



Guideline

Subject: Minimum Continuing Capital and Surplus Requirements

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Subsection 515(1), 992(1) and 608(1) of the Insurance Companies Act (ICA) requires federally regulated life insurance companies and societies, holding companies and companies operating in Canada on a branch basis, respectively, to maintain adequate capital or to maintain an adequate margin of assets in Canada over liabilities in Canada. Guideline A: *Minimum Continuing Capital and Surplus Requirements* (MCCSR) is not made pursuant to subsections 515(2), 992(2) and 608(3) of the ICA. However, the guideline along with Guideline A-4: *Regulatory Capital and Internal Capital Targets* provide the framework within which the Superintendent assesses whether a life insurer¹ maintains adequate capital or an adequate margin pursuant to subsection 515(1), 992(1) and 608(1). Notwithstanding that a life insurer may meet these standards, the Superintendent may direct the life insurer to increase its capital under subsection 515(3), 992(3) or 608(4).

This guideline establishes standards, using a risk-based approach, for measuring specific life insurer risks and for aggregating the results to calculate the amount of a life insurer's regulatory required capital to support these risks. The guideline also defines and establishes criteria for determining the amount of qualifying regulatory available capital.

The MCCSR is only one component of the required assets that foreign life insurers must maintain in Canada. Foreign life insurers must also vest assets in Canada as prescribed under the *Assets (Foreign Companies) Regulations* of the ICA.

Life insurers are required to apply this version of the guideline for reporting periods ending on or after January 1, 2016. Early application of this version of the guideline is not permitted.

¹ For purposes of this guideline, "life insurers" refers to all federally regulated insurers, including Canadian branches of foreign life companies, fraternal benefit societies, regulated insurance holding companies and non-operating insurance companies.



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Chapter 1. Overview and General Requirements

This chapter provides an overview of the guideline, and sets out general requirements. More detailed information on specific components of the calculation is contained in subsequent chapters. The requirements in this guideline are updated regularly by the Superintendent as experience with the MCCR formula develops, as the risk profiles of life insurers change, and so that risks may be better considered.

1.1. Overview

1.1.1. Qualifying Regulatory Available Capital

The determination of qualifying regulatory available capital (Available Capital) is detailed in chapter [2](#). It comprises two tiers, tier 1 (core capital) and tier 2 (supplementary capital), and involves certain deductions, limits and restrictions.

The determination of Available Capital includes all subsidiaries that are consolidated for the purpose of calculating the Base Required Capital.

1.1.2. Base Required Capital

A life insurer's Base Required Capital is determined as the sum of the capital requirements for each of five risk components. The component capital requirements are determined using factor-based or other methods that are applied to specific on- and off-balance sheet assets or liabilities.

The five risk components are:

- asset default (C-1) risk (risk of loss resulting from on-balance sheet asset default and from contingencies in respect of off-balance sheet exposure and related loss of income; and the loss of market value of equities and related reduction of income) (reference chapters [3](#) and [7](#));
- mortality/morbidity/lapse risks (risk that assumptions about mortality, morbidity and lapse will be wrong) (reference chapter [4](#));
- changes in interest rate environment (C-3) risk (risk of loss resulting from changes in the interest rate environment) (reference chapter [5](#));
- segregated funds risk (risk of loss arising from guarantees embedded in segregated funds) (reference chapter [8](#)); and
- foreign exchange risk (risk of loss resulting from fluctuations in currency exchange rates) (reference chapter [9](#)).

Chapter 10 describes all of the methods by which the above component requirements may be reduced through risk mitigation or risk transfer arrangements.

The Base Required Capital is determined on a consolidated basis. The consolidated entity includes all subsidiaries (whether held directly or indirectly) that carry on a business that a company could carry on directly (e.g., life insurance, real estate, ancillary business subsidiaries, etc.).

1.1.3. Foreign companies²

The margin requirement for companies operating in Canada on a branch basis (Required Margin) is set forth under the Test of Adequacy of Assets in Canada and Margin Requirements (TAAM) in chapter 6. The TAAM covers each of the five risk components, and is determined using factor-based or other methods that are applied to vested assets, to specific assets under the control of the Chief Agent, and to liabilities, obligations and other commitments in Canada. The Required Margin is then used in calculating part of the vesting requirements for foreign insurers.

The TAAM is only one component of the required assets that foreign insurers must maintain in Canada. Foreign life insurers must also vest assets in Canada as prescribed in the *Assets (Foreign Companies) Regulations* made pursuant to section 610 of the ICA.

1.1.4. Interpretation of results

The MCCR has been designed to measure the capital adequacy of a company and is one of several indicators that OSFI uses to assess financial condition. The MCCR should not be used in isolation for ranking and rating companies. Please refer to *Guideline A-4: Regulatory Capital and Internal Capital Targets* for more information about OSFI's minimum and supervisory targets expectations in the assessment of insurers' capital adequacy within the context of OSFI's Supervisory Framework³ and OSFI's expectations with respect to the setting of insurer-specific internal capital targets and capital management policies for federally regulated insurance companies.

1.2. General requirements

1.2.1. MCCR/TAAM minimum and supervisory target capital ratios⁴

The MCCR compares the total Available Capital to the Base Required Capital (Total Ratio) and compares the adjusted net tier 1 capital to the Base Required Capital (Tier 1 Ratio). The TAAM compares the Available Margin to the Required Margin (Total Ratio) and compares the Available Margin excluding Other Admitted Assets to the Required Margin (Core Ratio). The MCCR and TAAM ratios are generally expressed as a percentage of the Base Required Capital or the Required Margin.

² Within this guideline, the term “foreign company” has the same meaning as in Section 2 of the Insurance Companies Act.

³ More detail regarding OSFI's [Supervisory Framework](http://www.osfi-bsif.gc.ca), including assessment criteria, can be found at OSFI's website: www.osfi-bsif.gc.ca.

⁴ Supervisory Targets are not applicable to regulated insurance holding companies and non-operating insurance companies.

With respect to the Total Ratio, if considering only the risks where calculations are specified, a minimum Total Ratio of 100% may be considered acceptable. However, life insurers are exposed to more risks than those for which calculations are specified. Consequently, the minimum Total Ratio for life insurers is set at 120% rather than 100% to cover operational risks that are not explicitly measured, but which form part of the minimum requirement under MCCR/TAAM.

In addition, OSFI has established a supervisory target Total Ratio of 150% that is intended to cover the risks specified in the MCCR/TAAM and other risks that are not included in the calculation. Other risks may include strategic and reputational risk, as well as risks not explicitly addressed by the actuary when determining policy liabilities.

Tier 1 capital is the primary element of capital that allows institutions to absorb losses during ongoing operations. Therefore, OSFI has established corresponding regulatory requirements for adjusted net tier 1 capital. Parallel requirements are also applicable with respect to branches.

The minimum Tier 1/Core Ratio is 60%. However, OSFI expects each institution to maintain its Tier 1/Core Ratio at no less than the supervisory target of 105%. This represents 70% of the 150% supervisory target Total Ratio.

Not all of a company's risks can be mitigated through reinsurance. Therefore, OSFI expects each institution to maintain Tier 1 Available Capital/Available Margin excluding Other Admitted Assets at or above 25% of the gross MCCR/TAAM Base Required Capital/Required Margin, i.e. the requirement calculated without any reduction for reinsurance ceded. The requirement to calculate a Tier 1/Core Ratio gross of reinsurance is waived for companies that cede less than 60% of their business, as measured by both ceded reserves and the ceded MCCR/TAAM Base Required Capital/Required Margin.

Companies are expected to maintain their Total and Tier 1/Core Ratios at or above the established minimum and supervisory target levels on a continuous basis. Questions about an individual company's/branch's minimum and supervisory target capital levels should be addressed to the Relationship Manager at OSFI.

1.2.2. Opinion of the Appointed Actuary

The Appointed Actuary is required to sign, on the front page of the annual MCCR-TAAM return, an opinion as to the accuracy of the return in accordance with subsection 2480 of the CIA Practice-Specific Standards for Insurers. The text of the required opinion is:

“I have reviewed the calculation of the Minimum Continuing Capital and Surplus Requirement ratios of [Company name] as at [Date]. In my opinion, the calculations of the components of the Base Required Capital and Available Capital have been determined in accordance with the regulatory guidelines, and the components of the calculations requiring discretion were determined using methodologies and judgment appropriate to the circumstances of the company.”

[Note: For TAAM form filings “Minimum Continuing Capital and Surplus Requirement ratios”, and “Base Required Capital and Available Capital” are replaced by “Test of adequacy of assets in Canada and margin requirements ratios”, and “Base Required Margin and Available Margin”.]

The memorandum supporting this certification that the Appointed Actuary is required to prepare under the Standard must be available to OSFI upon request.

1.2.3. Authorized official signature

Each life insurer is required to have an authorized Officer endorse the following statement on the annual and quarterly MCCSR/TAAM returns:

“I confirm that I have read the relevant guideline and annual return reporting instructions issued by the Office of the Superintendent of Financial Institutions and that this form is completed in accordance with them.”

The Officer endorsing this statement on the annual return must be different from the insurer’s Appointed Actuary.

1.2.4. Audit requirement

Life insurers are required to engage the auditor appointed pursuant to section 337 or 633 of the *Insurance Companies Act* to report on the MCCSR and TAAM returns in accordance with the relevant standards for such assurance engagements, as promulgated by the Canadian Auditing and Assurance Standards Board (AASB).

1.2.5. Policy liabilities

For MCCSR purposes the policy liabilities used in calculating the mortality, morbidity, lapse and changes in interest rate environment components should include deferred income taxes under valuation assumptions as required by the Canadian Institute of Actuaries (CIA) Standards, prior to any accounting adjustment for balance sheet presentation. In addition, the policy liabilities used should exclude fifty percent of the future morbidity improvement if any portion of the impact of such improvement has been reversed from retained earnings in the determination of gross tier 1 capital under section 2.1.1.1 and should exclude future mortality improvement under CIA standard 2350.06 and additional future mortality improvement⁵ under CIA standard 2350.11 if the combined impact of such improvement has been reversed from retained earnings in the determination of gross tier 1 capital under section 2.1.1.1.

⁵ The term “additional future mortality improvement”, when used in relation to the valuation of policy liabilities for annuities, means the difference between the liability calculated using the secular trend toward lower mortality rates currently promulgated by the CIA, and the liability calculated using the promulgated secular trend toward lower mortality rates that was in effect on December 31, 2010.

1.2.6. Criteria for qualifying participating policies

In light of the risk pass-through nature of participating policies, some of the risk components associated with participating policy liabilities and the assets backing them may be reduced if certain conditions are met. A risk component for a block of policies may only be reduced if experience with respect to the risk component is explicitly incorporated into the annual dividend adjustment process for the policies in a consistent manner from year to year. Specifically, participating policy liabilities and the assets backing them may be treated as *qualifying participating policies* (i.e. qualifying for a reduced risk component only) if the following four criteria are met⁶:

1. The policies must pay meaningful dividends. To be considered meaningful, the present value of projected dividends calculated using valuation assumptions must be greater than the reduction in required capital that would result from using reduced risk factors.
2. The company's participating dividend policy must be publicly disclosed and must make it clear that policyholder dividends are not guaranteed and will be adjusted to reflect actual experience. The company must publicly disclose the elements of actual experience that are incorporated into the annual dividend adjustment process. Such elements may include investment income, asset defaults, mortality, lapses and expenses.
3. The company must regularly (at least once a year) review the policyholder dividend scale in relation to the actual experience of the participating account. It must be able to demonstrate to OSFI which individual elements of actual experience, to the extent they were not anticipated in the current dividend scale, have been passed through in the annual dividend adjustment. Furthermore, it must be able to demonstrate that shortfalls in actual overall experience, to the extent that they are not fully absorbed by any dividend stabilization reserves (DSRs)⁷ or other similar experience levelling mechanisms, are recovered⁸ on a present value basis through (level or declining) reductions in the dividend scale⁹. The dividend scale reductions required to effect recovery must be made within two years from when the shortfall occurs.
4. The company must be able to demonstrate to OSFI that it follows the dividend policy and practices referred to above.

⁶ The treatment also applies if the participating policy contains adjustable factors other than dividends that meet the criteria above (i.e., they are meaningful, the criteria for their review is disclosed, they are reviewed and adjusted regularly and the company can demonstrate that it is following the policy).

⁷ For the purposes of MCCSR, a DSR is defined as a reserve in an open or closed participating block from which an insurer may make a dividend payment during periods of loss or lower profit and where the insurer may pay profits into during periods of higher profit.

⁸ The recovery of shortfalls must be demonstrated based on reductions in the dividend scale compared to what would have been paid taking into account all of those elements, and only those elements, that are passed through to policyholders.

⁹ Reductions in the dividend scale must be level or must represent front-loaded or accelerated experience recovery. Reductions in terminal dividends are considered to be level reductions in the dividend scale.

Chapter 2. Qualifying Regulatory Available Capital

2.1. Summary of capital components

The three primary considerations for defining the Available Capital of a company for purposes of measuring capital adequacy are:

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

Total Available Capital comprises two tiers. Tier 1 (core capital) comprises the highest quality capital elements. Tier 2 (supplementary capital) elements 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. If there can be some doubt as to the availability of capital (i.e., retraction privileges, uncertainty as to realizable values), it is classified as tier 2. Deferred tax liabilities do not qualify as Available Capital/Margin. Unless explicitly stated otherwise in this Guideline, deferred tax liabilities may not be used to increase any component of Available Capital /Margin, and the carrying amount of any item required to be deducted from Available Capital /Margin may not be reduced by any portion of associated deferred tax liabilities.

All capital instruments must be issued and fully paid for in money or, with the approval of the Superintendent, in property.

Given the potential impact of the disqualification of a capital instrument, insurers are encouraged to seek confirmations of capital quality from OSFI prior to issuing instruments. In conjunction with such requests, the institution is expected to provide specific information (reference [Appendix 2-A](#)).

No asset default factor will be applied to items that are deducted from capital. If changes in the balance sheet value of a deducted item have not been recognized in MCCR Available Capital or TAAM Available Margin, the amount deducted for the item should be its amortized cost rather than the value reported on the balance sheet.

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.

Debt obligations, as defined in the *Insurance Companies Act*, made by life insurers that do not qualify as Available Capital by virtue of their characteristics are subject to a capital charge (reference section [5.3](#)).

The capital elements comprising tiers 1 and 2, as well as the various limits, restrictions and deductions to which they are subject, are described next.

2.1.1. Tier 1

Tier 1 capital instruments are required to meet the qualifying criteria in section 2.1.1.2 (Common Shares) or sections 2.1.1.3 to 2.1.1.5 (Tier 1 Capital Instruments other than Common Shares). Tier 1 capital instruments issued prior to August 7, 2014 that do not meet the qualifying criteria for Tier 1 Available Capital in section 2.1.1.2 or sections 2.1.1.3 to 2.1.1.5, are required to meet the qualifying criteria specified in [Appendix 2-B](#); these will be subject to transitional measures in due course.

2.1.1.1. Gross tier 1 capital

Tier 1 capital elements are restricted to the following, subject to requirements established by the Superintendent, such that gross tier 1 capital is the sum of the following:

- Common shareholders' equity, defined to include common shares, contributed surplus,¹⁰ and retained earnings^{11,12};
- Participating account;
- Qualifying non-controlling interests in subsidiaries arising on consolidation from tier 1 capital instruments;
- Qualifying Tier 1 instruments other than common shares (reference sections [2.1.1.3](#), [2.1.1.4](#), [2.1.1.5](#) and [Appendix 2-C](#))
 - Qualifying non-cumulative perpetual preferred shares
 - Other
- Non-participating account (mutual companies);
- Accumulated foreign currency translation adjustments reported in Other Comprehensive Income (OCI)¹³;
- Accumulated net unrealized loss on available-for-sale equity securities reported in OCI¹⁴;

¹⁰ Where repayment is subject to the Superintendent's approval.

¹¹ 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. Companies are expected to meet OSFI's criteria in Accounting Guideline D-10, and 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.

¹² The amount of retained earnings reported by fraternal benefit societies for MCCR purposes should be the lower of the insurance fund surplus or the total current year surplus.

¹³ All OCI amounts are net of tax.

¹⁴ Preferred shares should generally be characterized by the holder as equity securities, in a manner consistent with

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- Accumulated changes in liabilities reported in OCI under shadow accounting;
 - Accumulated defined benefit pension plan remeasurements reported in OCI.

Companies may elect to phase-in, in gross tier 1:

- a) the impact on gross tier 1 of including the accumulated defined benefit pension plan OCI remeasurements, if any, that existed on December 31, 2012 (i.e.: the amounts, if any, that existed immediately prior to the effective date of the requirement in this guideline to include in gross tier 1 accumulated defined pension plan remeasurements in OCI)
and
- b) the impact on gross tier 1 related to net defined benefit pension plan liabilities (assets) upon the initial adoption of the revisions to *IAS 19 Employee Benefits*, effective for fiscal years beginning on or after January 1, 2013 (i.e.: the impact on gross tier 1 of the net restatement of retained earnings and AOCI together).

The amount subject to phase-in in gross tier 1 is the sum of a) and b) above. The phase-in will be made on a straight-line basis over the phase-in period. The phase-in period begins on January 1, 2013 for item a) and on the effective date of the revisions to *IAS 19 Employee Benefits* for item b) and must be completed by the earliest quarter-end occurring on or after December 31, 2014. If a company elects the phase-in, it will be irrevocable, the adjustment amount will be reflected in gross tier 1 capital and the company will have to phase-in the net defined benefit pension plan impacts on net tier 1 and on tier 2C capital, as outlined in sections [2.1.1.6](#) and [2.1.2.4](#).

For MCCR purposes, the following items are reversed from reported retained earnings:

- Accumulated after-tax gains or losses on fair-valued liabilities that arise from changes to an institution's own credit risk;
- Items related to real estate¹⁵:
 - After-tax fair value gains or losses on owner-occupied property upon conversion to IFRS (cost model)¹⁶;
 - Accumulated after-tax revaluation loss on owner-occupied property (revaluation model);
 - The accumulated net after-tax fair value gains after transition to IFRS on investment properties that do not back policy liabilities under CALM¹⁷;

section 6.2.1 (vi) of the *Capital Adequacy Requirements* guideline. Only preferred shares that have a fixed maturity date on which the holder is repaid, or which allow the holder to require the issuer to repay the holder at some point prior to liquidation may be classified as debt securities.

¹⁵ In performing all adjustments to retained earnings, significant capital additions made after transition to IFRS should be treated separately from the underlying property. The acquisition date for such an addition is the date on which the addition was completed and not the acquisition date of the underlying property.

¹⁶ The amount reversed should equal the difference between deemed cost on transition to IFRS, and the moving average market value immediately prior to conversion to IFRS.

- Accumulated net after-tax gains or losses up to the transfer date on owner-occupied property that was previously classified as investment property¹⁸;
- Fifty percent of the net decrease in policy liabilities, net of reinsurance, resulting from the recognition of morbidity improvement.
- The net decrease in policy liabilities (for insurance and annuity business combined¹⁹, net of all reinsurance) resulting from the recognition of future mortality improvement under CIA standard 2350.06 and additional future mortality improvement⁵ under CIA standard 2350.11;
- Discretionary participation features reported in a component of equity that is included in MCCR Available Capital.

The following item is added to reported retained earnings for MCCR purposes:

- Accumulated gains reported in OCI up to the transfer date on investment property that was previously classified as owner-occupied property.

The amount of morbidity improvement by product subject to reversal may be offset by the amount of mortality improvement within the same product, provided that it is not applied in the calculation of the net decrease in policy liabilities resulting from the recognition of future mortality improvement described above. Companies may elect to phase-in the impact on retained earnings of reversing the future morbidity improvement assumption in policy liabilities. The phase-in will be made on a straight-line basis over the phase-in period. The phase-in period, which will be twelve quarters, begins on January 1, 2015 and must be completed by the earliest quarter-end occurring on or after December 31, 2017.

2.1.1.2 Qualifying Criteria for Common Shares

Common shares qualify as Tier 1 capital if all of the following criteria are met:

- 1) Represents the most subordinated claim in liquidation of the insurer.
- 2) The investor is entitled to a claim on the residual assets that is proportional with its share of issued capital, after all senior claims have been paid in liquidation (i.e., has an unlimited and variable claim, not a fixed or capped claim).

¹⁷ For investment property acquired before transition to IFRS that was previously classified as owner-occupied property, the cost base for calculating the gain is either the property's deemed cost on transition to IFRS (cost model) or its carrying value immediately after transition to IFRS (revaluation model). For similarly reclassified investment property acquired after transition to IFRS, the cost base for calculating the gain is the property's original acquisition cost.

¹⁸ The amount of the reversal is the difference between the property's deemed cost on the date of transfer into owner-occupied property, and either the moving average market value immediately prior to conversion to IFRS net of subsequent depreciation if the property was acquired before conversion to IFRS, or the original acquisition cost net of subsequent depreciation if the property was acquired after conversion to IFRS.

¹⁹ Excluding segregated funds

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- 3) The principal is perpetual and never repaid outside of liquidation (setting aside discretionary repurchases or other means of effectively reducing capital in a discretionary manner that is allowable under relevant law and subject to the prior approval of the Superintendent).
 - 4) The insurer does not, in the sale or marketing of the instrument, create an expectation at issuance that the instrument will be bought back, redeemed or cancelled, nor do the statutory or contractual terms provide any feature which might give rise to such expectation.
 - 5) Distributions are paid out of distributable items (retained earnings included). The level of distributions is not in any way tied or linked to the amount paid in at issuance and is not subject to a contractual cap (except to the extent that an insurer is unable to pay distributions that exceed the level of distributable items or to the extent that distributions on senior ranking capital must be paid first).
 - 6) There are no circumstances under which the distributions are obligatory. Non-payment is, therefore, not an event of default.
 - 7) Distributions are paid only after all legal and contractual obligations have been met and payments on more senior capital instruments have been made. This means that there are no preferential distributions, including in respect of other elements classified as the highest quality issued capital.
 - 8) It is in the form of issued capital that takes the first and proportionately greatest share of any losses as they occur. Within the highest quality capital, each instrument absorbs losses on a going-concern basis proportionately and *pari passu* with all the others.
 - 9) The paid-in amount is recognised as equity capital (i.e., not recognised as a liability) for determining balance sheet solvency.
 - 10) It is directly issued and paid-in²⁰ and the insurer cannot directly or indirectly have funded the purchase of the instrument. Where the consideration for the share is other than cash, the issuance of the common share is subject to the prior approval of the Superintendent.
 - 11) The paid-in amount is neither secured nor covered by a guarantee of the issuer or related entity²¹ or subject to any other arrangement that legally or economically enhances the seniority of the claim.
 - 12) It is only issued with the approval of the owners of the issuing insurer, either given directly by the owners or, if permitted by applicable law, given by the Board of Directors or by other persons duly authorised by the owners.
 - 13) It is clearly and separately disclosed as equity on the insurer's balance sheet, prepared in accordance with relevant accounting standards.

²⁰ Paid-in capital generally refers to capital that has been received with finality by the insurer, is reliably valued, fully under the insurer's control and does not directly or indirectly expose the insurer to the credit risk of the investor.

²¹ A related entity can include a parent company, a sister company, a subsidiary or any other affiliate. A holding company is a related entity irrespective of whether it forms part of the consolidated insurance group.

The criteria for common shares also apply to non-joint stock companies, such as mutual insurance companies and fraternal benefit societies, taking into account their specific constitutions and legal structures. The application of the criteria should preserve the quality of the instruments by requiring that they are deemed fully equivalent to common shares in terms of their capital quality, including their loss absorption capacity, and do not possess features which could cause the condition of the insurer to be weakened as a going concern during periods when the insurer is under stress.

2.1.1.3 Qualifying Criteria for Tier 1 Capital Instruments Other than Common Shares²²

Instruments, other than common shares, qualify as Tier 1 capital if all of the following criteria are met:

- 1) Issued and paid-in in cash or, subject to the prior approval of the Superintendent, in property.
- 2) Subordinated to policyholders, general creditors, and subordinated debt holders of the insurer.
- 3) Is neither secured nor covered by a guarantee of the issuer or related entity or other arrangement that legally or economically enhances the seniority of the claim vis-à-vis the insurer's policyholders and creditors²³.
- 4) Is perpetual, i.e. there is no maturity date and there are no step-ups²⁴ or other incentives to redeem²⁵.
- 5) May be callable at the initiative of the issuer only after a minimum of five years:
 - a. To exercise a call option an insurer must receive prior approval of the Superintendent; and
 - b. An insurer's actions and the terms of the instrument must not create an expectation that the call will be exercised; and
 - c. An insurer must not exercise the call unless:
 - i. It replaces the called instrument with capital of the same or better quality, including through an increase in retained earnings, and the replacement of

²² OSFI continues to explore the applicability of non-viability contingent capital (NVCC) to insurers. In the event insurers become subject to this requirement, the qualifying criteria for Tier 1 capital instruments, other than common shares, and Tier 2 capital instruments will be revised accordingly and further transitioning arrangements will be established for non-qualifying instruments.

²³ Further, where an issuer uses a SPV to issue capital to investors and provides support, including overcollateralization, to the vehicle, such support would constitute enhancement in breach of Criterion # 3 above.

²⁴ A step-up is defined as a call option combined with a pre-set increase in the initial credit spread of the instrument at a future date over the initial dividend (or distribution) rate after taking into account any swap spread between the original reference index and the new reference index. Conversion from a fixed rate to a floating rate (or vice versa) in combination with a call option without any increase in credit spread would not constitute a step-up.

²⁵ Other incentives to redeem include a call option combined with a requirement or an investor option to convert the instrument into common shares if the call is not exercised.

this capital is done at conditions which are sustainable for the income capacity of the insurer²⁶; or

- ii. The insurer demonstrates that its capital position is well above the supervisory target capital requirements after the call option is exercised²⁷.
- 6) Any repayment of principal (e.g., through repurchase or redemption) requires Superintendent approval and insurers should not assume or create market expectations that such approval will be given.
 - 7) Dividend / coupon discretion:
 - a. The insurer must have full discretion at all times to cancel distributions/payments²⁸.
 - b. Cancellation of discretionary payments must not be an event of default or credit event.
 - c. Insurers must have full access to cancelled payments to meet obligations as they fall due.
 - d. Cancellation of distributions/payments must not impose restrictions on the insurer except in relation to distributions to common shareholders.
 - 8) Dividends/coupons must be paid out of distributable items.
 - 9) The instrument cannot have a credit sensitive dividend feature, i.e. a dividend/coupon that is reset periodically based in whole or in part on the insurer's credit standing²⁹.
 - 10) The instrument cannot contribute to liabilities exceeding assets if such a balance sheet test forms part of insolvency law.
 - 11) Other than preferred shares, instruments included in Tier 1 Capital must be classified as equity per relevant accounting standards.
 - 12) Neither the insurer nor a related party over which the insurer exercises control or significant influence can have purchased the instrument, nor can the insurer directly or indirectly have funded the purchase of the instrument.

²⁶ Replacement issuances can be concurrent with but not after the instrument is called.

²⁷ For a definition of the Supervisory Target, refer to Guideline A-4 *Regulatory Capital and Internal Capital Targets*

²⁸ A consequence of full discretion at all times to cancel distributions/payments is that “dividend pushers” are prohibited. An instrument with a dividend pusher obliges the issuing insurer to make a dividend/coupon payment on the instrument if it has made a payment on another (typically, more junior) capital instrument or share. This obligation is inconsistent with the requirement for full discretion at all times. Furthermore, the term “cancel distributions/payments” means to forever extinguish these payments. It does not permit features that require the insurer to make distributions/payments in kind at any time.

²⁹ Life insurers may use a broad index as a reference rate in which the issuing insurer is a reference entity; however, the reference rate should not exhibit significant correlation with the insurer's credit standing. If an insurer plans to issue capital instrument where the margin is linked to a broad index in which the insurer is a reference entity, the insurer should ensure that the dividend/coupon is not credit-sensitive.

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- 13) The instrument cannot have any features that hinder recapitalisation, such as provisions that require the issuer to compensate investors if a new instrument is issued at a lower price during a specified timeframe.
 - 14) If the instrument is not issued out of an operating entity or the holding company in the consolidated group (e.g., a special purpose vehicle – “SPV”), proceeds must be immediately available without limitation to an operating entity³⁰ or the holding company in the consolidated group in a form which meets or exceeds all of the other criteria for inclusion in Tier 1 capital³¹.

Purchase for cancellation of Tier 1 capital instruments is permitted at any time with the prior approval of the Superintendent. For further clarity, a purchase for cancellation does not constitute a call option as described in the above qualifying criteria.

Tax and regulatory event calls are permitted during an instrument’s life subject to the prior approval of the Superintendent and provided the insurer was not in a position to anticipate such an event at the time of issuance. Where an insurer elects to include a regulatory event call in a Tier 1 capital instrument, the regulatory event should be defined as “the date specified in a letter from the Superintendent to the Company on which the instrument will no longer be recognized in full as eligible Tier 1 capital of the insurer on a consolidated basis”.

Dividend stopper arrangements that stop payments on common shares or Tier 1 capital instruments are permissible provided the stopper does not impede the full discretion the insurer must have at all times to cancel distributions or dividends on the Tier 1 capital instrument, nor must it act in a way that could hinder the recapitalization of the insurer pursuant to criterion # 13 above. For example, it would not be permitted for a stopper on a Tier 1 instrument to:

- attempt to stop payment on another instrument where the payments on the other instrument were not also fully discretionary;
- prevent distributions to shareholders for a period that extends beyond the point in time that dividends or distributions on the Tier 1 instrument are resumed;
- impede the normal operation of the insurer or any restructuring activity, including acquisitions or disposals.

A dividend stopper may also act to prohibit actions that are equivalent to the payment of a dividend, such as the insurer undertaking discretionary share buybacks.

³⁰ An operating entity is an entity set up to conduct business with clients with the intention of earning a profit in its own right.

³¹ For greater certainty, the only assets the SPV may hold are intercompany instruments issued by the insurer or a related entity with terms and conditions that meet or exceed the Tier 1 criteria. Put differently, instruments issued to the SPV have to fully meet or exceed all of the eligibility criteria for Tier 1 capital as if the SPV itself was an end investor – i.e., the insurer cannot issue a lower quality capital or senior debt instrument to an SPV and have the SPV issue higher quality capital instruments to third-party investors so as to receive recognition as Tier 1 capital.

Where an amendment or variance of a Tier 1 instrument's terms and conditions affects its recognition as Available Capital, such amendment or variance will only be permitted with the prior approval of the Superintendent³².

Insurers are permitted to “re-open” offerings of capital instruments to increase the principal amount of the original issuance provided that call options will only be exercised, with the prior approval of the Superintendent, on or after the fifth anniversary of the closing date of the latest re-opened tranche of securities.

Defeasance options may only be exercised on or after the fifth anniversary of the closing date with the prior approval of the Superintendent.

2.1.1.4 Tier 1 Capital Instruments Other than Common Shares issued to a Parent

In addition to the qualifying criteria and minimum requirements specified in this Guideline, Tier 1 capital instruments other than common shares issued by an insurer to a parent, either directly or indirectly, can be included in Available Capital subject to the insurer providing prior written notification of the intercompany issuance to OSFI's Capital Division together with the following:

- a copy of the instrument's terms and conditions;
- the intended classification of the instrument for Available Capital purposes;
- the rationale for not issuing common shares in lieu of the subject capital instrument;
- confirmation that the rate and terms of the instrument are at least as favourable to the insurer as market terms and conditions;
- confirmation that the failure to make dividend or interest payments, as applicable, on the subject instrument would not result in the parent, now or in the future, being unable to meet its own debt servicing obligations nor would it trigger cross-default clauses or credit events under the terms of any agreements or contracts of either the insurer or the parent.

2.1.1.5 Tier 1 Capital Instruments Other than Common Shares issued out of Branches and Subsidiaries outside Canada

In addition to any other requirements prescribed in this Guideline, where an insurer wishes to include, in its consolidated Available Capital, a capital instrument issued out of a branch or subsidiary of the insurer outside Canada, it must provide OSFI's Capital Division with the following documentation:

- a copy of the instrument's terms and conditions;
- certification from a senior executive of the insurer, together with the insurer's supporting analysis, that confirms that the instrument meets the qualifying criteria for the tier of

³² Any modification of, addition to, or renewal of an instrument issued to a related party is subject to the legislative requirement that transactions with a related party be at terms and conditions that are at least as favourable to the insurer as market terms and conditions.

Available Capital in which the insurer intends to include the instrument on a consolidated basis; and

- an undertaking whereby both the insurer and the subsidiary confirm that the instrument will not be redeemed, purchased for cancellation, or amended without the prior approval of the Superintendent. Such undertaking will not be required where the prior approval of the Superintendent is incorporated into the terms and conditions of the instrument.

2.1.1.6. Deductions from tier 1

Certain items are deducted from gross tier 1 capital to arrive at net tier 1 capital and adjusted net tier 1 capital. Net tier 1 capital is used for the purpose of determining limitations on elements of capital (reference section [2.1.5](#)), while adjusted net tier 1 capital is used for the purpose of calculating the MCCR Tier 1 and Total Ratios (reference section [2.1.6](#)).

Net tier 1 capital is defined as gross tier 1 capital less the following deductions:

- Goodwill (reference section [2.3](#));
- Intangible assets in excess of 5% of gross tier 1 capital (reference section [2.3](#));
- Adjusted negative reserves calculated policy by policy (reference section [2.4](#)) and negative reserves ceded to unregistered reinsurers (reference sections [10.4.2](#), [10.4.3](#), and [10.5](#));
- Cash surrender value deficiencies calculated on a grouped aggregate basis (reference section [2.4](#));
- Back-to-back placements of new tier 1 capital, arranged either directly or indirectly, between financial institutions;
- Each net defined benefit pension plan recognized as an asset on the insurer's balance sheet (inclusive of the impact of any asset ceiling limitation) net of any associated deferred tax liability³³. Insurers can reduce this deduction by the amount of available refunds of defined benefit pension plan surplus assets to which the insurer has unrestricted and unfettered access if they obtain prior written OSFI supervisory approval³⁴. (The amount hereby deducted is referred to as the Pension Asset Deduction)

Companies that elect to phase-in the impact on gross tier 1 capital of changes related to the net defined benefit pension plan liability (asset) must also phase-in, in net tier 1, the impact on net tier 1 of the Pension Asset Deduction:

- a) on account of each net defined benefit pension plan recognized as an asset on the insurer's balance sheet (inclusive of the impact of any asset ceiling limitation) net of any associated deferred tax liability³³, if any, that existed on December 31, 2012 (i.e.: the

³³ That would be extinguished if the asset should become impaired or derecognized under IFRS.

³⁴ To obtain OSFI supervisory approval, an insurer must demonstrate to OSFI's satisfaction that it has clear entitlement to the surplus and that it has unrestricted and unfettered access to the surplus pension assets. Evidence required by OSFI may include, among other things, an acceptable independent legal opinion and the prior authorization from the pension plan members and the pension regulator.

amount of the Pension Asset Deduction, if any, immediately prior to the effective date of the Pension Asset Deduction requirement in this guideline.)

and

- b) restatement upon the initial adoption of the revisions to *IAS 19 Employee Benefits*, effective for fiscal years beginning on or after January 1, 2013 (i.e.: the impact of the restatement on the Pension Asset Deduction).

The amount subject to phase-in in net tier 1 is the sum of a) and b) above. The phase-in will be made on a straight-line basis over the phase-in period. The phase-in period begins on January 1, 2013 for item a) and on the effective date of the revisions to *IAS 19 Employee Benefits* for item b) and must be completed by the earliest quarter-end occurring on or after December 31, 2014. The phase-in will be irrevocable and the adjustment amount will be reflected in net tier 1 capital.

Adjusted net tier 1 capital is defined as net tier 1 capital less the following additional deductions:

- 50% of deductions/adjustments as defined in section [2.1.4](#); and
- Deductions from tier 2 capital in excess of total tier 2 capital available (reference section [2.1.2.5](#)).

2.1.2. Tier 2

Tier 2 capital instruments are required to meet the qualifying criteria specified in sections 2.1.2.1 [to 2.1.2.3](#). Tier 2 capital instruments issued prior to August 7, 2014 that do not meet the qualifying criteria in sections 2.1.2.1 [to 2.1.2.3](#), are required to meet the qualifying criteria specified in Appendix [2-B](#); these will be subject to transitional measures in due course.

When reporting Tier 2 instruments, insurers should first confirm that the instrument meets the Tier 2 qualifying criteria specified in sections 2.1.2.1 [to 2.1.2.3](#). The insurer should then further classify the Tier 2 instrument into either Tier 2A or Tier 2B per the criteria applicable to capital instruments issued prior to August 7, 2014 (reference Appendix [2-B](#)).

Tier 2 capital elements are restricted to the following, subject to requirements established by the Superintendent:

- Tier 2A: Hybrid (debt/equity) capital instruments
- Tier 2B: Limited life instruments
- Tier 2C: Other Capital Items (reference section [2.1.2.4](#))

Tier 2A capital also includes:

- accumulated net after-tax unrealized gain on available-for-sale equity securities reported in OCI; and
- accumulated net after-tax fair value gain after transition to IFRS on investment properties that do not back policy liabilities under CALM.

2.1.2.1. Qualifying Criteria for Tier 2 Capital Instruments³⁵

Instruments qualify as Tier 2 capital if all of the following criteria are met:

- 1) Issued and paid-in in cash or, with the prior approval of the Superintendent, in property.
- 2) Subordinated to policyholders and general creditors of the insurer.
- 3) Is neither secured nor covered by a guarantee of the issuer or related entity or other arrangement that legally or economically enhances the seniority of the claim vis-à-vis the insurer's policyholders and/or general creditors.
- 4) Maturity:
 - a. Minimum original maturity of at least five years;
 - b. Recognition in Available Capital in the remaining five years before maturity will be amortised on a straight line basis;
 - c. There are no step-ups³⁶ or other incentives to redeem.
- 5) May be callable at the initiative of the issuer only after a minimum of five years:
 - a. To exercise a call option an insurer must receive the prior approval of the Superintendent; and
 - b. An insurer must not do anything that creates an expectation that the call will be exercised³⁷; and
 - c. An insurer must not exercise the call unless;
 - i. It replaces the called instrument with capital of the same or better quality, including through an increase in retained earnings, and the replacement of this capital is done at conditions which are sustainable for the income capacity of the insurer³⁸; or
 - ii. The insurer demonstrates that its capital position is well above the supervisory target capital requirements after the call option is exercised³⁹.

³⁵ OSFI continues to explore the applicability of non-viability contingent capital (NVCC) to insurers. In the event insurers become subject to this requirement, the qualifying criteria for Tier 1 capital instruments, other than common shares, and Tier 2 capital instruments will be revised accordingly and further transitioning arrangements will be established for non-qualifying instruments.

³⁶ A step-up is defined as a call option combined with a pre-set increase in the initial credit spread of the instrument at a future date over the initial dividend (or distribution) rate after taking into account any swap spread between the original reference index and the new reference index. Conversion from a fixed rate to a floating rate (or vice-versa) in combination with a call option without any increase in credit spread would not constitute a step-up.

³⁷ An option to call the instrument after five years but prior to the start of the amortization period will not be viewed as an incentive to redeem as long as the insurer does not do anything that creates an expectation that the call will be exercised at this point.

³⁸ Replacement issues can be concurrent with but not after the instrument is called.

³⁹ For a definition of the Supervisory Target, refer to Guideline A-4 *Regulatory Capital and Internal Capital Targets*.

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- 6) The investor must have no rights to accelerate the repayment of future scheduled principal or interest payments, except in bankruptcy, insolvency, wind-up or liquidation.
 - 7) The instrument cannot have a credit sensitive dividend feature; that is, a dividend or coupon that is reset periodically based in whole or in part on the insurer's credit standing⁴⁰.
 - 8) Neither the insurer nor a related party over which the insurer exercises control or significant influence can have purchased the instrument, nor can the insurer directly or indirectly have funded the purchase of the instrument.
 - 9) If the instrument is not issued out of an operating entity or the holding company in the consolidated group (e.g., a special purpose vehicle – "SPV"), proceeds must be immediately available without limitation to an operating entity⁴¹ or the holding company in the consolidated group in a form which meets or exceeds all of the other criteria for inclusion in Tier 2 capital⁴².

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 liquidation, insolvency, bankruptcy or winding-up of the issuer.

Purchase for cancellation of Tier 2 instruments is permitted at any time with the prior approval of the Superintendent. For further clarity, a purchase for cancellation does not constitute a call option as described in the above Tier 2 qualifying criteria.

Tax and regulatory event calls are permitted during an instrument's life subject to the prior approval of the Superintendent and provided the insurer was not in a position to anticipate such an event at the time of issuance. Where an insurer elects to include a regulatory event call in a Tier 2 capital instrument, the regulatory event should be defined as "the date specified in a letter from the Superintendent to the Company on which the instrument will no longer be recognized in full as eligible Tier 2 capital of the insurer or included as risk-based Total Available Capital on a consolidated basis".

Where an amendment or variance of a Tier 2 instrument's terms and conditions affects its recognition as Available Capital, such amendment or variance will only be permitted with the prior approval of the Superintendent⁴³.

⁴⁰ Insurers may use a broad index as a reference rate in which the issuing insurer is a reference entity; however, the reference rate should not exhibit significant correlation with the insurer's credit standing. If an insurer plans to issue capital instruments where the margin is linked to a broad index in which the insurer is a reference entity, the insurer should ensure that the dividend / coupon is not credit-sensitive.

⁴¹ An operating entity is an entity set up to conduct business with clients with the intention of earning a profit in its own right.

⁴² For greater certainty, the only assets the SPV may hold are intercompany instruments issued by the insurer or a related entity with terms and conditions that meet or exceed the Tier 2 qualifying criteria. Put differently, instruments issued to the SPV have to fully meet or exceed all of the eligibility criteria for Tier 2 capital as if the SPV itself was an end investor – i.e. the insurer cannot issue a senior debt instrument to an SPV and have the SPV issue qualifying capital instruments to third-party investors so as to receive recognition as Tier 2 capital.

⁴³ Any modification of, addition to, or renewal or extension of an instrument issued to a related party is subject to

Insurers are permitted to “re-open” offerings of capital instruments to increase the principal amount of the original issuance provided that call options will only be exercised, with the prior approval of the Superintendent, on or after the fifth anniversary of the closing date of the latest re-opened tranche of securities.

Defeasance options may only be exercised on or after the fifth anniversary of the closing date with the prior approval of the Superintendent.

2.1.2.2. Tier 2 Capital Instruments Issued to a Parent

In addition to the qualifying criteria and minimum requirements specified in this Guideline, Tier 2 capital instruments issued by an insurer to a parent either directly or indirectly, can be included in Available Capital subject to the insurer providing prior written notification of the intercompany issuance to OSFI's Capital Division together with the following:

- a copy of the instrument’s term and conditions;
- the intended classification of the instrument for Available Capital purposes;
- the rationale for not issuing common shares in lieu of the subject capital instrument;
- confirmation that the rate and terms of the instrument are at least as favourable to the insurer as market terms and conditions;
- confirmation that the failure to make dividend or interest payments, as applicable, on the subject instrument would not result in the parent, now or in the future, being unable to meet its own debt servicing obligations nor would it trigger cross-default clauses or credit events under the terms of any agreements or contracts of either the insurer or the parent.

2.1.2.3. Tier 2 Capital Instruments Issued out of Branches and Subsidiaries Outside Canada

Debt instruments issued out of an insurer’s branches or subsidiaries outside Canada must be governed by Canadian law. The Superintendent may, however, waive this requirement where the insurer can demonstrate that an equivalent degree of subordination can be achieved as under Canadian law. Instruments issued prior to year-end 1994 are not subject to this requirement.

In addition to any other requirements prescribed in this Guideline, where an insurer wishes to consolidate a capital instrument issued by a foreign subsidiary, it must provide OSFI’s Capital Division with the following documentation:

- a copy of the instrument’s term and conditions;
- certification from a senior executive of the insurer, together with the insurer’s supporting analysis, that confirms that the instrument meets the qualifying criteria for the tier of

the legislative requirement that transactions with a related party be at terms and conditions that are at least as favourable to the insurer as market terms and conditions.

Available Capital in which the insurer intends to include the instrument on a consolidated basis; and

- an undertaking whereby both the insurer and the subsidiary confirm that the instrument will not be redeemed, purchased for cancellation, or amended without the prior approval of the Superintendent. Such undertaking will not be required where the prior approval of the Superintendent is incorporated into the terms and conditions of the instrument.

2.1.2.4. Tier 2C: Other capital items:

The following items qualify as tier 2C:

- 75% of amounts deducted from tier 1 on account of cash surrender value deficiencies;
- all amounts deducted from tier 1 on account of negative reserves;
- 50% of the terminal dividend reserve associated with out-of-Canada participating life insurance business meeting the conditions set out in section [2.9](#);
- 50% of the amount deducted from gross tier 1 (per section [2.1.1.6](#)) on account of each net defined benefit pension plan recognized as an asset on the insurer's balance sheet. (The amount that hereby qualifies as tier 2C is referred to as the Pension Asset Add-back.); and
- adjustment amount to amortize the impact in the current period on Available Capital on account of the net defined benefit pension plan liability (asset).

Companies that elect to phase-in the impact on gross tier 1 capital of changes related to the net defined benefit pension plan liability (asset) must also phase-in, in tier 2C the impact on tier 2C capital of the Pension Asset Add-back:

- a) on account of each net defined benefit pension plan recognized as an asset on the insurer's balance sheet that existed on December 31, 2012 (i.e.: the amount of the Pension Asset Add-back, if any, immediately prior to the effective date of the requirement in this guideline to add-back in tier 2C 50% of the Pension Asset Deduction) and
- b) restatement upon the initial adoption of the revisions to *IAS 19 Employee Benefits*, effective for fiscal years beginning on or after January 1, 2013 (i.e.: the impact of the restatement on the Pension Asset Add-back).

The amount subject to phase-in in tier 2C is the sum of a) and b) above. The phase-in will be made on a straight-line basis over the phase-in period. The phase-in period begins on January 1, 2013 for item a) and on the effective date of the revisions to *IAS 19 Employee Benefits* for item b) and must be completed by the earliest quarter-end occurring on or after December 31, 2014. The phase-in will be irrevocable and the adjustment amount will be reflected in tier 2C capital.

Companies may make a one-time election to amortize the impact on Available Capital on account of the net defined benefit pension plan liability (asset). The amounts subject to amortization in each period include the change, in each period, of the:

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- a) accumulated net defined benefit pension plan OCI remeasurements included in gross tier 1;
 - b) amount of the Pension Asset Deduction from gross tier 1 (per section [2.1.1.6](#)); and
 - c) Pension Asset Add-back in tier 2C.

The amount subject to amortization in each period is the sum of a), b) and c) above. The amortization will be made on a straight-line basis over the amortization period. The amortization period will be twelve quarters and will begin in the current quarter. The election will be irrevocable and the company will continue, in each quarter, to amortize the new impact on Available Capital in subsequent periods. The adjustment amount will be reflected in tier 2C capital.

2.1.2.5. Deductions from tier 2

Net tier 2 capital is defined to be total tier 2 capital available less the following two deductions:

- 50% of deductions/adjustments as defined in section [2.1.4](#);
- back-to-back placements of new tier 2 capital arranged either directly or indirectly between financial institutions.

However, net tier 2 capital may not be lower than zero. If the total of all tier 2 deductions exceeds total tier 2 capital available, the excess must be deducted from tier 1.

2.1.3. *Qualifying non-controlling interests*

Non-controlling interests, including capital instruments issued by subsidiaries to third party investors, arising on consolidation will be included in the respective categories, provided:

- the instruments meet the criteria applicable to that category; and
- they do not effectively rank equally or ahead of the claims of policyholders and other senior creditors of the insurer due to a parent guarantee or by any other contractual means.

Companies will generally be permitted to include in Available Capital minority and other non-controlling interests in operating subsidiaries that are fully consolidated for MCCR purposes, provided that the capital in the subsidiary is not excessive in relation to the amount necessary to carry on the subsidiary's business, and the level of capitalization of the subsidiary is comparable to that of the insurance company as a whole⁴⁴.

If a subsidiary issues capital instruments for the funding of the company, or that are substantially in excess of its own requirements, the terms and conditions of the issue, as well as the

⁴⁴ Where a company's consolidated financial statements include an unleveraged mutual fund entity that is not subject to deduction from Available Capital and that has assets exempt from the requirements of chapter 3 (as a result of the company's ability to demonstrate (1) ownership by policyholders or outside investors and (2) a contractual obligation to pass through all returns, provided that the company is able to track and distinguish the mutual fund units held for its own account from those held by policyholders and outside investors), the non-controlling interests in such mutual fund entities should not be included in the company's Available Capital.

intercompany transfer, must ensure that investors are placed in the same position as if the instrument were issued by the company 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 life company, it is likely that this treatment will only be applicable to the subordinated debt. In addition, to qualify as Available 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.

2.1.4. Deductions/adjustments

Fifty percent of the following amounts is deducted from tier 1, and an additional fifty percent is deducted from tier 2 after application of the net tier 1 limit:

- unrealized unamortized other than temporary⁴⁵ declines in value ("impairment") of real estate investments that have not been taken into account in the valuation of policy liabilities less, 45% on the portion of gains/losses on which recoverable income taxes are not accounted for, or the deferred income tax amount. The amount deducted should also include expected disposition costs. This is calculated on a property-by-property basis;
- investments in non-life financial corporations that are controlled by the company, net of goodwill and identified intangibles that have been deducted from tier 1 capital (reference section [2.6](#));
- substantial investments in entities including joint ventures (reference section [2.7](#));
- other facilities that are treated as capital by unconsolidated subsidiaries and by unconsolidated corporations in which the company has a substantial interest;
- first loss facilities as required under Guideline B-5: [Asset Securitization](#);
- aggregate positive policy liabilities ceded under arrangements defined to be unregistered reinsurance, less the amount of collateral and letters of credit applied toward these liabilities (reference chapter [10](#)); and
- purchased options for which the company elects deduction under section [3.7.4](#).

Companies may elect to phase-in the initial impact of adopting *IFRS 11 Joint Arrangements*, effective for fiscal years beginning on or after January 1, 2013, related to investments classified as joint ventures previously accounted for using proportionate consolidation. The amount subject to phase-in will be the amount of the substantial investments in joint ventures, determined using the equity method of accounting, that were previously accounted for using the proportionate consolidation method of accounting. The phase-in will be made on a straight-line basis over the phase-in period. The phase-in period begins on the effective date of the accounting standard and must be completed by the earliest quarter-end occurring on or after December 31, 2014.

⁴⁵ The expression "other than temporary" refers to situations where the market value of the real estate remains below its book value for a period of three years or more. An example of this calculation can be found in the MCCR Interpretation Bulletin No 1.

2.1.5. *Limitations*

Common shareholders' equity (i.e., common shares, contributed surplus, retained earnings and participating account surplus) and policyholders' equity (mutual companies) should be the predominant form of a company's tier 1 capital.

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

- A strongly capitalized company should not have Tier 1 capital instruments other than common shares⁴⁶ that, in aggregate, exceed 40% of net tier 1 capital. Tier 1 capital instruments other than common and preferred shares shall not, at the time of issuance, comprise more than 15% of net tier 1 capital. If at any time either limit is breached, the company must immediately notify OSFI and provide an acceptable plan showing how the insurer proposes to quickly eliminate the excess.
- The amount of capital elements, net of amortization, included in tier 2 shall not exceed 100% of net tier 1 capital.
- Limited life instruments, net of amortization, included in tier 2B⁴⁷ shall not exceed 50% of net tier 1 capital.

Any capital instruments and limited life instruments issued in excess of these limitations will not be counted as Available Capital for the purpose of the risk-based capital adequacy test unless the FRFI has obtained the agreement of its Relationship Manager in advance; however, they will be taken into account when reviewing the overall strength of the company⁴⁸.

2.1.6. *MCCSR Available Capital*

For the purpose of calculating the MCCSR Tier 1 Ratio, the measure of Available Capital used is adjusted net tier 1 capital, after the application of all limitations. For the purpose of calculating the MCCSR Total Ratio, the measure of Available Capital used is adjusted net tier 1 capital plus net tier 2 capital, after the application of all limitations to both components.

⁴⁶ Included in this limit are all Tier 1 capital instruments other than common shares, whether issued before, on or after August 7, 2014.

⁴⁷ Included in this limit are all limited life instruments, whether issued before, on or after August 7, 2014.

⁴⁸ OSFI will consider each proposal for tier 1 treatment of excess amounts on its own merits and may disallow or otherwise restrict such treatment. For example, OSFI generally would not allow an excess amount to continue to be included in tier 1 capital if the excess arose due to a combination of operating losses and common share repurchases in the same fiscal quarter.

In all circumstances, a FRFI's fiscal quarter-ends will be the relevant dates for the purpose of determining the existence of excess tier 1-qualifying preferred shares and innovative tier 1 instruments (i.e. tier 1-qualifying preferred shares and innovative tier 1 in excess of the limit of 40 per cent of net tier 1 capital and innovative tier 1 instruments in excess of the limit of 15 per cent of net tier 1 capital, respectively). In the case of new issues, OSFI will define the "time of issuance" to be the last day of the fiscal quarter in which an issuance of tier 1-qualifying preferred shares or innovative tier 1 instruments takes place.

2.2 Hedging of subordinated debentures

When a company 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 policyholders, the company 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 a date less than three years before maturity will qualify as a full hedge; hedges to a call date or to a date more than three years before maturity will not.

In addition, the company should disclose information on the hedging arrangement, the amount of the translation gain/losses and the accounting treatment accorded the translation gains/losses in a note to the MCCSR/TAAM 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.

2.3 Goodwill and intangible assets

Unamortized goodwill will be deducted in the determination of net tier 1 capital. This deduction comprises goodwill related to consolidated subsidiaries and goodwill related to subsidiaries deconsolidated for MCCSR purposes. Goodwill related to substantial investments in unconsolidated entities that is not otherwise deducted for MCCSR 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 against the supervisory target ratio. Companies 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.

Additionally, the carrying value, net of amortization, of identified intangible assets⁴⁹ that is in excess of 5% of gross tier 1 capital will be deducted in the determination of net tier 1 capital. The deduction for intangible assets applies to identified intangible assets purchased directly, or acquired in conjunction with or arising from the acquisition of a business. Such intangibles may include, but are not limited to, trade names, customer relationships, and policy and other distribution channels. Identified intangible assets include those related to consolidated subsidiaries and subsidiaries deconsolidated for MCCSR purposes.

⁴⁹ Companies may net associated deferred tax liabilities against the carrying value of an identified intangible asset arising from a business combination (recognized and measured in accordance with *IFRS 3 – Business Combinations*) when both of the following conditions are met: 1) The cost of the intangible asset is completely non-deductible for tax purposes in the tax jurisdiction in which it was acquired, so that the tax base for the intangible asset is nil. In particular, no portion of any reduction in the carrying amount of the intangible asset due to amortization or impairment is allowed as a tax-deductible expense, and no portion of the cost of the intangible asset is tax deductible if it is sold; and 2) The recognition of the deferred tax liability associated with the acquired intangible was recorded by increasing the company's reported consolidated goodwill, and is included in the goodwill amount deducted from tier 1 capital.

Computer software classified as intangible assets per IAS 38 are not included in the definition of identified intangible assets for determining the excess of 5% of gross tier 1 deduction.

2.4 Negative reserves and cash surrender value deficiencies

Companies are required to calculate negative reserves on a policy-by-policy basis and cash surrender value (CSV) deficiencies on an aggregate basis by group. Policy-by-policy negative reserves are adjusted for income taxes, amounts that may be recovered on surrender, and the capital that a company is holding in respect of each policy's insurance components. The adjusted amount of policy-by-policy negative reserves and the amount of aggregate CSV deficiencies must be deducted from tier 1 capital or included in Assets Required. All of the adjusted negative reserve amount and 75% of the aggregate CSV deficiency amount may be included in tier 2c capital or Other Assets. The details of both calculations are described below.

For MCCSR purposes, the policy liabilities used in calculating negative reserves and CSV deficiencies should include deferred income taxes under valuation assumptions as required by the Canadian Institute of Actuaries Standards prior to any accounting adjustment for balance sheet presentation, and should exclude cashflows resulting from any future morbidity improvement if the impact of such improvement has been reversed from retained earnings in the determination of gross tier 1 capital under section 2.1.1.1 and should exclude cashflows resulting from future mortality improvement under CIA standard 2350.06 if the impact of such improvement has been reversed from retained earnings in the determination of gross tier 1 capital under section [2.1.1.1](#).

2.4.1. Negative reserves

Policy-by-policy negative reserves should be calculated for all products and lines of business, including group and accident and sickness business. The calculation should include:

- The negative reserve for each certificate under group policies for which premiums or reserves are based on individual insured characteristics, such as group association or creditor insurance;
- The excess, if positive, of the deferred acquisition costs for any policy over its termination or surrender charges; and
- Negative group refund provisions where recovery is not completely assured, calculated policy by policy.

The negative reserve for a policy may be multiplied by a factor of 70%, in order to account for the effect of income taxes, if it arises from either of the following:

- Active life reserves for Canadian individual health business, or
- Canadian individual life business.

No tax reduction is allowed for negative reserves relating to any other type of business. The negative reserve for the policy, after adjustment (if any) for taxes, may then be further reduced to a minimum of zero by the sum of the following five policy components:

- The net commission chargeback for the policy;
- The lapse component for the policy;
- The policy's marginal mortality component;
- The policy's marginal morbidity component; and
- An adjustment if the policy is part of a YRT reinsurance treaty.

However, the maximum total amount by which the deduction from tier 1 of tax-adjusted policy-by-policy negative reserves for a Canadian company may be reduced is limited to 25% of:

- Gross tier 1 capital available; less
- All deductions from tier 1 used to determine adjusted net tier 1 capital as specified in section [2.1.1.6](#), excluding negative reserves; less
- Total tax-adjusted policy-by-policy negative reserves, calculated without any reduction for the policy components listed above.

For a foreign company, the maximum reduction in tax-adjusted policy-by-policy negative reserves included in Assets Required is limited to 25% of:

- Admitted assets vested in trust; plus
- Investment income due and accrued on admitted vested assets; less
- The portion of Deductions/Adjustments (reference section [6.6](#)) that is subtracted directly in the determination of Assets Available (reference section [6.3](#)); less
- Assets Required excluding negative reserves; less
- Total tax-adjusted policy-by-policy negative reserves, calculated without any reduction for the policy components listed above.

In order to use any of the components to offset the policy's negative reserve, the component must be calculated for that policy alone. The following provides additional detail on the calculation of each of the policy components.

2.4.1.1. Commission chargebacks

The net commission chargeback for a policy is defined as:

$$0.85 \times T \times C$$

where T is the factor used to adjust the policy negative reserve for taxes (either 70% or 100%) and C is the policy's commission chargeback that the company could reasonably expect to

recover in the event the policy were to lapse. The chargeback amount used should be based on the policy's chargeback schedule, and should be calculated net of all ceded reinsurance allowances and commissions.

2.4.1.2. Lapse component

For the purpose of determining the negative reserve reduction for the policy on account of the lapse component (reference section [4.5](#)), this component should be calculated net of both registered and unregistered reinsurance.

2.4.1.3. Marginal mortality component

In order to use the mortality component (reference section [4.1](#)) as an offset to the negative reserve deduction for a particular policy, the partition of the company's book of business used for the mortality component must contain a set consisting of this policy alone. For basic death policies, the marginal mortality volatility component should be calculated as:

$$\frac{s^2}{2 \times \sqrt{\sum_{\text{Basic Death}} S^2}} + k - d$$

and for AD&D policies it should be calculated as:

$$\frac{s^2}{2 \times \sqrt{\sum_{\text{AD\&D}} S^2}} + k - d$$

where:

- s is the volatility component, net of all reinsurance (registered and unregistered), calculated for the set consisting of the policy,
- k is the catastrophe component, net of all reinsurance, calculated for the set consisting of the policy,
- The sum is taken over all sets of basic death or AD&D policies, including the set consisting of the policy for which a deposit has been made, and S is the volatility component for the set net of all reinsurance, and
- d is the amount of any reduction in the mortality component that has been taken on account of a deposit placed by the policyholder.

A company may not use the mortality component for the policy to reduce the negative reserve if it has reduced its mortality requirement on account of a reinsurance claims fluctuation reserve covering the policy.

2.4.1.4. Marginal morbidity component

The marginal morbidity component (reference section [4.4](#)) for a policy should be calculated as:

$$M_0 - M_1 - D$$

where M_0 is the morbidity requirement for the company's entire book of business (net of both registered and unregistered reinsurance and after adjustment for statistical fluctuation), M_1 is the morbidity requirement (taking account of the increased statistical fluctuation factor) for the company's book of business excluding the policy, and D is the amount of any reduction in the morbidity component that has been taken on account of a deposit placed by the policyholder. A company may not use the morbidity component for the policy to reduce the negative reserve if it has reduced its morbidity requirement on account of a reinsurance claims fluctuation reserve covering the policy.

2.4.1.5. Adjustment for policies assumed under YRT treaties

If a policy has been assumed under an eligible YRT reinsurance treaty (defined as a treaty that has fully guaranteed premiums and does not provide for profit sharing), the adjustment that may be used to reduce the policy's negative reserve is:

$$NR \times \min\left(\frac{A - B}{A}, 0.25\right)$$

where:

- NR is the policy's tax-adjusted negative reserve,
- A is the total of tax-adjusted negative reserves for all policies within the company's eligible YRT reinsurance treaties calculated policy by policy, and
- B is the total of tax-adjusted negative reserves for all of the company's eligible YRT reinsurance treaties, calculated treaty by treaty.

2.4.2. Cash surrender value deficiencies

Cash surrender value deficiencies may be calculated on an aggregate basis within groupings by product type. The deduction from tier 1 or amount included in Assets Required is then the sum of the aggregate deficiencies (if positive) for each grouping of policies. All of the policies in an aggregated group must be within the same line of business (as defined in the LIFE-1 or LIFE-2), must be contractually similar, and must eventually offer a meaningful cash surrender value. Policies that never pay cash surrender cash values may not be used to offset deficiencies in policies that do. The cash surrender values used in the calculation of deficiencies should be net of all surrender charges, market value adjustments and other deductions that a company could reasonably expect to apply in the event the policy were to be surrendered.

2.5. *Amortization of Tier 2 Capital Instruments*

Tier 2 capital instruments are subject to straight-line amortization in the final five years prior to maturity. Hence, as these instruments approach maturity, such outstanding balances are to be amortized based on the following schedule:

Years to Maturity	Included in Capital
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%

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 on November 1, 1995, and be reflected in the December 31, 1995 MCCSR return. An additional 20% amortization would be reflected in each subsequent December 31 return.

2.6. *Non-life financial corporation controlled by the company*

Equity investments in non-life solvency regulated financial corporations⁵⁰ that are controlled (as defined in the Act) by the company will be deducted^{51,52} from Available Capital. Non-life solvency regulated financial corporations include those entities that are engaged in the business of banking, trust and loan business, property and casualty insurance business, the business of co–

⁵⁰ Where the company cannot carry on the business directly or where application of the MCCSR factors does not measure the risks adequately in the controlled non-life solvency regulated financial corporation, the deduction method should be used.

⁵¹ Negative equity positions in controlled non-life solvency regulated financial corporations are floored at zero (i.e. negative positions in equity cannot be deducted to increase Available Capital).

⁵² Investments in subsidiaries that write both life insurance and property and casualty (P&C) insurance business are consolidated for MCCSR purposes. Insurers are required to calculate the subsidiary's capital requirements for life and P&C insurance risks using the MCCSR Guideline for life insurance liabilities and the MCT Guideline for P&C insurance liabilities. Where the MCT Guideline does not address insurance risk requirements relating to a specific P&C risk, insurers should contact OSFI in order to determine the capital requirement. Assets that have been specifically designated as supporting the subsidiary's life insurance liabilities under CALM are subject to the asset risk requirements of the MCCSR Guideline. The capital requirements for all other assets and all other risks in the subsidiary are determined using either the MCCSR or the MCT Guideline exclusively, depending on whether the subsidiary has a larger insurance risk capital requirement for the life business or for the P&C business under the respective guidelines' capital requirements; the insurer should use the same guideline from year to year until such weighting falls below 40% or exceeds 60%. The MCCSR required capital for the subsidiary is then the sum of the MCCSR and MCT requirements for insurance risk, MCCSR capital requirements for assets supporting CALM liabilities, and the capital requirements for the remaining assets and all other risks based on either the MCCSR or the MCT Guideline.

operative credit societies or that are primarily engaged in the business of dealing in securities, including portfolio management and investment counselling. Fifty percent of the net equity investment will be deducted from tier 1 capital, and an additional fifty percent will be deducted from tier 2 capital. The deduction should be net of both:

- goodwill and identified intangibles related to the investment that have been deducted from tier 1 capital per section [2.3](#), and
- all amounts related to the investment representing components of accumulated other comprehensive income that are ineligible for inclusion in MCCSR Available Capital.

Where the company has investments in preferred shares or debt instruments of the corporation, the amount invested in these instruments will also be deducted from Available Capital if they qualify as capital by the regulator in that corporation's home jurisdiction. Further, where a facility such as a letter of credit or guarantee is provided by the company, is treated as capital by the non-life financial corporation controlled by the company, being available for drawdown in the event of impairment of the corporation's capital and is subordinated to the corporation's customer obligations, the full amount of the facility will also be deducted from Available Capital. Although the facility has not been called upon, if it were drawn, the resources would not be available to cover capital requirements in the life company.

No asset default factor will be applied to equity investments, letters of credit and guarantees or other facilities provided to controlled non-life financial corporations where these have been deducted from Available Capital.

Investment in preferred shares or debt instruments of, or letters of credit provided to, controlled non-life financial corporations that are not deducted from Available Capital will be treated like any other asset in accordance with this guideline (reference chapter [3](#)).

If a company guarantees the obligations of a controlled non-life financial corporation, an off-balance sheet capital requirement will also be imposed (reference chapter [7](#)).

2.7. Substantial investments without control

Ownership interests in an entity⁵³ including a joint venture, other than an eligible mutual fund entity as described below, in which the company has made a substantial investment (as defined in Section 10 of the Act) but does not control will be deducted from Available Capital. Fifty percent of the investments will be deducted from tier 1 capital, and an additional fifty percent will be deducted from tier 2 capital. Canadian companies should calculate the deduction net of all amounts related to the investment representing components of accumulated other comprehensive income that are ineligible for inclusion in MCCSR Available Capital.

Portfolio investments, defined as investments of between 10% and 30% in the common shares of a corporation, that are subject to section 513 of the *Insurance Companies Act*, will be grandfathered. However, the grandfathering provision will not apply to equity investments in

⁵³ Refer to section 3.1.12 for the treatment of limited partnerships.

which the company, together with any of its subsidiaries and/or other financial institutions affiliated with the company, hold more than 30% of the common shares of another corporation.

Where a company has not been permitted to have a controlling interest in a foreign life entity due to restrictions imposed in the foreign jurisdiction, the company will be permitted to consolidate based on its proportionate equity interest of that entity. However, excess capital in the foreign life entity can only be counted by the company if confirmation that the excess capital is repatriable to the parent is provided by the regulator in that jurisdiction. Further, excess capital that is counted must reflect any income tax effect upon repatriation.

Where the company has investments in preferred shares or debt instruments of a foreign life entity, the amount invested in these instruments will also be deducted from Available Capital if the instruments qualify as capital by the regulator in the home jurisdiction of the entity. Further, where a facility such as a letter of credit or guarantee is provided by the company and is treated as capital by the entity being available for drawdown in the event of impairment of the entity's capital and is subordinated to the entity's customer obligations, the full amount of the facility will be deducted from Available Capital. Although the facility has not been called upon, if it were drawn, these resources would not be available to cover capital requirements in the life company.

No asset default factor will be applied to facilities that are deducted from Available Capital. Investments in preferred shares, debt instruments, and facilities that are not deducted from Available Capital will be treated like any other asset in accordance with this guideline (reference chapter [3](#)).

If a company guarantees the obligations of an entity it does not control, but in which it has a substantial investment and has deducted it from Available Capital, an off-balance sheet capital requirement will also be imposed (reference chapter [7](#)).

Companies are not required to deduct from Available Capital substantial investments in mutual fund entities that do not leverage their equity by borrowing in debt markets, and that do not otherwise leverage their investments. Instead, a capital charge on the assets of the mutual fund entity will apply based on the requirements of section 3.1.9. For example, no deduction need be made from Available Capital where the company makes a substantial investment in a mutual fund as part of a structured transaction that passes through the unaltered returns (i.e., no guarantee of performance) on the substantial investment to the mutual fund holder.

2.8. *Minimum amount of capital and surplus*

Notwithstanding the capital requirement described in the guideline, Canadian life insurance companies will be required to maintain a minimum amount of Available Capital, as calculated in this guideline, of \$5 million or such amount as specified by the Minister.

2.9. *Out-of-Canada terminal dividend reserves (tier 2C)*

Fifty per cent of the terminal dividend reserve associated with out-of-Canada participating life insurance business qualifies as Tier 2C capital where:

-
- The terminal dividend reserve can be shown to be uniquely associated with a block of out-of-Canada (e.g. United Kingdom) lives, terminal dividends constitute a high proportion of the total benefit paid to the policyholder, and the foreign jurisdiction either does not require actuarial liabilities to be set up for these dividends, or allows the reserves established for such dividends to be considered as available to offset risk in determining the required capital for the company;
 - The terminal dividend reserve is calculated in accordance with the CIA's Consolidated Standards of Practice;
 - Policyholder material discloses the true variability of terminal dividend payments and that the returns will vary with the returns on equity or other assets supporting the policies. The disclosure must indicate that ultimate terminal dividends are tied to the financial condition of the company or of the subsidiary issuing these policies and that the payments are at the discretion of the company or of the subsidiary issuing these policies;
 - The board of directors of the company or subsidiary issuing these policies has passed a resolution that it will act to adjust the terminal dividends to take account of the advice of the Appointed Actuary or with-profits actuary and any other factors they consider relevant regarding the appropriateness of the terminal dividend scale, consistent with policyholder expectations and the financial condition of the company or subsidiary.
 - The participating fund associated with out-of-Canada participating life insurance business is sufficient to cover extreme scenarios at a 99.5% confidence level based on stochastic or other appropriate stress testing, acceptable to the company's or subsidiary's regulator, of all of the relevant risks. The stress tests must be undertaken assuming one of the following:
 - Neither the Canadian GAAP provisions for adverse deviation in liabilities nor the MCCSR capital held for the participating business are available to cover losses, but terminal dividends are fully adjusted (consistent with policyholder expectations) to reflect adverse experience; or
 - Provisions for adverse deviation and MCCSR capital are used to cover losses, but a maximum of 50% of the terminal dividend reserve is released to reflect adverse experience.
 - The country in which the out-of-Canada participating life insurance business is issued is considered by OSFI to have a strong regulation and supervision system.

Appendix 2-A Information Requirements for Capital Confirmations

Given the potential impact of the disqualification of a capital instrument, insurers are encouraged to seek confirmations of capital quality from OSFI prior to issuing instruments⁵⁴. In conjunction with such requests, the institution is expected to provide the following information to the Capital Division.

1. An indicative term sheet specifying indicative dates, rates and amounts and summarizing key provisions should be provided in respect of all proposed instruments.
2. The draft and final terms and conditions of the proposed instrument supported by relevant documents (i.e. Prospectus, Offering Memorandum, Debt Agreement, Share Terms, etc.).
3. A copy of the institution's current by-laws or other constating documents relevant to the capital to be issued as well as any material agreements, including shareholders' agreements, which may affect the capital quality of the instrument.
4. Where applicable, for all debt instruments only:
 - a) the draft and final Trust Indenture and supplemental indentures; and
 - b) the terms of any guarantee relating to the instrument.
5. Where the terms of the instrument include a redemption option or similar feature upon a tax event, an external tax opinion confirming the availability of such deduction in respect of interest or distributions payable on the instrument for income tax purposes⁵⁵.
6. An accounting opinion describing the proposed treatment and disclosure of the Tier 1 capital instrument (other than common shares) or the Tier 2 capital instrument on the institution's financial statements⁵⁶.
7. Where the initial interest or coupon rate payable on the instrument resets periodically or the basis of the interest rate changes from fixed to floating (or vice versa) at a pre-determined future date, calculations demonstrating that no incentive to redeem, or step-up, will arise upon the change in the initial rate. Where applicable, a step-up calculation should be provided according to the swap-spread methodology which confirms there is no step-up upon the change in interest rate and supported by screenshots of the applicable reference index rate(s).
8. Capital projections that demonstrate that the insurer will be in compliance with its supervisory target capital ratios as well as the capital composition requirements specified in section [2.1.5](#) at the end of the quarter in which the instrument is expected to be issued.
9. An assessment of the features of the proposed capital instrument against the minimum criteria for inclusion in Other Tier 1 capital or Tier 2 capital, as applicable, specified in this

⁵⁴ If an insurer fails to obtain a capital confirmation (or obtains a capital confirmation without disclosing all relevant material facts to OSFI), OSFI may, at its discretion and at any time determine that such capital does not comply with these principles and is to be excluded from an insurer's Available Capital.

⁵⁵ OSFI reserves the right to require a Canada Revenue Agency advance tax ruling to confirm such tax opinion if the tax consequences are subject to material uncertainty.

⁵⁶ OSFI reserves the right to require such accounting opinion to be an external opinion of a firm acceptable to OSFI if the accounting consequences are subject to material uncertainty.

Guideline. For greater certainty, this assessment would only be required for an initial issuance or precedent and is not required for subsequent issuances provided the terms of the instrument are not materially altered.

10. A written attestation from a senior officer of the insurer confirming that the insurer has not provided financing to any person for the express purpose of investing in the proposed capital instrument.

Appendix 2-B Qualifying Criteria for Capital Instruments Issued Prior to August 7, 2014

Capital instruments issued prior to August 7, 2014 that do not meet the relevant criteria specified in sections 2.1.1.2 to 2.1.1.5 or 2.1.2.1 to 2.1.2.3 are assessed against the relevant criteria specified in this Appendix for inclusion in Available Capital. Capital instruments that meet the relevant criteria in this Appendix, but do not meet the relevant criteria specified in sections 2.1.1.2 to 2.1.1.5 or 2.1.2.1 to 2.1.2.3 will be subject to transitional measures in due course.

A. Tier 1

1. Preferred shares (Tier 1)

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, the Office would not normally prevent such redemptions by healthy and viable companies when the instrument is or has been replaced by equal or higher quality capital including an increase in retained earnings, or if the company is downsizing. The redemption or purchase for cancellation of tier 1 instruments requires the prior approval of the Superintendent.

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

- subordinated;
- permanent; and
- free of mandatory fixed charges.

1.1. Subordination

Preferred shares must be subordinated to policyholders and unsecured creditors of the company. If preferred shares are issued by a subsidiary or intermediate holding company for the funding of the company 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 were issued by the company.

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; and

-
- any step-up⁵⁷ representing a pre-set increase at a future date in the dividend (or distribution) rate based in whole or in part on the issuer’s credit rating or financial condition⁵⁸.

Any conversion, other than to common shares of the issuer⁵⁹, or redemption is subject to supervisory approval and:

- redemption can only be for cash or the equivalent; and
- 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.

Preferred shares with dividends that are fixed for a period of time and then shift to a floating rate (“Fixed-Floaters”) may contain embedded step-ups. OSFI must be satisfied that dividend reset features do not impair the permanence of the shares, and that these features do not create an incentive to redeem. A dividend reset feature that results in a step-up from the initial rate signals intent to redeem. Accordingly, step-ups, at any level and any time, are not acceptable in a tier 1 preferred share instrument. To qualify for inclusion as Available Capital, applicants must demonstrate that a dividend reset feature does not give rise to a step-up of any amount, given the company’s credit quality at the original date of issue.

Fixed-Floaters that are determined to contain a step-up will be subject to the specific treatment that is established by OSFI with the issuing FRFI.⁶⁰

For purposes of determining the existence of a step-up, international standards employ the “swap spread” methodology outlined in Appendix 2-C. In situations where the index that is the basis for the reset rate differs from that of the initial rate, this methodology uses the public swap markets to enable a comparison of the two rates. FRFIs wishing to include a dividend reset mechanism in a preferred share instrument must demonstrate, using the swap spread methodology, that no embedded step-up exists. However, for this analysis to be conclusive, a public swap market should exist between the two reference rates. Without such a market, it will

⁵⁷ An increase over the initial rate after taking into account any swap spread between the original reference index and the new reference index.

⁵⁸ In keeping with this policy, a dividend-reset mechanism that does not specify a cap, consistent with the company’s credit quality at the original date of issue, is not acceptable because it raises the possibility that the dividend would be reset based on the future credit quality of the company. Any existing preferred shares containing such a feature and previously approved for inclusion in Tier 1 are grandfathered.

⁵⁹ Qualifying preferred shares outstanding as of January 31, 2004 and accounted for as equity, prior to November 1, 2004, the effective date of CICA Handbook Section 3860 Financial Instruments – Disclosure and Presentation, will continue to be eligible for core tier 1 treatment for as long as they remain outstanding, even if they are accounted for as liabilities after the effective date of the change in accounting standards.

⁶⁰ Effective May 2001 and up to June 2004, issues of preferred shares containing embedded step-ups at any level did not qualify for Tier 1 or Tier 2A and were considered for inclusion only in Tier 2B. Effective June 2004, qualifying preferred shares that have a moderate step-up may be included in Tier 2A capital, provided the conditions in Appendix 2-B, section B.1 are met.

be difficult for a FRFI to demonstrate objectively to demonstrate to OSFI's satisfaction that no step-up exists. In these circumstances, OSFI believes that only a public swap market between the two reference rates contained in the instrument provides certainty as to the intent of the dividend reset mechanism.

The only capital instruments that could qualify as tier 1 capital and contain a step-up feature are instruments that meet the requirements of rules for innovative instruments outlined in Appendix 2-C. In those limited circumstances, the instrument may have a moderate step-up only after 10 years.

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; or
- 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 with accepted practice, in the event of non-declaration of a dividend, approval of the holders of preferred shares may be sought 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); or
- 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); or
- redeeming, purchasing or otherwise retiring less than all such preferred shares; or
- 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.

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; and
 - 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.

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; and
- a dividend-reset mechanism that does not specify a cap, consistent with the institution's credit quality at the original date of issue.

B. Tier 2

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 company 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.

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.

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. Hybrid capital instruments must, at a minimum, meet the following criteria:

-
- are unsecured, subordinated to policyholder and creditor obligations and fully paid;
 - are 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 of Financial Institutions;
 - are available to participate in losses without triggering a cessation of ongoing operations or the start of insolvency proceedings; and
 - allow service obligations to be deferred (as with cumulative preferred shares) where the profitability of the company would not support payment.

These instruments include:

- cumulative perpetual preferred shares;
- qualifying 99-year debentures; and
- qualifying non-controlling interest arising on consolidation from tier 2 hybrid capital instruments.

To qualify as tier 2A capital, preferred shares should have characteristics similar to those required for tier 1 capital with the exception that tier 2A preferred shares may be cumulative.⁶¹

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 may be regarded as involving disguised capital repayment. To qualify for tier 2A, capital should not have a limited life.

Perpetual⁶² debentures meeting the criteria for hybrid capital instruments specified above will be eligible for inclusion in tier 2A capital if they also:

- are available to participate in losses while the issuer is still a going concern. Therefore, if the retained earnings (both par and non-par) of the issuer are negative, then the principal amount of the debt and unpaid interest must automatically convert to common or perpetual preferred shares⁶³;
- 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

⁶¹ Effective June 2004, Tier 2A qualifying capital instruments, including preferred shares, may also include moderate step-ups, provided the conditions in Appendix 2-B, section B.1 are met.

⁶² Perpetual includes debentures with a 99-year term.

⁶³ It may be acceptable for the principal amount of the debt, together with any unpaid interest, to be deemed for all purposes to have automatically converted to common shares or perpetual preferred shares immediately before the Superintendent takes control of the issuer or steps are initiated for the winding-up of the issuer so that the holder will no longer be a holder of tier 2A-qualifying debentures but a holder of common or preferred shares. OSFI will consider the acceptability of this alternative conversion trigger on a case-by-case basis in the context of a debenture's other principal features.

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

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

Preferred shares or perpetual subordinated debentures with moderate step-ups may be included in tier 2A capital, provided these instruments meet all of the other conditions for tier 2A treatment and subject to the following additional requirements⁶⁴:

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

2. *Limited life instruments (tier 2B)*

Limited life instruments must, at a minimum, meet the following criteria:

- subordination to policyholders and other senior creditors;
- an initial minimum term greater than five years; and
- may be redeemable by the issuer in the first five years only with the prior consent of the Superintendent of Financial Institutions⁶⁵.

In contrast to hybrid instruments, limited life instruments are not permanent and include:

- limited life redeemable preferred shares;

⁶⁴ A capital instrument with a step-up feature that does not meet all of the stated Tier 2A conditions may be eligible for Tier 2B treatment, provided it meets the step-up conditions and all other conditions for Tier 2B treatment.

⁶⁵ OSFI would not normally prevent such redemptions by healthy and viable companies 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.

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

Preferred shares with dividends that are fixed for a period of time and then shift to a floating rate (“Fixed-Floaters”) may contain embedded step-ups.

Subordinated debt or term preferred shares with embedded step-ups may be included in tier 2B capital, provided these instruments meet all of the other conditions for tier 2B treatment and subject to the following requirements:

- step-up must be calculated using the “swap spread” methodology outlined in Appendix 2-C;
- step-up cannot be combined with any other feature that causes an economic incentive to redeem;
- terms of the instrument must not provide for more than one step-up over the life of the instrument;
- instrument must not have a step-up of any amount in the first five years; and
- 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.

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 obligations, and would not trigger cross-default clauses under the covenants of other borrowing agreements of either the institution or the parent.

Limitations apply to the amount of limited life instruments that may be included in tier 2B (see section [2.1.5](#)).

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.

3. Amortization of Tier 2 Capital Instruments

Tier 2 capital instruments 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 company 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:

Years to Maturity	Included in Capital
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 policyholders.

Amortization should begin five years before the date at which the debenture or share may be redeemed at the company's option. For example, for a 20-year debenture or share that can be redeemed at the company's option any time after the first ten years, amortization should begin after the fifth year. This rule does 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.

Tier 2B 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.

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 on November 1, 1995, and be reflected in the December 31, 1995 MCCR return. An additional 20% amortization would be reflected in each subsequent December 31 return.

C. Early Redemption of Capital Instruments

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

- i) Tax laws change, adversely affecting the tax advantage of the preferred shares/hybrid instrument;

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- ii) OSFI's capital adequacy requirements change, such that the preferred shares/hybrid instrument could no longer be included in calculating the Available Capital of the company on a consolidated basis; or
 - iii) A restructuring resulting from a major acquisition or merger where the instrument is immediately exchanged for a capital qualifying instrument of the continuing company with identical terms and conditions and capital attributes.

Superintendent approval is required for redemption at any time.

D. Related Guidance Notes and Advisories

Refer to the following OSFI additional guidance on the definition of capital.

Guidance	Date
Ruling 2005-01: <i>Conversion of subordinated debt</i>	2005
Advisory: <i>Innovative Tier 1 and Other Capital Clarifications – Revised Version</i>	December 2008

Appendix 2-C 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. We plan to revisit the Appendix as our 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 capital⁶⁶. A non-operating entity cannot have depositors or policyholders.

This Appendix applies to indirect issues done through a SPV. To qualify as capital, direct issues must meet the conditions set out in OSFI Guidelines *Minimum Continuing Capital and Surplus Requirements* 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, contributed surplus, retained earnings and participating account surplus, as applicable) should be the predominant form of a FRFI's Tier 1 capital.

⁶⁶ All qualifying consolidated innovative tier 1 instruments outstanding as of June 30, 2003, and any in respect of which OSFI received a formal request for capital confirmation as of the same date and which was subsequently approved by OSFI, continue to receive innovative tier 1 regulatory capital treatment by OSFI, even if these were no longer consolidated as a result of AcG-15 *Consolidation of Variable Interest Entities*, when it became effective in November 2004.

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- 1(a): Innovative instruments must not, at the time of issuance, make up more than 15 per cent of a FRFI's net Tier 1 capital. Any excess cannot be included in Available Capital.⁶⁷

If, at any time after issuance, a FRFI's ratio of innovative instruments to net Tier 1 capital exceeds 15 per cent, 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): Tier 1-qualifying preferred shares (combined with innovative instruments) must not, at the time of issuance, make up more than 40 per cent of a FRFI's net Tier 1 capital. Any excess cannot be included in Available Capital.⁶⁷

Tier 1-qualifying preferred shares that were previously included in Tier 1 capital (i.e., they were within the 40% aggregate limit for Tier 1 instruments other than common shares as at issuance) but which subsequently exceed the 40% aggregate limit due to operating losses and/or the payment of normal dividends will be considered eligible for continued inclusion in Tier 1 capital.

A FRFI that wishes to include such excess preferred share amounts in Tier 1 capital must obtain OSFI's prior confirmation that this treatment is acceptable. To obtain confirmation, the FRFI must demonstrate that operating losses and/or the payment of normal dividends created the excess amount. The FRFI must also provide a clear and supportable plan, acceptable to OSFI, outlining how it proposes to eliminate the excess quickly. This approach to the treatment of excess Tier 1-qualifying preferred share amounts is effective as at March 31, 2003.

- 1(c): A strongly capitalized FRFI should not have innovative instruments and perpetual non-cumulative preferred shares that, in aggregate, exceed 40% 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(d): For the purposes of this principle, "net Tier 1 capital" means Tier 1 capital 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:

⁶⁷ Only those excesses arising after issuance and as a result of operating losses and/or the payment of normal dividends will normally be eligible for continued inclusion in Tier 1 capital.

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 per cent of the innovative instrument(s) and, for Loan-Based Structures, the excess will be considered to be material if it exceeds 3 per cent 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 99 years.⁶⁸ 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.
 - 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:

⁶⁸ Qualifying inter-company instruments issued prior to December 2008 are required to have a maturity of at least 30 years.

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- 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 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 Ratio of less than 75 per cent or a MCCR Total Ratio of less than 120 per cent⁶⁹; or
 - c) in the case of a DTI, it has a Tier 1 capital ratio of less than 5.0 per cent or a Total Capital ratio of less than 8.0 per cent; 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 Tier 1 Ratio of less than 75 per cent or a MCCR Total Ratio of less than 120 per cent, or, in the case of a DTI, the FRFI has a Tier 1 capital ratio of less than 5.0 per cent or a Total Capital ratio of less than 8.0 per cent; 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 risk premium (over the risk-free rate) reflected in 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 risk premium (over the risk-free rate) reflected in the dividend rate of

⁶⁹ The MCCR Tier 1 and Total Ratios are calculated per section 2.1.6: (Adjusted net tier 1 capital / Base Required Capital) x 100 and ((Adjusted net tier 1 capital + net tier 2 capital) / Base Required Capital) x 100.

comparable shares as at that date (i.e. upon the original issuance of the innovative instrument).⁷⁰

- 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:
 - (i) 100 basis points, less the swap spread between the initial index basis and the stepped-up index basis; and
 - (ii) 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

⁷⁰ For Tier 1-qualifying preferred shares issued prior to December 2008, 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.

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 issued after December 2008 can include securities that mature in at least 99 years. However, these will be subject to straight-line amortization for regulatory capital purposes beginning 10 years prior to maturity.⁷¹ 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.⁷²

Structures permitting the indirect conversion of an innovative Tier 1 instrument into the common shares of an unregulated holding company may be submitted to OSFI for review and approval, provided the following conditions are met:

- (1) unregulated holding company has a material public common float and the FRFI does not;
- (2) unregulated holding company is the direct parent and controlling shareholder of the FRFI; and
- (3) unregulated holding company is a non-operating holding company.

⁷¹ Innovative instruments issued prior to January 2009 must not contain a maturity date or other feature that requires the instrument to be paid in cash.

⁷² The intent is to allow the issuance of innovative Tier 1 instruments by a FRFI owned directly by a holding company with a material float of common shares listed and posted for trading on a recognized stock exchange (a "material public common float") when the FRFI has no such float of its own.

OSFI reserves the right to require additional conditions or restrictions, consistent with the proposed regulatory capital treatment of an instrument, to address the particular nature of proposals presented for its consideration.⁷³

Principle #6: Innovative instruments must be free from mandatory fixed charges.⁷⁴

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.

⁷³ If, subsequent to the issuance of an innovative Tier 1 instrument that has a structure involving an unregulated holding company, material changes occur in the activities of that holding company or the nature of its relationship to the FRFI, the FRFI should seek OSFI's confirmation that the original capital treatment of the instrument continues to apply. In those circumstances, OSFI reserves the right to reassess the quality of the instrument and, where appropriate, to introduce additional conditions or restrictions to maintain the original regulatory capital treatment of the instrument.

⁷⁴ Effective December 2008, a qualifying innovative instrument is permitted to be "share cumulative" where, under specified circumstances to maintain cash resources in the FRFI and as a result of contractual obligations between the investors, the SPV and the FRFI, deferred cash coupons on the innovative instrument become payable in tier 1-qualifying perpetual preferred shares of the FRFI, subject to the following requirements (in the situation where preferred shares are issued during a cash coupon deferral period, leaving aside any tax consequences related thereto, such issuance reallocates capital between retained earnings and preferred share capital and does not result in a net increase in the overall level of Tier 1 capital):

- Cash coupons on the innovative instrument can be deferred at any time, at the FRFI management's complete discretion, with no limit on the duration of the deferral, apart from the maturity of the instrument.
- The preferred shares issued by the FRFI will initially be held in trust and will only be distributed to the holders of the innovative instrument to pay for deferred coupons once the cash coupons on the innovative instrument are resumed or when the innovative instruments are no longer outstanding (e.g. maturity of the innovative instrument, conversion of innovative instrument into preferred shares of the FRFI, etc.).
- The number of preferred shares to be distributed by the FRFI to effect payment in lieu of deferred cash coupons must be calculated by dividing the deferred cash coupon amount by the face amount of the preferred shares.
- The risk premium (over the risk-free rate) reflected in the dividend rate of such preferred shares must be established at the time the innovative instrument is issued and must not exceed the risk premium (over the risk-free rate) reflected in the dividend rate of comparable shares as at that date (i.e. upon original issuance of the innovative instrument).

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.

OSFI expects that FRFIs will, particularly for innovative instruments issued after July 1, 2008, provide prospectus-level disclosure at issuance to ensure the main features of the innovative instruments and the structure of the issue are transparent and easily understood by investors, including all relevant risk factors. Further, in the case of material changes, OSFI expects the FRFI will provide additional disclosure on a timely basis. In particular, the following information should be disclosed to investors in innovative instruments and to the shareholders of the FRFI issuing, directly or indirectly, the innovative instruments:

- 1) *Tier 1 treatment*: It should be explicitly stated that innovative instruments are structured with the intent of achieving Tier 1 regulatory capital treatment and, as such, have features of equity capital. It should be clearly stated that dividends on the innovative instruments will not be paid if dividends are not paid by the FRFI on its common and preferred shares. In addition, it should be disclosed that the innovative instruments contain certain features that will convert these instruments into preferred shares of the FRFI and thus, in the event of liquidation of the FRFI, holders of the innovative instruments issued by the SPV will rank as preferred shareholders of the FRFI.
- 2) *Trust assets (asset-based only)*: FRFIs should, at issuance and on at least a quarterly basis thereafter, provide prospectus-level disclosure of any material information that will assist investors in understanding the risks of the underlying trust assets, including, to the extent relevant: a breakdown of the assets by type (i.e., residential mortgage, mortgage backed security, etc.), the geographic distribution of the assets, information on the creditworthiness of obligors and guarantors, a description of collateral and a description of the average maturities of the assets.

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.

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Chapter 3. Asset Default (C-1) Risk

3.1. Asset default factors

Asset default risk covers losses resulting from asset defaults, loss of market value of equities, and related reductions in income⁷⁵. It encompasses both on- and off-balance sheet risks of life insurers. To compute the component requirement for on-balance sheet risks, factors are applied to the values of the company's assets. To compute the component requirement for off-balance sheet instruments, factors are applied to the exposure amount determined according to chapter 7. The resulting charges are summed to arrive at the asset default risk component requirement.

For the purpose of calculating the C-1 risk component, on-balance sheet assets should be valued at their balance sheet carrying amounts, with the following exceptions:

- loans carried at fair value under the fair value option, fair value hedge accounting, or available-for-sale accounting, which should be valued at amortized cost;
- debt securities carried at fair value under available-for-sale accounting, which should also be valued at amortized cost; and
- owner-occupied property, which should be valued in accordance with section [3.1.11](#).

Additionally, the C-1 component relating to certain types of asset risks is calculated using techniques that are different from applying the regular factors:

- The on- and off-balance sheet risks relating to qualifying participating policies should be tracked separately from those relating to non-par policies and surplus, as the asset default factors differ (see below).
- The capital requirement for securitizations is described in section [3.4](#).
- The capital requirement for securities that have been lent is described in section [3.5](#).
- Assets backing index-linked products receive capital factors based on correlation calculations, as described in section [3.6](#).
- Assets held in segregated funds by a company's policyholders are not subject to the requirements of this chapter⁷⁶.
- Reinsurance assets are not subject to the requirements of this chapter, and instead receive the capital treatment described in sections [10.4](#) and [10.5](#).

⁷⁵ Entities deducted from Available Capital, such as certain non-life financial corporations, are not subject to the requirements of this section.

⁷⁶ If a company's consolidated financial statements include an unleveraged mutual fund entity that is not subject to deduction from Available Capital, the requirements of section 3.6 will apply to the portion of assets where returns on those assets are retained for the company's own account. The requirements of chapter 3 do not apply to the portion of assets where the company can demonstrate (1) ownership by policyholders or outside investors and (2) a contractual obligation to pass through all returns, provided that the company is able to track and distinguish the mutual fund units held for its own account from those held by policyholders and outside investors.

For assets backing qualifying participating policies that meet the criteria in section [1.2.6](#), the asset default factors are 50% of the regular factors. Regular factors apply to assets backing non-participating products, ancillary funds, and surplus. If the assets backing qualifying participating policies are commingled within an asset segment that also backs other products, the assets to which the reduced C-1 requirements for qualifying participating are applied must be the same assets used to back these qualifying participating policies in the calculation of the policy liabilities under the CALM methodology.

3.1.1. Use of ratings

Many of the factors in this chapter depend on the rating assigned to an asset or an obligor. In order to use a factor that is based on a rating, a company must meet all of the conditions specified in this section.

Companies may recognize credit ratings from the following rating agencies for MCCR purposes:

- DBRS
- Moody's Investors Service
- Standard and Poor's (S&P)
- Fitch Rating Services

A company must choose the rating agencies it intends to rely on and then use their ratings for MCCR purposes consistently for each type of claim. Companies may not "cherry pick" the assessments provided by different rating agencies.

Any rating used to determine a factor must be publicly available, i.e. the rating must be published in an accessible form and included in the rating agency's transition matrix. Ratings that are made available only to the parties to a transaction do not satisfy this requirement.

If a company is relying on multiple rating agencies and there is only one assessment for a particular claim, that assessment should be used to determine the capital charge for the claim. If there are two assessments from the rating agencies used by a company and these assessments differ, the company should apply the capital charge corresponding to the lower of the two ratings. If there are three or more assessments for a claim from a company's chosen rating agencies, the company should exclude one of the ratings that corresponds to the lowest capital charge, and then use the rating that corresponds to the lowest capital charge of those that remain (i.e. the company should use the second-highest rating from those available, allowing for multiple occurrences of the highest rating).

Where a company holds a particular securities issue that carries one or more issue-specific assessments, the capital charge for the claim will be based on these assessments. Where a company's claim is not an investment in a specifically rated security, the following principles apply:

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- In circumstances where the borrower has a specific rating for an issued debt security, but the company's claim is not an investment in this particular security, a rating of BBB- or better on the rated security may only be applied to the company's unrated claim if this claim ranks pari passu or senior to the rated claim in all respects. If not, the credit rating cannot be used and the company's claim must be treated as an unrated obligation.
 - In circumstances where the borrower has an issuer rating, this assessment typically applies to senior unsecured claims on that issuer. Consequently, only senior claims on that issuer will benefit from an investment-grade (BBB- or better) issuer assessment; other unassessed claims on the issuer will be treated as unrated. If either the issuer or one of its issues has a rating of BB+ or lower, this rating should be used to determine the capital charge for an unrated claim on the issuer.
 - Short-term assessments are deemed to be issue specific. They can only be used to derive capital charges for claims arising from the rated facility. They cannot be generalized to other short-term claims, and in no event can a short-term rating be used to support a capital charge for an unrated long-term claim.
 - Where the capital charge for an unrated exposure is based on the rating of an equivalent exposure to the borrower, foreign currency ratings should be used for exposures in foreign currency. Canadian currency ratings, if separate, should only be used to determine the capital charge for claims denominated in Canadian currency.

The following additional conditions apply to the use of ratings:

- External assessments for one entity within a corporate group may not be used to determine the capital charge for other entities within the same group.
- No rating may be inferred for an unrated entity based on assets that the entity possesses.
- In order to avoid the double counting of credit enhancement factors, companies may not recognize credit risk mitigation under sections 3.2 and 3.3 if the credit enhancement has already been reflected in the issue-specific rating.
- A company may not recognize a rating if the rating is at least partly based on unfunded support (e.g. guarantees, credit enhancement or liquidity facilities) provided by the company itself or one of its affiliates.
- Any assessment used must take into account and reflect the entire amount of credit risk exposure a company has with regard to all payments owed to it. In particular, if a company 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.

Companies may not rely on unsolicited ratings in determining the capital charge for an asset, except where the asset is a sovereign exposure and a solicited rating is not available.

3.1.2. Basic component requirement

Factor		Basic Components
Regular	Qualifying Participating	
0%	0%	Currency held on the company's own premises
0%	0%	Unrealized gains and accrued receivables on forwards, swaps, purchased options and similar derivative contracts where they have been included in the off-balance sheet calculation
0%	0%	Receivables from federally regulated insurers and approved provincial reinsurers
0%	0%	Any deductions from capital, including goodwill, intangible assets and substantial investments (including facilities)

Demand deposits, certificates of deposit, drafts, checks, acceptances and similar obligations that have an original maturity of less than three months, and that are drawn on regulated deposit-taking institutions subject to the solvency requirements of the Basel Framework, receive a factor of 0.25% (0.125% for qualifying participating).

3.1.3. Miscellaneous items

Factor		Miscellaneous Items
Regular	Qualifying Participating	
8%	4%	Book value of miscellaneous items (e.g., outstanding premiums, agent's debit balances ⁷⁷ , receivables, furniture and fixtures, prepaid expenses, deferred tax assets, intangible assets not deducted from capital)
8%	4%	Receivables from insurers that are not federally regulated or not approved provincial reinsurers
8%	N/A	The amount of available refunds from defined benefit pension plan surplus assets included in Tier 1
8%	4%	Instruments or investments that are not specifically identified in this guideline
16%	8%	Assets ⁷⁸ classified as held for sale (HFS) ⁷⁹

⁷⁷ With respect to agent's debit balances, where there is doubt concerning the collection of interest or principal, the company must set up a provision or the "loan" must be written off. Such provisions would be based on the company's collection experience for these loans and the current economic conditions. The asset default factor would then be applied to the net amount of the agent's balances (outstanding amount less provision).

⁷⁸ If the insurer elects to apply the risk factor for assets held for sale, and does not use the alternate look-through approach, the associated liabilities held for sale will be subject to the usual MCCR treatment.

⁷⁹ Alternatively, assets held for sale can be reclassified on the balance sheet according to their nature at the option of the insurer. For example, real estate held for sale may be reclassified as a real estate investment or a disposal group classified as held for sale may be re-consolidated (look-through approach). If this alternate method is selected, any write-down made as a result of re-measuring the assets at the lower of carrying amount and fair value less costs to sell should not be reversed upon reclassification or re-consolidation; the write-down should continue to be reflected in the retained earnings used to determine Available Capital. The write-down amount should be applied to the reclassified/re-consolidated assets in a manner consistent with the basis for the write-

3.1.4. Entities eligible for a 0% factor

Bonds, notes and other obligations of the following entities are eligible for a 0% C-1 factor:

- The Government of Canada
- Sovereigns rated AA- or better and their central banks, provided such rating applies to the currency in which an obligation is issued⁸⁰
- Unrated sovereigns with a country risk classification of 0 or 1, as assigned by Export Credit Agencies participating in the “Arrangement on Officially Supported Export Credits”⁸¹, for obligations denominated in the sovereign’s domestic currency
- Canadian provincial and territorial governments
- Agents of the Canadian Government or a Canadian provincial or territorial government whose debts are, by virtue of their enabling legislation, direct obligations of the Crown in right of such federal or provincial government
- The Bank for International Settlements
- The International Monetary Fund
- The European Community and the European Central Bank
- The following multilateral development banks:
 - 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)

down of the HFS assets. If the company applies this alternate method for a disposal group, the OSFI RM may request a pro-forma MCCSR return that would include the impact of the sale. The pro-forma MCCSR calculation would include, among other things, the projected gain or loss on sale, the impact of other related transactions and agreements which may occur in parallel and impact the results, which may not be recognized at period-end. The insurer may also be requested to provide OSFI with an impact analysis identifying the significant drivers of the MCCSR differences with and without the disposal group, including the impact of sale related subsequent agreements and transactions.

⁸⁰ Sovereign obligations rated lower than AA- may not receive a factor of 0%, and are instead subject to the factor requirements in section 3.1.5.

⁸¹ The consensus country risk classification is available on the OECD’s web site (<http://www.oecd.org>) in the Export Credit Arrangement web page of the Trade Directorate.

- Multilateral Investment Guarantee Agency (MIGA)
- Public sector entities in jurisdictions outside Canada where:
 - I. The jurisdiction's sovereign rating is AA- or better, and
 - II. The national bank supervisor in the jurisdiction of origin permits banks under its supervision to use a risk weight of 0% for the public sector entity under the Basel Framework
- Recognized exchanges and clearing houses⁸² that serve as central counterparties⁸³ to derivatives and securities financing transactions.

3.1.5. Factors based on external ratings

Companies may use the following factors for all credit exposures (including guaranteed and off-balance sheet exposures), with the exception of asset backed securities and reinsurance assets, that are eligible to receive a factor based on an external rating under section 3.1.1. The treatment of rated asset backed securities is described in section 3.4.

Factor		Rating
Regular	Qualifying Participating	
		Short Term:
0.25%	0.125%	Rated A-1, P-1, F1, R-1 or equivalent
0.50%	0.25%	Rated A-2, P-2, F2, R-2 or equivalent
2%	1%	Rated A-3, P-3, F3, R-3 or equivalent
8%	4%	All other ratings, including non-prime and B or C ratings
		Long Term:
0.25%	0.125%	AAA, Aaa or equivalent
0.5%	0.25%	AA, Aa or equivalent
1%	0.5%	A or equivalent
2%	1%	BBB, Baa or equivalent
4%	2%	BB, Ba or equivalent
8%	4%	B or equivalent
16%	8%	Lower than B or equivalent

⁸² OSFI may from time to time advise companies as to standards that exchanges and clearing houses must meet in order to be recognized, including operational standards, standards for initial margin, and regulation by a recognized government authority.

⁸³ A central counterparty is an entity that interposes itself between counterparties to contracts traded within one or more financial markets, becoming the legal counterparty so that it is the buyer to every seller and the seller to every buyer. In order to qualify for a 0% factor, the central counterparty must mitigate its own exposure to credit risk by requiring all participants in its arrangements to fully collateralize their obligations to the central counterparty on a daily basis. The 0% factor may not be used in respect of transactions that have been rejected by the central counterparty, nor in respect of equity investments, guarantee fund or default fund obligations a company may have to a central counterparty.

3.1.6. Unrated claims

Unrated commercial paper and similar short-term facilities having an original maturity of less than one year should receive the factor corresponding to a rating of A-3, P-3 or equivalent, unless an issuer has a short-term facility with an assessment that warrants a capital charge of 8% (4% for qualifying participating). If an issuer has such a short-term facility outstanding, all unrated debt claims on the issuer, whether long term or short term, also receive a capital charge of 8% (4% for qualifying participating) unless the company uses recognized credit risk mitigation techniques (reference sections [3.2](#) and [3.3](#)) for such claims.

Where a rating is not available for a long-term bond or private placement, the factor used should be based on the insurer's internal rating. These internal ratings must be reviewed at least annually. The minimum factor that may be used is 2% (1% for qualifying participating). If OSFI believes that the factor used is inappropriate, a higher factor will be required.

Internal ratings may not be used for mortgages, asset backed securities or loans. The treatment of unrated asset backed securities is described in section 3.4.3. In the case of loans, a factor of 8% (4% for qualifying participating) should normally be used.

The C-1 factor for derivatives contracts or other capital markets transactions for which a rating cannot be inferred is 8% (4% for qualifying participating).

3.1.7. Mortgages⁸⁴

Factor		Mortgages
Regular	Qualifying Participating	
2%	1%	Qualifying residential mortgages, as defined below
4%	2%	Commercial mortgages
8%	4%	Mortgages secured by undeveloped land (i.e., construction financing), other than land used for agricultural purposes or the production of minerals. A property recently constructed or renovated will be considered as under construction until it is completed and 80% leased.
8%	4%	That part of the mortgage that is based on an increase in value occasioned by a different future use.

Qualifying residential mortgages include:

- loans secured by first mortgages on individual condominium residences and one- to four-unit residential dwellings made to a person(s) or guaranteed by a person(s), provided that such loans are not more than 90 days past due and do not exceed a loan-to-value ratio of 80%, and

⁸⁴ Mortgage-backed securities, collateralized mortgage obligations and other asset backed securities are covered in section 3.4.

- 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 mortgages.

The factor for residential mortgages insured under the NHA or equivalent provincial mortgage insurance programs is 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 the *Protection of Residential Mortgage or Hypothecary Insurance Act*), companies may recognize the risk-mitigating effect of the counter-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 an exposure to the mortgage guarantor in accordance with the rules set out in section 3.3.

The factor for commercial mortgages applies to mortgages that do not meet all of the criteria for qualifying residential mortgages.

3.1.8. Investments in equities and innovative instruments

Factor		Stocks*
Regular	Qualifying Participating	
		Preferred stocks:
1%	0.5%	AAA, AA, Pfd-1, P-1 or equivalent
2%	1%	A, Pfd-2, P-2 or equivalent
4%	2%	BBB, Pfd-3, P-3 or equivalent
6%	3%	BB, Pfd-4, P-4 or equivalent
15%	7.5%	B or lower, Pfd-5, P-5 or equivalent or unrated
15%	7.5%	Common stocks, income trusts, and other similar investments, and interests in joint ventures

* Other than investments in corporations controlled by the company, or in entities or joint ventures in which the company has a substantial investment.

Investments in innovative or other non-common capital instruments issued by domestic or international financial institutions must be treated as equity investments based upon the underlying economic risk of the instruments.

Substantial investments in an entity including a joint venture will be deducted from the Available Capital of the company (reference section [2.7](#)).

3.1.9. Mutual funds

The factor for investments in unleveraged mutual funds, exchange traded funds, segregated funds and real estate investment trusts is a weighted average of factors for assets that the fund is permitted to invest in. The weights and factors are calculated assuming that the fund first invests in the asset class attracting the highest capital requirement, to the maximum extent permitted in its prospectus or Annual Information Form (where more current). It is then assumed that the fund continues allocating investments to asset classes in declining order of capital charge, to the maximum extent permitted, until a total allocation of 100% is reached. The factor for the mutual fund is then the sum of the products of the weights and risk factors for the assumed investment allocation.

In the absence of specific limits to asset classes or if the fund is in violation of the limits stated in the prospectus, the entire fund is subject to the highest risk charge applicable to any security that the fund holds or is permitted to invest in.

The factor for any fund that employs leverage⁸⁵ is 15% (7.5% for qualifying participating).

3.1.10. Corporations controlled by the company

An accounting consolidation equivalent will be used for controlling investments in corporations carrying on a business that the company could carry on directly (e.g., life insurance, real estate and ancillary business subsidiaries). For those situations, the MCCSR rules will be applied to the controlled corporation. The same consolidation principle applies to subsidiaries of the company whether held directly or indirectly. The corporation's MCCSR will then be added to the parent life company's own MCCSR. The tier limitations (i.e., term tier 2 may not exceed 50% of tier 1) will be applied on a consolidated basis.

Corporations controlled by the company	Treatment
Life insurance corporation	accounting consolidation equivalent
Non-life financial corporation (reference section 2.6)	deduct investment in corporation from tier 1 and tier 2 capital (reference section 2.6)
Commercial corporation (i.e., ancillary business corporations)	accounting consolidation equivalent
Real estate corporation	accounting consolidation equivalent

⁸⁵ Leveraged funds are those that issue debt/preferred shares, or that use financial derivatives to amplify returns. Funds that employ an insignificant amount of leverage may be excluded from this definition.

3.1.11. Real estate⁸⁶

Factor		Real Estate
Regular	Qualifying Participating	
4%	2%	Used by the company or a consolidated subsidiary
7%	3.5%	Income-producing rental properties (see below)
15%	7.5%	Other
35% ⁸⁷	17.5%	Oil and gas properties

Factors are applied to real estate book values, with the exception of owner-occupied property. Reported exposures for owner-occupied property should be based on:

- original acquisition cost net of subsequent depreciation, for properties acquired after December 31, 2010, or
- moving-average market value on December 31, 2010 (i.e. book value prior to conversion to IFRS) net of subsequent depreciation, for properties acquired before 2011.

All real estate exposures should be reported gross of any associated mortgages or other debt.

Companies may only use the factor for income-producing rental properties for residential and commercial properties that earn an income yield of at least 4% of their carrying values. For properties acquired after December 31, 1991, the carrying value in the 4% test should be calculated net of encumbrances, if any, and income should be calculated net of all real-estate expenses (including interest on encumbrances) and taxes (including property and other taxes, but excluding income taxes). For real estate assets acquired prior to December 31, 1991, encumbrances should not be deducted from the carrying value of the property in the 4% test, and interest expenses should not be deducted from income. The income amount used in the 4% test includes cash income only, and does not include amortization of the value of the property. The factor for income-producing rental properties may not be used for properties currently under development and for which imputed interest is capitalized for financial reporting purposes.

⁸⁶ Exposures may be reduced by the deduction from Available Capital, if any, for other than temporary declines on real estate backing surplus described in section 2.1.4.

⁸⁷ A 15% factor (7.5% for qualifying participating) may be used for the proved reserves of oil and gas properties that meet the following criteria:

- there is an independent reserve engineers report certifying that there is a 90% probability that at least the estimated proved reserves will be recovered;
- the discounted cash flows of the proved reserves (using a 90% probability of recovery) exceed the book value of the investment; and
- the independent reserve engineers are in good standing with the profession and have a proven history in the industry.

3.1.12. *Limited partnerships*

Investments in limited partnerships are treated as direct investments by the life company. The approach is to "look through" the partnership.

3.1.13. *Leases*

3.1.13.1. Lessee

Where a life company is the lessee under an operating lease, no capital is required. However, under a capital lease, the capital requirement for the asset held on the balance sheet is based on the underlying property leased per section 3.1.11.

3.1.13.2. Lessor

Companies may use a 0% factor for any lease that is a direct obligation of an entity listed in section 3.1.4 that is eligible for a 0% C-1 factor. A 0% factor may also be used for a lease that is guaranteed by such an entity if the guarantee meets the criteria for recognition under section 3.3. The 0% factor may not be used for leases where a company does not have direct recourse to an entity eligible for a 0% factor under the terms of the obligation, even if such an entity is the underlying lessee.

For financial leases and sales type leases, if the lease is secured only by equipment the 4% factor applies (2% for qualifying participating). If the lease is also secured by the general credit of the lessee and the lease is rated or a rating for the lease can be inferred under section 3.1.1, the factor is based on this rating. Any rating used must be applicable to the direct obligor of the instrument held by the company (or the direct guarantor, if recognition is permitted under section 3.3), which may be different from the underlying lessee. If no rating can be inferred, the factor is 2% (1% for qualifying participating) or a higher factor, if the company's internal rating would result in a higher capital charge.

3.1.14. *Impaired and restructured obligations*

The charges for impaired and restructured obligations in this section replace the charges that would otherwise apply to a performing asset. They are to be applied instead of (not in addition to) the charge that was required for the asset before it became impaired or was restructured.

The factor for the unsecured portion of any asset for which there is reasonable doubt about the timely collection of the full amount of principal or interest (including any asset that is contractually more than 90 days in arrears), and that does not carry an external rating from an agency listed in section 3.1.1, is 16% (8% for qualifying participating). This factor is applied to the net carrying amount of the asset on the balance sheet, defined as the principal balance of the obligation net of write-downs and individual allowances. For the purpose of defining the secured portion of a past due obligation, eligible collateral and guarantees are the same as in sections 3.2 and 3.3.

This capital treatment also applies to restructured obligations. An asset is considered to have been restructured when the company, for economic or legal reasons related to the obligor's financial difficulties, grants a concession that it would not otherwise consider. The 16% factor (8% for qualifying participating) will continue to apply to restructured obligations until cash flows have been collected for a period of at least one year in accordance with the amended terms and conditions.

3.1.15. *Investment income due and accrued*

Investment income due and accrued should be reported with, and receive the same factor as the assets to which it relates.

3.2. *Collateral*

A collateralized transaction is one in which:

- a company has 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 counterparty⁸⁸ or by a third party on behalf of the counterparty.

The following standards must be met before capital relief will be granted in respect of any form of collateral:

- The effects of collateral may not be double counted. Therefore, companies may not recognize collateral on claims for which an issue-specific rating is used that already reflects that collateral. All criteria in section 3.1.1 around the use of ratings remain applicable to collateral.
- All documentation used in collateralized transactions must be binding on all parties and legally enforceable in all relevant jurisdictions. Companies 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.
- The legal mechanism by which collateral is pledged or transferred must ensure that the company 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, companies must take all steps necessary to fulfil those requirements under the law applicable to the company'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.

⁸⁸ In this section "counterparty" is used to denote a party to whom a company 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 an exposure under an OTC derivatives contract.

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- 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 – provide little protection and are therefore ineligible.
 - Companies 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.
 - Where collateral is held by a custodian, companies must take reasonable steps to ensure that the custodian segregates the collateral from its own assets.

Collateralized transactions are classified according to whether they are policy loans, capital markets transactions, or other secured lending arrangements. The category of capital markets transactions includes repo-style transactions (e.g. repos and reverse repos, and securities lending and borrowing) and other capital-markets driven transactions (e.g. OTC derivatives and margin lending).

3.2.1. Policy loans

Loans for which insurance policies are provided as collateral will receive a 0% factor if the following conditions are met:

- Both the loan and the policy provided as collateral are issued by and remain held by the company
- The term of the loan does not exceed the term of the policy provided as collateral
- The company has the legal right and intention of offset in the event the loan goes into default or the policy is cancelled
- Amounts owing under the loan, including any unpaid interest, are never greater than the proceeds available under the collateral
- The aggregate amount outstanding under the loan agreement, including accrued interest, will not at any time in the future exceed the cash surrender value of the policy

If any of these conditions are not met, an asset default factor of 8% (4% for qualifying participating) should be applied to the loan.

3.2.2. Eligible financial collateral

The following collateral instruments may be recognized for secured lending and capital markets transactions:

- Debt securities rated by a recognized rating agency (reference section [3.1.1](#)) where these securities are:
 - rated BB- or better and issued by an entity eligible for a 0% bond factor; or
 - rated BBB- or better and issued by other entities (including banks, insurance companies, and securities firms); or

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- short-term and rated A-3/P-3 or better.
 - Debt securities not rated by a recognized rating agency where:
 - the securities are issued by a Canadian bank whose equity is listed on a recognized exchange; and
 - the original maturity of the securities is less than one year; and
 - the securities are classified as senior debt; and
 - all debt issues by the issuing bank having the same seniority as the securities and that have been rated by a recognized rating agency are rated at least BBB- or A-3/P-3.
 - Equities and convertible bonds that are included in a main index.
 - Gold.
 - Mutual funds where:
 - a price for the units is publicly quoted daily; and
 - the mutual fund is limited to investing in the instruments listed above⁸⁹.

Additionally, the following collateral instruments may be recognized for capital markets transactions:

- Equities and convertible bonds that are not included in a main index but that are listed on a recognized exchange, and mutual funds that include such equities and bonds.

For collateral to be recognized in a secured lending transaction, it must be pledged for at least the life of the loan. For collateral to be recognized in a capital markets transaction, it must be secured in a manner that would preclude release of the collateral unless warranted by market movements, the transaction is settled, or the collateral is replaced by new collateral of equal or greater value.

3.2.3. Secured lending

Collateral received in secured lending must be revalued on a mark-to-market basis at least every six months. The market value of collateral that is denominated in a currency different from that of the loan must be reduced by 20%. The portion of a loan that is collateralized by the market value of eligible financial collateral receives the capital charge applicable to the collateral instrument, subject to a minimum of 0.25% (0.125% for qualifying participating) with the exception noted below. The remainder of the loan is assigned the capital charge appropriate to the counterparty.

⁸⁹ However, the use of derivative instruments by a mutual fund solely to hedge investments listed as eligible financial collateral shall not prevent units in that mutual fund from being recognized as eligible financial collateral.

A charge of 0% may be used for a secured lending transaction if:

- the loan and the collateral are denominated in the same currency; and
- the collateral consists entirely of securities eligible for a 0% capital charge; and
- the market value of the collateral is at least 25% greater than the carrying value of the loan.

3.2.4. Capital markets transactions

3.2.4.1. Introduction

When taking collateral for a capital markets transaction, companies must calculate an adjusted exposure amount to a counterparty for capital adequacy purposes in order to take account of the effects of that collateral. Using haircuts, companies are required to adjust both the amount of the exposure to the counterparty and the value of any collateral received in support of the counterparty's obligations to take account of possible future fluctuations in the value of either⁹⁰ occasioned by market movements. This will produce volatility-adjusted amounts for both the exposure and the collateral. Unless either side of the transaction is in cash, the volatility-adjusted amount for the exposure will be higher than the exposure itself, and for the collateral it will be lower. 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.

Where the volatility-adjusted exposure amount is greater than the volatility-adjusted collateral amount (including any further adjustment for foreign exchange risk), the capital charge is calculated as the difference between the two multiplied by the C-1 factor appropriate to the counterparty.

Section 3.2.4.2 describes the size of the individual haircuts used. These haircuts depend on the type of instrument and the type of transaction. The haircut amounts are then scaled using a square root of time formula depending on the frequency of remargining. Section 3.2.4.3 sets out conditions under which companies may use zero haircuts for certain types of repo-style transactions involving government bonds. Finally, section 3.2.4.4 describes the treatment of master netting agreements.

3.2.4.2. Calculation of the capital requirement

For a collateralized capital markets transaction, the exposure amount after risk mitigation is calculated as follows:

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

⁹⁰ The exposure amount may vary where, for example, securities are being lent.

where:

- E^* is the exposure value after risk mitigation
- E is the current value of the exposure
- H_e is the haircut appropriate to the exposure
- C is the current value of the collateral received
- H_c is the haircut appropriate to the collateral
- H_{fx} is the haircut appropriate for currency mismatch between the collateral and the exposure

The exposure amount after risk mitigation is multiplied by the C-1 factor appropriate to the counterparty to obtain the charge for the collateralized transaction.

When the collateral consists of a basket of assets, the haircut to be used on the basket is the average of the haircuts applicable to the assets in the basket, where the average is weighted according to the market values of the assets in the basket.

The following are the standard haircuts, expressed as percentages:

Issue rating for debt securities	Residual Maturity	Securities eligible for a 0% C-1 factor	Other securities
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 Unrated bank debt securities	≤ 1 year	1	2
	>1 year, ≤ 5 years	3	6
	> 5 years	6	12
BB+ to BB-	All	15	
Main index equities and convertible bonds, and gold		15	
Other equities and convertible bonds listed on a recognized exchange		25	
Mutual funds		Highest haircut applicable to any security in which the fund can invest	

The standard haircut for currency risk where the exposure and collateral are denominated in different currencies is 8%.

For transactions in which a company lends cash, the haircut to be applied to the exposure is zero⁹¹. For transactions in which a company lends non-eligible instruments (e.g. non-investment

⁹¹ A Canadian company may use a haircut of zero for cash received as collateral if the cash is held in Canada in the form of a deposit at one of the company's banking subsidiaries.

grade corporate debt securities), the haircut to be applied to the exposure should be the same as that applied to an equity that is traded on a recognized exchange but not part of a main index.

For collateralized OTC derivatives transactions, the E^* component term $E \times (1 + H_e)$, representing the volatility-adjusted exposure amount before risk mitigation, is replaced by the exposure amount for the derivatives transaction calculated using the current exposure method as described in chapter 7. This is either the positive replacement cost of the transaction plus the add-on for potential future exposure, or, for a series of contracts eligible for netting, the net replacement cost of the contracts plus A_{Net} . The haircut for currency risk should be applied when there is a mismatch between the collateral currency and the settlement currency, but no additional adjustments beyond a single haircut for currency risk are required if there are more than two currencies involved in collateral, settlement and exposure measurement.

All of the standard haircuts listed above must be scaled by a square root of time factor according to the following formula:

$$H = S \times \sqrt{\frac{N + T - 1}{10}}$$

where:

- H represents any of the haircuts used in calculating the exposure amount after risk mitigation;
- S is the standard haircut specified above for the exposure or collateral;
- N is the actual number of business days between remargining under the transaction; and
- T is equal to 5 for repo-style transactions, and 10 for all other capital markets transactions.

3.2.4.3. Conditions for using zero haircuts

For repo-style transactions that satisfy the following conditions, and for which the counterparty is a core market participant as defined below, companies may apply haircuts of zero to both the exposure and collateral:

- Both the exposure and the collateral are cash or securities issued by the Government of Canada or a provincial or territorial government in Canada.
- Both the exposure and the collateral are denominated in the same currency.
- Either the transaction is overnight or both the exposure and the collateral are marked to market daily and are subject to daily remargining.
- 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 liquidation⁹² of the collateral is considered to be no more than four business days.

⁹² This does not require a company to always liquidate the collateral but rather to have the capability to do so within the given time frame.

- The transaction is settled across a settlement system proven for that type of transaction.
- The documentation covering the agreement is standard market documentation for repo-style transactions in the securities concerned.
- 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.
- Upon any default event, regardless of whether the counterparty is insolvent or bankrupt, the company has the unfettered, legally enforceable right to immediately seize and liquidate the collateral for its benefit.

Core market participants include the following entities:

- Sovereigns, central banks and public sector entities
- Banks and securities firms
- Other financial companies (including insurance companies) rated AA- or better
- Regulated mutual funds that are subject to capital or leverage requirements
- Regulated pension funds
- Recognized clearing organizations

3.2.4.4. Treatment of repo-style transactions covered under master netting agreements

The effects of bilateral netting agreements covering repo-style transactions will be recognized 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:

- 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;
- 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;
- allow for the prompt liquidation or setoff of collateral upon the event of default; and
- be, together with the rights arising from the provisions required above, legally enforceable in each relevant jurisdiction upon the occurrence of an event of default and regardless of the counterparty's insolvency or bankruptcy.

For repo-style transactions included within a master netting agreement, the exposure amount after risk mitigation is calculated as follows:

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

where:

- E^* is the exposure value after risk mitigation
- E is the current value of the exposure
- C is the current value of the collateral received
- E_s is the absolute value of the net position in each security covered under the agreement
- H_s is the haircut appropriate to E_s
- E_{fx} is the absolute value of the net position in each currency under the agreement that is different from the settlement currency
- H_{fx} is the haircut appropriate for currency mismatch

All other rules regarding the calculation of haircuts in section 3.2.4.2 equivalently apply for companies using bilateral netting agreements for repo-style transactions.

3.3. Guarantees and credit derivatives

Where guarantees⁹³ or credit derivatives are direct, explicit, irrevocable and unconditional, and companies fulfil certain minimum operational conditions relating to risk management processes, they will be allowed to take account of such credit protection in calculating capital requirements. The capital treatment is founded on the substitution approach, whereby the protected portion of a counterparty exposure is assigned the capital charge of the guarantor or protection provider, while the uncovered portion retains capital charge of the underlying counterparty. Thus only guarantees issued by or protection provided by entities with a lower capital charge than the underlying counterparty will lead to reduced capital requirements. A range of guarantors and protection providers is recognized.

3.3.1. Operational requirements common to guarantees and credit derivatives

The effects of credit protection may not be double counted. Therefore, no capital recognition is given to credit protection on claims for which an issue-specific rating is used that already reflects that protection. All criteria in section 3.1.1 around the use of ratings remain applicable to guarantees and credit derivatives.

A guarantee (counter-guarantee) or credit derivative must represent a direct claim on the protection provider and must be explicitly referenced to a specific exposure 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 exposure⁹⁴. It must also be unconditional;

⁹³ Letters of credit for which a company is the beneficiary are included within the definition of guarantees, and receive the same capital treatment.

⁹⁴ Note that the irrevocability condition does not require that the credit protection and the exposure be maturity

there should be no clause in the protection contract outside the direct control of the insurer 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.

All documentation used for documenting guarantees and credit derivatives must be binding on all parties and legally enforceable in all relevant jurisdictions. Insurers 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.

3.3.2. *Additional operational requirements for guarantees*

The following conditions must be satisfied in order for a guarantee to be recognized:

- a) On the qualifying default/non-payment of the counterparty, the insurer 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 insurer, or the guarantor may assume the future payment obligations of the counterparty covered by the guarantee. The insurer must have the right to receive any such payments from the guarantor without first having to take legal action 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, interest and other uncovered payments should be treated as an unsecured amount in accordance with section 3.3.5.

3.3.3. *Additional operational requirements for credit derivatives*

The following conditions must be satisfied in order for a credit derivative contract to be recognized:

- 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

matched; rather that the maturity agreed *ex ante* may not be reduced *ex post* by the protection provider.

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- provision or other similar debit to the profit and loss account). Refer to the exception below when restructuring is not specified as a credit event.
- 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.
 - d) Credit derivatives allowing for cash settlement are recognized 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.

When the restructuring of the underlying obligation is not covered by the credit derivative, but the other requirements above 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 recognized 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.

Only credit default swaps and total return swaps that provide credit protection equivalent to guarantees will be eligible for recognition. Where a company 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 increasing provisions), the credit protection will not be recognized.

Other types of credit derivatives are not eligible for recognition.

3.3.4. *Eligible guarantors and protection providers*

Insurers may recognize credit protection given by the following entities:

- entities eligible for a 0% C-1 factor under section 3.1.4;
- externally rated public sector entities, banks and securities firms with a lower C-1 factor than that of the counterparty; and
- other entities rated A- or better. This includes credit protection provided by parent, subsidiary and affiliate companies of an obligor when they have a lower C-1 factor than that of the obligor.

However, an insurer may not recognize a guarantee or credit protection on an exposure to a third party when the guarantee or credit protection is provided by a related party (parent, subsidiary or affiliate) of the insurer. This treatment follows the principle that guarantees within a corporate group are not a substitute for capital.

3.3.5. *Capital treatment*

The protected portion of a counterparty exposure is assigned the capital factor of the protection provider. The uncovered portion of the exposure is assigned the factor of the underlying counterparty.

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 company and the guarantor share losses on a pro-rata basis), capital relief will be afforded on a proportional basis, so that the protected portion of the exposure will receive the treatment applicable to eligible guarantees and credit derivatives, and the remainder will be treated as unsecured. Where a company 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, and the risk transferred and the risk retained are of different seniority, companies may obtain credit protection for the senior tranches (e.g. second-loss position) or the junior tranches (e.g. first-loss position). In this case, the rules as set out in Guideline B-5: [Asset Securitization](#) will apply.

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 from Available Capital as a first loss position under section 2.1.4.

3.3.6. *Currency mismatches*

Where the credit protection is denominated in a currency different from that in which the exposure is denominated, the amount of the exposure deemed to be protected will be 80% of the nominal amount of the credit protection, converted at current exchange rates.

3.3.7. *Maturity mismatches*

A maturity mismatch occurs when the residual maturity of the credit protection is less than that of the underlying exposure. If there is a maturity mismatch and the credit protection has an original maturity lower than one year, the protection may not be recognized. As a result, the maturity of protection for exposures with original maturities less than one year must be matched to be recognized. Additionally, credit protection with a residual maturity of three months or less may not be recognized if there is a maturity mismatch. Credit protection will be partially recognized in other cases where there is a maturity mismatch.

The maturity of the underlying exposure and the maturity of the credit protection should both be measured 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 credit protection, embedded options that may reduce the term of the protection 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 company buying protection but the terms of the arrangement at origination contain a positive incentive for the company 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 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 improves, the effective maturity will be the remaining time to the first call.

When there is a maturity mismatch, the following adjustment will be applied:

$$P_a = P \times \frac{t - 0.25}{T - 0.25}$$

where:

- P_a is the value of the credit protection adjusted for maturity mismatch
- P is the nominal amount of the credit protection, adjusted for currency mismatch if applicable
- T is the lower of 5 or the residual maturity of the exposure expressed in years
- t is the lower of T or the residual maturity of the credit protection arrangement expressed in years

3.3.8. *Sovereign counter-guarantees*

Some claims may be covered by a guarantee that is indirectly counter-guaranteed by a sovereign. Such claims may be treated as covered by a sovereign guarantee provided that:

- the sovereign providing the counter-guarantee is eligible for a 0% C-1 factor;
- the sovereign counter-guarantee covers all credit risk elements of the claim;

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- both the original guarantee and the counter-guarantee meet all the operational requirements for guarantees, except that the counter-guarantee need not be direct and explicit to the original claim; and
 - the cover is robust, and there is no historical evidence suggesting that the coverage of the counter-guarantee is less than effectively equivalent to that of a direct sovereign guarantee.

3.3.9. *Public sector entities in competition*

Companies may not recognize guarantees made by public sector entities, including provincial and territorial governments in Canada, that would disadvantage private sector competition. Companies should look to the host (sovereign) government to confirm whether a public sector entity is in competition with the private sector.

3.3.10. *Other items related to the treatment of credit risk mitigation*

In the case where a company has multiple types of mitigators covering a single exposure (e.g. both collateral and a guarantee partially cover an exposure), the company will be required to subdivide the exposure into portions covered by each type of mitigator (e.g. portion covered by collateral, portion covered by guarantee) and the capital charge for each portion must be calculated separately. When credit protection provided by a single protection provider has differing maturities, these must be subdivided into separate protection as well.

There are cases where a company 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 company may recognize credit protection for the asset within the basket having the lowest capital charge, but only if the notional amount of the asset is less than or equal to the notional amount of the credit derivative. In the case where the second default among the assets within the basket triggers the credit protection, the company obtaining credit protection through such a product will only be able to recognize credit protection on the asset in the basket having the lowest capital charge if first-to-default protection has also been obtained, or if one of the assets within the basket has already defaulted.

3.4. *Asset backed securities*

The category of asset backed securities encompasses all securitizations, including collateralized mortgage obligations and mortgage backed securities. Companies are requested to closely review the documentation supporting these types of investments, paying particular attention to the investment's financial structure. For investments that arise as a result of asset securitization transactions, companies should refer to Guideline B-5: [Asset Securitization](#) to determine whether there are functions provided (i.e., credit support, enhancement or liquidity facilities) that would require a deduction from Available Capital or a charge for C-1 risk and should ensure that there is an adequate reporting system for monitoring the creditworthiness of the borrower as required under IAS 39.

3.4.1. NHA mortgage-backed securities

NHA mortgage-backed securities that are guaranteed by the Canada Mortgage and Housing Corporation carry a factor of 0% to recognize the fact that obligations incurred by CMHC are legal obligations of the Government of Canada.

3.4.2. Rated asset backed securities

The credit risk factors applicable to asset backed securities that have been rated are contained in Annex 1 of Guideline B-5: [Asset Securitization](#). In order for ratings of asset backed securities to be recognized, the ratings must meet all of the requirements in section 3.1.1.

3.4.3. Unrated asset backed securities

The asset default factor is 8% (4% for qualifying participating) for unrated asset backed securities unless they are of the pass-through type and effectively a direct holding of the underlying assets, and the following conditions are met:

- the underlying asset pool may contain only assets that are fully performing when the asset-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 assets;
- the underlying assets are assigned to an independent third party for the benefit of the investors in the securities who will then own the underlying assets;
- the arrangements for the special-purpose vehicle and trustee must provide that these obligations are observed:
 - if an administrator or a 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 assets;
 - the vehicle and trustee must be legally separate from the originator of the pooled assets;
 - the vehicle and trustee must be responsible for any damage or loss to investors created by their own or their servicer's mismanagement of the pooled assets;
 - 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 an asset goes into default;
 - the holder of the security must have a pro rata share in the underlying assets or the vehicle that issues the security must have only liabilities related to the issuing of the asset-backed security;

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- the cash flows of the underlying assets must meet the cash flow requirements of the security without undue reliance on any reinvestment income; and
 - 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 assets that meet the terms and conditions of the security.

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 an 8% factor (4% for qualifying participating).

Where the underlying pool of assets is comprised of assets having different capital charges, the charge for the security will be the highest charge associated with the pool of assets. Where the underlying pool contains assets that have become impaired, that portion of the instrument should be treated as a past due investment in accordance with section 3.1.14.

3.5. *Repurchase, reverse repurchase and securities lending 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 capital charge associated with this exposure should be the higher of:

- the capital charge for the securities to be repurchased, or
- the capital charge for an exposure to the counterparty to the transaction, recognizing any eligible collateral (see section 3.2).

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 section 3.2, the exposure amount may be reduced accordingly.

In securities lending, companies can act as a principal to the transaction by lending their own securities, or as an agent by lending securities on behalf of their clients. When a company lends its own securities, the capital charge is the higher of:

- the capital charge for the instruments lent, or
- the capital charge for an exposure to the borrower of the securities. The exposure to the borrower may be reduced if the company holds eligible collateral (refer to section 3.2). Where the company lends securities through an agent and receives an explicit guarantee of the return of the securities, the company may treat the agent as the borrower, subject to the conditions in section 3.3.

When a company, acting as agent, lends securities on behalf of a client and guarantees that the securities lent will be returned or the company will reimburse the client for the current market

value, the company should calculate the capital requirement as if it were the principal to the transaction. The capital charge is that for an exposure to the borrower of the securities, where the exposure amount may be reduced if the company holds eligible collateral (see section [3.2](#)).

The methodologies described above do not apply to repurchases or loans of securities backing a company's index-linked products, as defined in section [3.6](#). If a company enters into a repurchase or loan agreement involving such assets, the capital charge is equal to the charge for the exposure to the counterparty or borrower (taking account of eligible collateral), plus the charge applicable under section [3.6](#).

3.6. Index-linked products

3.6.1. Scope of application

The C-1 asset default factors in section [3.1](#) do not apply to assets backing index-linked products. All assets backing index-linked products must be segmented and included in the index-linked reporting form, and will attract capital factors based on the correlation factor calculation in section [3.6.2](#).

The correlation factor calculation may be used for products, such as universal life policies, having the following characteristics:

- Both assets and liabilities for these contracts are held in the general fund of the life insurance company;
- The policyholder is promised a particular return in the contract, based on an index, possibly subject to a floor. The following are examples of such returns:
 1. The same return as a specified public index. This includes, but is not limited to a public stock index, a bond index, an index maintained by a financial institution, etc.
 2. The same return as is earned by one of the company's segregated funds.
 3. The same return as is earned by one of the company's mutual funds.
 4. The same return as is earned by another company's mutual funds; and
- The company may invest in assets that are not the same as those that constitute the indices.

The following conditions must be adhered to.

- All supporting assets must be segmented into asset subgroups;
- A separate asset subgroup must be maintained for each index referred to in the products;
- The returns (on a market basis) of each asset subgroup must be tracked; and
- Any transfers into or out of the asset subgroup must be at market.

3.6.2. Capital requirements

To determine the capital factor applicable to a particular subgroup of assets, a correlation factor (CF) must be calculated. This factor is given by:

$$CF = A*(B/C)$$

where: A represents the historical correlation between the returns credited to the policyholder funds and the returns on the subgroup's assets

B represents the minimum of [standard deviation of asset returns, standard deviation of returns credited to policyholder funds]

C represents the maximum of [standard deviation of asset returns, standard deviation of returns credited to policyholder funds]

Note that the CF must be calculated for each asset subgroup.

The historical correlations and standard deviations must be calculated on a weekly basis, covering the previous 52-week period. The returns on asset subgroups must be measured as the increase in their market values net of policyholder cash flows.

The CF for the previous 52 weeks is required to be calculated each quarter. The MCCSR required capital factor is then equal to 100% minus the lowest of the four correlation factors calculated over the previous four quarters. This required capital factor is applied to the market value at quarter-end of the assets in the asset subgroup.

Instead of using policyholder funds in the calculations, a company may use cash surrender values or policy liabilities to measure the correlation. The basis used must be consistently applied in all periods.

For assets backing index-linked products that are not segmented into asset subgroups, or for which the CF cannot be calculated, the MCCSR required capital factor is 15% (i.e. CF = 85%).

Newly formed funds will have a 15% MCCSR required capital factor (i.e. CF = 85%) for the first three quarters. Combined with the requirement to use the highest capital factor of the last four quarters' calculations, this implies that the MCCSR required capital factor will be 15% (i.e. CF = 85%) for the first 18 months of newly formed funds.

When a synthetic index investment strategy is used, there is some C-1 risk that is not borne directly by policyholders. This may include credit risk associated with fixed income securities and counterparty risk associated with derivatives that are purchased under the synthetic strategy. Companies must hold the C-1 capital requirements for these risks in addition to the index-linked requirements of this section.

For those index-linked insurance policies that have a minimum death benefit guarantee, the appropriate MCCSR factor for segregated fund mortality guarantees should be applied. These factors may be obtained using the GetCost function as described in section 8.7.1. The required amounts may be reduced by reinsurance credits and by any policyholder liabilities covering this risk.

3.7. *Assets replicated synthetically and derivatives transactions*

This section describes the capital charge for transactions that increase a company's exposure to C-1 risk and for which the full notional amount of the transaction may not be reported on the balance sheet, such as transactions undertaken through derivatives. Companies are required to report the entire exposure amount in the OSFI 86/87 and to hold capital for the full underlying risk assumed for these transactions irrespective of how they are reported on the balance sheet.

No additional capital is required under this section for hedges of index-linked liabilities that have been taken into account in the correlation factor calculation under section 3.6, nor for purchased put options that clearly serve to hedge a company's segregated fund guarantee risk. For hedges of segregated fund guarantees undertaken as part of an OSFI-approved hedging program, OSFI will determine at the time of approval the extent to which the hedges may be exempted from the requirements of this section.

Where a company has entered into transactions (including short equity positions) that:

- are intended to hedge the company's segregated fund guarantee risk;
- are not applied as offsets or hedges against other positions within the company to reduce required capital; and
- have not been undertaken as part of an OSFI-approved hedging program,

the capital charge for the hedges may be reduced to a minimum of zero if the company is able to demonstrate that losses on the hedges under particular scenarios would be offset by decreases in its segregated fund guarantee liabilities. Companies should contact OSFI for details on the calculation for determining the capital requirement for hedges in this situation.

The requirements in this section are distinct from the requirements for counterparty credit risk arising from off-balance sheet transactions. Transactions referenced in this section remain subject to the charges for potential replacement cost as described in section [3.1](#) and chapter [7](#).

3.7.1. *Credit protection provided*

Where an insurer has guaranteed a debt security (for example through the sale of a credit derivative) it should hold the same amount of capital as if it held the security directly. Such exposures should be reported as off-balance sheet instruments in the OSFI 86/87.

Where an insurer provides credit protection on a securitisation tranche rated BBB- or higher via a first-to-default credit derivative on a basket of assets, the capital charge may be determined as the notional amount of the derivative times the C-1 factor corresponding to the tranche's rating, provided that this rating represents an assessment of the underlying tranche that does not take account of any credit protection provided by the insurer. If the underlying product does not have an external rating, the insurer may either deduct the full notional amount of the derivative from Available Capital as a first loss position, or it may calculate the capital charge as the notional amount times the sum of the C-1 factors for each asset in the basket. In the case of a second-to-

default credit derivative, the insurer may exclude the asset in the basket having the lowest C-1 factor if using the summation approach.

3.7.2. *Short positions in equities*

The charge for a short position in any equity security or index that does not wholly or partially offset a long equity position elsewhere within the company is the same as that for a long position of the same magnitude. Positions eligible for offset recognition and the corresponding capital treatments are described in section 3.8.

3.7.3. *Futures, forwards and swaps*

The capital treatment for a futures or forward position in any security or index is the same as that for the equivalent spot position, and should be reported in the OSFI 86/87 as if the position were current. The charge for a swap is the same as that for the series of future or forward transactions that replicates the swap.

Example: A company has entered into a futures contract to purchase equity securities on a future date. The company should report an equity exposure in an amount equal to the total current market value of the equities underlying the futures contract.

Example: A company has entered into a one-year swap during which it will pay the total return (coupons and capital gains) on a 10-year Government bond, and receive the return on a notional index of equities that was worth \$100M at the time of inception. The index of equities is currently worth \$110M. The company should report an equity exposure of \$110M for the long position in the index, but no exposure for the short position in the bond because such a position is not subject to a capital charge.

3.7.4. *Options on equities*

The following describes the methodology used to determine the capital charge for both equity options that have been purchased and options that have been sold. This methodology may not be applied to equity options embedded in products sold to policyholders. The market risk capital charge for policies containing an equity option component should be calculated using the methodologies for index-linked products (section 3.6) or segregated fund guarantees (chapter 8), as appropriate.

The capital charge for an option (or a combination of options in exactly the same underlying equity) is determined by constructing a two-dimensional matrix of changes in the value of the option position under various market scenarios, using the same valuation model that is used for financial reporting purposes. The first dimension of the matrix requires a company to evaluate the price of the option position over a range of 15% above and below the current value of the underlying stock or index, with at least seven observations (including the current observation) used to divide the range into equally spaced intervals. The second dimension of the matrix entails a change in the volatility of the underlying stock or index equal to $\pm 25\%$ of its current volatility. The capital charge for the option position is then equal to the largest decline in value

(or 50% of this amount for options backing qualifying participating policies) calculated in the matrix. As an alternative to constructing a scenario matrix for a purchased option, a company may deduct 50% of the carrying amount of the option from its reported tier 1 capital available, and an additional 50% from tier 2.

The application of this method and the precise manner in which the analysis is undertaken will be subject to review by OSFI. Companies must understand the details of the valuation model used to construct the scenario matrix, and must independently review and test the model on an ongoing basis. Market prices, volatilities and other inputs to the valuation model must be subject to verification by a unit independent of the immediate parties to the transactions.

Example: A company has sold a call option on a stock, with the stock currently having a market value of \$100 and volatility of 20%. The first dimension of the matrix should range from \$85 to \$115, divided into six intervals of \$5.00 each, and the second dimension should assume that volatility stays at 20%, increases to 25% (= 20% + 25% of 20%) or decreases to 15% (=20% - 25% of 20%). If the change in the value of the company's option position under the various market scenarios is as below, then the capital charge for the option is \$8.16 (\$4.08 for qualifying participating).

Gain (loss) due to change in option value	<u>Stock Price</u>			(current)			
	\$85.00	\$90.00	\$95.00	\$100.00	\$105.00	\$110.00	\$115.00
<u>Volatility 15%</u>	\$3.71	\$2.96	\$2.22	\$1.14	(\$0.61)	(\$2.12)	(\$5.60)
(current) 20%	\$2.68	\$1.84	\$1.04	0	(\$1.72)	(\$4.47)	(\$6.69)
25%	\$1.32	\$0.70	(\$0.65)	(\$1.93)	(\$3.58)	(\$5.80)	(\$8.16)

3.7.5. Equity-linked notes

The balance sheet carrying amount of an equity- or index-linked note should be decomposed into the sum of a fixed-income amount, equivalent to the present value of the minimum guaranteed payments under the note, and an amount representing the value of the option embedded within the note. The fixed-income portion of the note should be classified as a debt exposure, with the capital charge based on the rating of the note, and the residual amount should be treated as an equity option.

Example: A company purchases an A-rated equity-linked note from a Canadian bank for \$10,000. The note promises to pay, in two years, the \$10,000 purchase price of the note plus the purchase price times 65.7% of the percentage appreciation (if positive) of a stock index over the term of the note. The company uses the Black-Scholes option valuation model for financial reporting purposes. The volatility of the stock index is 25%, the yield curve is flat, the annual risk-free rate is 5%, and the issuing bank's annual borrowing rate is 6.5%. The total charge for this note is \$861.41, which is the sum of the following three separate charges:

1. Bond component: The value of the fixed-income component of the note is $\$10,000/(1.065)^2 = \$8,816.59$. The capital charge, based on the note's A rating, is 1% of this amount, or \$88.17.

-
2. Option component: The value of the call option embedded within the note, taking into account the credit risk of the issuer, is the residual amount, namely \$1,183.41. In the option scenario table, the greatest loss will occur if the value of the index declines by 15% at the same time as the index volatility declines to 18.75%, in which case the value of the option will decline by \$756.15; this is the capital charge for the option.
 3. Counterparty credit risk (per chapter 7): The exposure amount for the option is calculated under the current exposure method as:

$$\begin{aligned} & \text{Positive mark-to-market} + \text{Factor} \times \text{Notional} \\ &= \$1,183.41 + 8\% \times \$6,570 \\ &= \$1,709.01 \end{aligned}$$

Since the note has an A rating, the capital charge is 1% of the current exposure amount, or \$17.09.

3.7.6. *Convertible bonds*

The capital charge for a convertible bond is equal to the charge for the bond's fixed-income component, plus the equity option charge for the bond's embedded warrant. The charge for the fixed-income component is equal to the bond's C-1 factor (based on its rating) multiplied by the present value of the minimum guaranteed payments under the bond. The charge for the embedded warrant should be calculated using the scenario table method for options on equities, where the gains and losses are based on either the change in value of the bond's warrant component (if the valuation methodology assigns an explicit value to this component) or the change in value of the whole bond.

As an alternative to the above methodology, a company may classify the full carrying amount of the convertible bond as an equity exposure.

3.7.7. *Other instruments*

If a company has entered into a transaction not described in this section that increases its exposure to C-1 risk, it should contact the Capital Division at OSFI with the details of the transaction in order to determine the appropriate treatment for MCCSR purposes.

3.8. **Recognition of equity hedges**

3.8.1. *Offsetting long and short positions in equities*

Equity positions backing indexed-linked policyholder liabilities for which a required capital factor is calculated under section 3.6 may not be recognized as an offset to any other positions. However, 50% of any net equity position backing a company's participating business may be offset against positions that do not support the participating block. Offsetting hedges of an equity position may only be recognized if the party providing the hedge is an eligible guarantor as defined in section 3.3.4.

3.8.1.1. Identical reference assets

Long and short positions in exactly the same underlying equity security or index may be considered to be offsetting so that a company is required to hold capital only for the net position.

3.8.1.2. Closely correlated reference assets

Where the underlying securities or indices in a long and short position are not exactly the same but are closely correlated (e.g. a broad stock index and a large capitalization sub-index), companies should calculate the required capital factor for the combined position using the correlation factor methodology described in section [3.6.2](#). If a company has not held a short position over the entire period covered in the correlation factor calculation, but the security or index underlying the short position has quotations that have been published at least weekly for at least the past two years, the company may perform the calculation as if it had held the short position over the entire period. However, returns for actively managed short positions may not be inferred for periods in which the positions were not actually held, and mutual funds that are actively managed externally may not be recognized as an offsetting short position in an inexact hedging relationship.

3.8.2. *Recognition of equity option hedges*

Option hedges of an equity holding may only be recognized if the party providing the hedge is an eligible guarantor as defined in section [3.3.4](#). Option hedges of segregated fund guarantee risk may not be recognized in the segregated fund guarantee capital calculation without explicit approval from OSFI. The form and amount of any such recognition will be specified by OSFI at the time of approval. Option hedges of segregated fund guarantee risk that receive recognition in the segregated fund guarantee capital calculation cannot be applied towards other equity risks.

3.8.2.1. Identical reference assets

If an option's reference asset is exactly the same as that underlying an equity position held, a company may exclude the equity holding in calculating the charge for its equity exposures and instead consider the combined change in value of the equity position with the option in constructing the scenario table (reference section [3.7.4](#)).

3.8.2.2. Closely correlated reference assets

If an option's reference asset is not exactly the same as that underlying an equity position, but is closely correlated with the equity, then the required capital factor for offsetting long and short positions in the option's reference asset and the asset underlying the equity position should be calculated as described in section [3.8.1.2](#). A company may then exclude the equity holding from its requirement for equity exposures and instead calculate the combined change in value of the equity position with the option in a scenario table (reference section [3.7.4](#)). However, the movement in the option's reference asset under each scenario must be assumed to be higher or lower (whichever produces a lower value for the option position) than the movement of the equity, by an amount equal to the capital requirement for directly offsetting positions. No additional adjustments need be made to the assumed changes in asset volatilities under the scenarios to account for asset mismatch.

Example: A company has a long position in a main equity index, and also owns a call option and a put option on different indices that are closely correlated with the main index. The lowest correlation factor over the previous four quarters between the reference index of the call option and the main index, calculated per section [3.6.2](#), is 97%, and the lowest correlation factor calculated over the previous four quarters between the reference index of the put option and the main index is 99%. The company would therefore construct a scenario table in which the price of the main index ranged from 15% below to 15% above its current value, while the index underlying the call option ranged from 18% below to 12% above its current value, and the index underlying the put option ranged from 14% below to 16% above its current value. In the scenarios in the center column of the table, the main index would remain at its current value, while the index underlying the call option would be 3% lower than currently and the index underlying the put option would be 1% higher than currently.

Chapter 4. Mortality, Morbidity and Lapse Risk

4.1. Mortality risk

The methodology described below is based on the February 2005 CIA Research Paper “Mortality Requirements in MCCR, TAAM and CAR”.

The gross mortality component for life insurance (both individual and group) is the sum of the components for volatility risk and catastrophe risk. The gross requirement is reduced by credits for policyholder deposits, unregistered reinsurer deposits and stop-loss arrangements to arrive at the net requirement.

In order to compute the mortality requirement, a company must partition its book of business into sets of like products. Basic death and AD&D products may not be included in the same set, nor may individual and group products. All products within a set should have similar attributes with respect to adjustability and mortality guarantee duration.

All cashflow projections, benefit amounts and reserve amounts used to determine the mortality component should be calculated net of all reinsurance that is deemed to constitute registered reinsurance under section [10.2](#). Cashflow projections should take into account all current valuation decrements and assumptions, including margins for adverse deviation.

The net amount at risk for a policy or set of products, for both directly written business and business acquired through reinsurance, refers to the total net face amount of all of the included policies minus the total net reserve for the included policies, where both the face amount and the reserve are net of registered reinsurance.

For purposes of the mortality component, basic death benefits include supplementary term coverages, participating coverages arising out of dividends (paid-up additions and term additions), and increasing death benefits associated with universal life policies (i.e. policies where the death benefit is the face amount plus funds invested). More generally, any mortality risk supported by the general account should be included in the MCCR calculation.

Reduced factors for adjustable and participating business may only be used for adjustable policies where mortality adjustability is reasonably flexible, and for qualifying participating policies that meet the criteria in section [1.2.6](#). For adjustable, participating or universal life policies where mortality adjustability is not reasonably flexible, the factors for “all other” business should be used. The reasonable flexibility of the adjustability features should have been tested in pricing the policy or elsewhere, and should demonstrate that the company may recuperate at least half of any unexpected losses due to volatility or catastrophe risk. This would be done by comparing the price with and without future adjustments, using the regular or reduced component as appropriate. Tests of adjustability may not take into consideration amounts recoverable through arrangements that are accorded a separate adjustment in the mortality component, such as hold harmless agreements, deposits made by policyholders or claims fluctuations reserves. The tests performed should be available upon request.

4.1.1. Volatility component

The capital required for volatility risk is:

$$\sqrt{\sum_{\text{Basic Death}} S^2} + \sqrt{\sum_{\text{AD\&D}} S^2}$$

where the sums are taken over all sets of basic death and AD&D products respectively, and S is the volatility component for the set of products. The formula for S is given by:

$$S = 2.5 \times A \times B \times E / F$$

where:

- A is the standard deviation of the upcoming year's projected net death claims for the set, defined by:

$$A = \sqrt{\sum q(1-q)b^2}$$

In the above equation, the sum is taken over all policies in the set (or over all certificates in the set if the set consists of group policies), q is equal to the valuation mortality (including the margin for adverse deviations) for a particular policy, and b is the net death benefit for the policy. The standard deviation of projected claims should be based on claims at the policy level, rather than claims per life insured. Multiple policies on the same life may be treated as separate policies, but distinct coverages of the same life under a single policy should be aggregated. If this aggregation is not done due to systems limitations, the impact should still be measured and accounted for in the total requirement.

- B is defined by:

$$B = \begin{cases} \max\left(\frac{1}{2} \ln(D), 1\right) & \text{for sets of adjustable and participating policies} \\ & \text{that meet the criteria for reduced factors} \\ \max(\ln(D), 1) & \text{for all other sets of policies} \end{cases}$$

where D is equal to the Macaulay duration of all projected net death claims for the policies in the set, calculated assuming a discount rate of 5% per year, and \ln is the natural logarithm function.

- E is the total net amount at risk for the policies in the set, and
- F is the total net face amount for the policies in the set.

When there is insufficient data available to calculate A for a set of products and the standard deviation of the net death benefit amounts for all policies or (for group products) certificates in the set is known, factor A for the set should be approximated as:

$$A \approx \sqrt{\frac{C \times \sum b^2}{F}}$$

where:

- C is the projected value of the upcoming year's total net death claims for all policies in the set (including claims projected to occur after policy renewal dates),
- The sum is taken over all policies or (for group products) certificates in the set, and b is the net death benefit amount for the policy or certificate, and
- F is the total net face amount for the policies in the set.

When there is insufficient data available to calculate A for a set of products and the standard deviation of the net death benefit amounts is not known, companies may approximate factor A for the set using a comparable set of the company's own products for which it is able to calculate the volatility component exactly. For the set whose volatility component is being approximated, A may be approximated as:

$$A \approx \frac{A_c \times \sqrt{N_c}}{C_c} \times \sqrt{C} \times \sqrt{\max\left(\frac{F}{n}, \frac{C}{N}\right)}$$

where:

- A_c is the exact factor A calculated for the comparison set;
- N_c and N are the total numbers of deaths projected to occur over the upcoming year for all policies in the comparison set and all policies in the set for which A is being approximated, respectively;
- C_c and C are the projected values of the upcoming year's total net death claims for all policies in the comparison set and all policies in the set for which A is being approximated, respectively;
- F is the total net face amount for the policies in the set for which A is being approximated, and
- n is the total number of lives covered under the policies in the set for which A is being approximated.

The use of the above approximation is subject to the following conditions:

- There should be no basis from which to conclude that the dispersion of the distribution of net death benefit amounts, as measured by the ratio of the standard deviation to the mean, of the comparison set may with material likelihood be lower than that of the set for which A is being approximated. It may not be appropriate to base the approximation on a company's entire book of products of the same type. A company's Appointed Actuary

should be able to explain why using the approximation based on the comparison set produces appropriate results.

- Companies must use comparison sets of individual products to approximate factors for sets of individual products, and comparison sets of group products to approximate factors for sets of group products. Companies may use sets of basic death products to approximate factors for sets of AD&D products, but may not use sets of AD&D products to approximate factors for sets of basic death products.
- For any particular set of products used as a comparison set, the number of covered lives in the comparison set must be greater than or equal to the total number of covered lives summed over all sets for which factors are approximated based on the comparison set.
- If this approximation is used for sets of individual basic death products, the sets in aggregate must not be material relative to the company's entire book of business.

For sets of products consisting entirely of traditional employer-sponsored group policies, companies may use the above approximation without reliance on a set of comparable products with the comparison set factor $A_c \times \sqrt{N_c} / C_c$ replaced by 1.75 in the approximation. In order to use the factor of 1.75 to approximate A for a set, each policy in the set must have the characteristic that an employee is required to remain actively working for the plan sponsor in order to continue coverage. In particular, such a set may not contain debtor, association, mass mailing or dependent coverages.

When there is insufficient data available to calculate A for a set of products and the standard deviation of the net death benefit amounts is not known, companies may also approximate factor A for the set using the formula:

$$A \approx \sqrt{C} \times \sqrt{b_{\min} + b_{\max} - \frac{b_{\min} \times b_{\max}}{F/n}}$$

where:

- C is the projected value of the upcoming year's total net death claims for all policies in the set (including claims projected to occur after policy renewal dates),
- b_{\min} is less than or equal to the lowest single-life net death benefit amount of any policy or certificate in the set,
- b_{\max} is the highest single-life net death benefit amount or retention limit of any policy or certificate in the set,
- F is the total net face amount for the policies in the set, and
- n is the total number of lives covered under the policies in the set.

The value of the average net death benefit amount F/n used in the above formula must be exact, and may not be based on an estimate. If a company cannot establish with certainty both the average net death benefit amount and a lower bound b_{\min} on the net death benefit amounts, it must use the value $b_{\min} = 0$ in the formula so that the approximation used is:

$$A \approx \sqrt{C \times b_{\max}}$$

When there is insufficient data to calculate B for a set of products, and a company calculates A for the set using a set of comparable products, and it is probable that the duration of projected net death claims for the comparison set is the same as or longer than that of the set for which there is insufficient data, the company should use the value of B for the comparison set as the approximation of B for the set for which there is insufficient data. If a company is using the formula based on the sum of the squares of the policy benefit amounts to approximate A for a set of individual products, it may still use an appropriately conservative comparison set of products to estimate B for the set provided that the comparison set meets the same conditions as required for a comparison set used to approximate A .

When there is insufficient data to calculate B for a set of group products and this factor is not estimated from a comparison set, the following approximation may be used:

$$B \approx \begin{cases} 1 & \text{for adjustable and participating products that meet the criteria for reduced factors,} \\ & \text{and for products having a mortality guarantee duration of 2 years or less} \\ 2 & \text{for all other products} \end{cases}$$

When there is insufficient data to calculate B for a set of individual products and this factor is not estimated from a comparison set, a company may calculate B using the exact formula with the exception that the duration of projected net death claims D is replaced by the longest remaining liability valuation term of any policy in the set.

4.1.2. Catastrophe component

The capital required for catastrophe risk is:

$$\sum_{\text{AllProducts}} K$$

where the book of business is partitioned into the same sets as in the volatility component, and K is the capital requirement for catastrophe risk for the set. The formula for K is given by:

$$K = \alpha \times C \times \frac{E}{F}$$

where:

- $\alpha = \begin{cases} 0.05 & \text{for sets of adjustable and participating policies that} \\ & \text{meet the criteria for reduced factors} \\ 0.1 & \text{for all other sets of products} \end{cases}$
- C is the projected value of the upcoming year's total net death claims for all policies in the set (including claims projected to occur after policy renewal dates),
- E is the total net amount at risk for the policies in the set, and
- F is the total net face amount for the policies in the set.

For purposes of the catastrophe component, group policies with no rate guarantee beyond the current year are considered adjustable.

4.1.3. Credit for reinsurance and special policyholder arrangements

4.1.3.1. Adjustments for group business

Group policies or benefits that are associated with one of the risk-reduction features below should be placed into separate sets consisting exclusively of policies with such features. These sets should be further partitioned according to whether the policyholder is the Canadian Government or a provincial or territorial government in Canada, or another type of policyholder. A company may apply a scaling factor to both the volatility and catastrophe components for a set of policies having risk-reduction features, where the scaling factor is 5% for Canadian federal, provincial or territorial group policyholders, and 15% for all other policyholders. The risk-reduction features eligible are:

- 1) “guaranteed no risk”,
- 2) deficit repayment by policyholders, or
- 3) a “hold harmless” agreement where the policyholder has a legally enforceable debt to the insurer.

The above applies for groups where the risk-reduction features provide for a full transfer of risk. Where a policy has one of the above risk-reduction features, but the maximum recoverable amount (as specified in the insurance contract) from the policyholder is subject to a limit, the credit for the risk-reduction feature will be calculated in the same manner as the credit for policyholder deposits under section 4.1.3.3, with the following modifications:

- 1) use the maximum recoverable amount in place of the deposit amount in the calculation, and
- 2) the credit for the risk-reduction feature, the lower of the maximum recoverable amount and the portion of L that would be allocated to the policyholder under any risk-sharing formula, must be reduced by 5% for Canadian federal, provincial or territorial group policyholders, and 15% for all other policyholders.

“Administrative Services Only” group contracts where the insurer bears no risk and has no liability for claims should be excluded from the calculation of the mortality component.

4.1.3.2. Reinsurance

All intermediate quantities used to determine the mortality component should be calculated net of all reinsurance that is deemed to constitute registered reinsurance under section 10.2. Such reinsurance may include modco agreements, provided that the assuming company fully takes the agreement into account in its own mortality risk calculation.

For sets of products containing contracts where the direct or assumed premiums are guaranteed but the reinsurance premiums are adjustable, both the volatility component and the catastrophe

risk requirement for the set should be calculated twice: once net of the reinsurance as if it were not adjustable, and once gross of the reinsurance. The volatility component and the catastrophe risk requirement used in the mortality risk calculation are then the averages of those found from the two calculations.

Deposits under the control of the company for a period not less than the mortality charge guarantee term remaining that are in excess of the reserves for the risk reinsured and that are made by reinsurers under unregistered reinsurance arrangements (reference section [10.2](#)) may be used to reduce the mortality component. For Canadian business, the deposit must be held in Canada, and the company's relevant regulatory authority must have given the ceding company permission to reduce its reserves by the amount of the deposit corresponding to the reserves. The amount by which the mortality component may be reduced on account of a deposit made by an unregistered reinsurer that can be applied against losses under a specific reinsurance agreement or group of agreements is limited to a maximum of:

$$M_0 - M_1$$

where M_0 is the mortality component calculated net of registered reinsurance only, and M_1 is the mortality component calculated net of both registered reinsurance and the specific reinsurance agreements backed by the deposit. Note that where an unregistered reinsurer has made separate deposits (e.g. in two or more accounts), each of which can be applied only against losses under a separate set of agreements, the maximum total reduction allowed in the mortality component will generally be lower than had the reinsurer made a single deposit that could be applied against losses under any of the agreements.

4.1.3.3. Policyholder deposits

Qualifying policyholder deposits, excluding actuarial and claim reserves and any due refund provisions, may be used to reduce the mortality component. Such deposits must be:

- 1) made by policyholders,
- 2) available for claims payment (e.g., claims fluctuation and premium stabilization reserves, and accrued provision for experience refunds), and
- 3) returnable, net of applications, to policyholders on policy termination.

Where such a deposit has been made under a group policy and a company wishes to take credit for the deposit in the mortality component, the partition of the company's book of business must contain a set consisting of this policy alone. When the company is able to recover excess losses from the deposit on a first-dollar, 100% coinsurance basis, the amount by which the component may be reduced for a deposit made under the policy is limited to the lower of the deposit amount or a loss amount L , defined below. If the amount that the company is able to recover from a deposit is subject to a risk-sharing arrangement, the company may only take credit for the deposit if the dollar amounts of both the losses borne by the company and by the policyholder under the arrangement do not decrease as total excess claims increase. If a company is eligible to take credit for the deposit under a risk-sharing arrangement, the amount by which the component may

be reduced is limited to the lower of the deposit amount, or the portion of the defined loss amount L that would be allocated to the policyholder under the risk-sharing formula.

For group basic death policies, L is defined by:

$$L = \frac{s^2}{2 \times \sqrt{\sum_{\text{Basic Death}} S^2}} + k$$

and for group AD&D policies it is defined by:

$$L = \frac{s^2}{2 \times \sqrt{\sum_{\text{AD\&D}} S^2}} + k$$

where:

- s is the volatility component, net of all reinsurance (both registered and unregistered), calculated for the set consisting of the policy,
- k is the catastrophe component, net of all reinsurance, calculated for the set consisting of the policy, and
- The sum is taken over all sets of basic death or AD&D policies, including the set consisting of the policy for which a deposit has been made, and S is the volatility component for the set net of all reinsurance.

4.1.3.4. Reinsurance claims fluctuation reserves

Claims fluctuation reserves, deposits, or loss positions retained by a ceding company that serve to reduce the assuming company's risk under a reinsurance agreement may be used to reduce the assuming company's mortality component. The reduction is calculated in the same way as the reduction for policyholder deposits in section 4.1.3.3. The loss amount L to be used in calculating the credit is defined by:

$$L = M_0 - M_1 - D$$

where M_0 is the assuming company's total mortality component net of both registered and unregistered reinsurance, M_1 is the assuming company's mortality component calculated excluding the reinsurance agreement for which the deposit has been made, and D is the amount of any reduction in the component that has already been taken on account of policyholder deposits for the business assumed under the reinsurance agreement.

4.1.3.5. Stop loss arrangements

Should a legally binding agreement exist whereby a company or branch substantially assumes all the claim costs for a block of policies in excess of a predetermined amount, the ceding company may reduce its mortality requirement subject to the prior approval of the Superintendent. To obtain such approval, the ceding company must justify the amount of the reduction it is seeking in terms of the reduction in risk achieved by the arrangement based on the results of the

company's own modeling. The modeled results must include measurements of the stop-loss arrangement's effect on both loss volatility and catastrophic losses.

Where OSFI has granted credit for a stop-loss arrangement and the assuming company or branch is licensed to do business in Canada, the ceding company must retain in its records the assuming company's actuary's certification that the assuming company (i) is legally bound to pay all claims in excess of the predetermined amount, and (ii) has included the amount claimed by the ceding company in its own MCCR mortality requirement calculation. Where the stop-loss arrangement is deemed to constitute unregistered reinsurance under section 10.2, credit may be taken by the ceding company only to the extent that deposits placed by the assuming company in excess of ceded reserves are available to cover the ceded mortality requirement.

Catastrophe covers are ineligible for stop-loss credit.

4.2. *Disability and other morbidity risks*

For policies classified as life insurance, the component requirement should be calculated as outlined in section 4.4 for accident and sickness policies' treatment of morbidity risk.

4.3. *Annuities involving life contingencies*

The risks associated with vested annuity mortality, financial, or asset risks are dominated by overall systematic risks (e.g., inadequate premium rates). Since risks of random statistical fluctuation are not material, no adjustment is necessary for differences in size.

The component requirement is 1% of the total policy liabilities, including any portion of the policy liability that does not involve life contingencies. In the case of a longevity swap where a company assumes longevity risk, the 1% factor will be applied to the full actuarial present value of the variable annuity payments under the swap, not the net value of the swap.

Any annuity that is clearly issued or assumed to back a life insurance policy may be excluded from the mortality and C-3 risk components, and may instead be counted as an offset in the calculation of these components for the life policy. In order to be recognized as clearly backing a life policy, the annuity policy or contract must explicitly identify or specifically refer to a third-party contract that identifies the name of the insured and the life policy being supported. All of these contracts or policies must be linked in such a way that any cancellation or termination of all or part of one of the contracts would trigger the immediate termination of the corresponding parts of the remaining contracts that were backed by the cancelled or terminated coverages. Furthermore, the death benefit of the life policy must only be payable if the annuity payments are stopped without any return of premium(s) and the annuity premium(s) have been or can be redeemed either directly or indirectly by the insurer. The annuity policy must also be included in the same segment as the life policy in the CALM valuation, so that both contracts are covered by the same portfolio of assets and are subject to the same investment policies, practices and strategy.

4.4. Morbidity risk

Morbidity risk for accident and sickness insurance relates to risks arising from volatility in claims experience, and from events that would lead to increased claims. To compute the morbidity component, a factor is applied to the measure of exposure to risk. The resulting values are added to arrive at the morbidity risk component requirement.

4.4.1. Disability income insurance and waiver of premium benefits

The factors used in deriving the risk component vary with the guaranteed term remaining in the exposure measure. The measure of exposure to risk is as follows:

Risk	Measure of Exposure	Applicable Guaranteed Term
Disability Income, New Claims Risk	Annual earned premiums	length of the premium guarantee remaining
Disability Income, Continuing Claims Risk	Disability income reserves relating to claims of prior years	length of the benefit period remaining

The additional risks associated with non-cancellable guaranteed premium business should be recognized. As well, increased volatility is characteristic of disability income insurance, as compared to medical and dental expense reimbursement business.

4.4.1.1. New claims risk

The new claims risk component relates to claims arising from the current year's coverage, and includes the risks of incidence and claims continuance. The factor applied to the measure of exposure is as follows:

Percentage of Annual Earned Premiums ⁹⁵		Length of Premium Guarantee Remaining
Individually Underwritten	Other	
12%	12%	less than or equal to 1 year
20%	25%	greater than 1 year, but less than or equal to 5 years
30%	40%	greater than 5 years

For benefits attached to group life insurance policies, the factors for individual coverages should be used.

These factors should be multiplied by 75% for contracts that provide for benefit periods that do not exceed two years.

⁹⁵ For travel insurance, the capital charge should be applied to revenue premiums.

4.4.1.2. Continuing claims risk

The continuing claims component covers the risk of claims continuance arising from coverage provided in prior years. The factor applies to disability income or waiver of premium claim reserves related to claims incurred in prior years, including the portion of the provision for incurred but unreported claims.

The factor applied to the measure of exposure is as follows:

Duration of Disability			Length of Benefit Period Remaining
less than or equal to 2 years	greater than 2 years but less than or equal to 5 years	greater than 5 years	
4.0%	3.0%	2.0%	less than or equal to 1 year
6.0%	4.5%	3.0%	greater than 1 year but less than or equal to 2 years
8.0%	6.0%	4.0%	greater than 2 years or lifetime

4.4.2. Accidental death and dismemberment

These benefits should be included in the company-wide calculation of the mortality risk component, as outlined in section 4.1. However, for automobile and common carrier accidental death and dismemberment coverages, only "all cause" policies solicited by mail should be included in the mortality risk component. Specific accident perils accidental death and dismemberment policies solicited by mail, and "free" coverages on premium credit card groups should be included in "Other Accident and Sickness Benefits".

4.4.3. Other accident and sickness benefits

4.4.3.1. New claims risk

The component requirement is 12% of annual earned premiums. This approximates 15% of net annual premiums.

4.4.3.2. Continuing claims risk

The component requirement is 10% of the provision for incurred but unpaid claims relating to prior years. The use of prior years avoids a double component requirement for incurred but unpaid claims arising from coverage purchases by premiums paid in the current year.

4.4.4. Adjustment for statistical fluctuation

The total capital and surplus requirement for morbidity risk is multiplied by a factor determined by the following function of the calculated component requirement M :

$$SFF(M) = \begin{cases} 1 & , \text{ if } M \leq \$9,000,000 \\ 0.7 + \frac{900}{\sqrt{M}} & , \text{ if } M > \$9,000,000 \end{cases}$$

Companies should determine a single factor, to four decimal places, based on the aggregate of their morbidity risks (including disability and other morbidity risks contained within policies classified as life insurance) that should be applied to all morbidity risks across the company. The applicable factor may be determined using the aggregate of the calculated component requirement and the corresponding component requirements for life insurance subsidiaries where consolidation is appropriate. The factor used by a branch operation of a non-resident company to adjust for statistical fluctuation may only take account of its Canadian business.

4.4.5. *Credit for reinsurance and special policyholder arrangements*

4.4.5.1. Adjustments for group business

The gross requirement for any group benefit may be multiplied by a scaling factor if it carries one of the following features:

- 1) “guaranteed no risk”,
- 2) deficit repayment by policyholders, or
- 3) a “hold harmless” agreement where the policyholder has a legally enforceable debt to the insurer.

The factor to be used is 5% if the group policyholder is the Canadian Government or a provincial or territorial government in Canada, and 15% for all other policyholders.

The above applies for groups where the risk-reduction features provide for a full transfer of risk. Where a policy has one of the above risk-reduction features, but the maximum recoverable amount (as specified in the insurance contract) from the policyholder is subject to a limit, the credit for the risk-reduction feature will be calculated in the same manner as the credit for policyholder deposits under section 4.4.5.3, with the following modifications:

- 1) use the maximum recoverable amount in place of the deposit amount in the calculation, and
- 2) the credit for the risk-reduction feature, the lower of the maximum recoverable amount and the portion of the marginal morbidity component that would be allocated to the policyholder under any risk-sharing formula, must be reduced by 5% for Canadian federal, provincial or territorial group policyholders, and 15% for all other policyholders.

No component is required for “Administrative Services Only” group contracts where the insurer bears no risk and has no liability for claims.

4.4.5.2. Reinsurance

Premium and reserve amounts used in calculating the requirement for morbidity risk should be determined net of all reinsurance that is deemed to constitute registered reinsurance under section [10.2](#). For unregistered reinsurance arrangements (reference section [10.2.2](#)) excess deposits placed by the reinsurer may be used to reduce the component requirement as described in section [10.6](#). The amount by which the morbidity requirement may be reduced on account of a deposit made by an unregistered reinsurer that can be applied against losses under a specific reinsurance agreement or group of agreements is limited to a maximum of:

$$M_0 \times SFF_0 - M_1 \times SFF_1$$

where:

- M_0 is the gross morbidity requirement calculated net of registered reinsurance only, before adjustment for statistical fluctuation;
- M_1 is the gross morbidity requirement calculated net of both registered reinsurance and the specific reinsurance agreements backed by the deposit, before adjustment for statistical fluctuation;
- SFF_0 is the statistical fluctuation factor corresponding to a calculated component requirement of M_0 , and
- SFF_1 is the statistical fluctuation factor corresponding to a calculated component requirement of M_1 .

4.4.5.3. Policyholder deposits

Qualifying policyholder deposits, excluding actuarial and claim reserves and any due refund provisions, may be used to reduce the morbidity component. Such deposits must be:

- 1) made by policyholders,
- 2) available for claims payment (e.g. claims fluctuation and premium stabilization reserves, and accrued provision for experience refunds), and
- 3) returnable, net of applications, to policyholders on policy termination.

When a company is able to recover excess losses from a deposit for a particular policy on a first-dollar, 100% coinsurance basis, the amount by which the component may be reduced is limited to the lower of the deposit amount or the marginal morbidity requirement for the policy, as defined below. If the amount that the company is able to recover from a deposit is subject to a risk-sharing arrangement, the company may only take credit for the deposit if the dollar amounts of both the losses borne by the company and by the policyholder under the arrangement do not decrease as total excess claims increase. If a company is eligible to take credit for the deposit under a risk-sharing arrangement, the amount by which the component may be reduced is limited to the lower of the deposit amount, or the portion of the marginal morbidity requirement for the policy that would be allocated to the policyholder under the risk-sharing formula. The marginal morbidity requirement for a policy is defined as the morbidity requirement, net of both registered and unregistered reinsurance and after adjustment for statistical fluctuation, for a company's

entire book of business minus the morbidity requirement (taking account of the increased statistical fluctuation factor) for the company's book of business excluding the policy under consideration.

4.4.5.4. Reinsurance claims fluctuation reserves

Claims fluctuation reserves, deposits, or loss positions retained by a ceding company that serve to reduce the assuming company's risk under a reinsurance agreement may be used to reduce the assuming company's morbidity component. The reduction is calculated in the same way as the reduction for policyholder deposits in section 4.4.5.3. The reduction in the morbidity component is limited to the marginal morbidity requirement for the reinsurance agreement (the decrease in the assuming company's morbidity requirement, net of all reinsurance and after adjustment for statistical fluctuation, if the reinsurance agreement for which the deposit has been made is excluded) minus the amount of any reduction in the component that has already been taken on account of policyholder deposits for the business assumed under the reinsurance agreement.

4.5. *Lapse risk*

The lapse risk component of required capital recognizes the risk that lapse experience may vary year to year from what has been assumed. The component is required for any individually priced policy or certificate that is subject to lapse risk and for which a lapse assumption is used in valuing the liabilities; this includes all individual life, individual health and funeral business, as well as each certificate under group policies for which premiums or reserves are based on individual insured characteristics. It is calculated by either increasing or decreasing the lapse assumption for each policy at each duration, depending on which adjustment produces a higher reserve. For policies having crossover points, the assumed lapse rate will be increased at some durations and decreased at others.

The lapse component is determined by:

- 1) Calculating total policy liabilities net of registered reinsurance only. This calculation may not take into account any cession, on any particular policy, that is deemed to constitute unregistered reinsurance under section 10.2.
- 2) Recalculating total net policyholder liabilities (taking into account only those reinsurance cessions included in the reserve in Step 1) using higher lapse margins for adverse deviation. The magnitude of the lapse margin at each policy duration should be increased by 6.5 percentage points for qualifying participating policies meeting the criteria in section 1.2.6 and adjustable premium policies, and 13 percentage points for all other policies.

For example, if a lower lapse assumption at a particular duration for a non-participating, non-adjustable premium policy produces a higher reserve, and the valuation assumption uses a best-estimate lapse rate of 6% reduced by a 10% margin to 5.4%, then the revised assumption should use a lapse rate of 6% reduced by a 23% margin to 4.62%. On the other hand, if a higher lapse assumption at a particular duration produces a higher reserve, and the valuation assumption uses a best-estimate lapse rate of 6% increased by a

10% margin to 6.6%, then the revised assumption should use a lapse rate of 6% increased by a 23% margin to 7.38%.

All other assumptions remain unchanged from those used in Step 1.

3) Subtracting the reserve calculated in Step 1 from the reserve calculated in Step 2.

The 6.5% factor for adjustable business may only be used for adjustable policies where adjustability to recover losses from lapse experience is reasonably flexible. For adjustable, participating or universal life policies where lapse adjustability is not reasonably flexible, the 13% factor for “all other” business should be used. The reasonable flexibility of the adjustability features should have been tested in pricing the policy or elsewhere, and should demonstrate that the company may recuperate at least half of any unexpected losses due to lapse risk. This would be done by comparing the price with and without future adjustments, using the regular or reduced component as appropriate. The tests performed should be available upon request.

Although it is preferable to calculate the lapse risk component based on year-end reserves, companies may calculate the component based on a quarter-end selected during the year. In this case, the increase in reserves from step 1) to step 2) is expressed as a percentage and is used for all MCCR/TAAM calculations for the following 12 months.

In order to simplify the calculation of this component, companies are not expected to modify systems that make automatic mortality adjustments when lapse assumptions change.

Chapter 5. Changes in Interest Rate Environment (C-3) Risk

Changes in interest rate environment (C-3) risk is the risk associated with asset depreciation arising from interest rate shifts. Capital is necessary to cover the dependence of asset and liability cash flows on interest rate fluctuation.

The component for changes in interest rate environment risk specifically encompasses the risk occasioned by rising interest rates. Disintermediation may diminish cash flows, hamper investments at the higher rates, or prompt the liquidation of assets at depressed prices. Losses arising from asset default (C-1) are accorded separate treatment in the development of required capital and are specifically excluded from this risk component.

To compute the changes in interest rate environment component, factors are applied to policy liability amounts. The resulting values are summed to arrive at the changes in interest rate environment component, subject to a minimum of zero for each product type. Liabilities for index-linked products identified in section 3.6 that are included in the correlation factor calculation are exempt from the C-3 risk requirements. Companies may take credit (reduce the reserves to which factors are applied) for reinsurance that is deemed to constitute registered reinsurance under section 10.2.

5.1. Insurance and immediate annuities

The factors used to calculate the risk component are as follows:

Factor	Guaranteed Period Remaining on Premium Rates or Credited Interest	Product
0.01	less than 5 years	Life and Health Insurance, other than Universal Life
0.02	greater than or equal to 5 years, but less than 10 years	
0.03	greater than or equal to 10 years	
0.015	less than 5 years	Endowment Insurance, other than Universal Life
0.03	greater than or equal to 5 years, but less than 10 years	
0.05	greater than or equal to 10 years	
0.01	Single Premium Immediate Annuities (including RRIFs) and Disability Claims Payable in Instalments (including Disability Waiver)	

The policy liability amounts used in this calculation should be net of policy loans where the policy loan rate is variable, and not subject to an upper limit; or where there is direct recognition of policy loans by policy either in the dividend scale or in the excess interest credited. A policy loan interest rate that is based on an index is considered to be variable.

The tabled factors are halved for insurance policies without guaranteed cash surrender values (including maturity values) in the next five years.

For qualifying participating policies that meet the criteria in section 1.2.6, and for universal life policies that grant interest on a portfolio rate basis (where rates change freely), the appropriate factors in the preceding table for a guarantee period of less than five years should be used (notwithstanding the reference to "other than universal life"). A reduced factor may only be used for universal life policies where the credited rates are reasonably flexible. The reasonable flexibility of the crediting features should have been tested in pricing the policy or elsewhere, and should demonstrate that the company may recuperate at least half of any unexpected losses due to disintermediation risk. This would be done by comparing the price with and without future adjustments, using the regular or reduced component as appropriate. The tests performed should be available upon request.

For current premium rates that are significantly less than the maximum guaranteed premium rates, the guarantee term is that applicable to the current rates.

No component is required for business where the policy liabilities are not discounted for interest, and on which there is no interest credited.

5.2. Accumulation funds

Separate treatment is accorded accumulation funds (including all amounts on deposit), deferred annuities, retirement income policies, and universal life products. The factors used in deriving the risk component vary with the guaranteed term remaining in the exposure measure, as well as with the plan type. The different plan types are defined as follows:

- Type A** At all times, funds may be withdrawn only
- (i) with an adjustment to reflect changes in interest rates or asset values since fund receipt; or
 - (ii) by way of an immediate life annuity; or
 - (iii) in instalments over a minimum of five years; or
 - (iv) for amounts not greater than the annual interest credits allowed.
- Type B** Fund withdrawal is defined as for Type A, except that funds may be withdrawn at the end of the interest guarantee period in a single sum, or in instalments over less than five years.
- Type C** Funds may be withdrawn before the end of the guarantee period in a single sum, or in instalments over less than five years, either
- without adjustment to reflect changes in interest rates or asset values since fund receipt; or
 - subject only to a fixed surrender charge, either in amount or as a percentage of the funds.

The factors used in deriving the risk component for accumulation funds (including all amounts on deposit), deferred annuities, retirement income policies, and universal life products are as follows:

Factor	Type of Plan
0.005	** daily interest accounts being credited with market short-term interest, and with interest rate guarantee periods remaining of six months or less
0.010	guaranteed period remaining less than 10 years (other than in **) for Plan Types A and B
0.020	guaranteed period remaining greater than or equal to 10 years for Plan Types A and B
0.020	guaranteed period remaining greater than 6 months but less than 18 months for Plan Type C
0.050	guaranteed period remaining greater than 18 months but less than 10 years for Plan Type C
0.100	guaranteed period remaining greater than or equal to 10 years for Plan Type C

For accumulation funds, the guarantee period is the number of years remaining until the next interest rate reset date. Accumulation funds include claim fluctuation reserves, stabilization reserves, and provisions for experience rating refunds.

For group plans, for purposes of distinguishing between Plan Types, fund withdrawal does not include employee withdrawals upon termination of employment, retirement, disability, or death. Withdrawals occasioned by adverse aggregate group experience, such as claim fluctuation reserves, are also excluded.

Single premium funeral insurance may be classified as a Type A or Type B accumulation fund for purposes of the C-3 risk component calculation, with the duration (guaranteed period remaining) set equal to the average expected remaining life of the portfolio, so that the applicable factor is either 0.010 or 0.020. However, funeral insurance with periodic premiums must be classified as a regular insurance product. In order to receive a preferential factor, a funeral insurance product must have all of the following characteristics:

- The insurance policy provides a relatively small cash death benefit to cover the cost of a funeral;
- Most or all of the death benefit is assigned to a funeral home to provide specific funeral goods and services pre-arranged between the policyholder and the funeral home;
- The average age at issue is relatively advanced (e.g. 60 or older); and
- The proceeds of the policy are payable directly to a funeral home.

5.3. *Debt obligations*

Debt obligations, as defined in the Insurance Companies Act, contracted by life insurers that do not qualify as Available Capital by virtue of these characteristics will receive a factor of 1%. The Insurance Companies Act prescribes that "debt obligation" means a bond, debenture, note or other evidence of indebtedness of an entity, whether secured or unsecured.

5.4. Asset cash flow uncertainty risk

5.4.1. Scope and basic requirement

The asset cash flow uncertainty risk component covers against losses caused by the prepayment and extension of investments that are sensitive to interest rate fluctuations. No C-3 component is required for:

- traditional fixed income investments including non-callable, callable and extendible bonds;
- residential mortgages and commercial mortgages with prepayment penalties or prepayment conditions;
- commercial mortgage backed securities supported by pools of commercial mortgages with prepayment penalties or prepayment conditions;
- Canadian pass-through MBSs and Canadian CMOs supported by pools of NHA insured mortgages with prepayment penalties or prepayment conditions;
- assets backed by a pool of automobile and light truck loans, credit card receivables and trade receivables;
- asset backed securities with floating rate coupons;
- franchise loans with treasury make whole clauses; and
- assets backing index-linked products identified in section 3.6 that are included in the correlation factor calculation.

A C-3 factor of 1% applies to:

- residential mortgages and commercial mortgages that have no prepayment penalties or conditions;
- Canadian CMOs supported by a pool of mortgages that have no prepayment penalties or clauses;
- U.S. pass-through MBSs and CMOs; and
- pass-through asset backed securities collateralized by home improvement loans and manufactured housing loans.

5.4.2. Other fixed income assets

An 8% factor applies to leveraged derivatives and leveraged structured notes.

C-3 factors for cash flow uncertainty may be reduced by 50% for assets backing cash flow tested reserves.

Chapter 6. Companies Operating in Canada on a Branch Basis

Under subsection 608(1) of the *Insurance Companies Act*, a foreign life company is required to maintain in Canada an adequate margin of assets over liabilities in respect of its insurance business in Canada. The Test of Adequacy of Assets in Canada and Margin Requirements (TAAM) set out in this guideline provides the framework within which the Superintendent assesses whether companies operating in Canada on a branch basis maintain an adequate margin pursuant to subsection 608(1).

Companies operating in Canada on a branch basis are required to maintain assets in Canada, in respect of their life insurance business in Canada, that are sufficient to cover:

- 1) reserves for actuarial and other policy liabilities;
- 2) unpaid claims;
- 3) other liabilities and amounts related to the carrying on of its life insurance business in Canada; and
- 4) a margin of assets in Canada over liabilities in Canada.

These requirements are prescribed in accordance with the *Assets (Foreign Companies) Regulations*.

6.1. TAAM Ratios

The TAAM ratios measure the adequacy of assets available to meet the margin requirements as determined in accordance with this guideline. The Total Ratio is defined as Available Margin divided by Required Margin. The Core Ratio⁹⁶ is defined as Available Margin excluding Other Admitted Assets divided by Required Margin. The Available Margin is the difference between Assets Required and Assets Available. The determination of Assets Required, Assets Available, and Required Margin is described below.

6.2. Assets Required

Assets Required in respect of a foreign life company's insurance business in Canada consists of:

- reserves for actuarial and other policy liabilities⁹⁷, net of all reinsurance ceded;
- provisions for policyholder dividends, experience rating refunds, and discretionary participation features⁹⁸;

⁹⁶ The Core Ratio is a foreign life company's Canadian branch equivalent concept of the Tier 1 Ratio. The minimum Core Ratio is 60%. However, OSFI expects each branch to maintain its Core Ratio at no less than the supervisory target of 105%. This represents 70% of the 150% supervisory target Total Ratio.

⁹⁷ For TAAM purposes, policy liabilities should include deferred income taxes under valuation assumptions as required by the Canadian Institute of Actuaries Standards, prior to any accounting adjustment for balance sheet presentation.

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- fifty percent of the net decrease in policy liabilities, net of reinsurance, resulting from the recognition of future morbidity improvement
 - the net decrease in policy liabilities (for insurance and annuities combined, net of all reinsurance) resulting from the recognition of future mortality improvement under CIA standard 2350.06 and additional future mortality improvement⁵ under CIA standard 2350.11;
 - outstanding claims and adjustment expenses;
 - policyholder amounts on deposit;
 - accounts payable;
 - income taxes payable;
 - mortgage loans and other real estate encumbrances;
 - deferred income tax liabilities;
 - each net defined benefit pension plan recognized as a liability on the branch's balance sheet net of any associated deferred tax asset⁹⁹;
 - other liabilities;
 - adjusted negative reserves calculated policy by policy (reference section [2.4](#)) and negative reserves ceded to unregistered reinsurers (reference sections [10.4.2](#), [10.4.4](#) and [10.5](#));
 - cash surrender value deficiencies calculated on a grouped aggregate basis (reference section [2.4](#));

less:

- loans secured by policies in Canada;
- agents' debit balances and outstanding premiums; and
- amounts due from [federally regulated insurers and approved reinsurers](#) that can be legally netted against the actuarial liabilities of the branch.

The amount of morbidity improvement subject to reversal for a product may be offset by the amount of mortality improvement within the same product, provided that it is not applied in the calculation of the net decrease in policy liabilities resulting from the recognition of future mortality improvement described above. Branches may elect to phase in, in Assets Required, the impact on Assets Required of including the net decrease in policy liabilities, net of reinsurance, resulting from the recognition of future morbidity improvement. The phase-in will be made on a straight-line basis over the phase-in period. The phase-in period, which will be twelve quarters, begins on January 1, 2015 and must be completed by the earliest quarter-end occurring on or after December 31, 2017.

⁹⁸ These amounts must be included in assets required irrespective of whether they are classified as liabilities or equity for financial reporting purposes.

⁹⁹ That would be extinguished if the liability were derecognized under IFRS.

Branches may elect to phase-in, in Assets Required, the impact on Assets Required of:

- (a) including each net defined benefit pension plan recognized as a liability on the branch's balance sheet net of any associated deferred tax asset⁹⁹, if any, that existed on December 31, 2012; and
- (b) the restatement in the net defined benefit pension plan liability upon the initial adoption of the revisions to *IAS 19 Employee Benefits*, effective for fiscal years beginning on or after January 1, 2013

The amount subject to phase-in is the sum of a) and b) above. The phase-in will be made on a straight-line basis over the phase-in period. The phase-in period begins on January 1, 2013 for item a) and on the effective date of the revisions to *IAS 19 Employee Benefits* for item b) and must be completed by the earliest quarter-end occurring on or after December 31, 2014. If a branch elects a phase-in, it will be irrevocable and reflected via an adjustment to Assets Required.

In order to deduct an amount due from a federally regulated insurer or approved reinsurer from Assets Required, a branch must satisfy OSFI that, at a minimum, the following conditions have been met:

- The amount due is from an insurer to which the branch has a liability of an equal or greater amount. (Amounts due in excess of the liability may not be deducted from Assets Required; they may only be included in *Other Admitted Assets*, below).
- The branch has executed a written, bilateral netting contract or agreement with the insurer to which the liability is owed that creates a single legal obligation. The result of such an arrangement must be that the branch would have only one obligation for payment or one claim to receive funds based on the net sum of the liabilities and amounts due in the event the counterparty to the agreement failed to perform due to any of the following: default, bankruptcy, liquidation or similar circumstances.
- The netting arrangement provides that only the liabilities to the counterparty arising out of the Canadian operations of the foreign company may be taken into consideration in determining the net amount owed. In particular, the counterparty must not be able to net amounts due to the branch against any liabilities of the home office or affiliates of the branch that are not liabilities arising out of the Canadian operations of the foreign company.
- The branch must have written and reasoned legal opinions that, in the event of any legal challenge, the relevant courts or administrative authorities would find the amount owed 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 jurisdiction where the counterparty is incorporated 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 insurance transaction; and c) the law governing any contracts or agreements required to effect the netting arrangement.
 - A legal opinion must be generally recognized 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 branch must have procedures in place to update legal opinions as necessary to ensure continuing enforceability of the netting arrangement in light of possible changes in relevant law.

6.3. Assets Available

Assets Available consists of:

- admitted assets vested in trust;
- investment income due and accrued on admitted vested assets; and
- Other Admitted Assets, as specified below;

less:

- 50% of Deductions/Adjustments, defined below; and
- the excess of 50% of Deductions/Adjustments over Other Assets, defined below.

For the purpose of calculating the TAAM ratios, vested assets are to be valued in accordance with the *Assets (Foreign Companies) Regulations*.

6.4. Required Margin

The Required Margin is equal to the sum of the risk components listed in section 1.1.2 and described in chapters 3, 4, 5, 7, 8, 9 and 10, and applies to:

- vested assets;
- liabilities in respect of insurance business in Canada; and
- the book value of assets under the control of the Chief Agent, if these are taken into consideration in determining *Other Admitted Assets* below.

6.5. Other Admitted Assets

In calculating Assets Available, a branch may include Other Admitted Assets, equal to Other Assets as defined below, minus 50% of Deductions/Adjustments as defined in section 6.6. However, Other Admitted Assets may not be lower than zero. If the amount that must be deducted exceeds Other Assets, the excess must be deducted from Assets Available.

Other Assets is the lesser of 75% of the Required Margin, or the sum of:

- i) the total book value of the following assets under the control of the chief agent, all of which must be unencumbered:
 - automobiles, furniture and equipment, computer hardware, leasehold improvements; and
 - amounts due from [federally regulated insurers and approved reinsurers](#) not in arrears;
- ii) all amounts included in Assets Required on account of negative reserves;

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- iii) 75% of the cash surrender value deficiencies calculated on a grouped aggregate basis (reference section [2.4.2](#)); and
 - iv) the adjustment amount to amortize the impact in the current period on Assets Required on account of each net defined benefit pension plan recognized as a liability on the branch's balance sheet net of any associated deferred tax assets⁹⁹.

Branches may make a one-time election to amortize in each period, the impact on Assets Required relating to the change, in each period, of net defined benefit pension plan liabilities. The amortization will be made on a straight-line basis over the amortization period. The amortization period will be twelve quarters and will begin in the current quarter. The election will be irrevocable and the branch will continue, in each quarter, to amortize the new impact on Assets Required in subsequent periods. The adjustment amount will be reflected in Other Admitted Assets.

Assets under the control of the Chief Agent may be included in Other Assets only if the following conditions are met:

- records and record keeping facilities in Canada are satisfactory to the Superintendent,
- the branch has received an unqualified auditor's opinion, and
- the Superintendent receives an undertaking from the head office of the company and the Chief Agent specifying that the assets under section i) under the control of the Chief Agent will be maintained in Canada.

6.6. *Deductions/adjustments*

50% of the following amounts is deducted from Assets Available, and an additional 50% is deducted from Other Admitted Assets:

- equity investments in an entity in which the branch has a substantial investment but does not control (reference section [2.7](#));
- other facilities that are treated as capital by unconsolidated subsidiaries and by unconsolidated corporations in which the branch has a substantial investment;
- first loss facilities or transfer of assets with recourse (in accordance with Guideline B-5: [Asset Securitization](#));
- aggregate positive policy liabilities ceded under arrangements deemed to constitute unregistered reinsurance, less the amount of collateral and letters of credit applied toward these liabilities (reference chapter [10](#)),

Chapter 7. Off-Balance Sheet Activities

The term “off-balance sheet activities”, 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 under this section irrespective of whether they have been recorded on the balance sheet at fair value.

The major risk to life insurance companies associated with off-balance sheet activities is the default of the counterparty to a transaction, i.e., counterparty credit risk. The face amount of an off-balance sheet instrument does not always reflect the amount of the credit risk. To approximate the potential credit exposure, the face amount of the instrument must be multiplied by a credit conversion factor to derive a credit equivalent amount (reference section [7.1](#)). The resulting credit equivalent amount is then assigned the asset default factor appropriate to the counterparty (reference section [3.1](#)) or, if relevant, the factor for the collateral (reference section [3.2](#)) or the guarantor (reference section [3.3](#)).

Companies should also refer to OSFI’s Guideline B-5: [Asset Securitization](#). The guideline outlines the regulatory framework for asset securitization transactions and for other types of asset transfers with recourse. The purpose of the guideline is to ensure that financial institutions maintain adequate capital to protect themselves against risks arising as a result of these transactions and to insulate themselves to the extent possible from any moral recourse obligations.

7.1. 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 to derive a credit equivalent amount. The process for determining the credit equivalent amounts of derivative instruments is covered in sections [7.2](#) and [7.3](#). The resulting credit equivalent amount is then treated in a manner similar to an on-balance sheet instrument and is assigned the risk factor appropriate to the counterparty (or if relevant, the guarantor or collateral) per chapter [3](#). The categories of credit conversion factors are as follows:

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 participations in bankers' acceptances and participations 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.

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- Written put options on specified assets with the character of a credit enhancement.¹⁰⁰

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.
- Revolving underwriting facilities (RUFs), note issuance facilities (NIFs) and other similar arrangements.

20% Conversion Factor

- Short-term self-liquidating trade-related contingencies, including commercial/documentary letters of credit (the 20% factor applies if a company has either issued or confirmed the contingent liability).
- Commitments with an original maturity of one year or less.

0% Conversion Factor

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

Categories of off-balance sheet instruments are described in section [7.4](#).

Separate credit conversion factors have been developed for forwards, swaps, purchased options and similar derivatives. The maturity of these contracts is also taken into account in their conversion to the credit equivalent on-balance sheet instrument. Under specified circumstances companies may net off-balance sheet exposures (reference section [7.3](#)).

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

The treatment of forwards, swaps, purchased options and similar derivative contracts requires special attention because companies 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 asset default factor appropriate to the counterparty.

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. Options purchased over the counter are included with the same conversion factors as other instruments.

¹⁰⁰ Written put options (where premiums are paid upfront) expressed in terms of market rates for currencies or financial instruments bearing no credit risk are excluded from the framework.

A. Interest rate contracts include:

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

B. Exchange rate contracts include:

- gold contracts¹⁰¹;
- cross-currency swaps;
- cross-currency interest rate swaps;
- outright forward foreign exchange contracts;
- currency futures; and
- currency options purchased.

C. Equity contracts include:

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

D. Precious metals (e.g., silver, platinum, and palladium) contracts, except gold contracts, include:

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

E. Contracts on other commodities include:

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

¹⁰¹ Gold contracts are treated the same as exchange rate contracts for the purpose of calculating credit risk.

A company should calculate the credit equivalent amount of these contracts using the **current exposure method**. Under this method, a company adds:

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

Residual Maturity	Interest Rate	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%

Notes:

1. Instruments traded on exchanges do not require capital for counterparty credit risk where they are subject to daily margining requirements.
2. For contracts with multiple exchanges of principal, the factors are to be multiplied by the number of remaining payments in the contract.
3. For contracts that are structured to settle outstanding exposure following specified payment dates and where the terms are reset so that the market value of the contract is zero on these specified dates, the residual maturity is considered to be 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 the above criteria, the add-on factor is subject to a floor of 0.5%.
4. Contracts not covered by any of the columns of this matrix are to be treated as "other commodities."
5. 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.
6. 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, companies 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.
7. Potential credit exposure is to be calculated for all OTC contracts (with the exception of single currency floating/floating interest rate swaps), regardless of whether the replacement cost is positive or negative.

-
8. No add-on for potential future exposure is required for credit derivatives. The credit equivalent amount for a credit derivative is equal to the greater of its replacement cost or zero.

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

7.3.1. *Conditions for netting*

Companies 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.

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

- The company 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 company 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 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 company 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 incorporated 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 recognized 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 company has internal procedures to verify that, prior to recognizing a transaction as being subject to netting for capital purposes, the transaction is covered by legal opinions that meet the above criteria.
- The company 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 company 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 contract that permits a non-defaulting counterparty to make only limited payments, or no payments, to the defaulter.

Credit exposure on bilaterally netted forwards, swaps, purchased options and similar derivatives transactions is calculated as the sum of the net mark-to-market replacement cost, if positive, plus an add-on 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 future credit exposure for netted transactions (A_{Net}) equals the sum of: (i) 40% of the add-on as presently calculated (A_{Gross})¹⁰²; and (ii) 60% of the add-on multiplied by the ratio of net current replacement cost to positive current replacement cost (NPR) 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.

7.3.2. *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:

¹⁰² A_{gross} equals the sum of the potential future credit exposures (i.e., notional principal amount of each transaction times the appropriate add-on factors from section 7.2) for all transactions subject to legally enforceable netting agreements.

Counterparty

Transaction	Notional Principal Amount	X	Add-on Factor (ref. 7.2)	=	Potential Credit Exposure	Positive Replacement Cost	Negative Replacement Cost
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 companies 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 companies 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)	$\sum NR / \sum R^+ = 15/21 = 0.71$					

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 company is using the counterparty by

counterparty basis or the aggregate basis. The company must choose which basis it will use and then use it consistently for all netted transactions.

A_{Net} is given by:

$$A_{Net} = \begin{cases} (0.4 \times A_{gross}) + (0.6 \times NPR \times A_{gross}) & \text{for netted contracts where} \\ & \text{the net replacement cost is } > 0 \\ \\ 0.4 \times A_{gross} & \text{for netted contracts where} \\ & \text{the net replacement cost } = 0 \end{cases}$$

- 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 the factors appropriate to each type of counterparty and enter the total credit equivalent amount on the appropriate page of the OSFI 86/87.

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.

7.3.3. Example of netting calculation for potential future exposure with contracts subject to novation

Assume an institution has 6 contracts with the same counterparty and has a legally enforceable netting agreement with that counterparty:

Contract	Notional Principal Amount	Marked to Market
A	10	1
B	20	-2
C	10	-1
D	40	4
E	30	3
F	20	-2

Contracts A and B are subject to novation, as are contracts C and D. Under novation, the two contracts are replaced by one new contract. Therefore to calculate the capital requirements, the institution would replace contracts A and B for contract A+ and contracts C and D for contract C+, netting the notional amounts and calculating a new marked to market amount.

Contract	Notional Principal Amount	Marked to Market
A+	10	-1
C+	30	3
E	30	3
F	20	-2

Assume the add-on factor for all contracts is 5%. The potential credit exposure is calculated for each contract. A_{Gross} is the sum of the potential credit exposures:

Contract	Notional Principal Amount	Add-on Factor (5%)	Potential Credit Exposure	Positive Replacement Cost	Negative Replacement Cost
A+	10	.05	0.5	0	-1
C+	30	.05	1.5	3	0
E	30	.05	1.5	3	0
F	20	.05	1.0	0	-2
Total			4.5	6	-3

The net replacement cost is 3 (i.e., $6 - 3$; the greater of zero or the sum of the positive and negative replacement costs).

The NPR is 0.5 (i.e., $3/6$; the net replacement cost divided by the positive replacement cost).

A_{Net} is $(.4 * 4.5) + (.6 * .5 * 4.5) = 3.15$.

The credit equivalent amount is 6.15 (i.e., $3 + 3.15$; the net replacement cost plus A_{Net}).

7.4. Categories of off-balance sheet instruments

The definitions in this section apply to off-balance sheet exposures.

7.4.1. Direct credit substitutes (100% conversion factor)

Direct credit substitutes include guarantees or equivalent instruments backing financial claims. With a direct credit substitute, the risk of loss to the company 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, and
 - reinsurance of financial obligations;
- 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 participations in bankers' acceptances and risk participations in financial letters of credit. Risk participations constitute a guarantee by the acquiring company such that if there is a default by the underlying obligor, they will indemnify the selling company for the full principal and interest attributable to them;
 - securities lending transactions, where the company is liable to its customer for any failure to recover the securities lent.

7.4.2. Transaction-related contingencies (50% conversion factor)

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.

7.4.3. *Trade-related contingencies (20% conversion factor)*

These include short-term self-liquidating trade-related items such as commercial and documentary letters of credit issued by the company 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 company for which the company is acting as reimbursement agent should not be considered a risk asset.

7.4.4. *Sale and repurchase agreements (100% conversion factor)*

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 predetermined 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.

7.4.5. *Forward asset purchases¹⁰³ (100% conversion factor)*

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

7.4.6. *Forward/forward deposits (100% conversion factor)*

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

7.4.7. *Partly paid shares and securities (100% conversion factor)*

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 predetermined at the time of issue or at an unspecified future date.

¹⁰³ This does not include a spot transaction that is contracted to settle within the normal settlement period.

7.4.8. *Note issuance/revolving underwriting facilities (50% conversion factor)*

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.

7.4.9. *Future/forward rate agreements*

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

7.4.10. *Interest rate swaps*

In an interest rate swap, two parties contract 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.

7.4.11. *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 capping agreements and collar (floor/ceiling) agreements.

7.4.12. *Forward foreign exchange contracts*

A forward foreign exchange contract is an agreement between a company and a counterparty in which the company 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.

7.4.13. *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.

7.4.14. *Cross currency interest rate swaps*

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

7.4.15. *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 price established in a central regulated marketplace.

7.4.16. *Precious metals contracts and financial contracts on commodities*

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

7.4.17. *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 foreign exchange rate contracts.

7.5. *Commitments*

Commitments are arrangements that obligate a company, 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.

Commitments exclude policy loans, i.e., part of a policy's cash value that has not been taken in the form of a policy loan.

7.5.1. *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 company without notice or that effectively provide for automatic cancellation due to deterioration in the borrower's creditworthiness. This implies that the company 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 terms permit the company 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.
- Forward commitments (where the company makes a commitment to issue a commitment) if the loan can be drawn down more than one year after the company's initial undertaking is signed.

7.5.2. *Maturity*

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

7.5.2.1. *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 company 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 company 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.

7.5.2.2. 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 company's credit standards, and provides the company 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 company 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.

7.5.3. *Specific types of commitments*

7.5.3.1. 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.

7.5.3.2. Evergreen commitments

Open-ended commitments that are cancellable by the company 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.

7.5.3.3. 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 company 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, then each tranche may be converted separately, depending on its maturity.

7.5.3.4. 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.

7.5.3.5. 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 re-drawdowns, etc., the client can access a line of credit past one year, with no opportunity for the company to unconditionally cancel the commitment within one year, the commitment shall be converted at 50%.

7.5.3.6. Commitments for off-balance sheet transactions

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

Chapter 8. Segregated Fund Guarantee Risk

This component is for the risk associated with investment or performance-related guarantees on segregated funds or other similar products. The risk is determined using prescribed or approved factors, or an approved internal model.

OSFI permits, subject to materiality considerations, criteria and explicit prior approval, the use of internal models for the development of segregated fund capital requirements. Institutions seeking to use their internal models must follow the requirements outlined in OSFI's [Instruction Guide: Use of Internal Models for Determining Required Capital for Segregated Fund Risks \(MCCSR\) dated March 2002](#) and [Advisory: Revised Guidance for Companies that Determine Segregated Fund Guarantee Capital Requirements Using an Approved Model dated December 2010](#).

8.1. Products

Capital factors are provided for a variety of standardized product forms for guaranteed minimum death and maturity benefits commonly offered for segregated fund guarantee products in Canada and the United States. Below is a general description of the product forms modelled. More details can be found in Table 5 of section 8.5.

Guaranteed Minimum Death Benefit (GMDB) forms modelled include the following:

- 1) **Return of Premium (ROP):** provides a death benefit guarantee equal to the higher of the account value or the premiums paid.
- 2) **5% Annual Roll-up (ROLL):** provides a guaranteed benefit that increases 5% per annum compounded at each contract anniversary with the guarantee frozen at age 80.
- 3) **Maximum Anniversary Value/Annual Ratchet (MAV):** automatic annual reset of guarantee at each contract anniversary with resets frozen at age 80.
- 4) **10-year Rollover Contract (GMDB_10):** guarantee can reset and term-to-maturity also will reset to 10 years. No resets are permitted in the final 10 years prior to contract maturity.

Guaranteed Minimum Maturity Benefits (GMMB) forms modelled include:

- 1) **Fixed Maturity Date (FIXED):** guarantee is level and applies up to the fixed maturity date.
- 2) **10-year Rollover Maturity Benefit (GMMB_10):** guarantee can be reset and term-to-maturity also resets to 10 years. No resets are permitted in the 10 years prior to contract maturity.
- 3) **Guaranteed Minimum Surrender Benefit After 10 Years (GMSB_10):** guarantee comes into effect 10 years after contract issue. If the guaranteed value at 10 years is greater than the account value at surrender, a “top-up” benefit equal to the difference is paid.

8.2. Documentation and reporting

Given the complexity of this calculation, for auditing purposes the Appointed Actuary is required to keep supporting schedules of all the calculations for each step building up to the final numbers detailed in the MCCR form. Also, the Appointed Actuary is required to detail the calculation in the segregated fund section of the Appointed Actuary's Report. Forms 90.010 and 90.015 must be completed.

The columns of the reporting form on page 90.010 are filled in as follows:

Column 01 - **Guaranteed Value**

This is the amount guaranteed in all segregated funds. If the funds are subject to guarantees of differing amounts, for example 100% on death and 75% on maturity, report the larger amount here.

Column 02 - **Market Value**

This is the market value of all segregated funds.

Column 03 - **Total Gross Calculated Requirements**

This is the total gross calculated requirement for all segregated funds.

Column 04 - **Credit for Reinsurance Ceded**

Report credit for amounts ceded in column 04. Note that amounts ceded under arrangements deemed to constitute unregistered reinsurance (reference section [10.2](#)) must be deducted from Available Capital/Margin on page 20.030, line 085 of the OSFI 87 form by Canadian companies, and on page 13.000, line 340 of the OSFI 86 form by foreign branches. Deposits held for unregistered reinsurance, for a period not less than the remaining guarantee term, in excess of policy liabilities and any required margins (see section [10.6](#)) can be used to reduce the net required segregated fund risk component on the reinsured policies to a minimum of zero.

Column 05 - **Net Requirements**

This is determined as:

(Total Gross Calculated Requirements – Credit for Reinsurance Ceded)

Column 06 – **Credit for OSFI-Approved Hedging Programs**

This is the dollar equivalent of the maximum allowable reduction. It is determined as:

(Maximum allowable percentage reduction * Net Requirements)

where the maximum percentage reduction is the reduction that was determined at the time of approval. See the OSFI Advisory: [Recognition of Hedge Contracts in the Determination of the Segregated Fund Guarantee Capital Requirement for Life Insurance Companies](#) dated December 2008.

This column may also be used to enter the amount of a negative Guaranteed Minimum Withdrawal Benefit Hedging Liability (enter the amount as a positive value in this column) to effectively floor this negative value at zero in determining the Net Required Component in Column 8.

Column 07 - **Net Actuarial Liabilities Held**

This is the total net actuarial liability held on the balance sheet for segregated fund guarantee risks, excluding deferred income taxes¹⁰⁴.

Column 08 - **Net Required Component**

This is determined as:

(Net Requirements (column 5) – Credit for OSFI-Approved Hedging Programs – Net Actuarial Liabilities Held)

Line 099 must not be less than zero in total.

The columns of the reporting form on page 90.015 are filled in as follows:

Column 01 - **Factor Requirements**

This is the gross calculated requirement based on the OSFI-approved factors.

Column 02 - **OSFI Approved Internal Model Requirements**

For OSFI-approved models, this is the gross calculated requirement based on company-specific internal models.

Column 03 - **Total Gross Calculated Requirements**

For OSFI-approved models, transition rules apply:

In the first year of approval, Total Gross Calculated Requirements = 50% of the Factor Requirements + 50% of the Internal Model Requirements.

¹⁰⁴ Wherever the term “Net Actuarial Liabilities Held” or a similar term appears, it should be calculated on a basis that is consistent with the calculation of the TGCRC with respect to the inclusion or exclusion of deferred income taxes.

Thereafter, Total Gross Calculated Requirements = 100% of the Internal Model Requirements.

Otherwise, Total Gross Calculated Requirements = 100% of the Factor Requirements.

Column 04 - **Credit for Reinsurance Ceded**

Report credit for amounts ceded in column 04. Note that policy liabilities ceded under arrangements deemed to constitute unregistered reinsurance (reference section [10.2](#)) must be deducted from Available Capital/Margin on page 20.030, line 085 of the OSFI 87 form by Canadian companies, and on page 13.000, line 340 of the OSFI 86 form by foreign branches. Deposits held for unregistered reinsurance, for a period not less than the remaining guarantee term, in excess of policy liabilities and any required margins (see section [10.6](#)) can be used to reduce the net required segregated fund risk component on the reinsured policies to a minimum of zero.

Column 05 - **Net Requirements**

This is determined as:

(Total Gross Calculated Requirements – Credit for Reinsurance Ceded)

Column 06 - **Credit for OSFI-Approved Hedging Programs**

This is the dollar equivalent of the maximum allowable reduction. It is determined as:

(Maximum allowable percentage reduction * Net Requirements)

where the maximum percentage reduction is the reduction that was determined at the time of approval. See the OSFI Advisory: [Recognition of Hedge Contracts in the Determination of the Segregated Fund Guarantee Capital Requirement for Life Insurance Companies](#) dated December 2008.

This column may also be used to enter the amount of a negative Guaranteed Minimum Withdrawal Benefit Hedging Liability (enter the amount as a positive value in this column) to effectively floor this negative value at zero in determining the Net Required Component in Column 8.

Column 07 - **Net Actuarial Liabilities Held**

This is the total net actuarial liability held on the balance sheet for segregated fund guarantee risks, excluding deferred income taxes¹⁰⁴.

Column 08 - Net Required Component

This is determined as:

(Net Requirements (column 5) – Credit for OSFI Approved Hedging Programs – Net Actuarial Liabilities Held)

Note that the amount reported on page 90.010, column 08, line 230 should be the same as the amount reported on page 90.015, column 08, line 100.

8.3. Total gross calculated requirement

8.3.1. Overview

It is expected that the MCCSR methodology for Total Gross Calculated Requirement (“*TGCR*”) will be applied on a policy-by-policy basis (i.e., seriatim). If the company adopts a cell-based approach, only materially similar contracts should be grouped together. Specifically, all policies comprising a “cell” must display substantially similar characteristics for those attributes expected to affect risk-based capital (e.g., definition of guaranteed benefits, attained age, policy duration, years-to-maturity, market-to-guaranteed value, asset mix, etc.). The *TGCR* and Net Actuarial Liabilities Held for the purpose of determining capital requirements for segregated funds using prescribed or approved factors should not include deferred income taxes.

The portfolio *TGCR* is the sum of the *TGCR* calculations for each policy or cell. The result for any given policy (cell) may be negative, zero or positive. In total, the *TGCR* cannot be negative.

The *TGCR* for a given policy is equal to: $TGCR = GV \times \hat{f}(\tilde{\theta}) - AV \times \hat{g}(\tilde{\theta})$, where *GV* = current guaranteed minimum benefit, *AV* = current account balance, $\hat{f}(\tilde{\theta})$ = benefit cost factor, $\hat{g}(\tilde{\theta})$ = margin offset factor and $\tilde{\theta}$ is a vector that defines the risk characteristics for the policy. The factors $\hat{f}(\tilde{\theta})$ and $\hat{g}(\tilde{\theta})$ are described more fully in section 8.7.1. The *TGCR* is calculated separately for each guaranteed minimum benefit (i.e., death, maturity and surrender).

The model assumptions for the *TGCR* Factors are documented in section 8.3.2.

There are four (4) major steps in determining the *TGCR* for a given policy/cell:

- a) Classify the asset exposure (section 8.4);
- b) Determine the risk attributes (section 8.5);
- c) Retrieve the appropriate nodes (section 8.6);
- d) Use the supplied functions to determine the requirement (section 8.7).

The first step requires the company to categorize the asset value for the given policy/cell by mapping the entire exposure to one of the prescribed “fund classes” as described in section 8.4. *TGCR* factors are provided for each asset class.

The second step requires the company to determine (or derive) the appropriate attributes for the given policy or cell. The attributes needed to access the factor tables and calculate the required values are:

- Product form (“Guarantee Definition”), P .
- Guarantee level, G .
- Adjustment to guaranteed value upon partial withdrawal (“GMDB/GMMB Adjustment”), A .
- Fund class, F .
- Attained age of the policyholder, X , (for GMDB only, use a 4-year setback for female lives).
- Contract maturity age, M , (for GMDB only, use a 4-year setback for female lives).
- Time-to-next maturity date, T .
- Ratio of account value to guaranteed value, ϕ .
- Total “equivalent” account-based charges, MER (“management expense ratio”).
- Reset utilization rate, R (where applicable).
- In-the-money termination rate, S (guaranteed surrender benefits only).

Other required policy values include:

- Total account value on which the guaranteed benefit is calculated, AV .
- Current *GMDB*, *GMMB* and/or *GMSB*.
- Total net spread available to fund guaranteed benefits (“margin offset”), α .

The next steps – retrieving the appropriate nodes and using the supplied functions to determine the requirement – are explained in sections 8.6 and 8.7. Software tools have been developed to assist companies in these efforts. If an insurer is unable to use the supplied tools, it will be required to develop software of its own. In such a situation, the insurer should contact OSFI for specific guidance on how to develop its own lookup and extraction routines. A calculation example demonstrating the application of the various component factors to a sample policy is provided in section 8.7.3.

In this chapter, *GMDB*, *GMMB*, *GMSB* are generically denoted by GV . AV generically denotes either Account Value or Market Value. The total “equivalent” account charges should include *all* amounts assessed against policyholder accounts, expressed as a level spread per year (in basis points). This quantity is called the Management Expense Ratio (“MER”) and is defined as the average amount (in dollars) charged against policyholder funds in a given year divided by average account value. Normally, the MER would vary by fund class and be the sum of investment management fees, mortality & expense charges, guarantee fees/risk premiums, etc. The total spread available to fund the guaranteed benefits (i.e., GMDB, GMMB, GMSB costs) is

called the “margin offset” (denoted by α) and should be net of spread-based costs and expenses (e.g., net of maintenance expenses, investment management fees, trailer commissions, amounts required to provide for amortization of deferred acquisition costs, etc.). Section 8.8 describes how to determine *MER* and α .

The GMDB/GMMB/GMSB definition for a given policy/cell may not exactly correspond to those provided. In some cases, it may be reasonable to use the factors/formulas for a different product form. In other cases, the company might determine the TGCR based on two different guarantee definitions and interpolate the results to obtain an appropriate value for the given policy/cell. However, if the policy form is sufficiently different from those provided and there is no practical or obvious way to obtain a reasonable result, the insurer should follow the instructions outlined in section 8.10.

The general form of the *TGCR* may be written as:

$$TGCR = GV \times h(\circ) \times w(\circ) \times f(\circ) - \frac{\alpha}{100} \times AV \times g(\circ)$$

where:

GV = current guaranteed minimum benefit (dollars)

AV = current account value (dollars)

$f(\circ) = f(\tilde{\theta})$ = cost factor per \$1 of GV

$g(\circ) = g(\tilde{\theta})$ = margin offset factor per \$1 of AV (assuming 100 bps of available spread)

$h(\circ) = h(\tilde{\theta})$ = asset mix diversification factor

$w(\circ) = w(\tilde{\theta})$ = time diversification factor

Under this notation, $\tilde{\theta}$ is used to generically represent the risk attribute set (e.g., product form, guaranteed level, asset class, attained age, etc.) for the policy, or some relevant subset thereof. α is the company-determined net spread (“margin offset”, in basis points per annum) available to fund the guaranteed benefits.

Where more than one feature (i.e., guaranteed benefit) is present in a product, unless the company has a justifiable alternative for allocating the total available spread between the benefit types (e.g., explicitly defined risk charges), the split should be based on the proportionate gross guaranteed benefit costs. An example is provided in section 8.7.3 to illustrate this concept.

In practice, $f(\circ)$, $g(\circ)$, $h(\circ)$ and $w(\circ)$ are values interpolated from the factor grid. The use of the factor grid is discussed more fully in section 8.7. The factor grid is a large pre-computed table developed using stochastic modeling for a wide array of combinations of the risk attribute set. The risk attribute set is defined by those policy/product characteristics that affect the risk profile (exposure) of the business: product form (guarantee definition), fund class, attained age, AV/GV ratio, time-to-maturity, etc.

8.3.2. Assumptions for TGCR methodology published factors

Each node in the factor grid is effectively the modeled result for a given “cell” assuming a \$100 single deposit.

Table 1: Model Assumptions & Product Characteristics

Account Charges (MER)	Vary by fund class. See Table 2 later in this section.
Base Margin Offset	100 basis points per annum.
GMDB Description	<ul style="list-style-type: none"> ▪ ROP = return of premium. ▪ ROLL = 5% compound roll-up, frozen at age 80. ▪ MAV = annual ratchet (maximum anniversary value), frozen at age 80. ▪ GMDB_10 = 10-year rollover contract.
GMMB & GMSB Descriptions	<ul style="list-style-type: none"> ▪ FIXED = fixed maturity date. ▪ GMSB_10 = 10-year guaranteed surrender benefit. ▪ GMMB_10 = 10-year rollover maturity benefit.
GV Adjustment on Withdrawal	“Pro-Rata by Market Value” and “Dollar-for-Dollar” are tested separately.
Surrender Charges	Ignored (i.e., zero).
Base Policy Lapse Rate	6% p.a. at all policy durations. See also “Dynamic Lapse Multiplier”.
Partial Withdrawals	Flat 4% p.a. at all policy durations (as a % of AV). No dynamics.
Rollover (Renewal) Rate	85% at the end of each 10-year term (GMDB_10 and GMMB_10 only).
Dynamic Lapse Multiplier	<p>Actual lapse rate = $\lambda \times [\text{Base Policy Lapse Rate}]$, where:</p> $\lambda = \text{MIN} \left[\lambda^+, \text{MAX} \left[\lambda^-, \left[a + b \times \left(\frac{AV}{GV} \right) \right] \times [c + d \times \text{MIN}(h, T)] \right] \right]$ <p>$\lambda^+ = 1.6667$, $\lambda^- = 0.3333$, $a = -0.0952$, $b = 0.8010$, $c = 0.6279$, $d = 0.0654$, $h = 10$ and $T = \text{time-to-next maturity}$.</p>
Mortality	100% of CIA 1986–92 ALB Male Aggregate Ultimate.
Fixed Expenses, Annual Fees	Ignored (i.e., zero).
Discount Rate	5.5% annual effective (non-dynamic).
Elective Reset of GV	Whenever the AV/GV ratio exceeds 115% (maximum 2 resets per year). No resets are permitted in the 10 years prior to the final “contract” maturity date.
In-The-Money Surrender (GMSB_10 only)	Whenever the benefit is payable (i.e., 10 years after issue or last reset) and the AV/GV ratio is less 85%.

Notes on Factor Development:

- The GMDB roll-up is compounded (not simple interest, not stepped at each anniversary) and is applied to the previous roll-up guaranteed value.
- The “Base Policy Lapse Rate” is the rate of policy termination (surrenders). Policy terminations (surrenders) are assumed to occur throughout the policy year (not only on anniversaries).

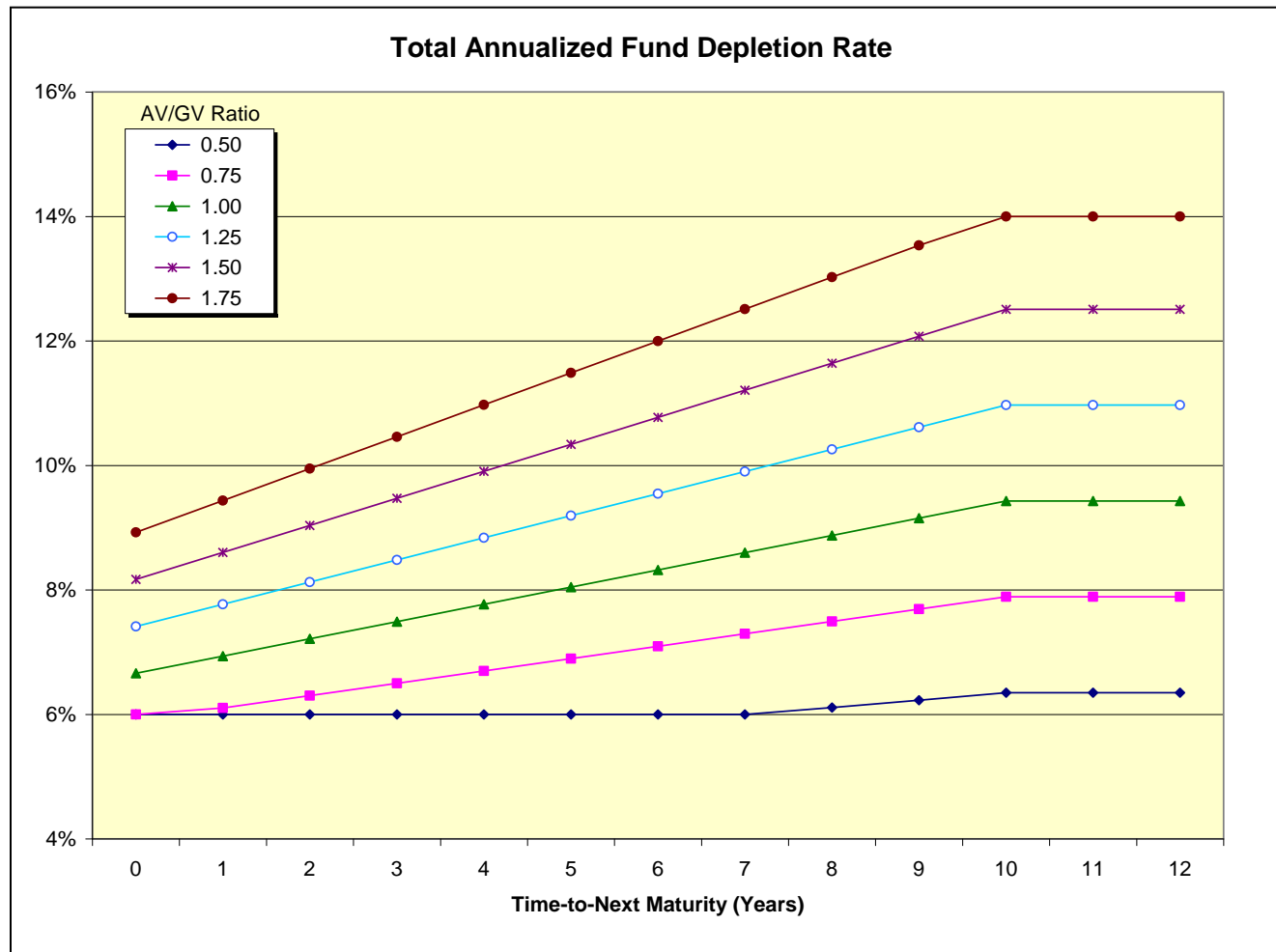
- Partial withdrawals are assumed to occur at the end of each time period (quarterly).
- Account charges (“MER”) represent the total amount (annualized, in basis points) assessed against policyholder funds (e.g., sum of investment management fees, mortality and expense charges, risk premiums, policy/administrative fees, etc.). They are assumed to occur throughout the policy year (not only on anniversaries).
- For the GMDB_10 and GMMB_10 products, the contract rolls over (renews) at the end of each 10-year term for another 10 years. The guaranteed benefit resets to Z% of MV (after payment of any top-up maturity benefit for in-the-money maturity guarantees) where Z is typically 75 or 100.
- The guaranteed minimum surrender benefit (GMSB_10) comes into effect 10 years after contract issue. If the guaranteed value at 10 years is greater than the account value at surrender, a “top-up” benefit equal to the difference is paid.

Table 2: Account-Based Fund Charges (bps per annum)

Asset Class / Fund	Account Value Charges (MER)
Money Market	110
Fixed Income (Bond)	200
Balanced	250
Low Volatility Equity	265
Diversified Equity	265
Intermediate Risk Equity	280
Aggressive or Exotic Equity	295

The annualized total fund depletion rates (i.e., including the fixed 4% per annum partial withdrawal) are illustrated in Figure 1 for various AV/GV ratios and times to maturity.

Figure 1: Fund Depletion Rates (Lapse + Partial Withdrawal) by AV/GV Ratio & Time-to-Maturity



8.4. Classifying the asset exposure

8.4.1. Definition of asset classes

The following criteria should be used to select the appropriate factors, parameters and formulas for the exposure represented by a specified guaranteed benefit. When available, the volatility of the long-term annualized total return for the fund(s) – or an appropriate benchmark – should conform to the limits presented. For this purpose, “long-term” is defined as twice the average projection period that would be applied to test the product in a stochastic model (generally, at least 25 years).

Where data for the fund or benchmark are too sparse or unreliable, the fund exposure should be moved to the next higher volatility class than otherwise indicated. In reviewing the asset classifications, care should be taken to reflect any additional volatility of returns added by the presence of currency risk, liquidity (bid-ask) effects, short selling and speculative positions.

All exposures/funds must be categorized into one of the following seven (7) asset classes:

1. Money Market/Short-Term
2. Fixed Income
3. Balanced
4. Low Volatility Equity
5. Broad-Based Diversified Equity
6. Intermediate Risk Equity
7. Aggressive or Exotic Equity

Money Market/Short-Term. The fund is invested in money market instruments with an average remaining term-to-maturity of less than 365 days.

Fixed Income. The fund is invested primarily in investment grade fixed income securities. Up to 25% of the fund within this class may be invested in diversified equities or high-yield bonds. The expected volatility of the fund returns will be lower than the Balanced fund class.

Balanced. This class is a combination of fixed income securities with a larger equity component. The fixed income component should exceed 25% of the portfolio. Additionally, any aggressive or ‘specialized’ equity component should not exceed one-third (33.3%) of the total equities held. Should the fund violate either of these constraints, it should be categorized as an equity fund. These funds usually have a long-term volatility in the range of 8% – 13%.

Low Volatility Equity. This fund is comparable to the Broad-Based Diversified Equity class with the additional attributes noted below. Only funds that otherwise would be classified as Broad-Based Diversified Equity are candidates for this fund classification. For foreign funds, volatility should take into account the impact of currency fluctuations.

The expected volatility of the fund should be less than 15.5% (annualized) and the aggressive/exotic equity component of the equity holdings should be less than 33.3% of the total equities by market value. Further, the overall asset holdings should satisfy at least one of the following conditions:

- The fund permanently maintains a relatively large cash or fixed income position (greater than 10% of the market value of assets) as part of its investment strategy;
- The fund is “income” oriented and contains a significant (greater than 10% of the market value of assets) proportion of stocks paying material and regular dividends that are automatically reinvested in the fund.

Broad-Based Diversified Equity. The fund is invested in a well-diversified mix of Canadian, U.S. or global equities. The foreign equity component must be comprised of liquid securities in well-developed markets. Funds in this category would exhibit long-term volatility comparable to that of the TSX. These funds should usually have a long-term volatility in the range of 13% – 19%.

Intermediate Risk Equity. The fund has a mix of characteristics from both the Diversified and Aggressive Equity Classes. These funds have a long-term volatility in the range of 19% – 25%.

Aggressive or Exotic Equity. This class comprises more volatile funds where risk can arise from: (a) underdeveloped markets, (b) uncertain markets, (c) high volatility of returns, (d) narrow focus (e.g., specific market sector), etc. The fund (or market benchmark) either does not have sufficient history to allow for the calculation of a long-term expected volatility, or the volatility is very high. This class would be used whenever the long-term expected annualized volatility is indeterminable or exceeds 25%.

8.4.2. *Selecting appropriate investment classes*

The selection of an appropriate investment type should be done at the level for which the guarantee applies. For guarantees applying on a deposit-by-deposit basis, the fund selection is straightforward. However, where the guarantee applies across deposits or for an entire contract, the approach can be more complicated. In such instances, the approach is to identify for each policy where the “grouped holdings” fit within the categories listed and to classify the associated assets on this basis.

A seriatim process is used to identify the “grouped” fund holdings, to assess the risk profile of the current fund holdings (possibly calculating the expected long-term volatility of the funds held with reference to the indicated market proxies), and to classify the entire ‘asset exposure’ into one of the specified choices. Here, ‘asset exposure’ refers to the underlying assets (segregated and/or general account investment options) on which the guarantee will be determined. For example, if the guarantee applies separately for each deposit year within the contract, then the classification process would be applied separately for the exposure of each deposit year.

In summary, mapping the benefit exposure (i.e., the asset exposure that applies to the calculation of the guaranteed minimum benefits) to one of the prescribed asset classes is a multi-step process:

1. Map each separate and/or general account investment option to one of the prescribed asset classes. For some funds, this mapping will be obvious, but for others it will involve a review of the fund’s investment policy, performance benchmarks, composition and expected long-term volatility.
2. Combine the mapped exposure to determine the expected long-term volatility of current fund holdings. This will require a calculation based on the expected long-term volatilities for each fund and the correlations between the prescribed asset classes as given in Table 3.
3. Evaluate the asset composition and expected volatility (as calculated in step 2) of current holdings to determine the single asset class that best represents the exposure, with due consideration to the constraints and guidelines presented earlier in this section.

In step 1, the company should use the fund’s actual experience (i.e., historical performance, inclusive of reinvestment) only as a guide in determining the expected long-term volatility. Due to limited data and changes in investment objectives, style and/or management (e.g., fund mergers, revised investment policy, different fund managers, etc.), the company may need to

give more weight to the expected long-term volatility of the fund’s benchmarks. In general, the company should exercise caution and not be overly optimistic in assuming that future returns will consistently be less volatile than the underlying markets.

In step 2, the company should calculate the “volatility of current fund holdings” (σ for the exposure being categorized) by the following formula using the volatilities and correlations in Table 3.

$$\sigma = \sqrt{\sum_{i=1}^n \sum_{j=1}^n w_i w_j \rho_{ij} \sigma_i \sigma_j}$$

where $w_i = \frac{AV_i}{\sum_k AV_k}$ is the relative value of fund i expressed as a proportion of total contract

value, ρ_{ij} is the correlation between asset classes i and j and σ_i is the volatility of asset class i (see Table 3). An example is provided in Table 4.

Table 3: Volatilities and Correlations for Prescribed Asset Classes

ANNUAL VOLATILITY		GENERAL ACCOUNT	MONEY MARKET	FIXED INCOME	BALANCED	LOW VOL EQUITY	DIVERSE EQUITY	INTERM EQUITY	AGGR EQUITY
1%	GENERAL ACCOUNT	1	0.50	0.15	0	0	0	0	0
1%	MONEY MARKET	0.50	1	0.20	0	0	0	0	0
6%	FIXED INCOME	0.15	0.20	1	0.50	0.25	0.25	0.20	0.10
11%	BALANCED	0	0	0.50	1	0.80	0.95	0.75	0.65
15%	LOW VOL EQUITY	0	0	0.25	0.80	1	0.80	0.75	0.65
17%	DIVERSE EQUITY	0	0	0.25	0.95	0.80	1	0.75	0.65
22%	INTERM EQUITY	0	0	0.20	0.75	0.75	0.75	1	0.70
26%	AGGR EQUITY	0	0	0.10	0.65	0.65	0.65	0.70	1

As an example, suppose three funds (Fixed Income, Diversified Equity and Aggressive Equity) are offered to clients on a product with a contract level guarantee (i.e., across all funds held within the policy). The current fund holdings (in dollars) for five sample contracts are shown in Table 4.

Table 4: Fund Categorization Example

	1	2	3	4	5
MV Fund X (Fixed Income):	5,000	6,000	8,000	-	5,000
MV Fund Y (Diversified Equity):	9,000	5,000	2,000	5,000	-
MV Fund Z (Aggressive Equity):	1,000	4,000	-	5,000	5,000
Total Market Value:	\$15,000	\$15,000	\$10,000	\$10,000	\$10,000
Total Equity Market Value:	\$10,000	\$9,000	\$2,000	\$10,000	\$5,000
Fixed Income % (A):	33%	40%	80%	0%	50%
Fixed Income Test (A>75%):	No	No	Yes	No	No
Aggressive % of Equity (B):	10%	44%	n/a	50%	100%
Balanced Test (A>25% & B<33.3%):	Yes	No	n/a	No	No
Volatility of Current Fund Holdings:	12.0%	12.1%	6.5%	19.6%	13.6%
Fund Classification:	Balanced	Diversified*	Fixed Income	Intermediate	Diversified

The “Volatility of Fund Holdings” for policy #1 is calculated as $\sqrt{A+B} = 12.04\%$ where:

$$A = \left(\frac{5}{15} \times 0.06\right)^2 + \left(\frac{9}{15} \times 0.17\right)^2 + \left(\frac{1}{15} \times 0.26\right)^2$$

$$= 1.1104\%$$

$$B = 2 \cdot \left(\frac{5}{15} \cdot \frac{9}{15}\right) (0.25 \times 0.06 \times 0.17) + 2 \cdot \left(\frac{5}{15} \cdot \frac{1}{15}\right) (0.10 \times 0.06 \times 0.26) + 2 \cdot \left(\frac{9}{15} \cdot \frac{1}{15}\right) (0.65 \times 0.17 \times 0.26)$$

$$= 0.3388\%$$

Importantly, the volatility would be understated if we assumed zero correlation (e.g., all market returns are independent) since *B* contributes materially to the final value.

8.5. Determining the risk attributes

The ‘Tabular’ approach for the *TGCR* component creates a multi-dimensional grid (array) by testing a very large number of combinations for the policy attributes. The results are expressed as factors. The *TGCR* is calculated by looking into (based on a “key”) the large, pre-computed multi-dimensional tables and using multi-dimensional linear interpolation. The lookup “key” depends on the risk attributes for the policy $\tilde{\theta} = (P, G, A, F, X, M, T, \phi, \Delta, R, S)$ where ϕ is the AV/GV ratio for the benefit exposure under consideration, Δ is the “MER Delta”, *R* is the utilization rate of the elective reset option (if applicable) and *S* is the “in-the-money” termination

* Although the volatility suggests “Balanced Fund”, the Balanced Fund criteria were not met. Therefore, this ‘exposure’ is moved “up” to Diversified Equity. For those funds classified as Diversified Equity, additional analysis would be required to assess whether they can be reclassified as “Low Volatility Equity”. In the examples above, none qualify.

rate on GMSB_10 policies. The “MER Delta” is calculated based on the difference between the actual MER and that assumed in the factor testing (see Table 2), subject to a cap (floor) of 100 bps (–100 bps). See Table 5 for more details.

For GMDB, there are $4 \times 2 \times 2 \times 7 \times 4 \times 4 \times 5 \times 7 \times 3 \times 2 = 376,320$ “nodes” in the “Basic Factor” grid. Interpolation will only be permitted across the six (6) dimensions: Contract Maturity Age (*M*), Attained Age (*X*), Time to Next Maturity (*T*), AV/GV Ratio (ϕ), MER Delta (Δ) and Reset Utilization Rate (*R*). The “In-the-Money” termination rate (*S*) is not used for GMDBs.

For GMMB, there are $3 \times 2 \times 2 \times 7 \times 1 \times 7 \times 5 \times 7 \times 3 \times 2 \times 2 = 246,960$ “nodes” in the “Basic Factor” grid. Interpolation will only be permitted across the six (6) dimensions: Contract Maturity Age (*M*), Time to Next Maturity (*T*), AV/GV Ratio (ϕ), MER Delta (Δ), Reset Utilization Rate (*R*) and In-the-Money Termination Rate (*S*). The “In-the-Money” termination rate (*S*) is only applies to the “GMSB_10” product form. The testing for guaranteed minimum maturity and surrender benefits assumed all lives were attained age 55 at the calculation date.

Functions are available to assist the company in applying the *TGCR* Methodology. More fully described in section 8.7, these functions perform the necessary factor table lookups and associated multi-dimensional linear interpolations. If the insurer is unable to use the supplied functions, it will be required to develop its own. In such a case, the insurer should contact OSFI for specific details.

The GMDB and GMMB/GMSB factors are respectively contained in the files “GMDBFactors_CTE95.csv” and “GMMBFactors_CTE95.csv”. These are comma-separated value text files where each “row” represents the factors for a test policy as identified by its lookup key. Rows are terminated by new line and line feed characters. Factors are also provided at the CTE80 confidence level – the factor files are “GMDBFactors_CTE80.csv” and “GMMBFactors_CTE80.csv”. For the determination of capital requirements, the “GMDBFactors_CTE95.csv” and “GMMBFactors_CTE95.csv” factors are to be used.

Each row in the factor tables consists of three entries, described further below.

1	2	3
Test Case Identifier (Key)	Basic Cost or Diversification Factor	Basic Margin Offset Factor or Zero (N/A)

An individual test case (i.e., a node on the multi-dimensional matrix of factors) can be uniquely identified by its key, which is the concatenation of the relevant individual policy attribute keys (or some subset thereof) prefixed by a leading ‘factor code’. The factor codes are shown below.

Factor Code	Description
1	Basic GMDB “Cost” and “Margin Offset” factors.
2	Basic GMMB and GMSB “Cost” and “Margin Offset” factors.

3	Asset Mix Diversification factors for GMDB options.
4	Asset Mix Diversification factors for GMMB and GMSB options.
5	Time Diversification factors for GMDB options.
6	Time Diversification factors for GMMB and GMSB options.

Basic Cost Factor. This is the term $f(\circ)$ in the formula for $TGCR$. The values in the factor grid represent CTE95 (or CTE80) of the sample distribution¹⁰⁵ for the present value of guaranteed minimum benefit cash flows (in excess of account value) in all future years (i.e., to the earlier of contract maturity and 30 years), normalized by current guaranteed value.¹⁰⁶ The policy attribute keys for the Cost factors are shown in Table 5.

Basic Margin Offset Factor. This is the term $g(\circ)$ in the formula for $TGCR$. The values in the factor grid represent CTE95 (or CTE80) of the sample distribution for the present value of margin offset cash flows in all future years (i.e., to the earlier of contract maturity and 30 years), normalized by current account balance. The Basic Margin Offset Factors assume $\hat{\alpha} = 100$ basis points of “margin offset” (net spread available to fund the guaranteed benefits). The policy attribute keys for the Margin Offset factors are shown in Table 5.

Asset Mix Diversification Factor. This is the term $h(\circ)$ in the formula for $TGCR$.

$h(\circ) = h(P, G, R, S)$ is an adjustment factor that reflects the benefits of fund diversification (asset mix) at the company (i.e., total portfolio) level. Note that $h(\circ) \leq 1$ depends on product form “ P ”, guarantee level “ G ”, reset utilization rate “ R ” (where applicable) and in-the-money termination rate “ S ” (GMSB only). The lookup keys for the Asset Mix Diversification factors are given in Table 6.

DF should be set equal to 1 in the `GetCost` and `GetTGCR` functions (see section 8.7.1).

Time Diversification Factor. This is the term $w(\circ)$ in the formula for $TGCR$.

$w(\circ) = w(P, G, F, R, S)$ is an adjustment factor that attempts to capture the benefits (i.e., net reduction in guaranteed benefit costs) of a dispersed maturity profile. This adjustment applies on to maturity benefit factors only; it does not apply to death benefit factors. Note that $w(\circ) \leq 1$ also depends on fund class “ F ”. If the company does not satisfy the time diversification criteria, then $w(\circ) = 1$ (i.e., no time diversification benefit). Although the structure permits otherwise, the time

¹⁰⁵ Technically, the sample distribution for “present value of net cost” = $PV[\text{benefit claims}] - PV[\text{Margin Offset}]$ was used to determine the scenario results that comprise the CTE95 risk measure. Hence, the “Cost Factors” and “Base Margin Offset Factors” are calculated from the same scenarios.

¹⁰⁶ In other words, the *Basic Cost Factors* are expressed “per \$1 of current guaranteed benefit” and the *Margin Offset Factors* are “per \$1 of account balance”, assuming 100 basis points (per annum) of available spread.

diversification factors for GMDB are set to 1. The lookup keys for the Time Diversification factors are given in Table 7.

This factor is set either to zero or one, based on the results of a time diversification test.

To perform the test, the in-force maturity dates for each product/maturity guarantee form are grouped by “quarter-to-maturity” (i.e., 1, 2, ..., N). For limited-term contracts that offer the client the opportunity to renew (“rollover”), the next maturity date should be used (not final contract maturity). Using current market value (at the calculation date), the current market value in each future 3-month time period is determined.

If the current market value in any given quarter exceeds 10% of the total, then the portfolio fails the test. If the current market value in each quarter is less than or equal to 10% of the total, the portfolio passes the test. If the portfolio fails the test, DT is set equal to zero in the `GetCost` and `GetTGCR` functions (see section 8.7.1). Otherwise, DT is set equal to one.

Table 5: Grid of Cost and Margin Offset Factors

Policy Attribute		Key : Possible Values & Description
Product Definitions, <i>P</i> .	GMDB	0 : Return-of-premium. 1 : Roll-up (5% per annum). 2 : Maximum Anniversary Value (MAV). 3 : 10-year rollover.
	GMMB & GMSB	0 : Fixed maturity date. 1 : 10-year CSV (benefit paid on surrender) 2 : <i>Not used</i> . 3 : 10-year rollover.
Guarantee Level (% of deposits), <i>G</i> .		0 : 75% 1 : 100%
GV Adjustment Upon Partial Withdrawal, <i>A</i> .		0 : Pro-rata by market value. 1 : Dollar-for-dollar.
Fund Class, <i>F</i> .		0 : <i>Not used</i> . 1 : Money Market. 2 : Fixed Income (Bond). 3 : Balanced Asset Allocation. 4 : Low Volatility Equity. 5 : Diversified Equity. 6 : Intermediate Risk Equity. 7 : Aggressive / Exotic Equity.
Contract Maturity Age, <i>M</i> . (years from valuation date)	GMDB	0 : 5 years 1 : 15 years 2 : 25 years 3 : 30 years
	GMMB & GMSB	0 : 1 year 4 : 10 years 1 : 3 years 5 : 20 years 2 : 5 years 6 : 30 years 3 : 8 years
Attained Age (Last Birthday), <i>X</i> .	GMDB	0 : 35 2 : 65 1 : 55 3 : 75
	GMMB & GMSB	0 : 55
Time to Next Maturity, <i>T</i> . (years from valuation date)		0 : 1 year 3 : 8 years 1 : 3 years 4 : 10+ years 2 : 5 years
Account Value-to-Guaranteed Value Ratio, ϕ .		0 : 0.25 4 : 1.25 1 : 0.50 5 : 1.50 2 : 0.75 6 : 2.00 3 : 1.00
Annualized Account Charge Differential from Table 2 Assumptions (“MER Delta”), Δ		0 : -100 bps 1 : 0 bps 2 : +100 bps
Reset Utilization Rate, <i>R</i> .		0 : 0% 1 : 100%
In-the-Money Surrender Rate (GMSB only), <i>S</i> .		0 : 0% 1 : 100%

It is important to note that the lookup keys for the factor tables define certain values differently from the parameters (arguments) passed to the lookup/retrieval functions, as indicated in the following table. More details are provided in section 8.7.

Policy Attribute	Key Interpretation	Function Arguments
Contract Maturity Age, M .	Years from Valuation Date. Equal to [Contract Maturity Age] less [Attained Age].	Actual contract maturity age.
AV/GV Ratio, ϕ .	Ratio of current Account Balance (AV) to Guaranteed Value (GV).	AV and GV are provided separately.
MER Delta, Δ .	[Actual MER] less [Assumed MER], in basis points. The "Assumed MERs" are shown in Table 2.	MER (annualized, in basis points p.a.) is passed directly.

Table 6: Grid of Asset Mix Diversification Factors

Policy Attribute		Key : Possible Values & Description
Product Definitions, P .	GMDB	0 : Return-of-premium. 1 : Roll-up (5% per annum). 2 : Maximum Anniversary Value (MAV). 3 : 10-year rollover.
	GMMB & GMSB	0 : Fixed maturity date. 1 : 10-year CSV (benefit paid on surrender). 2 : <i>Not used</i> . 3 : 10-year rollover.
Guarantee Level (% of deposits), G .		0 : 75% 1 : 100%
Reset Utilization Rate, R .		0 : 0% 1 : 100%
In-the-Money Surrender Rate (GMSB only), S .		0 : 0% 1 : 100%

Table 7: Grid of Time Diversification Factors

Policy Attribute		Key : Possible Values & Description
Product Definition, <i>P</i> .	GMDB	0 : Return-of-premium. 1 : Roll-up (5% per annum). 2 : Maximum Anniversary Value (MAV). 3 : 10-year rollover.
	GMMB & GMSB	0 : Fixed maturity date. 1 : 10-year CSV (benefit paid on surrender). 2 : <i>Not used</i> . 3 : 10-year rollover.
Guarantee Level (% of deposits), <i>G</i> .		0 : 75% 1 : 100%
Fund Class, <i>F</i> .		0 : <i>Not used</i> . 1 : Money Market. 2 : Fixed Income (Bond). 3 : Balanced Asset Allocation. 4 : Low Volatility Equity. 5 : Diversified Equity. 6 : Intermediate Risk Equity. 7 : Aggressive / Exotic Equity.
Reset Utilization Rate, <i>R</i> .		0 : 0% 1 : 100%
In-the-Money Surrender Rate (GMSB only), <i>S</i> .		0 : 0% 1 : 100%

8.6. Retrieving the appropriate nodes

Table 8 provides some sample lookup keys (assuming the annualized fund based charges equal the base assumption, hence $\Delta = 0$), while Table 9 shows the “Basic Cost” and “Basic Margin Offset” values from the factor grid for some sample GMDB and GMMB policies. All sample policies in Table 9 use a 100% guarantee level, base MERs and no resets. As mentioned earlier, the Base Margin Offset factors (in the tables) assume 100 basis points of “available spread”. The “Margin Offset Factors” are therefore scaled by the ratio $\frac{\alpha}{100}$, where α = the actual margin offset (in basis points per annum) for the policy being valued. Hence, the margin factor for the 7th policy is exactly half the factor for node ‘11105214210’ (the 4th sample policy in Table 9). That is, $0.02093 = 0.5 \times 0.04187$.

Where more than one feature (i.e., guaranteed benefit) is present in a product, unless the company has a justifiable alternative for allocating the total available spread between the benefit types (e.g., explicitly defined risk charges), the split should be based on the proportionate gross guaranteed benefit costs. An example of this allocation is provided in section 8.7.3.

Table 8: Sample Lookup Keys

KEY	NODE TYPE	PRODUCT / GV%	GV ADJUST	FUND CLASS	ATT.. AGE / MAT. AGE	NEXT MAT.	AV/GV	RESET UTIL.%	ITM TERM%
10103214110	A	GMDB-ROP / 100%	Pro-rata	Balanced Allocation	65 / 80	10+	50%	0%	n/a
200150444110	A	GMMB-Fixed / 75%	-\$-for-\$	Diverse Equity	55 / 75	5	125%	100%	n/a
3311	B	GMDB_10 / 100%	n/a	n/a	n/a	n/a	n/a	100%	n/a
43100	B	GMMB_10 / 100%	n/a	n/a	n/a	n/a	n/a	0%	n/a
611411	C	GMSB_10 / 100%	n/a	Low Vol. Equity	n/a	n/a	n/a	100%	100%

A = Basic Cost and Margin Offset Factors; B = Asset Mix Diversification Factors; C = Time Diversification Factors.

Table 9: Sample Nodes on the Basic Factor Grids

KEY	PRODUCT	GV ADJUST	FUND CLASS	ATT. AGE / MAT.AGE	NEXT MAT.	AV/GV	OFFSET	COST FACTOR	MARGIN FACTOR
10113124310	GMDB ROP	-\$-for-\$	Balanced Allocation	55 / 80	10+	1.00	100	0.01802	0.05762
10113214310	GMDB ROP	-\$-for-\$	Balanced Allocation	65 / 80	10+	1.00	100	0.03926	0.04747
10113302310	GMDB ROP	-\$-for-\$	Balanced Allocation	75 / 80	5	1.00	100	0.04443	0.02653
11105214210	GMDB 5% Rollup	Pro-rata	Diverse Equity	65 / 80	10+	0.75	100	0.16780	0.04187
11105214310	GMDB 5% Rollup	Pro-rata	Diverse Equity	65 / 80	10+	1.00	100	0.13091	0.04066
11105214410	GMDB 5% Rollup	Pro-rata	Diverse Equity	65 / 80	10+	1.25	100	0.09925	0.03940
11105214210	GMDB 5% Rollup	Pro-rata	Diverse Equity	65 / 80	10+	0.75	50	0.16780	0.02093
231050513100	GMMB_10	Pro-rata	Diverse Equity	55 / 75	3	1.00	100	0.32250	0.05609
231050523100	GMMB_10	Pro-rata	Diverse Equity	55 / 75	5	1.00	100	0.25060	0.05505
231050533100	GMMB_10	Pro-rata	Diverse Equity	55 / 75	8	1.00	100	0.16758	0.05545

8.7. Use of supplied functions to determine the requirement

8.7.1. Function descriptions

Special functions have been supplied in the file [OSFIFactorCalc.dll](#) (C++ dynamic linked library) to retrieve the “cost”, “margin offset” and “diversification” factors from the factor files and perform the multi-dimensional linear interpolation. Cover functions in the Microsoft®

Visual Basic “Add-In” are provided in the file [OSFIFactorCalc.xla](#) so that the C++ routines are callable from Microsoft Excel through VBA¹⁰⁷. The function arguments are described in Table 10. Not all parameters apply to all functions (i.e., some are optional and/or not applicable). The keys for the input parameters are given in Table 5.

Installation instructions are given later in this section. A call to an Excel function (built-in or VBA) must be preceded by a “+” or “=” character.

Table 10: Input Parameters (Arguments) to Supplied Lookup/Retrieval Functions

Input Parameter – Variable Name	Variable Type	Description
B – BenefitType	Long Integer	Benefit Type code (1=GMDB, 2=GMMB/GMSB).
P – ProductCode	Long Integer	Product Definition code.
G – GuarCode	Long Integer	Guarantee Level code.
A – GVAdjustCode	Long Integer	GV Adjustment Upon Partial Withdrawal.
F – FundCode	Long Integer	Fund Class code.
M – FinalMatAge	Floating Point Double	Contract Maturity Age of annuitant (in years).
X – AttainedAge	Floating Point Double	Attained Age of annuitant (in years).
T – TimeToMat	Floating Point Double	Time to Next Maturity Date (in years).
MVGV – MVGV	Floating Point Double	Ratio of Account Balance to Guaranteed Value (AV/GV).
MER – MER	Floating Point Double	Total Equivalent Account Charges (annualized, in bps).
R – ResetUtil	Floating Point Double	Reset Utilization Rate (from 0 to 1).
S – SurrenderUtil	Floating Point Double	In-The-Money Termination Rate (from 0 to 1).
RC – RiskCharge	Floating Point Double	Margin Offset (annualized, in basis points).
AV – AccountValue	Floating Point Double	Current Account Balance, in dollars.
GV – GuarValue	Floating Point Double	Current Guaranteed Value, in dollars.
DF – FundDivAdj	Floating Point Double	The fraction of the Asset Mix Diversification adjustment reflected in the Adjusted Cost Factor (from 0 to 1).
DT – TimeDivAdj	Floating Point Double	The fraction of the Time Diversification adjustment reflected in the Adjusted Cost Factor (from 0 to 1).

¹⁰⁷ Visual Basic for Applications.

See section 8.5 for instructions on setting the parameters for DF and DT.

Using the notation given earlier,

$$\begin{aligned}TGCR &= GV \times h(\circ) \times w(\circ) \times [BasicCostFactor] - \frac{\alpha}{100} \times AV \times [BasicMarginFactor] \\ &= GV \times h(\circ) \times w(\circ) \times f(\tilde{\theta}) - \frac{\alpha}{100} \times AV \times g(\tilde{\theta}) \\ &= GV \times \hat{f}(\tilde{\theta}) - AV \times \hat{g}(\tilde{\theta}) \\ &= \hat{F}(\tilde{\theta}) - \hat{G}(\tilde{\theta})\end{aligned}$$

The VBA functions are:

`GetCost`(B, P, G, A, F, M, X, T, AV, GV, MER, R, S, RC, DF, DT)

- Returns the *Adjusted Dollar Cost* $\hat{F}(\tilde{\theta})$, interpolating between nodes where necessary. S and RC are required arguments, but RC is ignored in the calculations (i.e., the margin offset does not affect the “cost” component). Also, S is ignored for GMDB calculations (i.e., S = 0 if B = 1). DF and DT are optional, but assumed to be zero if not supplied.

`GetMargin`(B, P, G, A, F, M, X, T, AV, GV, MER, R, S, RC, DF, DT)

- Returns the *Adjusted Dollar Margin Offset* $\hat{G}(\tilde{\theta})$, interpolating between nodes where necessary. S is required, but ignored for GMDB calculations (i.e., S = 0 if B = 1). DF and DT are optional, but ignored regardless (i.e., the diversification factors only apply to the “cost” component).

`GetTGCR`(B, P, G, A, F, M, X, T, AV, GV, MER, R, S, RC, DF, DT)

- Returns the *Adjusted Dollar TGCR* $\hat{F}(\tilde{\theta}) - \hat{G}(\tilde{\theta})$, interpolating between nodes where necessary. S is required, but ignored for GMDB calculations (i.e., S = 0 if B = 1). DF and DT are optional, but assumed to be zero if not supplied.

To retrieve the *Basic Cost Factor* $f(\tilde{\theta})$, simply use the function `GetCost` with AV = AV/GV, GV = 1 and DF = DT = 0. Similarly, the *Basic Margin Factor* $g(\tilde{\theta})$ may be obtained by calling `GetMargin` with GV = GV/AV, AV = 1 and RC = 100.

For reference, the underlying C++ routines are listed below. These tools are also available as VBA functions where the name is prefixed with an “x” (e.g., `xGetGMDBCostFactor`).

`GetGMDBCostFactor`(P, G, A, F, M, X, T, MVGV, MER, R)

- Returns the GMDB *Basic Cost Factor* $f(\tilde{\theta})$, interpolating between nodes where necessary.

`GetGMDBMarginFactor(P, G, A, F, M, X, T, MVGV, MER, R, RC)`

- Returns the GMDB *Scaled Margin Offset Factor* $\hat{g}(\tilde{\theta})$, interpolating between nodes where necessary. In this case, the Basic (i.e., tabular) Margin Offset Factor has already been scaled by the ratio $\frac{\alpha}{100}$ to account for the actual available spread. To extract the tabular factor $g(\tilde{\theta})$, use $RC = 100$.

`GetGMDBFundDiversification(P, G, R)`

- Returns the GMDB *Asset Mix Diversification Factor* $h(\tilde{\theta})$, interpolating between nodes where necessary.

`GetGMDBTimeDiversification(P, G, F, R)`

- Returns the GMDB *Time Diversification Factor* $w(\tilde{\theta})$, interpolating between nodes where necessary. Currently, $w(\tilde{\theta}) = 1$ for all nodes, so this function call is unnecessary for GMDB.

`GetGMMBCostFactor(P, G, A, F, M, X, T, MVGV, MER, R, S)`

- Returns the GMMB/GMSB *Basic Cost Factor* $f(\tilde{\theta})$, interpolating between nodes where necessary.

`GetGMMBMarginFactor(P, G, A, F, M, X, T, MVGV, MER, R, S, RC)`

- Returns the GMMB/GMSB *Scaled Margin Offset Factor* $\hat{g}(\tilde{\theta})$, interpolating between nodes where necessary. In this case, the Basic (i.e., tabular) Margin Offset Factor has already been scaled by the ratio $\frac{\alpha}{100}$ to account for the actual available spread. To extract the tabular factor $g(\tilde{\theta})$, use $RC = 100$.

`GetGMMBFundDiversification(P, G, R, S)`

- Returns the GMMB/GMSB *Asset Mix Diversification Factor* $h(\tilde{\theta})$, interpolating between nodes where necessary.

`GetGMMBTimeDiversification(P, G, F, R, S)`

- Returns the GMMB/GMSB *Time Diversification Factor* $w(\tilde{\theta})$, interpolating between nodes where necessary.

8.7.2. Installing and using the OSFI factor calculation routines

The files shown in Table 11 comprise the “OSFI Factor Calculation” tools, supplied by OSFI to assist the company in calculating the *TGCR* for GMDB, GMMB and GMSB options.

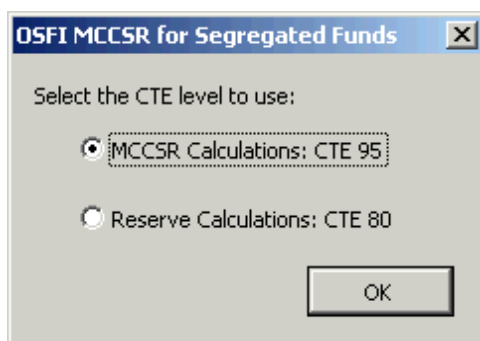
Table 11: OSFI Factor Calculation Tools – Required Files

File Name	Description
Setup.exe	Windows® setup program to unzip and install the calculation tools.
OSFIFactorCalc.xla	Microsoft® Excel Visual Basic Add-In. This functionality ‘wraps’ the C++ routines, allowing them to be called directly from Microsoft Excel workbooks (i.e., can be invoked the same way as built-in Excel functions).
OSFIFactorCalc.dll	The C++ dynamic linked library that contains the lookup and interpolation functions as described in this section.
GMDBFactors_CTE95.csv GMMBFactors_CTE95.csv	Comma separated value (flat text) files containing the factors and parameters described in section 9.5. Each “row” in the file corresponds to a test policy as identified by the lookup keys shown in Table 5. Each row consists of three entries and is terminated by new line and line feed characters. See Section 9.5 for more details. Files are also provided at the CTE80 confidence level.

To install the OSFI factor calculation routines, run the setup utility and follow the instructions. This will unzip (decompress) the files and register the DLL in the Windows program registry.

The Microsoft Add-In must be loaded (into Excel) before the VBA functions can be called. The factor files and the Microsoft Excel Add-In (*.xla) must reside in the same folder. Simply open “OSFIFactorCalc.xla” from Microsoft Excel. To view the VBA program, press [Alt-F11].

The following dialog should appear when the Add-In “OSFIFactorCalc.xla” is loaded, prompting the user to select the appropriate CTE confidence level for calculation (either CTE95 or CTE80). This controls which factor tables are read into memory. For a given workbook, only a single set of factor files can be accessed (i.e., either CTE80 or CTE95).



8.7.3. Calculation example

Suppose we have the policy/product parameters as specified in Table 12. Further assume that the portfolio satisfies the criteria in order to apply the “Time Diversification” factors.

Table 12: Results for 10-year GMMB with Elective Resets, Level ROP GMDB without Resets

a) Parameter / Attribute	Value	Description and/or Notes
Account Value (AV)	\$90.00	Total account value at valuation date, in dollars.
Original Deposit	\$100.00	Original deposit, in dollars.
GMDB (GV)	\$100.00	Current guaranteed death maturity benefit, in dollars.
GMMB (GV)	\$100.00	Current guaranteed minimum maturity benefit, in dollars.
Guarantee Level	100%	Initial guaranteed value as % of original deposit.
Gender	Female	Use 4-year age setback for X and M (GMDB only).
Actual Attained Age (X)	62	Attained age at the valuation date (in years).
Contract Maturity Age (M)	85	Contract maturity age (in years).
Time to Next Maturity (T), GMDB	23	Time to next maturity/rollover date (in years).
Time to Next Maturity (T), GMMB	3	Time to next maturity/rollover date (in years).
GV Adjustment	Pro-Rata	GV adjusted pro-rata by MV upon partial withdrawal.
Fund Class	Diversified Equity	Contract exposure mapped to Diversified Equity as per the Fund Categorization instructions in section 8.4.
MER	265	Total charge against policyholder funds (bps).
GMDB Product Code (P)	0	Product Definition code as per lookup key in Table 5.
GMMB Product Code (P)	3	Product Definition code as per lookup key in Table 5.
Guarantee Level Code (G)	1	Guarantee Code as per key in Table 5.
GV Adjustment Code (A)	0	GV Adjustment Upon Partial Withdrawal as per Table 5.
Fund Code (F)	5	Fund Class code as per lookup key in Table 5.
GMMB Reset Utilization (R)	0.35	Reset utilization rate (from 0 to 1).
In-The-Money Termination (S)	0	In-the-money termination rate (from 0 to 1).
Total Allocated Spread (RC)	80	Total margin offset (bps p.a.) for GMDB & GMMB combined.
Asset Mix Diversification (DF)	1	Credit for asset mix diversification.
Time Diversification (DT)	1	Credit for time diversification (GMMB).

Using the notation from section 8.7.1,

$$\begin{aligned}
 TGCR &= GV \times h(\circ) \times w(\circ) \times [BasicCostFactor] - \frac{\alpha}{100} \times AV \times [BasicMarginFactor] \\
 &= GV \times h(\circ) \times w(\circ) \times f(\tilde{\theta}) - \frac{\alpha}{100} \times AV \times g(\tilde{\theta}) \\
 &= GV \times \hat{f}(\tilde{\theta}) - AV \times \hat{g}(\tilde{\theta}) \\
 &= \hat{F}(\tilde{\theta}) - \hat{G}(\tilde{\theta})
 \end{aligned}$$

$$\begin{aligned}
 \hat{f}_{GMD\text{B}}(\tilde{\theta}) &= \text{GetCost}(1, 0, 1, 0, 5, 81, 58, 23, 0.9, 1, 265, 0, \\
 &\quad 0, 80, 1, 1) \\
 &= 0.04592
 \end{aligned}$$

$$\begin{aligned}
 \hat{f}_{GMM\text{B}}(\tilde{\theta}) &= \text{GetCost}(2, 3, 1, 0, 5, 85, 62, 3, 0.9, 1, 265, 0.35, \\
 &\quad 0, 80, 1, 1) \\
 &= 0.32849
 \end{aligned}$$

In the absence of specific and well-defined risk charges for each guaranteed benefit, we allocate the total spread by the claims cost and obtain (in bps per annum):

$$\alpha_{GMD\text{B}} = \frac{0.04592}{(0.04592 + 0.32849)} \times 80 = 0.12264 \times 80 = 9.81 \text{ basis points per annum available to}$$

fund the GMDB claims and $\alpha_{GMM\text{B}} = 80 - 9.81 = 70.19$ bps p.a. to fund GMMB payouts.

$$\begin{aligned}
 \hat{F}_{GMD\text{B}}(\tilde{\theta}) &= \text{GetCost}(1, 0, 1, 0, 5, 81, 58, 23, 90, 100, 265, 0, \\
 &\quad 0, 9.81, 1, 1) \\
 &= \$4.59 = 0.04592 \times \$100
 \end{aligned}$$

$$\begin{aligned}
 \hat{F}_{GMM\text{B}}(\tilde{\theta}) &= \text{GetCost}(2, 3, 1, 0, 5, 85, 62, 3, 90, 100, 265, \\
 &\quad 0.35, 0, 70.19, 1, 1) \\
 &= \$32.85 = 0.32849 \times \$100
 \end{aligned}$$

For reference, the *Basic Cost Factors* (i.e., before diversification adjustments) are:

$$\begin{aligned}
 f_{GMD\text{B}}(\tilde{\theta}) &= \text{GetCost}(1, 0, 1, 0, 5, 81, 58, 23, 0.9, 1, 265, 0, \\
 &\quad 0, 9.81) \\
 &= 0.04794
 \end{aligned}$$

$$f_{GMMB}(\tilde{\theta}) = \text{GetCost}(2, 3, 1, 0, 5, 85, 62, 3, 0.9, 1, 265, 0.35, 0, 70.19) \\ = 0.36461$$

$$g_{GMDb}(\tilde{\theta}) = \text{GetMargin}(1, 0, 1, 0, 5, 81, 58, 23, 0.9, 1, 265, 0, 0, 100) \\ = 0.04227 = 0.04697 \times 0.9$$

$$g_{GMMB}(\tilde{\theta}) = \text{GetMargin}(2, 3, 1, 0, 5, 85, 62, 3, 0.9, 1, 265, 0.35, 0, 100) \\ = 0.06201 = 0.06890 \times 0.9$$

$$\hat{G}_{GMDb}(\tilde{\theta}) = \text{GetMargin}(1, 0, 1, 0, 5, 81, 58, 23, 90, 100, 265, 0, 0, 9.81) \\ = \$0.41 = 0.04697 \times \$90 \times \left(\frac{9.81}{100}\right)$$

$$\hat{G}_{GMMB}(\tilde{\theta}) = \text{GetMargin}(2, 3, 1, 0, 5, 85, 62, 3, 90, 100, 265, 0.35, 0, 70.19) \\ = \$4.35 = 0.06890 \times \$90 \times \left(\frac{70.19}{100}\right)$$

$$TGCR_{GMDb} = \text{GetTGCR}(1, 0, 1, 0, 5, 81, 58, 23, 90, 100, 265, 0, 0, 9.81, 1, 1) \\ = \$4.18 \\ = \$4.59 - \$0.41$$

$$TGCR_{GMMB} = \text{GetTGCR}(2, 3, 1, 0, 5, 85, 62, 3, 90, 100, 265, 0.35, 0, 70.19, 1, 1) \\ = \$28.50 \\ = \$32.85 - \$4.35$$

Finally, the $TGCR$ for the policy is $\$4.18 + \$28.50 = \$32.68$

If desired, the Asset Mix and Time Diversification Factors may be obtained through additional function calls by setting DF or DT to zero as required and solving for the other factor. For example, if we set $DF = 1$ and $DT = 0$, we obtain for the GMMB component:

0.34307 = GetCost(2, 3, 1, 0, 5, 85, 62, 3, 0.9, 1, 265, 0.35,
0, 80, 1, 0)

However, with $DF = 1$ and $DT = 1$ we obtained $\hat{f}_{GMMB}(\tilde{\theta}) = 0.32849$ (see earlier in this section).

Hence, the GMMB *Time Diversification* Factor is equal to $0.9575 = \frac{0.32849}{0.34307}$.

8.8. Margin Offset Adjustment

The total equivalent account charge (“MER”) is meant to capture *all* amounts that are deducted from policyholder funds, not only those that are commonly expressed as spread-based fees. The MER, expressed as an equivalent annual basis point charge against account value, should include (but not be limited to) the following: investment management fees, mortality & expense charges, administrative loads, policy fees and risk premiums. It may be necessary to estimate an equivalent MER if there are fees withdrawn from policyholder accounts that are not expressed as basis point charges against account value.

The margin offset, α , represents the total amount available to fund the guaranteed benefit claims and amortization of the unamortized surrender charge allowance after considering most other policy expenses (including overhead). The margin offset, expressed as an equivalent annual basis point charge against account value, should be deemed permanently available in all future scenarios. However, the margin offset should not include per policy charges (e.g., annual policy fees) since these are included in fixed expenses. It is often helpful to interpret the margin offset as $\alpha = MER - X$, where X is the sum of:

- Investment management expenses and advisory fees;
- Commissions, bonuses (dividends) and overrides;
- Maintenance expenses; and
- Amounts required to amortize unamortized acquisition costs (net of available surrender charges).

8.9. Credit for reinsurance ceded or capital markets hedging

This is the reduction in the *TGCR* available on account of risk mitigation strategies, including reinsurance and hedging.

For registered reinsurance of segregated fund liabilities that is directly expressible in terms of the component factors, ceding companies may take credit through an appropriate reduction of the factors.

For more complex reinsurance arrangements that cannot be expressed using the factors, the impact will need to be modelled (refer to section [8.10](#)) and submitted to OSFI for approval. For example, a reinsurance treaty that has the ceding company retain losses to a predetermined level

(a “deductible”), with the reinsurer assuming losses above this level, but with a cap on the reinsurance claims (e.g., a maximum annual payment cap under the treaty) would normally require the use of suitable valuation model.

Policy liabilities ceded under arrangements deemed to constitute unregistered reinsurance (reference section [10.2](#)) must be reported on page 20.030, line 085 by Canadian companies, and on page 13.000, line 340 by foreign branches.

Deposits held for unregistered reinsurance per section 10.6, for the period not less than the fund guarantee term remaining and that are in excess of the actuarial liabilities for the risk reinsured, may reduce the net required segregated fund risk component requirement on the reinsured policies to a minimum of zero (report this amount in column 08 on page 90.010). For Canadian business, the deposits must be held in Canada, and OSFI must have given the company permission to reduce its reserves by the deposits held corresponding to the reserves. The reduction is limited to that available had the business been ceded to a reinsurer subject to these requirements.

8.10. Custom factors and internal models

8.10.1. Custom factors

Should the company be evaluating a product type that is materially different from those presented in the tables, or where a company needs to evaluate a complex reinsurance or hedging arrangement, it will be necessary to use stochastic modelling to calculate factors for the particular product or treaty.

The use of modelling to calculate factors specific to a product requires approval by the Actuarial Division of OSFI. Life Insurers should contact OSFI’s Actuarial or Capital Division for specific details.

Approved factors apply until new factors or an internal model are approved by OSFI.

With the passage of time, the assumptions underlying approved factors may not reflect emerging experience and can become inconsistent with the current valuation assumptions.

In such instances, an inconsistency between the TGCR calculated using the approved factors and that determined at CTE (95) using the company’s stochastic model with current valuation assumptions might develop. The actuary should regularly review this relationship to ensure that the TGCR held using the approved factors is not materially less than that calculated at CTE (95) using the company’s stochastic model with current valuation assumptions. *If the TGCR using the previously approved factors is materially less than the TGCR calculated at CTE (95) using the company’s stochastic model with current valuation assumptions, the institution should use the higher TGCR and apply to OSFI for approval of new factors or make an application to use its internal model to calculate capital requirements.*

8.10.2. *Internal models*

OSFI permits, subject to criteria, the use of internal models for the development of segregated fund capital requirements. Institutions seeking to use their internal models must follow the requirements outlined in OSFI's *Instruction Guide on Use of Internal Models for Determining Required Capital for Segregated Fund Risks (MCCSR)*. Internal model usage requires OSFI's prior written approval and is subject to materiality considerations. The requirements also include transitional rules: in the first year of approval, only 50% credit is permitted (i.e., the Total Gross Calculated Requirement is equal to 50% of the value calculated under the approved internal model plus 50% of the value calculated using the factor requirements). However, in subsequent years, the requirement is based 100% upon the value determined by the approved internal model.

8.11. *Analysis of results*

The development of capital requirement factor grids using stochastic methods is a complex process. While the work done in developing the factors was extensive, there is still the possibility that the factors may contain anomalies.

Many insurers use their own stochastic models to determine liability requirements. An insurer that uses a stochastic model that has not been approved should regularly compare the present value of net costs at CTE(95) that is output by its model with OSFI's capital requirements based on the application of the factor grid. Insurers should report to OSFI any unusual results that appear to be caused by logical or methodological errors within the capital requirements.

Chapter 9. Foreign Exchange Risk

The foreign exchange risk capital requirement is intended to cover the risk of loss resulting from fluctuations in currency exchange rates as well as the price of gold, and is applied to the entire business. Two steps are required to calculate this requirement. The first is to measure the exposure in each currency position. The second is to calculate the capital requirement for the portfolio of positions in different currencies. In summary, the capital charge is 8% of the greater of the sum of (i) the net open long positions or (ii) the net open short positions in each currency, plus the net open position in gold, whatever the sign¹⁰⁸. This charge may be reduced to a minimum of zero by subtracting two-thirds of the total provisions for foreign exchange risk that a company is holding within its actuarial liabilities. A charge is then added for foreign exchange volatility, if applicable.

9.1. *Measuring the exposure in a single currency*

The net open position for each individual currency (and gold) is calculated by summing:

- the net spot position, defined as all asset items less all liability items denominated in the currency under consideration, including accrued interest and accrued expenses but excluding provisions for foreign currency risk held within actuarial liabilities,
- the net forward position (i.e., all net amounts under forward foreign exchange transactions, including currency futures and the principal on currency swaps),
- guarantees (and similar instruments) that are certain to be called and are likely to be irrecoverable,
- net future income/expenses not yet accrued but already fully hedged (at the discretion of the reporting institution), and
- any other item representing a profit or loss in foreign currencies.

The following structural positions and related hedges may be excluded from the calculation of net open currency positions:

- Assets backing surplus held in a foreign operation for which changes in value due to currency fluctuations flow through the currency translation account of the Canadian reporting entity¹⁰⁹,
- Assets backing surplus that are fully deducted from a company's capital for MCCR purposes (e.g. goodwill),

¹⁰⁸ Gold is treated as a foreign exchange position rather than a commodity because its volatility is more in line with foreign currencies.

¹⁰⁹ Assets backing surplus, other than bonds, that are designated as available for sale and held in a foreign operation may be excluded if changes in the value of the assets due to currency fluctuations would otherwise be eligible to flow through the currency translation account of the Canadian reporting entity.

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- Any position entered into in relation to the net investment of a capital nature in a foreign operation, the accounting consequence of which is to reduce or eliminate what would otherwise be a change in the foreign currency translation adjustment,
 - Asset and liability positions corresponding to investments in foreign operations that are fully deducted from a company's capital for MCCR purposes.

9.2. Treatment of options

If a company has purchased or sold options on a foreign currency, it should perform the scenario table calculation described in section 3.7.4, where the changes in value measured are those of the net open position in the currency and the options combined, and where the range of values used for the currency in the table is 8% above and below its current value instead of 15%. The magnitude of the net open position in the currency after adjusting for options is then equal to 12.5 times the largest decline in value that occurs in the middle row of the table. If this decline occurs in a column where the value of the currency decreases then the position should be treated as a long position, and if the decline occurs in a column where the value of the currency increases then the position should be treated as a short position.

If the largest decline in the entire scenario table is greater than the largest decline in the middle row, then the difference represents the capital requirement for volatility in the foreign currency. This requirement must be added to the capital charge for foreign exchange risk, and may not be offset by provisions for foreign exchange risk held in liabilities.

9.3. Treatment of immaterial operations

Foreign exchange risk is assessed on a consolidated basis. It may be technically impractical in the case of immaterial operations to include some currency positions. In such cases, the internal limit in each currency may be used as a proxy for the positions, provided there is adequate ex post monitoring of actual positions complying with such limits. In these circumstances, the limits should be added, regardless of sign, to the net open position in each currency.

9.4. Measurement of forward currency positions

Forward currency positions should be valued at current spot market exchange rates. It would not be appropriate to use forward exchange rates since they partly reflect current interest rate differentials. Companies that base their normal management accounting on net present values are expected to use the net present values of each position, discounted using current interest rates and translated at current spot rates, for measuring their forward currency and gold positions.

9.5. Accrued and unearned interest, income and expenses

Accrued interest, accrued income and accrued expenses should be treated as a position if they are subject to exchange rate fluctuations. Unearned but expected future interest, income or expenses may be included, provided the amounts are certain and have been fully hedged by forward foreign exchange contracts. Companies must be consistent in their treatment of unearned interest, income and expenses and must have written policies covering the treatment. The

selection of positions that are only beneficial to reducing the overall position will not be permitted.

9.6. *Calculating the capital requirement for the portfolio*

The nominal amount (or net present value) of the net open position in each foreign currency (and gold) is converted at spot rates into Canadian dollars. The gross capital charge is 8% of the overall net open position, calculated as the sum of:

- the greater of the sum of the net open short positions or the sum of the net open long positions (absolute values), and
- the net open position in gold, whether long or short (i.e. regardless of sign).

The net capital charge is equal to the greater of zero, or the difference between the gross capital charge and two-thirds of the total provisions for foreign exchange risk (converted at spot rates into Canadian dollars) that are held within actuarial liabilities. The net capital charge is increased by the total of the volatility charges for each foreign currency, if any, to arrive at the final requirement.

9.7. *Unregistered reinsurance*

A separate component calculation must be performed for each group of liabilities ceded to an unregistered reinsurer that is backed by a distinct pool of assets, where the defining characteristic of a pool is that any asset in the pool is available to pay any of the corresponding liabilities. Each calculation should take into consideration the ceded liabilities, the assets supporting them, and deposits placed by the reinsurer to cover the capital requirement for the ceded liabilities if the deposits are in a currency different from the currency in which the ceded liabilities are payable to policyholders. If some of the assets supporting the liabilities ceded to an unregistered reinsurer are held by the ceding company (e.g. funds withheld), the company's corresponding liability should be treated as an asset in the calculation of the open positions for the ceded business.

Excess deposits placed by an unregistered reinsurer within a pool of supporting assets may be used to reduce the foreign exchange risk requirement for the corresponding ceded business to a minimum of zero, subject to the conditions in section 10.6. Any requirements not covered by excess deposits must be added to the ceding company's own requirement, and may not be offset by provisions for foreign exchange risk held in the company's own liabilities.

9.8. *Foreign exchange de minimus criteria*

A company doing negligible business in foreign currency, and that does not take foreign exchange positions within its own investment portfolio, may be exempted from the capital requirement for foreign exchange risk provided that:

- Its foreign currency business, defined as the greater of the sum of its gross long positions and the sum of its gross short positions in all foreign currencies, does not exceed 100% of total capital available, and

- Its overall net open foreign exchange position does not exceed 2% of total capital available.

9.9. Example

A company has the following net currency positions. These open positions have been converted at spot rates into Canadian dollars, where (+) signifies an asset position and (-) signifies a liability position.

YEN	EUR	GB£	CHF	US\$	GOLD
+50	+100	+150	-20	-180	-35
+300			-200		-35

In this example, the company has three currencies in which it has long positions, these being the Japanese Yen, the Euro and the British Pound, and two currencies in which it has a short position, the Swiss Franc and the U.S. Dollar. The middle line of the above chart shows the net open positions in each of the currencies. The sum of the long positions is +300 and the sum of the short positions is -200.

The gross foreign exchange requirement is calculated using the higher of the summed absolute values of either the net long or short positions, and the absolute value for the position in gold. The factor used is 8%. In this example, the total long position (300) would be added to the gold position (35) to give an aggregate position of 335. The aggregated amount multiplied by 8% results in a gross capital charge of \$26.80. If the company also is holding \$18.00 of provisions for foreign exchange risk within actuarial liabilities, two-thirds of this amount (\$12.00) may be subtracted from the gross capital charge to arrive at a net requirement of \$14.80.

Chapter 10. Credit for Risk Mitigation and Risk Transfer

10.1. Introduction

The risk mitigation arrangements for which it is possible to obtain credit in the MCCR, and the risk components to which they may be applied, are:

- reinsurance (mortality, morbidity, lapse, C-3 and segregated fund guarantee components);
- collateral (C-1 component for fixed-income and reinsurance assets);
- guarantees and credit derivatives (C-1 component for fixed-income and reinsurance assets);
- other derivatives serving as hedges (C-1 component for equities, and foreign exchange component); and
- asset securitization (C-1 component).

Any arrangement (including securitization) under which a third party assumes, or agrees to indemnify a company for, any obligation or risk that would normally be reflected in policy liabilities or MCCR required capital, with the exception of C-1 risk, is treated as reinsurance for MCCR purposes and is subject to the requirements in sections 10.2 to 10.6 below.

Collateral, guarantees and credit derivatives may be used to reduce the MCCR C-1 requirements for fixed-income financial assets. The conditions for their use, and the capital treatment are described in sections 3.2 and 3.3. Collateral and letters of credit may be used to reduce the C-1 requirement for reinsurance assets described in section 10.4, subject to the conditions in section 10.5. Derivatives serving as equity hedges may be applied to reduce the MCCR C-1 requirements for equities, as described in section 3.8, and derivatives serving as foreign exchange risk hedges may be applied to reduce the requirement as described in sections 9.2 and 9.4. Asset securitization may be used to reduce C-1 requirements as provided for in Guideline B-5: [Asset Securitization](#); guarantees providing tranching protection are treated as synthetic securitizations, and fall within the scope of the securitization guideline.

Reinsurance arrangements that are intended to mitigate the C-1 risk associated with a ceding company's on-balance sheet assets, irrespective of whether such arrangements mitigate other risks simultaneously, must meet the conditions and follow the capital treatment specified for a form of risk mitigation that is eligible to reduce the C-1 risk component (i.e. guarantees, credit derivatives, or asset securitization). Although asset risk mitigation techniques and reinsurance have some features in common, the markets they refer to and their respective specific characteristics are sufficiently different to require distinct capital treatments.

10.2. Definitions

10.2.1. Registered reinsurance

An arrangement is deemed to constitute registered reinsurance if it is conducted with a registered reinsurer. OSFI considers a reinsurer to be registered if it is:

- (a) a reinsurer that is either:
 - i) incorporated federally and has reinsured the risks of the ceding company; or
 - ii) a foreign company that has reinsured in Canada the risks of the ceding company, and is authorized by order of the Superintendent to do so; or
- (b) a provincially/territorially regulated insurer that has been approved by the Superintendent.

Note that in respect of item (a)(ii) above, a ceding foreign company will be permitted to treat a reinsurance arrangement as registered reinsurance only where the arrangement provides that the reinsurer does not have any right of set-off against obligations of the ceding foreign company other than those obligations related to the insurance business in Canada of the ceding foreign company.

Subsection 578(5) of the Insurance Companies Act requires a foreign company, in respect of risks it reinsures in Canada, to set out in all premium notices, applications for policies and policies (which may include cover notes offer letters or quotations) a statement that the document was issued or made in the course of its insurance business in Canada. In cases where the cover note, offer letter or quotation can be considered neither an application for a policy nor a policy, a company will be permitted to treat a reinsurance arrangement as registered reinsurance only if the foreign reinsurer includes, in the cover note, offer letter or quotation, a statement that the reinsurer intends to issue the reinsurance contract under negotiation in the course of its insurance business in Canada, and that it will take measures to ensure that the cedant's risks will be reinsured in Canada in accordance with OSFI's Advisory No. 2007-01-R1 entitled [*Insurance in Canada of Risks*](#).

10.2.2. Unregistered reinsurance

OSFI considers an entity to be an unregistered reinsurer if it is not a registered reinsurer as defined in section 10.2.1 above. Special purpose vehicles formed for the purpose of securitizing insurance risks are considered to be unregistered reinsurers.

All reinsurance arrangements conducted by a company or one of its subsidiaries with an unregistered reinsurer will be treated as unregistered reinsurance for MCCSR purposes, unless:

- (a) the ceding company is a Canadian insurance company or one of its subsidiaries; and
- (b) all of the policies reinsured under the arrangement are issued outside of Canada; and
- (c) either:

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- i) the branch or subsidiary of the Canadian insurer issuing or reinsuring the policies is subject to local solvency supervision by an OECD country in respect of the risks being ceded, and the reinsurance or retrocession arrangement is recognized¹¹⁰ by that country's solvency regulator, or
 - ii) the risks being ceded relate to policies that have been issued or reinsured by a subsidiary of the Canadian insurer that is incorporated in a non-OECD country, and the reinsurance or retrocession arrangement is recognized¹¹⁰ by that country's solvency regulator,

and;

(d) either:

- i) the reinsurer is regulated and subject to meaningful risk-based solvency supervision (including appropriate capital requirements) for insurance risks, or
- ii) the foreign solvency regulator has recognized the reinsurance arrangement on the basis that it has been fully collateralized by the reinsurer.

Reinsurance arrangements meeting all of conditions (a) through (d) above may be treated as registered reinsurance.

10.2.3. Ceded liabilities

In the remainder of this chapter, references to liabilities that have been “ceded” denote actuarially valued obligations due from a reinsurer under a reinsurance arrangement, gross of any reduction to account for the credit quality of the reinsurer. For the purpose of this chapter, all reinsured business should be valued based on the ceded policy liability and not the reinsurance asset appearing on the balance sheet.

10.3. Valuation basis for ceded liabilities

Policy liabilities that are ceded by a company under unregistered reinsurance as defined in section 10.2 must be valued, in accordance with the Canadian Asset Liability Method (CALM) of the Canadian Institute of Actuaries, using assumptions about the assets supporting the liabilities that are consistent with the assets used to collateralize the reinsurer's obligation. Therefore, in this chapter, for the purpose of valuing aggregate and policy-by-policy liabilities ceded to an unregistered reinsurer, the assets backing the ceded liability should be assumed to consist of all or a portion of:

- the assets held by the company or vested in trust that are used to support funds withheld from or other amounts due to the unregistered reinsurer;
- the assets located in Canada for which the company has a valid and perfected first priority security interest under applicable law that are used to obtain credit in respect of

¹¹⁰ The term “recognized”, as applied to a reinsurance arrangement by a foreign solvency regulator, means that the ceding company is able to report an improved capital adequacy position to the solvency regulator as a result of the reinsurance arrangement.

the unregistered reinsurer (reference section [10.5](#)); and

- letters of credit held to secure payment to the company by the reinsurer that are used to obtain credit in respect of the unregistered reinsurer (reference section [10.5](#)). These amounts should be treated as non-interest bearing cash equivalents for the purpose of valuation.

If all of the above assets are not sufficient to back the ceded liability, the remaining assets backing the ceded liability should be assumed to be assets held by the ceding company or vested in trust that back the ceding company's unallocated MCCR/TAAM Available Capital/Margin.

The valuation of policy liabilities ceded to an unregistered reinsurer must be performed without recognition of future morbidity improvement reversed from retained earnings in the calculation of gross tier 1 per section 2.1.1.1, and without recognition of future mortality improvement under CIA standard 2350.06 and additional future mortality improvement⁵ under CIA standard 2350.11 if such recognition results in a net decrease (for insurance and annuity business combined) of the ceded liability.

10.4. Asset default requirement for reinsurance assets

This section describes the capital treatment of C-1 risk for reinsurance assets, and replaces the treatment that would otherwise apply under chapter [3](#).

Reinsurance assets due under arrangements deemed to constitute registered reinsurance are currently not subject to any charge for C-1 risk.

The ceded policy liabilities corresponding to reinsurance assets arising from arrangements deemed to constitute unregistered reinsurance are required to be deducted from Available Capital, and do not receive a capital charge based on the rating of the reinsurer. The remainder of this section deals exclusively with liabilities ceded under arrangements deemed to constitute unregistered reinsurance.

10.4.1. Requirement for aggregate positive liabilities ceded

For every unregistered reinsurer, the total value of the policy liabilities ceded to the reinsurer, if positive, must be included within a company's Deductions/Adjustments (reference sections [2.1.4](#) and [6.6](#)).

10.4.2. Requirement for offsetting policy-by-policy liabilities ceded

Where a company cedes positive policy-by-policy liabilities and negative policy-by-policy liabilities to the same unregistered reinsurer, the amount of offsetting policy-by-policy liabilities ceded to the reinsurer is defined to be the lower of:

- the total positive policy-by-policy liabilities ceded to the reinsurer, or
- the total negative policy-by-policy liabilities ceded to the reinsurer.

This offsetting amount, net of any reduction of negative reserves allowed for taxes under section 2.4.1¹¹¹, must be deducted from tier 1 capital as a negative reserve and included in tier 2c for Canadian companies, or included in the negative reserve component of Assets Required for foreign companies. This requirement is equivalent to the requirements that would apply under sections 2.1.1.2 and 2.1.2.3, or sections 6.2 and 6.5, had a company retained equal amounts of positive and negative policy-by-policy liabilities.

10.4.3. Requirement for aggregate negative liabilities ceded – Canadian companies

Where the total value of the policy liabilities that a Canadian company has ceded to a particular unregistered reinsurer is negative, the company must deduct from tier 1 capital and include in tier 2c the reported amount of any assets appearing in the annual return (e.g. LIFE-1) arising from transactions with the reinsurer¹¹² unless:

- the assets are unencumbered and held in Canada in custody of the company;
- the assets are not receivables;
- the assets do not bear any credit exposure to the unregistered reinsurer or any of its affiliates (obligations of the reinsurer or any of its affiliates that have been guaranteed by a third party must be deducted from tier 1 and included in tier 2c); and
- the assets have been transferred to the company permanently; for example, they may not become repayable in the event of the occurrence of a contingency.

The deduction from tier 1 and inclusion in tier 2c required on account of any unregistered reinsurer is limited to the value of the aggregate negative policy liability ceded to the reinsurer, net of any reduction of the negative reserve amount allowed for taxes under section 2.4.1¹¹¹.

10.4.4. Requirement for aggregate negative liabilities ceded – foreign companies

Where the total value of the policy liabilities that a foreign company has ceded to a particular unregistered reinsurer is negative, the company must include in Assets Required the amount of any assets reported as vested in trust in the annual return (e.g. LIFE-2) arising from transactions with the reinsurer¹¹² unless:

- the assets do not bear any credit exposure to the unregistered reinsurer or any of its affiliates (obligations of the reinsurer or any of its affiliates that have been guaranteed by a third party must be included in Assets Required); and
- the assets have been transferred to the company permanently; for example, they may not become repayable in the event of the occurrence of a contingency.

¹¹¹ Only the reduction for taxes may be applied. No reduction is permitted for other policy components.

¹¹² Excluding negative reinsurance assets and reinsurance liabilities due to the reinsurer. The value of other assets arising from transactions with the reinsurer may not be netted with negative reinsurance assets or reinsurance liabilities in calculating the amount deducted from tier 1 or added to Assets Required.

The amount required to be added to Assets Required on account of any unregistered reinsurer is limited to the value of the aggregate negative policy liability ceded to the reinsurer, net of any reduction of the negative reserve amount allowed for taxes under section 2.4.1¹¹¹.

10.4.5. Examples

1. A Canadian company cedes \$100 aggregate policy liabilities to an unregistered reinsurer, where the liabilities consist of \$300 in positive policy-by-policy liabilities and \$200 in negative policy-by-policy liabilities. All of the business ceded is Canadian individual life business, meaning that the negative policy-by-policy reserves ceded are eligible for a 30% reduction due to taxes under section [2.4.1](#). In the absence of any collateral or letters of credit (reference section [10.5](#)), the company will be required under section 10.4.1 to include \$100 in its Deductions/Adjustments, so that it deducts \$50 from tier 1 and another \$50 from tier 2 Available Capital. Additionally, under section [10.4.2](#), the company will be required to deduct $(\$200 - (\$200 \times 30\%) =)$ \$140, which is the tax-adjusted policy-by-policy negative reserve amount, from tier 1 Available Capital and add this amount to tier 2c.
2. A Canadian company cedes \$400 in aggregate negative policy liabilities to an unregistered reinsurer, where the liabilities consist of \$100 in positive policy-by-policy liabilities and \$500 in negative policy-by-policy liabilities. All of the business ceded is Canadian individual life business, and the reinsurer has no recourse to the Canadian company if all or part of the ceded business lapses. In the absence of any collateral or letters of credit, the company will be required under section 10.4.2 to deduct $(\$100 - (\$100 \times 30\%) =)$ \$70 from tier 1 Available Capital and add this amount to tier 2c. There may be an additional deduction required under section [10.4.3](#) depending on the assets the company receives in consideration for the aggregate negative cession. For example:
 - a) If the company receives \$300 cash in exchange for ceding the business, then no additional deduction is required under section [10.4.3](#), as cash is not precluded under the criteria in this section.
 - b) If the company records a receivable for \$300 from the unregistered reinsurer, then it must deduct an additional (lower of $(\$300, \$400 - (\$400 \times 30\%) =)$ \$280 from tier 1 Available Capital and add this amount to tier 2c. The amount of the deduction is \$280 and not \$300, in this case, because it is limited to the tax-adjusted amount of the aggregate negative reserve ceded.
 - c) If the company receives no compensation for ceding the business, then no additional deduction is required under section [10.4.3](#). (Note however that the cession itself will cause a \$400 reduction in tier 1 Available Capital via a reduction in retained earnings).

10.5. Collateral and letters of credit

This section describes the forms of credit risk mitigation for which the deductions from Available Capital that are required under section [10.4](#) may be reduced, and replaces the rules that would otherwise apply under sections [3.2](#) and [3.3](#).

10.5.1. Credit available

A company is given credit, for each unregistered reinsurer, equal to the sum of:

- the funds held by the ceding company for the exclusive benefit of the ceding company (e.g., funds withheld reinsurance) to secure the payment to the ceding company by the reinsurer of the reinsurer's share of any loss or liability for which the reinsurer is liable under the reinsurance agreement; and
 - the value of assets pledged by the unregistered reinsurer that are located in Canada and subject to the company's claim under a valid and perfected first priority security interest under applicable law in accordance with OSFI's guidance for reinsurance security agreements. All pledged assets must:
 - be held to secure the payment to the ceding company by the reinsurer of the reinsurer's share of any loss or liability for which the reinsurer is liable under the reinsurance agreement¹¹³,
 - be in the form of cash¹¹⁴ or securities,
 - be owned by the reinsurer, and
 - be freely transferrable;
- and
- the amount of acceptable letters of credit¹¹⁵ held to secure the payment to the ceding company by the reinsurer of the reinsurer's share of any loss or liability for which the reinsurer is liable under the reinsurance agreement.

All collateral must be available for as long as the assuming insurer will have financial obligations under the reinsurance agreements for which the ceding company is taking credit. Where contract stipulations regarding the collateral may vary during the period, credit may only be taken if the ceding company maintains the exclusive option to retain the collateral and the additional cost of that option, if any, is fully recognized and explicitly accounted for at inception of the agreement.

All letters of credit used to obtain credit in respect of an unregistered reinsurer must be issued by or have a separate confirming letter from a Canadian bank that is listed on Schedule I or

¹¹³ A foreign company ceding risks related to its Canadian business will be given credit for assets located in Canada only where the reinsurance arrangement provides that the reinsurer does not have any right of set-off against the obligations of the foreign company other than obligations related to the foreign company's insurance business in Canada. In particular, the reinsurer must not be able to set off amounts due to the foreign company against any liabilities of the home office or affiliates of the foreign company that are not liabilities arising out of the Canadian operations of the foreign company.

¹¹⁴ Cash must be in a form in which it is possible to perfect a security interest under applicable law.

¹¹⁵ Companies should contact OSFI's Securities Administration Unit at 121 King Street West, 22nd Floor, Toronto Ontario M5H 3T9; by e-mail at SAU@osfi-bsif.gc.ca; or by facsimile at (416) 973-1171 to obtain OSFI's standards for letters of credit. Templates as well as general guidelines for the use of letters of credit may be found on OSFI's web site at <http://www.osfi-bsif.gc.ca>.

Schedule II of the *Bank Act*. In aggregate, the amount of credit taken for letters of credit is limited to 30% of the total positive policy-by-policy liabilities ceded to unregistered reinsurers.

The assets used to obtain credit for a specific unregistered reinsurer must materially reduce the risk arising from the credit quality of the reinsurer. In particular, the assets used may not be related-party obligations of the unregistered reinsurer (i.e. obligations of the reinsurer itself, its parent, or one of its subsidiaries or affiliates). With respect to the above three sources available to obtain credit, this implies that:

- To the extent that a ceding company is reporting obligations due from a related party of the reinsurer as assets in its annual return (e.g. LIFE-1), the ceding company is precluded from taking credit for funds held to secure payment from an unregistered reinsurer;
- Assets located in Canada in which a ceding company has a valid and perfected first priority security interest under applicable law may not be used to obtain credit if they are obligations of a related party of the unregistered reinsurer; and
- A letter of credit is not acceptable if it has been issued by a related party of the unregistered reinsurer.

Guideline B-2: [Large Exposure Limits](#) applies to assets used to obtain credit in respect of unregistered reinsurance. As a consequence, a company may not take credit for assets in which it has perfected a security interest or letters of credit, held under an unregistered reinsurance transaction or a series of such transactions (not necessarily all with the same reinsurer), if consolidating these assets¹¹⁶ on the company's balance sheet, along with the ceded liabilities they support, would cause a large exposure limit to be breached¹¹⁷. A company must comply with all other OSFI guidelines and advisories concerning investments (e.g. Guideline B-1: [Prudent Person Approach](#), Guideline B-5: [Asset Securitization](#)) in respect of the aggregate of the assets it has used to obtain credit for unregistered reinsurance with the assets it holds in its own portfolio.

10.5.2. Application to requirements for ceded liabilities

The credit available in respect of an unregistered reinsurer may be applied to the following requirements of section 10.4:

- 1) The requirement for aggregate positive liabilities ceded to the reinsurer (reference section [10.4.1](#)). This requirement may be reduced to a minimum of zero using the credit available.
- 2) The requirement for offsetting policy-by-policy liabilities ceded to the reinsurer

¹¹⁶ Or for letters of credit, recording the full amount of the letters of credit as obligations due from the issuing banks

¹¹⁷ This consolidation test must be performed in respect of unregistered reinsurance notwithstanding that Guideline B-2 does not establish quantitative limits for exposures to reinsurers. Assets and letters of credit having a residual maturity of less than one year may not be excluded from the definition of exposure. For the purpose of the consolidation test, the additional amount of total capital that a ceding company may assume would be available is limited to the lower of 150% of the marginal capital requirements for the ceded business, or the value of the assets and letters of credit posted by the reinsurer(s) that are used to support the capital requirements for the ceded business.

(reference section [10.4.2](#)). The requirement may be reduced to a minimum of zero for a particular reinsurer, but the credit taken for this requirement in aggregate is subject to the limit below.

The total credit available that may be applied toward requirement 2) in respect of all reinsurers in aggregate is limited to the greater of zero or:

$$N - \max (R - C, 0)$$

where:

- *N* is the total requirement for offsetting policy-by-policy liabilities ceded to unregistered reinsurers;
- *R* is equal to 50% of the company's Base Required Capital or Required Margin, where the required capital or margin is calculated net of registered reinsurance only; and
- *C* is Adjusted Net Tier 1 capital (for Canadian companies) or Available Margin less Other Admitted Assets (for foreign companies), where the amount is calculated without deducting the requirement for offsetting policy-by-policy liabilities ceded to unregistered reinsurers;

If the maximum credit that may be applied toward requirement 2) is less than the total of the requirement, the difference must be deducted from tier 1 and added to tier 2c (for Canadian companies) or added to Assets Required (for foreign companies) and may not be covered by collateral or letters of credit. If this situation occurs, the ceding company may allocate the maximum total credit allowed to particular unregistered reinsurers in any manner it chooses.

Any credit available for a particular reinsurer that exceeds the sum of the maximums allowed under 1) and 2) above or that is otherwise not applied towards these requirements may be applied towards the capital requirements for business ceded to the reinsurer, subject to the conditions in section [10.6](#).

10.5.3. Asset risk requirements

Consistent with the substitution capital treatment used for collateral and guarantees, companies are required to include, in the MCCSR Base Required Capital or TAAM Required Margin, the C-1 and C-3 capital charges (as determined under chapter [3](#)¹¹⁸ and section [5.4](#)) for all assets subject to the company's claim under a perfected security interest, and for all letters of credit, that are used to obtain credit for ceded liability or capital requirements relating to unregistered reinsurance. In addition, such collateral and letters of credit will give rise to a charge for foreign exchange risk under section [9.7](#) if there is a currency mismatch with the reinsured policy liabilities they support.

¹¹⁸ Although the requirements of chapter 3 do not apply to reinsurance assets, they do apply to collateral and letters of credit used to mitigate the C-1 risk associated with these assets.

10.6. Calculation of Base Required Capital/Required Margin

10.6.1. Necessary conditions for credit

In order for a ceding company to obtain a reduction in its Base Required Capital or Required Margin on account of any registered or unregistered reinsurance arrangement, the arrangement must conform to all of the principles contained in Guideline B-3: [Sound Reinsurance Practices and Procedures](#). The arrangement must also meet all of the conditions necessary for effective risk transfer specified in this section. The ceding company must be able to demonstrate that the change in risk it is exposed to as a result of the arrangement is commensurate with the amount by which it reduces its Base Required Capital or Required Margin¹¹⁹.

Risk transfer must be effective in all circumstances under which the ceding company relies on the transfer to cover the capital/margin requirement. In assessing an arrangement, the ceding company must take into account any contract terms whose fulfilment is outside the ceding company's direct control, and that would reduce the effectiveness of risk transfer. Such terms include, among others, those which:

- would allow the reinsurer to unilaterally cancel the arrangement (other than for non-payment of reinsurance premiums due under the contract);
- would increase the effective cost of the transaction to the ceding company in response to an increased likelihood of the reinsurer experiencing losses under the arrangement;
- would obligate the ceding company to alter the risks transferred for the purpose of reducing the likelihood that the reinsurer will experience losses under the arrangement;
- would allow for the termination of the arrangement due to an increased likelihood of the reinsurer experiencing losses;
- could prevent the reinsurer from being obligated to pay out any amounts due under the arrangement in a timely manner; or
- could allow for early maturity of the arrangement.

The ceding company must also take into account circumstances under which the benefit of the risk transfer could be undermined. For example, this may occur if the ceding company provides support (including non-contractual support) to the arrangement with the intention of reducing potential or actual losses to the reinsurer.

In determining whether there is effective risk transfer, the reinsurance arrangement must be considered as a whole. Where the arrangement consists of several contracts, the entire set of

¹¹⁹ Without limiting the requirement that ceding companies should abide by the risk transfer principle with respect to all reinsurance transactions, OSFI may, if it is unclear how much risk the ceding company bears post-reinsurance and OSFI determines it is desirable to provide greater certainty, issue further guidance (including quantitative requirements) to implement this principle with respect to any reinsurance arrangement. Companies are encouraged to contact OSFI to discuss reinsurance arrangements that may be affected by this principle or for which implementation guidance may be required.

contracts, including contracts between third parties, must be considered. The ceding company must also consider the entire legal relationship between itself and the reinsurer.

No reduction in Base Required Capital or Required Margin is allowed for a reinsurance arrangement that has material basis risk with respect to the reinsured business (for example if payments under the arrangement are made according to an external indicator instead of actual losses). Reinsurance assets arising from arrangements containing basis risk may be subject to capital charges for insurance risk in addition to the capital charge for C-1 risk.

In assessing the effectiveness of risk transfer, the economic substance of an arrangement must be considered over the legal form or accounting treatment.

10.6.2. Retained loss positions

Where a company has taken credit in its MCCR or TAAM (required or available) on account of a registered or unregistered reinsurance arrangement that does not cover all losses up to the level of the ceded actuarial liability plus 100% of the marginal MCCR Base Required Capital for the ceded business, the ceding company is required to add to its MCCR/TAAM Base Required Capital/Required Margin the total amount of losses at or below this level for which it remains at risk¹²⁰. Such an addition to Base Required Capital or Required Margin is necessary where a reinsurance arrangement contains any provision under which the reinsurer is required to cover losses only in excess of a certain amount, regardless of accounting treatment. Such provisions include, but are not limited to:

- a) experience rating refunds,
- b) claims fluctuation reserves and reinsurance claims fluctuation reserves, and
- c) variable risk transfer mechanisms other than a) or b) above whereby the level at which losses are reinsured depends upon prior experience¹²¹.

The amount of the loss position that a ceding company retains under a reinsurance arrangement must be recalculated, according to the treaty, at each reporting date.

10.6.3. Registered reinsurance

All capital requirement calculations may be performed net of registered reinsurance. For example, policy liabilities ceded to registered reinsurers should be subtracted from the policy liabilities used to calculate an MCCR component.

¹²⁰ This section is effective January 1, 2012 for all reinsurance contracts except for reinsurance contracts with a provision as described in 10.6.2 c) and for which a transition measure is provided.

¹²¹ Where a reinsurance arrangement contains a provision described in 10.6.2 c) and has been entered into prior to October 1, 2010 this section is effective April 1, 2014. Where a reinsurance arrangement contains a provision as described in 10.6.2 c) and has been entered into on or after October 1, 2010 and prior to January 1, 2012 this section is effective January 1, 2013.

10.6.4. Unregistered reinsurance

Where the credit available for an unregistered reinsurer under section [10.5.1](#) exceeds the credit that has been applied towards the requirements for liabilities ceded to the reinsurer under section [10.5.2](#), the amount of the excess, divided by 1.5 or another factor if specifically required by the Superintendent, may be used to reduce the following components of the Base Required Capital for the reinsured policies:

- mortality risk,
- morbidity risk,
- lapse risk,
- changes in interest rate environment risk,
- segregated fund guarantee risk, and
- foreign exchange risk.

Chapters [4](#), [5](#), [8](#) and [9](#) describe the treatment of unregistered reinsurance in the MCCR for these particular components, and specify additional conditions necessary to take credit for excess deposits.

If a deposit used to obtain credit for a policy component is not contractually available to cover all losses arising from the component risk that are not provided for in the ceded policy liability (e.g. tranching protection), then the amount of credit for the deposit is limited to:

- the marginal component requirement for the ceded business; minus
- the highest component loss for the ceded business, net of contractually permitted recoveries from the deposit, that would be borne by the ceding company under any scenario in which unexpected losses for the component risk of the ceded business do not exceed the marginal component requirement.

The credit taken in any of the specified components may not exceed the marginal capital requirement for the risks specifically reinsured, and may not exceed the reduction that would have been available had a company entered into an agreement on the same terms with a registered reinsurer.