are unchanged from the Standardised Approach. The ASA operational risk capital charge for retail banking (with the same basic formula for commercial banking) can be expressed as:

$$K_{RB} = \beta_{RB} \times m \times LA_{RB}$$

Where:

K_{RB} is the capital charge for the retail banking business line

β_{RB} is the beta for the retail banking business line

LA_{RB} is total outstanding retail loans and advances (non-risk weighted and gross of provisions), averaged over the past three years

m is 0.035

For the purposes of the ASA, total loans and advances in the retail banking business line consists of the total drawn amounts in the following credit portfolios: retail, SMEs treated as retail, and purchased retail receivables. For commercial banking, total loans and advances consists of the drawn amounts in the following credit portfolios: corporate, sovereign, bank, specialised lending, SMEs treated as corporate and purchased corporate receivables. The book value of securities held in the banking book should also be included.

Under the ASA, banks may aggregate retail and commercial banking (if they wish to) using a beta of 15%. Similarly, those banks that are unable to disaggregate their gross income into the other six business lines can aggregate the total gross income for these six business lines using a beta of 18%, with negative gross income treated as described in paragraph 654.

As under the Standardised Approach, the total capital charge for the ASA is calculated as the simple summation of the regulatory capital charges across each of the eight business lines.

654. The total capital charge is calculated as the three-year average of the simple summation of the regulatory capital charges across each of the business lines in each year. In any given year, negative capital charges (resulting from negative gross income) in any business line may offset positive capital charges in other business lines without limit.⁷⁴ However, where the aggregate capital charge across all business lines within a given year is negative, then the input to the numerator for that year will be zero.⁷⁵ The total capital charge may be expressed as:

$$K_{TSA} = \{\sum_{\text{years 1-3}} \max[\sum(GI_{1-8} \times \beta_{1-8}), 0]\} / 3$$

Where:

K_{TSA} = the capital charge under the Standardised Approach

GI_{1-8} = annual gross income in a given year, as defined above in the Basic Indicator Approach, for each of the eight business lines

β_{1-8} = a fixed percentage, set by the Committee, relating the level of required capital to the level of the gross income for each of the eight business lines. The values of the betas are detailed below.

Business Lines	Beta Factors
Corporate finance (β_1)	18%
Trading and sales (β_2)	18%
Retail banking (β_3)	12%
Commercial banking (β_4)	15%
Payment and settlement (β_5)	18%
Agency services (β_6)	15%
Asset management (β_7)	12%
Retail brokerage (β_8)	12%

OSFI Notes

Newly incorporated institutions intending to use the Standardized Approach having fewer than 12 quarters of gross income data will be expected to meet all of the qualifying criteria for the Standardized Approach, including the business line mapping requirements outlined in Annex 8. These institutions should use available gross income data to develop proxies for the missing portions of the required three years' data. Institutions should refer to the reporting instructions for OSFI's capital adequacy return for further guidance.

⁷⁴ At national discretion, supervisors may adopt a more conservative treatment of negative gross income.

⁷⁵ As under the Basic Indicator Approach, if negative gross income distorts a bank's Pillar 1 capital charge under the Standardised Approach, supervisors will consider appropriate supervisory action under Pillar 2.

OSFI Notes

When an institution makes a material acquisition, the operational risk capital calculation should be adjusted to reflect those activities. Since the gross income calculation is based on a rolling 12-quarter average, the most recent four quarters of gross income for the acquired business should be based on actual gross income amounts reported by the acquired business. Estimates may be used for the previous eight quarters when actual amounts are not available.

For institutions using the Standardized Approach, the gross income from the most recent four quarters for the acquired business must be mapped into the eight Basel business lines. Once an institution has obtained the percentage allocation of the gross income from the acquired entity across the eight Basel business lines for the most recent four quarters, it may apply this allocation to the previous eight quarters of gross income. Thus, the mapping exercise for the acquired business need only be performed for the most recent four quarters. The mapping results can be applied to the total gross income of the acquired business for the previous eight quarters to determine the percentage assigned to the eight Basel business lines.

When an institution makes a divestiture, the gross income calculation may be adjusted, with supervisory approval, to reflect this divestiture.

OSFI Notes

Institutions incorporated in Canada are not permitted to use the Alternative Standardized Approach for any part of their operations.

OSFI Notes

For domestic institutions implementing the Standardized Approach, OSFI will allow subsidiaries of these institutions to use either the Basic Indicator Approach or the Standardized Approach to determine operational risk regulatory capital for the subsidiary.

6.3. *Qualifying criteria*

6.3.1. *The Standardised Approach*⁷⁶

660. In order to qualify for use of the Standardised Approach, a bank must satisfy its supervisor that, at a minimum:

- Its board of directors and senior management, as appropriate, are actively involved in the oversight of the operational risk management framework;

⁷⁶ Supervisors allowing banks to use the Alternative Standardised Approach must decide on the appropriate qualifying criteria for that approach, as the criteria set forth in paragraphs 662 and 663 of this section may not be appropriate.

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- It has an operational risk management system that is conceptually sound and is implemented with integrity; and
 - It has sufficient resources in the use of the approach in the major business lines as well as the control and audit areas.

661. Supervisors will have the right to insist on a period of initial monitoring of a bank's Standardised Approach before it is used for regulatory capital purposes.

662. A bank must develop specific policies and have documented criteria for mapping gross income for current business lines and activities into the standardised framework. The criteria must be reviewed and adjusted for new or changing business activities as appropriate. The principles for business line mapping are set out in Annex 8.

663. As some internationally active banks will wish to use the Standardised Approach, it is important that such banks have adequate operational risk management systems. Consequently, an internationally active bank using the Standardised Approach must meet the following additional criteria:⁷⁷

OSFI Notes

All institutions implementing the Standardized Approach should meet the criteria set out in paragraph 663. OSFI will consider the institution's risk profile and complexity when reviewing the institution's self-assessment of compliance with these criteria.

- (a) The bank must have an operational risk management system with clear responsibilities assigned to an operational risk management function. The operational risk management function is responsible for developing strategies to identify, assess, monitor and control/mitigate operational risk; for codifying firm-level policies and procedures concerning operational risk management and controls; for the design and implementation of the firm's operational risk assessment methodology; and for the design and implementation of a risk-reporting system for operational risk.

OSFI Notes

The size and complexity of an institution may not warrant the existence of a specific organizational unit dedicated to operational risk management. Where this is the case, an institution should be able to demonstrate to OSFI how its operational risk management framework is appropriate to the size and complexity of the institution's operations. Where an independent unit does not exist, the above responsibilities should be assigned to individuals within the institution, who are independent from the relevant business line.

The term operational risk management system does not necessarily refer to a technology application for implementing operational risk management across the institution, although this may be a part of an institution's approach to managing operational risk. Rather, the term system refers to the collective policies and processes in place for identifying, assessing, monitoring and controlling operational risk across the institution.

⁷⁷ For other banks, these criteria are recommended, with national discretion to impose them as requirements.

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- (b) As part of the bank's internal operational risk assessment system, the bank must systematically track relevant operational risk data including material losses by business line. Its operational risk assessment system must be closely integrated into the risk management processes of the bank. Its output must be an integral part of the process of monitoring and controlling the bank's operational risk profile. For instance, this information must play a prominent role in risk reporting, management reporting, and risk analysis. The bank must have techniques for creating incentives to improve the management of operational risk throughout the firm.

OSFI Notes

All institutions implementing the Standardized Approach should be able to track and report relevant operational risk data including material operational risk losses by significant business line. The sophistication of this tracking and reporting mechanism should be appropriate for the size of the institution, taking into account its reporting structure as well as the operational risk exposure of the institution.

- (c) There must be regular reporting of operational risk exposures, including material operational losses, to business unit management, senior management, and to the board of directors. The bank must have procedures for taking appropriate action according to the information within the management reports.

OSFI Notes

All institutions implementing the Standardized Approach should develop regular reporting of operational risk exposures within the institution and to the board of directors. The frequency and content of this reporting should be appropriate for the reporting structure as well as the nature, complexity and risk profile of the institution. The need to formalize this reporting should also reflect the internal structure of the institution (e.g., the number of employees, the reporting hierarchy). All institutions should develop procedures for taking appropriate action based on the information contained in the operational risk reports.

- (d) The bank's operational risk management system must be well documented. The bank must have a routine in place for ensuring compliance with a documented set of internal policies, controls and procedures concerning the operational risk management system, which must include policies for the treatment of non-compliance issues.

OSFI Notes

All institutions should develop processes for ensuring compliance with a documented set of internal policies, controls and procedures concerning the management of operational risk.

- (e) The bank's operational risk management processes and assessment system must be subject to validation and regular independent review. These reviews must include both the activities of the business units and of the operational risk management function.

OSFI Notes

Where the size and complexity of the institution may not warrant the existence of a specific organizational unit dedicated to operational risk management, independent review should focus

on the operational risk management processes and may be integrated with the review of the respective business activities.

- (f) The bank's operational risk assessment system (including the internal validation processes) must be subject to regular review by external auditors and/or supervisors.

OSFI Notes

External audit reviews of an institution's operational risk assessment system are not mandated by OSFI.

6.4. Partial use

680. A bank will be permitted to use an AMA for some parts of its operations and the Basic Indicator Approach or Standardised Approach for the balance (partial use), provided that the following conditions are met:

- All operational risks of the bank's global, consolidated operations are captured;
- All of the bank's operations that are covered by the AMA meet the qualitative criteria for using an AMA, while those parts of its operations that are using one of the simpler approaches meet the qualifying criteria for that approach;
- On the date of implementation of an AMA, a significant part of the bank's operational risks are captured by the AMA; and
- The bank provides its supervisor with a plan specifying the timetable to which it intends to roll out the AMA across all but an immaterial part of its operations. The plan should be driven by the practicality and feasibility of moving to the AMA over time, and not for other reasons.

OSFI Notes

OSFI will allow partial use for an institution adopting the Standardized Approach on a transitional basis only. An institution will be permitted to use the Basic Indicator Approach for part of its operations for a period not exceeding three years after implementation of the Standardized Approach. OSFI will work with the industry to develop an acceptable threshold for determining the percentage of an institution's operations to be covered by the Standardized Approach on implementation date. OSFI will permit partial use only where the institution can demonstrate that it is not being implemented for capital arbitrage purposes. OSFI expects partial use to be used only under specific circumstances where the bank can develop a clear rationale for why it is needed.

Annex 8 - Mapping of Business Lines

Mapping of Business Lines

Level 1	Level 2	Activity Groups
Corporate Finance	Corporate Finance	Mergers and acquisitions, underwriting, privatisations, securitisation, research, debt (government, high yield), equity, syndications, IPO, secondary private placements
	Municipal/Government Finance	
	Merchant Banking	
	Advisory Services	
Trading & Sales	Sales	Fixed income, equity, foreign exchanges, commodities, credit, funding, own position securities, lending and repos, brokerage, debt, prime brokerage
	Market Making	
	Proprietary Positions	
	Treasury	
Retail Banking	Retail Banking	Retail lending and deposits, banking services, trust and estates
	Private Banking	Private lending and deposits, banking services, trust and estates, investment advice
	Card Services	Merchant/commercial/corporate cards, private labels and retail
Commercial Banking	Commercial Banking	Project finance, real estate, export finance, trade finance, factoring, leasing, lending, guarantees, bills of exchange
Payment and Settlement ⁷⁸	External Clients	Payments and collections, funds transfer, clearing and settlement
Agency Services	Custody	Escrow, depository receipts, securities lending (customers) corporate actions
	Corporate Agency	Issuer and paying agents
	Corporate Trust	
Asset Management	Discretionary Fund Management	Pooled, segregated, retail, institutional, closed, open, private equity
	Non-Discretionary Fund Management	Pooled, segregated, retail, institutional, closed, open
Retail Brokerage	Retail Brokerage	Execution and full service

⁷⁸ Payment and settlement losses related to a bank's own activities would be incorporated in the loss experience of the affected business line.

Principles for business line mapping⁷⁹

- (a) All activities must be mapped into the eight level 1 business lines in a mutually exclusive and jointly exhaustive manner.
- (b) Any banking or non-banking activity which cannot be readily mapped into the business line framework, but which represents an ancillary function to an activity included in the framework, must be allocated to the business line it supports. If more than one business line is supported through the ancillary activity, an objective mapping criteria must be used.
- (c) When mapping gross income, if an activity cannot be mapped into a particular business line then the business line yielding the highest charge must be used. The same business line equally applies to any associated ancillary activity.
- (d) Banks may use internal pricing methods to allocate gross income between business lines provided that total gross income for the bank (as would be recorded under the Basic Indicator Approach) still equals the sum of gross income for the eight business lines.
- (e) The mapping of activities into business lines for operational risk capital purposes must be consistent with the definitions of business lines used for regulatory capital calculations in other risk categories, i.e. credit and market risk. Any deviations from this principle must be clearly motivated and documented.

⁷⁹ Supplementary business line mapping guidance

There are a variety of valid approaches that banks can use to map their activities to the eight business lines, provided the approach used meets the business line mapping principles. Nevertheless, the Committee is aware that some banks would welcome further guidance. The following is therefore an example of one possible approach that could be used by a bank to map its gross income:

Gross income for retail banking consists of net interest income on loans and advances to retail customers and SMEs treated as retail, plus fees related to traditional retail activities, net income from swaps and derivatives held to hedge the retail banking book, and income on purchased retail receivables. To calculate net interest income for retail banking, a bank takes the interest earned on its loans and advances to retail customers less the weighted average cost of funding of the loans (from whatever source — retail or other deposits).

Similarly, gross income for commercial banking consists of the net interest income on loans and advances to corporate (plus SMEs treated as corporate), interbank and sovereign customers and income on purchased corporate receivables, plus fees related to traditional commercial banking activities including commitments, guarantees, bills of exchange, net income (e.g. from coupons and dividends) on securities held in the banking book, and profits/losses on swaps and derivatives held to hedge the commercial banking book. Again, the calculation of net interest income is based on interest earned on loans and advances to corporate, interbank and sovereign customers less the weighted average cost of funding for these loans (from whatever source).

For trading and sales, gross income consists of profits/losses on instruments held for trading purposes (i.e. in the mark-to-market book), net of funding cost, plus fees from wholesale broking.

For the other five business lines, gross income consists primarily of the net fees/commissions earned in each of these businesses. Payment and settlement consists of fees to cover provision of payment/settlement facilities for wholesale counterparties. Asset management is management of assets on behalf of others.

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- (f) The mapping process used must be clearly documented. In particular, written business line definitions must be clear and detailed enough to allow third parties to replicate the business line mapping. Documentation must, among other things, clearly motivate any exceptions or overrides and be kept on record.
 - (g) Processes must be in place to define the mapping of any new activities or products.
 - (h) Senior management is responsible for the mapping policy (which is subject to the approval by the board of directors).
 - (i) The mapping process to business lines must be subject to independent review.

OSFI Notes

Institutions should develop a business line mapping process consistent with these principles. The mapping process should be objective, verifiable and repeatable such that the overall operational risk capital would not change by a material amount based on misclassification of business line mapping.

When an institution undergoes internal management restructuring, the regulatory mapping would not have to be restated for prior periods if the institution can demonstrate that this type of restructuring would not result in material differences in the operational risk capital charge. When management restructuring occurs, this assessment should be documented by the institution and be made available to OSFI upon request.

Annex 9 - Detailed Loss Event Type Classification

Detailed Loss Event Type Classification

Event-Type Category (Level 1)	Definition	Categories (Level 2)	Activity Examples (Level 3)
Internal fraud	Losses due to acts of a type intended to defraud, misappropriate property or circumvent regulations, the law or company policy, excluding diversity/discrimination events, which involves at least one internal party	Unauthorised Activity	Transactions not reported (intentional) Transaction type unauthorised (w/monetary loss) Mismarking of position (intentional)
		Theft and Fraud	Fraud / credit fraud / worthless deposits Theft / extortion / embezzlement / robbery Misappropriation of assets Malicious destruction of assets Forgery Check kiting Smuggling Account take-over / impersonation / etc. Tax non-compliance / evasion (wilful) Bribes / kickbacks Insider trading (not on firm's account)
External fraud	Losses due to acts of a type intended to defraud, misappropriate property or circumvent the law, by a third party	Theft and Fraud	Theft/Robbery Forgery Check kiting
		Systems Security	Hacking damage Theft of information (w/monetary loss)
Employment Practices and Workplace Safety	Losses arising from acts inconsistent with employment, health or safety laws or agreements, from payment of personal injury claims, or from diversity / discrimination events	Employee Relations	Compensation, benefit, termination issues Organised labour activity
		Safe Environment	General liability (slip and fall, etc.) Employee health & safety rules events Workers compensation
		Diversity & Discrimination	All discrimination types

Event-Type Category (Level 1)	Definition	Categories (Level 2)	Activity Examples (Level 3)
Clients, Products & Business Practices	Losses arising from an unintentional or negligent failure to meet a professional obligation to specific clients (including fiduciary and suitability requirements), or from the nature or design of a product.	Suitability, Disclosure & Fiduciary	Fiduciary breaches / guideline violations Suitability / disclosure issues (KYC, etc.) Retail customer disclosure violations Breach of privacy Aggressive sales Account churning Misuse of confidential information Lender liability
		Improper Business or Market Practices	Antitrust Improper trade / market practices Market manipulation Insider trading (on firm's account) Unlicensed activity Money laundering
		Product Flaws	Product defects (unauthorised, etc.) Model errors
		Selection, Sponsorship & Exposure	Failure to investigate client per guidelines Exceeding client exposure limits
		Advisory Activities	Disputes over performance of advisory activities
Damage to Physical Assets	Losses arising from loss or damage to physical assets from natural disaster or other events.	Disasters and other events	Natural disaster losses Human losses from external sources (terrorism, vandalism)
Business disruption and system failures	Losses arising from disruption of business or system failures	Systems	Hardware Software Telecommunications Utility outage / disruptions
Execution, Delivery & Process Management	Losses from failed transaction processing or process management, from relations with trade counterparties and vendors	Transaction Capture, Execution & Maintenance	Miscommunication Data entry, maintenance or loading error Missed deadline or responsibility Model / system misoperation Accounting error / entity attribution error Other task misperformance Delivery failure Collateral management failure Reference Data Maintenance

Event-Type Category (Level 1)	Definition	Categories (Level 2)	Activity Examples (Level 3)
		Monitoring and Reporting	Failed mandatory reporting obligation Inaccurate external report (loss incurred)
		Customer Intake and Documentation	Client permissions / disclaimers missing Legal documents missing / incomplete
		Customer / Client Account Management	Unapproved access given to accounts Incorrect client records (loss incurred) Negligent loss or damage of client assets
		Trade Counterparties	Non-client counterparty misperformance Misc. non-client counterparty disputes
		Vendors & Suppliers	Outsourcing Vendor disputes

