BANK NEGARA MALAYSIA
CENTRAL BANK OF MALAYSIA

Risk-Based Capital Framework for Insurers and Takaful Operators

Exposure Draft

Applicable to:
1. Licensed insurers
2. Licensed takaful operators
3. Professional reinsurers
4. Professional retakaful operators

Issued on: 28 June 2024 BNM/RH/ED 029-33

This Exposure Draft (ED) sets out proposed regulatory requirements and guidance for determining the capital adequacy of licensed insurers and licensed takaful operators (including professional reinsurers and professional retakaful operators) to ensure that the risk-based capital framework is risk sensitive and responsive to changes in the market conditions and facilitates consistent and comparable capital adequacy measurement across the insurance and takaful industry, where appropriate. In developing the ED, the Bank has also taken into consideration the developments in global regulatory capital standards.

The Bank invites written comments on this ED, including issues or areas to be clarified or elaborated further and any alternative proposals that the Bank should consider. To facilitate the Bank's assessment, please clearly notate the paragraph to which each comment is related to, and provide supporting rationale and evidence or illustration, as appropriate.

In addition to providing general feedback, licensed persons are requested to:
(a) respond to the specific questions set out in this ED; and
(b) complete the template for the second Quantitative Impact Study (QIS 2) issued concurrently with this ED.

Responses must be submitted electronically in the specified format and addressed to pfpconsult@bnm.gov.my by 31 December 2024.

In the course of preparing your feedback, you may direct any queries to the following officers –
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Issued on: 28 June 2024

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PART A OVERVIEW

1. Introduction

1.1 The capital adequacy level of licensed insurers and licensed takaful operators (including professional reinsurers and professional retakaful operators) serves as a key indicator of their financial resilience. Therefore, it is important to ensure that the measurement of the capital adequacy level is robust and reflective of the actual solvency position of the licensed insurers and licensed takaful operators.

1.2 This policy document aims to–
- (a) ensure that the risk-based capital framework appropriately reflects the underlying risk exposures of licensed insurers and licensed takaful operators based on measurement approaches that are sufficiently risk sensitive and responsive to changes in the market conditions;
- (b) ensure that licensed insurers and licensed takaful operators maintain a capital adequacy level that is commensurate with their risk profile at all times;
- (c) promote a consistent capital adequacy measurement for the insurance and takaful sector, taking into account the similarities in the underlying risks, while considering the differences between the underlying business models of insurance and takaful; and
- (d) achieve greater alignment with key elements of the global capital standards such as the Insurance Capital Standard (ICS) issued by the International Association of Insurance Supervisors (IAIS)[1] and the relevant standards issued by the Islamic Financial Services Board (IFSB)[2], with modifications appropriate to the Malaysian market.

1.3 This policy document sets out the following requirements:
- (a) computation of the capital adequacy ratio, including the total capital available and the total capital required;
- (b) valuation basis for the liabilities of insurance/takaful contracts (hereinafter referred to as “insurance/takaful liabilities”);
- (c) supervisory solvency intervention levels; and
- (d) regulatory reporting to the Bank.

2. Applicability

2.1 This policy document is applicable to licensed persons as defined in paragraph 5.2.

2.2 For an insurance/takaful group, the requirements in this policy document must be applied to all licensed persons within the insurance/takaful group at the entity level.

[1] Public 2024 ICS Data Collection Technical Specifications (https://www.iaisweb.org/uploads/2024/06/2024-ICS-data-collection-Technical-Specifications.pdf)
[2] IFSB-28 – Revised Solvency Requirements for Takaful/Retakaful Undertakings (https://www.ifsb.org/wp-content/uploads/2023/10/IFSB-28_En.pdf)

2.3 Notwithstanding paragraph 2.1, the requirements in this policy document are not applicable to business outside Malaysia generated by a licensed person that operates as a branch in Malaysia, subject to meeting the following conditions:
(a) there is an explicit undertaking from the branch's head office to satisfy the liabilities arising from business outside Malaysia in the event that the branch is unable to fulfil its obligations;
(b) the branch belongs to a group with a strong financial position;
(c) the branch is subjected to consolidated supervision by a home supervisory authority; and
(d) effective home-host supervisory cooperation arrangements between the Bank and the branch's home supervisory authority are in place.

2.4 Notwithstanding paragraphs 2.1 and 2.2, the requirements in this policy document are not applicable to investment-linked unit funds and Participants' Individual Funds, unless otherwise specified in this policy document and via any other legal instrument issued by the Bank.

Group capital requirements for insurance/takaful groups

In line with the enhancements to the risk-based capital (RBC) requirements, the Bank will be reviewing the existing group capital requirements for insurance/takaful groups. The Bank will consult the relevant insurance/takaful groups before finalising the group capital requirements.

3. Legal provisions

3.1 The requirements in this policy document are issued pursuant to–
(a) sections 47(1), 76 and 143(2) of the Financial Services Act 2013 (FSA); and
(b) sections 57(1), 85 and 155(2) of the Islamic Financial Services Act 2013 (IFSA).

3.2 The guidance in this policy document is issued pursuant to section 266 of the FSA and section 277 of the IFSA.

4. Effective date

4.1 This policy document comes into effect on 1 January 2027[3] *(see question below)*.

[3] For the avoidance of doubt, the requirements in the existing Policy Documents on Risk-Based Capital Framework for Insurers (BNM/RH/PD 032-12) and Risk-Based Capital Framework for Takaful Operators (BNM/RH/PD 033-4) continue to apply until the requirements proposed in this exposure draft come into effect.

Question 1
Effective date

The Bank plans for the requirements in this policy document to take effect for the reporting period beginning 1 January 2027. This will be preceded by transitional arrangements, which may include parallel reporting that may commence as early as the reporting period beginning 1 January 2026, subject to the results of the second quantitative impact study (QIS 2) undertaken with this exposure draft. Would your company be able to comply with this timeline? If no, please suggest an alternative timeline, with clear justification.

5. Interpretation

5.1 The terms and expressions used in this policy document shall have the same meanings assigned to them in the FSA and IFSA, as the case may be, unless otherwise defined in this policy document.

5.2 For the purpose of this policy document–

"**S**" denotes a standard, an obligation, a requirement, specification, direction, condition and any interpretative, supplemental and transitional provisions that must be complied with. Non-compliance may result in enforcement action;

"**G**" denotes guidance which may consist of statements or information intended to promote common understanding and advice or recommendations that are encouraged to be adopted;

"**account-based product**" refers to a life insurance/family takaful product with unitised or non-unitised account, including investment-linked product, universal life product and takaful product with Participants' Individual Fund;

"**board**" means the board of directors of a licensed person, including a committee of the board where the responsibilities of the board set out in this policy document have been delegated to such a committee;

"**capital reserves**" refer to reserves created from equity transactions between the licensed person and its shareholders arising from adjustments in accounting for business combinations, mergers and acquisitions;

"**factor-based approach**" refers to the determination of the capital charge for a particular risk by applying a factor to an exposure measure;

"**fund**" refers to an insurance/takaful fund that is established and maintained in accordance with paragraph 8 of the Policy Document on Management of Insurance Funds (BNM/RH/PD 032-15) and paragraph 9 of the Policy Document on Takaful Operational Framework (BNM/RH/PD 033-7) (excluding the insurance/takaful fund referred to in paragraph 2.4) and the shareholders' fund;

“**group policy/takaful certificate**” refers to a policy/takaful certificate that insures/covers three or more persons under a single master policy/takaful certificate and where a person cancels his/her cover under the group policy/takaful certificate, only the insurance/takaful coverage for that particular person will cease;

“**individual policy/takaful certificate**” refers to a policy/takaful certificate other than a group policy/takaful certificate;

“**insurance/takaful contract**” refers to a basic (standalone) policy/takaful certificate (either individual policy/takaful certificate or group policy/takaful certificate) and extensions of cover (either riders or add-ons);

“**licensed family takaful operator**” refers to a licensed takaful operator carrying on family takaful business, including a professional retakaful operator carrying on family retakaful business;

“**licensed general insurer**” refers to a licensed insurer carrying on general insurance business, including a professional reinsurer carrying on general reinsurance business;

“**licensed general takaful operator**” refers to a licensed takaful operator carrying on general takaful business, including a professional retakaful operator carrying on general retakaful business;

“**licensed life insurer**” refers to a licensed insurer carrying on life insurance business, including a professional reinsurer carrying on life reinsurance business;

“**licensed person**” refers to–
(a) a licensed insurer, including a professional reinsurer; and
(b) a licensed takaful operator, including a professional retakaful operator;

“**limited pay policy/takaful certificate**” refers to a policy/takaful certificate where the premium/takaful contribution is payable at regular intervals (e.g. annually, semi-annually, quarterly, monthly), but the premium/takaful contribution payment term is shorter than the policy/takaful certificate term;

“**net asset value**” or “**NAV**” refers to the value of assets less liabilities of a fund. For the purpose of determining the change in NAV after applying the specified stresses under a stress-based approach, the change in insurance/takaful liabilities must only include the change in central estimate liabilities i.e. the provision of risk margin for adverse deviation remains constant, and any negative value of the base and stressed central estimate liabilities must not be zeroised;

“**net earned premiums**” refer to net written premiums (after deducting reinsurance premiums ceded from gross written premiums) less change in net premium liabilities[4] (after deducting reinsurance recoveries from gross premium liabilities);

“**net earned *tabarru’* charges**” refer to net *tabarru’* charges (after deducting *wakalah* fees and retakaful contributions ceded from gross written contributions) less change in net contribution liabilities[5] (after deducting retakaful recoveries from gross contribution liabilities);

“**net earned *wakalah* fees**” refer to *wakalah* fees received by a licensed takaful operator less change in net expense liabilities[6] (after deducting retakaful recoveries from gross expense liabilities);

“**non-account-based product**” refers to a life insurance/family takaful product other than an account-based product;

“**non-participating life policy**” refers to a life policy not conferring any right to share in the surplus of a life insurance fund;

“**non-proportional reinsurance/retakaful**” refers to reinsurance/retakaful coverage under which the reinsurer/retakaful operator pays all, or a specified percentage, of a loss arising from a particular occurrence or event in excess of a fixed amount and up to a stipulated limit;

“**other reserves**” refer to reserves within shareholders’ equity that are not capital reserves;

“**Participants’ Individual Fund**” or “**PIF**” refers to a takaful fund established to allocate a portion of a takaful participant’s contributions for the purpose of investment or savings;

“**Participants’ Risk Fund**” or “**PRF**” refers to a takaful fund established to pool a portion of a takaful participant’s contributions for the purpose of meeting takaful claims associated with events or risks specified in the takaful certificate;

“**proportional reinsurance/retakaful**” refers to reinsurance/retakaful coverage under which the cedant and the reinsurer/retakaful operator participate proportionately in the premiums/takaful contributions and losses on every risk that comes within the defined scope;

“**senior management**” means the chief executive officer and senior officers of a licensed person;

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[4] Change in premium liabilities is calculated as premium liabilities as at the end of the reporting period less premium liabilities as at the beginning of the year.
[5] Change in contribution liabilities is calculated as contribution liabilities as at the end of the reporting period less contribution liabilities as at the beginning of the year.
[6] Change in expense liabilities is calculated as expense liabilities as at the end of the reporting period less expense liabilities as at the beginning of the year.

"**single premium policy/single takaful contribution certificate**" refers to a policy/takaful certificate where the entire premium/takaful contribution for the policy/takaful certificate is payable at inception;

"**stress-based approach**" refers to the determination of the capital charge for a particular risk based on the impact on assets and/or liabilities due to a shock; and

"**written premiums/contributions**" refer to premiums/takaful contributions received and receivable on policies/takaful certificates written by the licensed person, net of any discounts on premiums/takaful contributions and adjusted for any additional or refunded premiums/takaful contributions, but before deducting commissions and other expenses. These also include premiums/takaful contributions in respect of reinsurance/retakaful accepted.

6. Related legal instruments and policy documents

6.1 This policy document must be read together with other relevant legal intruments and policy documents that have been issued by the Bank, including any amendments or reissuance thereafter, in particular–

(a) Appointed Actuary: Appointment and Duties (BNM/RH/STD 029-5) issued on 28 April 2014;
(b) Appointed Actuary: Appointment and Duties (for reinsurers and retakaful operators) (BNM/RH/STD 029-8) issued on 24 December 2014;
(c) Corporate Governance (BNM/RH/PD 029-9) issued on 3 August 2016;
(d) Financial Reporting (BNM/RH/PD 032-13) issued on 29 April 2022;
(e) Financial Reporting for Takaful Operators (BNM/RH/ED 033-5) issued on 29 April 2022;
(f) Guidelines on Internal Capital Adequacy Assessment Process (ICAAP) for Insurers (BNM/RH/GL/003-29) issued on 28 February 2012;
(g) Internal Capital Adequacy Assessment Process for Takaful Operators (BNM/RH/PD 033-2) issued on 15 April 2016;
(h) Investment-Linked Business (BNM/RH/PD 029-36) issued on 13 February 2023;
(i) Management of Insurance Funds (BNM/RH/PD 032-15) issued on 7 July 2023;
(j) Management of Participating Life Business (BNM/RH/PD 032-1) issued on 10 July 2023;
(k) Medical and Health Insurance/Takaful Business (BNM/RH/PD 029-66) issued on 29 February 2024;
(l) Revised Guidelines on Derivatives for Insurers (BNM/RH/GL 003-26) issued on 21 March 2009;
(m) Shariah Governance (BNM/RH/PD 028-100) issued on 20 September 2019;
(n) Takaful Operational Framework (BNM/RH/PD 033-7) issued on 26 June 2019; and
(o) Universal Life (BNM/RH/PD 032-22) issued on 13 February 2023.

7. Policy documents superseded

7.1 This policy document supersedes the following policy documents:

(a) Risk-Based Capital Framework for Insurers (BNM/RH/PD 032-12) issued on 17 December 2018;

(b) Risk-Based Capital Framework for Takaful Operators (BNM/RH/PD 033-4) issued on 17 December 2018;

(c) Guidelines on Valuation Basis for Liabilities of General Takaful Business (BNM/RH/GL 004-21) issued on 7 January 2011;

(d) Guidelines on Valuation Basis for Liabilities of Family Takaful Business (BNM/RH/GL 004-20) issued on 7 January 2011;

(e) Letter on Specification pursuant to Section 47 of the Financial Services Act 2013 (FSA) and Section 57 of the Islamic Financial Services Act 2013 (IFSA) on Deductions of Reinsurance (RI) or Retakaful (RT) Cessions issued on 20 December 2018;

(f) Letter on Non-Closure of Inactive Claims Files and Specification pursuant to Section 47 of the Financial Services Act 2013 (FSA)/Section 57 of the Islamic Financial Services Act 2013 on Reduction of Case Reserves issued on 16 October 2018; and

(g) Letter on Regulatory Treatment of BNM *Mudarabah* Certificate (BMC) for Licensed Insurers and Licensed Takaful Operators issued on 29 July 2015.

PART B CAPITAL ADEQUACY

8. Formula for capital adequacy ratio

S 8.1 A licensed person must compute the capital adequacy ratio (CAR) at the entity level, which represents the adequacy of total capital available to support total capital required, taking into account the availability of capital in each fund to support other funds (i.e. fungibility of capital).

S 8.2 A licensed person must compute the CAR as follows:

$$\text{CAR} = \frac{\text{TCA}}{\text{TCR}}$$

where,

TCA refers to the total capital available at the entity level, as computed in accordance with the requirement under paragraph 9.2; and

TCR refers to the total capital required at the entity level, as computed in accordance with the requirement under paragraph 16.3.

PART C TOTAL CAPITAL AVAILABLE

9. General requirements

S 9.1 A licensed person must determine the capital available for each fund as the aggregate of Tier 1 and Tier 2 capital, including the regulatory adjustments under paragraph 14, less the deductions under paragraphs 15.1 and 15.3.

S 9.2 A licensed person must determine the total capital available (TCA) at the entity level as the aggregate of the capital available for each fund as computed in paragraph 9.1, less a deduction to reflect the restrictions on fungibility of capital in participating life insurance funds and PRFs as specified in paragraph 15.6.

10. Principles and eligibility criteria for Tier 1 and Tier 2 capital

S 10.1 A licensed person must classify capital instruments into Tier 1 and Tier 2 capital based on the following principles:
(a) available to absorb losses;
(b) has loss absorbing capacity under different scenarios;
(c) subordinated to policy owners/takaful participants and creditors;
(d) demonstrates permanence;
(e) not rendered ineffective by encumbrances; and
(f) not rendered ineffective by mandatory servicing costs.

Principle 1: Available to absorb losses

S 10.2 A licensed person must determine a capital instrument under Tier 1 and Tier 2 capital as available to absorb losses only if the capital instrument has been issued and fully paid-up.

S 10.3 In relation to paragraph 10.2, a licensed person must only consider a capital instrument as fully paid-up if the capital instrument has been received with finality by the licensed person, is reliably valued, is fully under the licensed person's control and does not directly or indirectly expose the licensed person to the credit risk of the investor.

Principle 2: Has loss absorbing capacity under different scenarios

S 10.4 A licensed person must take into consideration the extent of the loss absorbing capacity of a capital instrument as described below in classifying a capital instrument under each tier:
(a) under Tier 1 capital, the capital instrument must have the capacity to fully absorb losses both on a going concern basis and in the event of a winding up; and
(b) under Tier 2 capital, the capital instrument must have the capacity to fully absorb losses in the event of a winding up.

Principle 3: Subordinated to policy owners/takaful participants and creditors

G 10.5 In principle, the highest quality capital instruments are those that are most subordinated as these instruments are the first to absorb losses.

S 10.6 A licensed person must take into account the level of subordination of a capital instrument as described below in classifying a capital instrument under each tier:

(a) under Tier 1 capital, the capital instrument must represent the most subordinated claim and rank *pari passu* with shares in the event of a winding up of the licensed person, where the holder of the capital instrument has a claim on the residual assets that is proportional to its share of the issued share capital after all other claims have been repaid, and that is not subject to a fixed or capped amount; and

(b) under Tier 2 capital, the capital instrument must be subordinated to policy owners/takaful participants and other senior or unsubordinated creditors. In particular, in relation to the priority of claims in the event of a winding up of a licensed takaful operator, upon meeting the liabilities to takaful participants of a takaful fund, any surplus assets of the takaful fund must be used to meet the liabilities of other takaful funds, where necessary, and then for any other purposes as may be prescribed by the Bank[7].

Principle 4: Demonstrates permanence

G 10.7 In principle, the quality of a capital instrument increases with its permanence.

S 10.8 A licensed person must ensure that a capital instrument is able to absorb losses for a sufficiently long period in order for the capital instrument to be available to the licensed person when needed.

S 10.9 A licensed person must take into account the differences in the level of permanence as described below in classifying a capital instrument under each tier:

(a) under Tier 1 capital–
  (i) the capital instrument must be perpetual i.e. must not have a maturity date; and
  (ii) the principal of the capital instrument must not be repaid outside of a winding up, except in the case of discretionary repurchases or other means of effectively reducing capital in a discretionary manner that is allowable under the relevant law[8] and subject to the Bank's prior approval; and

(b) under Tier 2 capital–
  (i) the capital instrument must have an original maturity of at least five years;

[7] Prescribed by the Bank pursuant to section 218 of the IFSA and as per the ruling by the Shariah Advisory Council (SAC) at its 114th and 186th meetings that upon the winding up of a licensed takaful operator, the surplus of a takaful fund is no longer owned by the takaful participants and the licensed takaful operator.

[8] For example, requirements on reduction of share capital under Subdivision 4, Division 1, Part III of the Companies Act 2016.

(ii) the recognition of the capital instrument as Tier 2 capital must be amortised on a straight-line basis over the final five years to maturity[9];

(iii) the licensed person must not create an expectation at the issuance date that the capital instrument will be bought back or cancelled, or that a call will be exercised. In this regard, the capital instrument must not have terms that incentivise the licensed person to redeem the capital instrument such as step-up features (e.g. coupon rate that increases from its initial level at a specified date after issuance);

(iv) any repayment of principal other than through the exercise of a call option (e.g. through repurchase) must be subject to the Bank's prior approval;

(v) the capital instrument must only be callable at the option of the licensed person after at least five years from the issuance date and subject to the Bank's prior approval; and

(vi) the call option must not be exercised unless–

A. the called capital instrument is replaced with a capital instrument of the same or better quality, and the replacement of the capital instrument is done at conditions which are sustainable for the income capacity of the licensed person; or

B. the licensed person demonstrates that its capital position is well above the supervisory solvency intervention levels specified in paragraph 36, after the call option is exercised.

Principle 5: Not rendered ineffective by encumbrances

S 10.10 A licensed person must ensure that a capital instrument under Tier 1 and Tier 2 capital is not–

(a) undermined or rendered ineffective by encumbrances which may restrict the capital instrument's ability to absorb losses; or

(b) subject to any condition that prevents the licensed person from using the capital instrument when needed.

S 10.11 A licensed person must ensure that the priority of claims by policy owners/takaful participants and creditors is not compromised by–

(a) a guarantee or security given by the licensed person or an affiliated entity[10]; or

(b) any other arrangement that legally or economically enhances the seniority of the claim of the holder of the capital instrument.

Principle 6: Not rendered ineffective by mandatory servicing costs

S 10.12 A licensed person must ensure that a capital instrument is not rendered ineffective by servicing requirements such as dividend payments to shareholders, coupon payments and principal repayments. While such servicing requirements are allowable, a licensed person must ensure that such servicing requirements do not hinder the capital instrument's ability to absorb losses.

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[9] For example, for a capital instrument with original term to maturity of 7 years and remaining term to maturity of 2 years, only 40% of the issued amount is eligible to be included in Tier 2 capital.

[10] An affiliated entity refers to a company over which the licensed person exercises control or significant influence.

S 10.13 A licensed person must take into account the extent of the mandatory servicing requirements as described below in classifying a capital instrument under each tier:

(a) under Tier 1 capital, there must be no circumstances under which distributions (e.g. dividend payments) are mandatory, and a licensed person must have full discretion to cancel the distributions. In particular–

(i) distributions are paid out of distributable items (including retained earnings), with the level of distributions not in any way tied or linked to the amount paid-up at issuance and not subject to a contractual cap, except to the extent that the licensed person is unable to pay distributions that exceed the level of distributable items; and

(ii) the non-payment of distributions must not constitute an event of default; and

(b) under Tier 2 capital, mandatory payments such as coupon payments and principal repayments are allowed, but the holder of the capital instrument must not have any rights to accelerate the repayment of future scheduled payments (either coupon or principal), except in the event of a winding up.

S 10.14 A licensed person must ensure that a capital instrument is not subject to any distribution that is linked to the credit standing or financial condition of the licensed person such that the distribution may accelerate a winding up.

11. Tier 1 capital

S 11.1 The capital instruments that shall be classified by a licensed person as Tier 1 capital include, but are not limited to, the following:

(a) ordinary shares (or working fund, in the case of a licensed person that operates as a branch in Malaysia);

(b) non-cumulative irredeemable preference shares;

(c) capital reserves;

(d) accumulated other comprehensive income[11]; and

(e) adjusted retained earnings (including valuation surplus in insurance/takaful funds)[12].

S 11.2 In relation to paragraph 11.1(e), a licensed person must determine the adjusted retained earnings as the sum of–

(a) the retained earnings reported in the regulatory statistical returns; and

(b) the difference between–

(i) the net insurance/takaful contract liabilities[13] reported in the regulatory statistical returns; and

[11] Including fair value through other comprehensive income reserves, revaluation reserves and other reserves.

[12] In the event that the value of the adjusted retained earnings is determined to be negative, a licensed person must not zeroise the adjusted retained earnings.

[13] This refers to the sum of insurance/takaful contract liabilities and reinsurance/retakaful contract liabilities, less the sum of insurance/takaful contract assets and reinsurance/retakaful contract assets, which are determined on a basis consistent with the Malaysian Financial Reporting Standard (MFRS) 17 Insurance Contracts, as reported in the regulatory statistical returns.

(ii) the net insurance/takaful liabilities determined based on the requirements in Part E of this policy document.

12. Tier 2 capital

S 12.1 The capital instruments that shall be classified by a licensed person as Tier 2 capital include, but are not limited to, the following:
(a) cumulative irredeemable preference shares;
(b) mandatory convertible loan stocks and other similar capital instruments[14];
(c) irredeemable subordinated debts;
(d) subordinated term debts; and
(e) *qard* received by the takaful funds.

S 12.2 In relation to paragraph 12.1(d), a licensed person must ensure that the amount of subordinated term debts recognised under the Tier 2 capital at the entity level does not exceed 50% of the Tier 1 capital at the entity level.

S 12.3 A licensed person must ensure that the total amount of Tier 2 capital at the entity level does not exceed the total amount of Tier 1 capital at the entity level.

13. Issuance of new capital instruments

S 13.1 A licensed person must obtain the Bank's written approval prior to the issuance of any new capital instrument[15] and its recognition as Tier 1 or Tier 2 capital under this policy document.

S 13.2 For the purpose of seeking the Bank's approval under paragraph 13.1, a licensed person must submit an application to the Bank together with the following:
(a) a confirmation by the licensed person's chief executive officer that the proposed capital instrument complies with the principles and eligibility criteria set out in paragraph 10;
(b) indicative issue and offering documents (e.g. prospectus, offering circular, pricing supplement, information memorandum, trust deed, loan/financing agreement) and as soon as practicable, the final issue and offering documents; and
(c) in respect of a licensed takaful operator, a confirmation by the Chairman of the Shariah Committee that the proposed capital instrument complies with Shariah requirements, including an explanation of the salient features of the Shariah contract and Shariah-compliant mechanisms used in structuring the capital instrument, as well as related deliberations by the Shariah Committee.

[14] These refer to irredeemable loans stocks or capital instruments which are mandatorily convertible into equity.
[15] New capital instruments refer to capital instruments that are not listed under paragraphs 11.1 and 12.1 such as innovative capital instruments.

S 13.3 In relation to paragraph 13.1, a licensed person must seek the Bank's prior approval for either an individual issuance or an issuance programme[16]. Where an issuance programme is approved by the Bank, a licensed person must notify the Bank prior to any subsequent individual issuances under the approved programme.

S 13.4 A licensed person must ensure that the capital instruments are issued with the approval of its shareholders i.e., either approved directly by the shareholders or, if permitted by law, approved by the board or by other persons duly authorised by the shareholders.

14. Regulatory adjustments

S 14.1 In relation to life insurance/family takaful business, a licensed person must recognise the following as a positive adjustment to the Tier 1 capital of each fund:

(a) for participating life insurance funds and PRFs, 100% of the absolute amount of negative insurance/takaful liabilities (before zeroisation)[17] at the fund level; and

(b) for other insurance funds and the shareholders' fund[18], 50% of the absolute amount of negative insurance/takaful liabilities (before zeroisation) at the fund level.

S 14.2 In relation to general insurance/general takaful business, a licensed person must recognise the following as a positive adjustment to the Tier 1 capital of each fund:

(a) for general insurance/general takaful funds, 75% of the amount of net unearned premium/contribution reserves[19] less net unexpired risk reserves[20] at the fund level, subject to a floor of zero; and

(b) for shareholders' fund of a licensed general takaful operator, 75% of the amount of net unearned *wakalah* fees[21] less net unexpired expense reserves[22] at the fund level, subject to a floor of zero.

15. Deductions

S 15.1 In determining the capital available, a licensed person must deduct the following from the aggregate of Tier 1 and Tier 2 capital:

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[16] Approval of an issuance programme allows subsequent individual issuances under the programme to be recognised as capital available provided that the principles and eligibility criteria under paragraph 10 continue to be met and the licensed person complies with any other condition imposed by the Bank.
[17] Negative insurance/takaful liabilities refer to net insurance/takaful liabilities (including provision of risk margin for adverse deviation (PRAD) and after deducting reinsurance/retakaful recoveries) of the fund that are less than zero, before the zeroisation as set out in paragraph 24.4.
[18] Including liabilities relating to the shareholders' fund of licensed family takaful operators.
[19] After deducting reinsurance/retakaful recoveries.
[20] Including PRAD and after deducting reinsurance/retakaful recoveries.
[21] After deducting reinsurance/retakaful recoveries.
[22] Including PRAD and after deducting reinsurance/retakaful recoveries.

(a) goodwill and other intangible assets[23] (e.g. capital expenditure such as computer software);
(b) deferred tax assets[24];
(c) assets pledged to support credit facilities obtained by the licensed person or for other specific purposes[25];
(d) investments in the licensed person's subsidiaries;
(e) credit facilities granted by the licensed person that are secured by its own shares;
(f) for a licensed life insurer, investments in the licensed life insurer's own investment-linked unit funds exceeding the limit specified in paragraph 9(a), Appendix X of the Policy Document on Investment-Linked Business (BNM/RH/PD 029-36); and
(g) *qard* provided to the takaful funds.

S 15.2 In relation to paragraph 15.1(c), in the case of assets pledged for a repurchase agreement (repo) entered into by a licensed person, the licensed person must deduct the amount of assets pledged exceeding 5% of the TCA from the aggregate of Tier 1 and Tier 2 capital.

S 15.3 In addition to the deductions under paragraph 15.1, a licensed person must deduct the following from the aggregate of Tier 1 and Tier 2 capital, where applicable:
(a) in respect of cessions to (re)insurers/(re)takaful operators other than licensed and qualifying[26] (re)insurers/(re)takaful operators, the amount of reinsurance/retakaful recoveries[27] less the amount of reinsurance/retakaful deposits held by the licensed person, subject to a floor of zero, must be deducted in calculating the capital available of the respective funds; and
(b) for takaful business, where a licensed takaful operator includes future surplus distributions from the PRFs to the shareholders' fund as cash inflows in determining the liabilities relating to the shareholders' fund, without including them as corresponding cash outflows in determining the liabilities relating to the PRFs, the present value of the expected future surplus distributions from the PRFs to the shareholders' fund must be deducted in calculating the capital available of the PRFs.

S 15.4 A licensed person must ensure that assets that are included as deductions under paragraph 15.1 are not subject to any capital charges.

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[23] As defined under the relevant MFRSs. This excludes right-of-use (RoU) assets where the underlying asset being leased is a tangible asset.
[24] Deferred tax asset (DTA) may be netted against its associated deferred tax liability (DTL) only if the DTA and DTL relate to taxes levied by the same taxation authority and offsetting is permitted by the relevant taxation authority. DTLs permitted to be netted against DTAs must exclude DTLs that have been netted against the deduction of goodwill and other intangible assets.
[25] Pursuant to paragraph 14.6 of the Policy Document on Management of Insurance Funds (BNM/RH/PD 032-15) and paragraph 20.5 of the Policy Document on Takaful Operational Framework (BNM/RH/PD 033-7).
[26] As defined in paragraph 12 of **Appendix 5**.
[27] This refers to the difference between gross and net insurance/takaful liabilities (including PRAD).

G 15.5 In relation to paragraph 9.2, only participating life insurance funds and PRFs are subject to restrictions on fungibility of capital. Therefore, the amount of capital available in each participating life fund or PRF that is recognised in the TCA is capped at the capital required for the fund. For all other funds, the entire amount of capital available in each fund is recognised in the TCA.

S 15.6 In relation to paragraph 15.5, a licensed person must determine the deduction for restrictions on fungibility of capital as the sum of the deduction calculated for each participating life insurance fund or PRF as follows:

Deduction for each participating life insurance fund or PRF =
max [Capital available – Capital required , 0]

Question 2
Adjusted retained earnings

For the purpose of determining the retained earnings recognised as Tier 1 capital, the Bank is proposing for licensed persons to leverage on the regulatory statistical returns which are currently undergoing revision to be more in line with the Malaysian Financial Reporting Standard 17 Insurance Contracts (MFRS 17) basis, with adjustment to account for the differences between MFRS 17 valuation basis and the valuation basis set out in this exposure draft, as per paragraph 11.2. This adjustment is to ensure that the amount of retained earnings recognised as Tier 1 capital is reflective of the valuation basis set out in this exposure draft.

(a) Please state whether your company agrees with the proposed approach for determining the adjusted retained earnings. If no, please elaborate with rationale, including any challenges foreseen in deriving the adjustment required under paragraph 11.2(b) and suggestions on any alternatives or simplifications.
(b) Please provide your views on whether there are any other adjustments that need to be made, apart from that required under paragraph 11.2(b), to derive the adjusted retained earnings from the retained earnings under MFRS 17 valuation basis. If yes, please provide details of the adjustments required and suggestions on how these adjustments could be derived.
(c) Please provide your views on whether there are any other items under TCA that are affected by the differences in valuation basis between MFRS 17 and RBC (e.g. deferred tax assets). If yes, please provide details of the affected items and suggestions on how these items could be adjusted to be reflective of the valuation basis set out in this exposure draft.

Question 3
New capital instruments

Please indicate whether your company is considering the issuance of any new capital instruments that are not listed under paragraphs 11.1 and 12.1 but meet the principles and eligibility criteria for recognition as Tier 1 or Tier 2 capital. If yes, please provide details of the instruments, the rationale for their issuance and the proposed classification of these instruments under the RBC framework.

PART D TOTAL CAPITAL REQUIRED

16. General requirements

S 16.1 A licensed person must compute the capital required for each fund, where the target risk level underlying the capital charges broadly corresponds to a Value-at-Risk (VaR) at 99.5% confidence level over a one-year period.

S 16.2 In computing the capital required for each fund, a licensed person must include capital charges for insurance/takaful, market, credit and operational risks as required under paragraphs 18 to 22 taking into account diversification benefits within each risk component and between the risk components as described in paragraph 23.

S 16.3 A licensed person must determine the total capital required (TCR) at the entity level as the aggregate of the capital required for each fund as computed in paragraph 16.2.

17. Management actions

S 17.1 Where a licensed person takes into account the impact of management actions in the valuation of insurance/takaful liabilities as specified in paragraph 28.12, the licensed person must take into account the impact of such management actions in determining the capital charges for life insurance/family takaful (LIFT), market and credit risks.

S 17.2 For the avoidance of doubt, where a licensed person takes into account the impact of management actions referred to in paragraph 28.12(b) in the valuation of insurance/takaful liabilities, the licensed person must take into account the impact of re-pricing of medical and health insurance/takaful (MHIT) contracts only in determining the medical payments risk capital charge.

S 17.3 A licensed person must ensure that the recognition of management actions in determining the capital charges for each (sub-)risk is in accordance with the requirements under paragraphs 28.13 to 28.15.

S 17.4 In addition to the requirement under paragraph 28.16, a licensed person must also provide in the Risk-Based Capital (RBC) report[28] the amount of the impact of management actions[29] recognised in TCA and TCR.

S 17.5 Where a licensed takaful operator includes future surplus distributions from the PRFs to the shareholders' fund as cash inflows in determining the liabilities relating to the shareholders' fund, the licensed takaful operator must take into account the impact of reduced future surplus distributions from the PRFs to the shareholders' fund after applying the specified stresses in determining the capital charges for LIFT, market and credit risks for the shareholders' fund.

[28] Refer to the requirement under paragraph 37.4.
[29] For the avoidance of doubt, changes to terminal bonus for participating life contracts sold on or after 1 July 2005 are not considered as management action.

Question 4
Recognition of management actions in insurance/takaful liabilities and TCR

The Bank is proposing to allow the recognition of the impact of bonus revisions and MHIT re-pricing in both the valuation of insurance/takaful liabilities and the determination of capital charges for LIFT, market and credit risks, subject to the criteria specified in paragraph 28.13.

(a) Please state whether your company agrees with the proposed criteria for recognising the impact of management actions. If no, please elaborate with rationale, including any challenges foreseen in meeting these criteria.
(b) Please provide your feedback on any challenges foreseen in reporting the quantum of the impact of management actions on TCA (arising from the recognition of management actions in the insurance/takaful liabilities) and TCR (arising from the recognition of management actions in the relevant capital charges) as required by paragraph 17.4.

Question 5
Recognition of bonus revisions

The Bank is considering to cap the overall impact of bonus revisions recognised in the capital required for participating life insurance funds to reflect the maximum plausible effect of this management action at the fund level. This may be operationalised by limiting the reduction in capital required for each participating life insurance fund based on the impact of bonus revisions under a scenario of simultaneous stresses for LIFT, market and credit risks where the scenario is determined by the licensed person to reflect the target risk level corresponding to VaR at 99.5% confidence level over a one-year period.

(a) Please state whether your company agrees with the proposed approach. If you would like to suggest any alternatives or simplifications (for example, limiting the reduction in capital required based on the present value of expected future surplus distributions to policy owners and shareholders captured in the net central estimate liabilities, or not applying a cap on the recognition of the overall impact of bonus revisions), please elaborate with rationale.
(b) Please explain how your company would develop the scenario of simultaneous stresses, including how the stresses for each (sub-)risk would be calibrated.

18. Capital charges for insurance/takaful risk

S 18.1 A licensed person must compute the capital charges for insurance/takaful risk for each of the following sub-risks as defined in **Table 1**:
(a) mortality risk;
(b) longevity risk;
(c) morbidity/disability risk;
(d) medical payments risk;
(e) lapse risk;

(f) expense risk;
(g) claims risk;
(h) premium/contribution risk; and
(i) catastrophe risk.

Table 1: Definitions of insurance/takaful sub-risks

Sub-risk	Definition
Mortality	Risk of loss due to unexpected increase in mortality rates.
Longevity	Risk of loss due to unexpected decrease in mortality rates.
Morbidity/disability	Risk of loss due to unexpected increase in morbidity/disability rates. This includes events that are caused by accident and sickness, including critical illness. However, this does not include events involving reimbursement of medical costs, which are covered under medical payments risk.
Medical payments	Risk of loss due to unexpected increase in the level of medical payments for MHIT products[30] that provide medical reimbursement benefits. This excludes other MHIT products such as those providing fixed benefit payouts for incidence of critical illness, and hospital income, which are captured under morbidity/disability risk.
Lapse	Risk of loss due to unexpected changes in the exercise rates of policy/takaful certificate options, including but not limited to, lapses, forfeitures, surrenders, renewals, terminations, partial withdrawals and premium/takaful contribution holidays. This includes consideration of mass lapse event.
Expense	Risk of loss due to unexpected increase in the level of expenses and expense inflation rate. For takaful business, this risk is borne by the shareholders' fund.
Claims	Risk of loss due to unexpected changes in the expected future payments for claim events that have already occurred, whether or not they have been reported.
Premium/ contribution	Risk of loss due to unexpected changes in the timing, frequency and severity of future claim events.
Catastrophe	Risk of loss due to low frequency and high severity claim events, such as pandemic and flood.

S 18.2 A licensed person must apply the capital charges for LIFT risk specified in **Table 2** in respect of the following:
(a) Life insurance/family takaful contracts; and
(b) MHIT and personal accident (PA) contracts (including those underwritten by a licensed general insurer/general takaful operator) that are valued using the methodology typically used to value the insurance/takaful liabilities of life insurance/family takaful contracts as referred to in paragraph 28.19(a).

[30] The term "MHIT products" is defined in the Policy Document on Medical and Health Insurance/Takaful Business (BNM/RH/PD 029-66).

S 18.3 A licensed person must apply the capital charges for general insurance/general takaful (GIGT) risk specified in **Table 2** in respect of the following:
(a) General insurance/general takaful contracts; and
(b) MHIT and PA contracts (including those underwritten by a licensed life insurer/family takaful operator) that are valued using the methodology typically used to value the insurance/takaful liabilities of general insurance/general takaful contracts as referred to in paragraph 28.19(b).

Table 2: Components of insurance/takaful risk

Sub-risk	LIFT risk	GIGT risk
Mortality	/	
Longevity	/	
Morbidity/disability	/	
Medical payments	/[31]	
Lapse	/	
Expense	/	/[32]
Claims		/
Premium/contribution		/
Catastrophe	/[33]	/[34]

S 18.4 A licensed person must split the claims and premium/contribution risk exposures under GIGT risk according to the classes of business set out in **Appendix 3**.

S 18.5 A licensed person must compute the insurance/takaful risk capital charges according to the measurement approaches set out in **Table 3**.

Table 3: Measurement approaches for insurance/takaful sub-risks

Sub-risk	Stress-based approach	Factor-based approach	Other approach
Mortality	/		
Longevity	/		
Morbidity/disability	/		
Medical payments	/		
Lapse	/		
Expense	/ (for LIFT risk)	/ (for GIGT risk)	
Claims		/	
Premium/contribution		/	
Catastrophe	/ (for LIFT risk)	/ (for GIGT risk)	/ Catastrophe model (for GIGT risk)

[31] Applicable only to MHIT contracts that provide medical reimbursement benefits.
[32] Applicable to takaful contracts only.
[33] Further details on applicability provided in paragraph 15 of **Appendix 1**.
[34] Further details on applicability provided in paragraph 11 of **Appendix 2**.

Capital charges for LIFT risk

S 18.6 A licensed person must determine the capital charges for insurance/takaful sub-risks under LIFT risk specified in **Table 2** by applying the stresses specified in **Appendix 1**, taking into account the impact of management actions referred to in paragraph 17.

Capital charges for GIGT risk

S 18.7 A licensed person must determine the capital charges for insurance/takaful sub-risks under GIGT risk specified in **Table 2** by applying the factors and exposure measures specified in paragraphs 1 to 10 of **Appendix 2**, with the exception of the capital charge for catastrophe risk which must be determined in accordance with paragraph 18.8.

S 18.8 A licensed person must determine the capital charge for catastrophe risk in accordance with paragraphs 11 to 19 of **Appendix 2**.

Question 6

Premium/contribution risk for long-term fire and long-term MHIT contracts

In order to capture the long-term exposures arising from long-term fire and long-term MHIT contracts, the Bank is proposing an adjustment to the premium/contribution risk exposure for these contracts by including the present value of expected future net earned premiums/contributions as specified in paragraph 4(b) of **Appendix 2**, multiplied by an adjustment factor as specified in paragraph 5 of **Appendix 2** to reflect the expected future claims for these contracts.

The adjustment factors for long-term fire and long-term MHIT contracts are differentiated to reflect the (in)ability to re-price these contracts, with a higher adjustment factor proposed for long-term fire contracts which are typically single premium policies/single takaful contribution certificates.

(a) Please state whether your company agrees with the proposed adjustment to the premium/contribution risk exposure for long-term fire and long-term MHIT contracts. If no, please elaborate with rationale, including any challenges foreseen in deriving the present value of expected future net earned premiums/contributions for these contracts and suggestions on any alternatives or simplifications.

(b) Please state whether your company agrees with the proposed adjustment factors for long-term fire and long-term MHIT contracts. If you would like to suggest alternatives, please elaborate with rationale.

(c) Please provide your views on whether a similar adjustment should be applied to the premium/contribution risk exposure for other long-term general insurance/general takaful contracts[35]. If yes, please elaborate with rationale and details of the features of the other long-term general insurance/general takaful contracts.

[35] Long-term general insurance/general takaful contracts refer to general insurance/general takaful contracts with policy/takaful certificate term of more than one year.

[Additional data required (for input in QIS 2 template): Amount of net earned premiums/contributions for long-term general insurance/general takaful contracts by class of business]

Question 7

Insurance/takaful risk (other than catastrophe risk) for reinsurance/retakaful business

Under the existing Policy Documents on Risk-Based Capital Framework for Insurers (BNM/RH/PD 032-12) and Risk-Based Capital Framework for Takaful Operators (BNM/RH/PD 033-4) (hereinafter collectively referred to as the “existing RBC framework”), general reinsurance/general retakaful business is subject to the same claims and premium/contribution risk factors as general insurance/general takaful business. In view that non-proportional reinsurance/retakaful business is exposed to higher risk of uncertainty, the Bank is proposing to differentiate the risk factors for non-proportional reinsurance/retakaful business by applying higher claims and premium/contribution risk factors as specified in **Table 1** of **Appendix 2**.

(a) Please state whether your company agrees with the differentiated claims and premium/contribution risk factors for non-proportional reinsurance/retakaful business. If you are of the view that the current approach of applying the same risk factors as per the existing RBC framework should be retained, please elaborate with rationale.

(b) Please state whether your company agrees with applying a single risk factor across all classes of business in calculating the claims and premium/contribution risk capital charges for non-proportional reinsurance/retakaful business. If you are of the view that the claims and premium/contribution risk factors for non-proportional reinsurance/retakaful business should be further differentiated, please provide details, including suggestions on the level of differentiation that could be applied (for example, by class of business) and rationale.

(c) Please provide your views on whether there is merit to also apply differentiated claims and premium/contribution risk factors for proportional reinsurance/retakaful business. If yes, please elaborate with rationale, including suggestions on how the risk factors for proportional reinsurance/retakaful could be differentiated.

(d) For life reinsurance/family retakaful business, please provide your views on whether there is merit to apply differentiated stresses for LIFT risk (e.g. mortality, morbidity/disability) for non-proportional life reinsurance/family retakaful business. If yes, please elaborate with rationale, including suggestions on how the stresses for non-proportional life reinsurance/family retakaful business could be differentiated.

[Additional data required (for input in QIS 2 template): Breakdown of exposures for claims and premium/contribution risks for non-proportional general reinsurance/general retakaful business by class of business]

Question 8
Catastrophe risk for general insurance/general takaful business – Flood peril for business within Malaysia

The Bank is considering to allow the use of catastrophe model to determine the catastrophe risk capital charge for flood peril for business within Malaysia, subject to the safeguards set out in paragraph 16 of **Appendix 2**. However, in order to allow sufficient time for a licensed general insurer/general takaful operator to put in place the required safeguards, the Bank is proposing a three-year monitoring period during which the licensed general insurer/general takaful operator can continue to use its catastrophe model to determine the catastrophe risk capital charge. Thereafter, if the Bank assesses that the required safeguards have not been met, the licensed general insurer/general takaful operator must use a factor-based approach, as set out in paragraph 14(b) of **Appendix 2**, to determine the catastrophe risk capital charge until the safeguards have been met.

(a) Please specify whether your company intends to use a catastrophe model to determine the catastrophe risk capital charge for flood peril for business within Malaysia, including whether your company already has access to the catastrophe model.
(b) If your company intends to use a catastrophe model, for each of the required safeguards, please specify whether your company already has the safeguard in place. If no,
    (i) Please provide the expected timeframe (in months) required to have the safeguard in place; and
    (ii) Please provide your feedback on any challenges foreseen in implementing the safeguard.
(c) If your company does not intend to use a catastrophe model, please elaborate on the rationale for this.
(d) Please state whether your company agrees with the proposed risk factor and exposure measure for the factor-based approach. If you would like to suggest any alternatives, please elaborate with rationale.

[Additional data required (for input in QIS 2 template): For exposure to flood peril for business within Malaysia, the gross aggregate limit for insurance/takaful contracts that are exposed to the peril, the sum insured/covered for classes of business that are exposed to the peril, and the 99.5th percentile and the mean of the total annual net losses derived from a catastrophe model, where available]

Question 9
Catastrophe risk for general insurance/general takaful business – Other material perils

The Bank is proposing a factor-based approach as set out in paragraph 15 of **Appendix 2** to determine the catastrophe risk capital charge for any other perils that a licensed person has material exposure to (including flood peril for business outside Malaysia).

Please state whether your company agrees with the proposed factor-based approach as well as the proposed risk factors and exposure measures for determining the catastrophe risk capital charges for other material perils. If you would like to suggest any alternatives (e.g. use of catastrophe model), please elaborate with rationale.

[Additional data required (for input in QIS 2 template): For exposure to other material perils, separately for business within Malaysia and business outside Malaysia, the gross aggregate limit for insurance/takaful contracts that are exposed to the peril, the sum insured/covered for classes of business that are exposed to the peril, and the 99.5th percentile and the mean of the total annual net losses derived from a catastrophe model, where available]

19. Capital charges for market risk

S 19.1 A licensed person must compute the capital charges for market risk for each of the following sub-risks as defined in **Table 4**:
(a) interest/profit rate risk;
(b) non-default spread risk;
(c) equity risk;
(d) property risk;
(e) currency risk; and
(f) asset concentration risk.

Table 4: Definitions of market sub-risks

Sub-risk	Definition
Interest/profit rate	Risk of loss due to unexpected changes in the level or volatility of interest/profit rates.
Non-default spread	Risk of loss due to unexpected changes in the level or volatility of spreads over the risk-free interest/profit rates, excluding the default component.
Equity	Risk of loss due to unexpected changes in the level or volatility of market prices of equities.
Property	Risk of loss due to unexpected changes in the level or volatility of market prices of properties or in the amount and timing of cash flows from investments in properties.
Currency	Risk of loss due to unexpected changes in the level or volatility of exchange rates.
Asset concentration	Risk of loss due to the lack of diversification in the asset portfolio.

Capital charges for market sub-risks other than asset concentration risk

S 19.2 A licensed person must determine the capital charges for market sub-risks referred to in paragraphs 19.1(a) to 19.1(e) using a stress-based approach as specified in paragraphs 1 to 24 of **Appendix 4**.

S 19.3 In determining the market risk capital charges for life insurance/family takaful business, a licensed person must take into consideration the impact of the specified stresses on the value of both assets and liabilities including–

(a) the increase in net central estimate insurance/takaful liabilities of investment-linked operating fund and PRFs after applying the specified stresses to the assets in investment-linked unit funds and PIFs[36]; and
(b) the impact of management actions as specified in paragraph 17.

S 19.4 In determining the market risk capital charges for general insurance/general takaful business, a licensed person must take into consideration the following:
(a) for interest/profit rate risk, the impact of the specified stresses on the value of both assets and liabilities; and
(b) for other market sub-risks, the impact of the specified stresses only on the value of assets[37].

Capital charge for asset concentration risk

S 19.5 A licensed person must determine the capital charge for asset concentration risk using a factor-based approach as specified in paragraphs 25 to 31 of **Appendix 4**[38].

Question 10
Interest/profit rate risk

In line with the proposed requirement for discounting to be applied to all insurance/takaful contracts, the Bank is proposing for the interest/profit rate risk capital charge to be calculated using a stress-based approach by applying relative upward and downward stresses on the risk-free yield curve and determining the impact of these stresses on both assets and liabilities.

(a) Please describe how your company intends to recalculate the value of the asset exposures that are sensitive to changes in interest/profit rates using the base and stressed risk-free yield curves as required by paragraph 2 of **Appendix 4**, including any challenges foreseen in recalculating the value and any suggestions on simplifications that could be applied.
(b) For asset and liability cash flows denominated in foreign currencies (i.e. currencies other than Malaysian Ringgit:
(i) Please state whether your company agrees with applying the proposed stresses in **Table 2** of **Appendix 4** for all foreign currencies. If you would like to suggest alternatives, please provide details with rationale.
(ii) Please provide your feedback on any challenges foreseen in determining the interest/profit rate risk capital charges for foreign currency-denominated assets and liabilities. If you would like to suggest any alternatives or simplifications, please elaborate with rationale.

[36] For example, due to a reduction in expected future cash inflows (e.g. fees) from the investment-linked unit funds to the investment-linked operating fund. For the avoidance of doubt, assets in investment-linked unit funds and PIFs are not subject to market risk capital charges.
[37] This is akin to the use of factor-based approach to determine the market risk capital charges.
[38] For the avoidance of doubt, a licensed person must continue to comply with the limit on investments in foreign assets set out in paragraph 1(d), Appendix III of the existing Policy Documents on Risk-Based Capital Framework for Insurers (BNM/RH/PD 032-12) and Risk-Based Capital Framework for Takaful Operators (BNM/RH/PD 033-4) until such time that the Bank reviews this requirement.

Question 11
Hybrid securities

The Bank is proposing to retain the current treatment of hybrid securities (e.g. convertible bonds/sukuk, preference shares, subordinated debt, perpetual bonds/sukuk) as per the existing RBC framework, where a licensed person may classify these instruments as either debt or equity depending on whether the instruments behave like debt securities or equities respectively. An alternative approach is to standardise the treatment by subjecting these instruments to equity risk capital charges that are differentiated by the rating category of the counterparty, similar to the ICS.

Please state whether your company agrees to retain the current treatment. If you would like to suggest any alternative approach such as that mentioned above, please elaborate with rationale.

[Additional data required (for input in QIS 2 template): Amount of exposure to different types of hybrid securities]

Question 12
Asset concentration risk – Excess exposures

Based on the feedback to the Discussion Paper on Risk-Based Capital Framework for Insurers and Takaful Operators (Framework Design) (BNM/RH/DP 029-3) issued on 30 June 2021, the industry is supportive of differentiating the asset concentration risk capital charge based on the degree of concentration in exposures to an asset class or counterparty in order to improve its risk sensitivity. In this regard, the Bank is proposing to differentiate the thresholds for determining excess exposures and the risk factors for determining the asset concentration risk capital charge between immovable properties and other assets, and for other assets, based on the rating category of the counterparties.

(a) Please provide your feedback on any challenges foreseen in determining the excess exposures for single immovable properties and single name exposures as specified in paragraphs 27 and 28 of **Appendix 4** respectively. If you would like to suggest any alternatives or simplifications, please provide details with rationale.

(b) Please provide your feedback on any challenges foreseen in determining the rating category of each single name exposure as specified in paragraph 29 of **Appendix 4**. If you would like to suggest any alternatives or simplifications, please provide details with rationale.

(c) Please describe how your company intends to apportion the excess exposures at entity level to each fund as required by paragraph 30 of **Appendix 4**, including any challenges foreseen in apportioning the excess exposures and any suggestions on simplifications that could be applied.

Question 13
Asset concentration risk – Scope

Under the existing RBC framework, exposures arising from transactions relating to insurance/takaful contracts[39] and business outside Malaysia are not subject to the specified investment and individual counterparty limits and hence, excluded from the calculation of the asset concentration risk capital charge. However, in order to improve risk sensitivity, the Bank is proposing for these exposures to be included in the calculation of the excess exposures and hence, subject to the asset concentration risk capital charge.

Please state whether your company agrees with the proposed inclusion of these additional exposures in the calculation of the asset concentration risk capital charge. If you are of the view that the current treatment should be retained, please elaborate with rationale.

20. Capital charges for credit risk

S 20.1 A licensed person must compute the capital charges for credit risk. Credit risk refers to the risk of loss resulting from asset defaults, related losses of income and the inability or unwillingness of a counterparty to fully meet its contractual financial obligations. Credit risk includes migration risk and spread risk due to defaults.

S 20.2 A licensed person must determine the capital charges for credit risk using a stress-based approach by applying the stresses specified in **Appendix 5**.

S 20.3 In determining the credit risk capital charges for life insurance/family takaful business, a licensed person must take into consideration the impact of the specified stresses on the value of both assets and liabilities including–

(a) the increase in net central estimate insurance/takaful liabilities of investment-linked operating fund and PRFs after applying the specified stresses to the assets in investment-linked unit funds and PIFs[40]; and
(b) the impact of management actions as specified in paragraph 17.

S 20.4 In determining the credit risk capital charges for general insurance/general takaful business, a licensed person must take into consideration the impact of the specified stresses only on the value of assets[41].

[39] Such as reinsurance/retakaful assets and receivables, and outstanding contributions.
[40] For example, due to a reduction in expected future cash inflows (e.g. fees) from the investment-linked unit funds to the investment-linked operating fund. For the avoidance of doubt, assets in investment-linked unit funds and PIFs are not subject to credit risk capital charges.
[41] This is akin to the use of factor-based approach to determine the credit risk capital charges.

Question 14
Credit exposures to reinsurers/retakaful operators

In calculating the credit risk capital charge for exposures to reinsurers/retakaful operators, the Bank is proposing to include expected reinsurance/retakaful recoveries recognised in the insurance/takaful risk capital charges as an additional exposure, as per paragraph 10(c) of **Appendix 5**. This is to capture the risk of reinsurers/retakaful operators not being able to fulfil their obligations to the licensed person in the event of unexpected losses.

Please provide your views on any potential challenges in determining and splitting the additional exposure based on the exposures' rating category and maturity. If you would like to suggest any alternatives or simplifications, please provide details with rationale.

Question 15
Credit exposures to foreign national governments and central banks

Under the existing RBC framework, the credit risk capital charge applied on exposures to foreign national governments and central banks (i.e. other than the Federal Government of Malaysia and the Bank) is differentiated between G10 and non-G10 countries. However, in order to improve risk sensitivity to this category of exposures, the Bank is proposing to further differentiate the capital charge for these exposures based on the sovereign rating and maturity of the exposure, by applying the capital charge for public sector entities.

Please state whether your company agrees with the proposed capital treatment for foreign national governments and central banks. If you would like to suggest any alternatives, please provide details with rationale.

Question 16
Collateral – Haircut

The Bank is proposing for the haircut for an eligible collateral to be equal to the specified stress for credit or equity risk capital charges based on the type of instrument used as collateral, as set out in paragraph 30 of **Appendix 5**. This is to ensure coherence between the treatment of collateral and the application of capital charges.

(a) Please indicate whether your company currently recognises any eligible collaterals as credit risk mitigant to reduce the credit risk capital charge. If yes, please provide details of the collateral used.
(b) Please state whether your company agrees with the proposed approach for determining the haircut for eligible collateral. If you would like to suggest any alternatives, please elaborate with rationale.

[Additional data required (for input in QIS 2 template): Market value of eligible collaterals, if any]

21. Look-through approach for market and credit risks

S 21.1 A licensed person must adopt one of the following three approaches in determining the market and credit risk capital charges for indirect investment exposures including collective investment schemes (CISs)[42], structured products and investment accounts:
(a) full look-through approach;
(b) mandate-based look-through approach; or
(c) fall-back approach.

Full look-through approach

S 21.2 A licensed person must adopt the full look-through approach using the actual allocation of the underlying exposures as at the reporting date when the following conditions are met:
(a) there is frequent and sufficient information provided to the licensed person regarding the underlying exposures of the indirect investment. In this regard, the frequency of the financial reporting of the indirect investment must be the same as, or more frequent than, the RBC reporting[43] of the licensed person, and the granularity of the information must be sufficient for the licensed person to calculate the corresponding market and credit risk capital charges; and
(b) the information on the underlying exposures is verified by an independent third party[44].

S 21.3 Under the full look-through approach, a licensed person must determine the market and credit risk capital charges in accordance with paragraphs 19 and 20 respectively by applying the specified stresses to the underlying exposures of the indirect investment.

G 21.4 For indirect investments with exposures in debt securities, a licensed person may treat the underlying debt securities which are of the same currency as a single debt security and determine the market and credit risk capital charges based on the weighted average of the maturities and rating categories of the debt securities.

Mandate-based look-through approach

S 21.5 When the conditions under paragraph 21.2 are not met for a licensed person to adopt the full look-through approach, the licensed person must adopt the mandate-based look-through approach using the information contained in the investment mandate of the indirect investment, where feasible.

[42] CISs refer to investments in any arrangements made for the purpose, or having the effect, of providing facilities for the licensed person to participate in or receive profits or income arising from the acquisition, holding, management or disposal of securities or any other assets, or sums paid out of such profits or income. These include unit trust funds, exchange-traded funds, real estate investment trusts (REITs), wholesale funds and investments in the licensed person's own investment-linked unit funds.
[43] Refer to the requirement under paragraph 37.
[44] The verification may be done by a trustee or a custodian. An external audit is not necessarily required for the verification.

S 21.6 Under the mandate-based look-through approach, a licensed person must determine the market and credit risk capital charges in accordance with paragraphs 19 and 20 respectively. In this regard, the licensed person must apply the specified stresses to the underlying exposures of the indirect investment assuming that the underlying exposures are allocated in exposures attracting the highest capital charges, to the maximum extent allowed under the investment mandate, and then progressively in exposures attracting the next highest capital charges until the entire market value of the indirect investment has been allocated.

Fall-back approach

S 21.7 Where neither the full look-through approach nor the mandate-based look-through approach is feasible, a licensed person must adopt the fall-back approach. Under this approach, the licensed person must classify the indirect investment as other equity exposures and apply the stress used to determine the equity risk capital charge for other equity exposures specified in item (d) in **Table 3** of **Appendix 4** to the entire market value of the indirect investment.

Question 17
Look-through approach

The proposed use of full look-through approach aims to ensure that the market and credit risk capital charges for indirect investments appropriately reflect the risk profile of the underlying exposures and are determined in a manner consistent with direct investments. However, taking into consideration the different levels of granularity and frequency of information that a licensed person receives in relation to the underlying exposures of indirect investments, where the licensed person is unable to adopt a full look-through approach, the Bank is proposing for the licensed person to adopt the mandate-based look-through approach, and finally the fall-back approach if both full and mandate-based approaches are not feasible.

Please state whether your company agrees with the proposed approaches. If no, please elaborate with rationale, including any challenges foreseen in adopting the approaches and suggestions on any alternatives or simplifications.

Question 18
Structured products

Please provide your feedback on any challenges foreseen in adopting the proposed full and mandate-based look-through approaches specifically for investments in structured products. If you would like to suggest any alternatives or simplifications, please provide details with rationale.

22. Capital charges for operational risk

S 22.1 A licensed person must compute the capital charges for operational risk. Operational risk refers to the risk of loss arising from inadequate or failed internal processes, people and systems, or from external events, and includes legal risk[45]. For takaful business, operational risk also includes Shariah non-compliance risk[46] and failure by a licensed takaful operator in executing its fiduciary duties[47].

S 22.2 A licensed life insurer must ensure that the operational risk capital charges for participating life business are borne by the shareholders' fund.

S 22.3 A licensed takaful operator must ensure that the operational risk capital charges are borne by the shareholders' fund.

S 22.4 A licensed person must calculate the operational risk capital charges using a factor-based approach as specified in **Appendix 6**.

Question 19
Exposure measure for account-based products

The Bank is considering the use of management expenses as the proxy for operational risk exposure for account-based products.

Please provide your views on whether management expenses would adequately represent the exposure to operational risk for account-based products. If you would like to suggest any alternatives (for example, premiums/takaful contributions and/or insurance/takaful liabilities, similar to the proxies for non-account-based products), please elaborate with justifications.

[Additional data required (for input in QIS 2 template): Amount of gross weighted premiums/contributions and gross central estimate insurance/takaful liabilities for account-based products]

23. Aggregation

S 23.1 A licensed person must determine the capital required for each fund by aggregating the capital charges for each risk component, taking into account the diversification benefits within each risk component and between the risk components, as described in paragraphs 23.2 to 23.5.

[45] Legal risk includes, but is not limited to, exposure to fines, penalties or punitive damages resulting from supervisory actions as well as private settlements.
[46] The term "Shariah non-compliance risk" is defined in the Policy Document on Shariah Governance (BNM/RH/PD 028-100).
[47] Failure in executing fiduciary duties refers to the failure of a licensed takaful operator to carry out the duties (*amanah*) that it is authorised to perform towards the takaful participants.

S 23.2 A licensed person must calculate the capital charge for LIFT risk, excluding catastrophe risk, for each fund by aggregating the capital charges for each sub-risk as follows:

$$\text{LIFT risk capital charge for each fund} = \sqrt{\left(\text{LIFT}_i\,,\,\dots\,,\,\text{LIFT}_j\right) \times \begin{bmatrix} \text{Corr}_{ii} & \cdots & \text{Corr}_{ij} \\ \vdots & \ddots & \vdots \\ \text{Corr}_{ji} & \cdots & \text{Corr}_{jj} \end{bmatrix} \times \left(\text{LIFT}_i\,,\,\dots\,,\,\text{LIFT}_j\right)^T}$$

where,

LIFT_i refers to capital charge for sub-risk *i* under LIFT risk as set out in paragraphs 18.1(a) to 18.1(f), i.e. excluding catastrophe risk; and

Corr_{ij} refers to correlation coefficient between sub-risk *i* and sub-risk *j* as set out in the correlation matrix in paragraph 1 of **Appendix 7**.

S 23.3 A licensed person must calculate the capital charge for GIGT risk, excluding catastrophe risk, for each fund by aggregating the capital charges for each sub-risk as follows:

$$\text{GIGT risk capital charge for each fund} = \sqrt{\left(\text{GIGT}_i\,,\,\dots\,,\,\text{GIGT}_j\right) \times \begin{bmatrix} \text{Corr}_{ii} & \cdots & \text{Corr}_{ij} \\ \vdots & \ddots & \vdots \\ \text{Corr}_{ji} & \cdots & \text{Corr}_{jj} \end{bmatrix} \times \left(\text{GIGT}_i\,,\,\dots\,,\,\text{GIGT}_j\right)^T}$$

where,

GIGT_i refers to capital charge for sub-risk *i* under GIGT risk as set out in paragraphs 18.1(f) to 18.1(h), i.e. excluding catastrophe risk; and

Corr_{ij} refers to correlation coefficient between sub-risk *i* and sub-risk *j* as set out in the correlation matrix in paragraph 2 of **Appendix 7**.

S 23.4 A licensed person must calculate the capital charge for market risk for each fund by aggregating the capital charges for each sub-risk as follows:

$$\text{Market risk capital charge for each fund} = \sqrt{\left(\text{Market}_i\,,\,\dots\,,\,\text{Market}_j\right) \times \begin{bmatrix} \text{Corr}_{ii} & \cdots & \text{Corr}_{ij} \\ \vdots & \ddots & \vdots \\ \text{Corr}_{ji} & \cdots & \text{Corr}_{jj} \end{bmatrix} \times \left(\text{Market}_i\,,\,\dots\,,\,\text{Market}_j\right)^T}$$

where,

Market_i refers to capital charge for sub-risk *i* under market risk as set out in paragraphs 19.1(a) to 19.1(f); and

$Corr_{ij}$ refers to correlation coefficient between sub-risk *i* and sub-risk *j* as set out in the correlation matrix in paragraph 3 of **Appendix 7**.

S 23.5 A licensed person must calculate the capital required for each fund by aggregating the capital charges for LIFT, GIGT, catastrophe, market, credit and operational risks as follows:

$$\text{Capital required for each fund} = \sqrt{\left(Risk_i , \ldots , Risk_j\right) \times \begin{bmatrix} Corr_{ii} & \cdots & Corr_{ij} \\ \vdots & \ddots & \vdots \\ Corr_{ji} & \cdots & Corr_{jj} \end{bmatrix} \times \left(Risk_i , \ldots , Risk_j\right)^T} + ORCC$$

where,

$Risk_i$ refers to capital charge for risk *i*, including catastrophe risk but excluding operational risk;

$Corr_{ij}$ refers to correlation coefficient between risk *i* and risk *j* as set out in the correlation matrix in paragraph 4 of **Appendix 7**; and

ORCC refers to capital charge for operational risk.

Question 20
Correlation matrices

The Bank is proposing to use correlation matrices to aggregate the capital requirements, allowing for diversification benefits within and between risks in each fund.

Please state whether your company agrees with the proposed aggregation approach and correlation coefficients. If you would like to suggest an alternative approach or alternative correlation coefficients, please elaborate with justifications, including details of the analysis performed to support the suggested approach and/or correlation coefficients.

PART E VALUATION OF INSURANCE/TAKAFUL LIABILITIES

24. General requirements

S 24.1 A licensed person must determine the insurance/takaful liabilities to ensure that adequate funds are available to meet all contractual obligations as they fall due.

S 24.2 In relation to paragraph 24.1, a licensed person must ensure that the insurance/takaful liabilities consist of–
(a) central estimate liabilities; and
(b) provision of risk margin for adverse deviation (PRAD).

S 24.3 A licensed person must determine the central estimate liabilities and PRAD separately for–
(a) the expired portion of risk, which relates to all claim events that have already occurred before or at the valuation date, whether already reported (hereinafter referred to as "case reserves") or not reported (hereinafter referred to as "incurred but not reported (IBNR) reserves"), where the obligations to meet the cash flows arising from these claim events have not been extinguished; and
(b) the unexpired portion of risk, which relates to future claim events that are expected to occur after the valuation date and within the contract boundary[48].

S 24.4 A licensed person must ensure that the value of the net insurance/takaful liabilities (i.e. after deducting reinsurance/retakaful recoveries) at the fund level is not less than zero.

25. Data and information used for valuation

S 25.1 A licensed person must have in place internal policies, processes and procedures to ensure that the data used for the valuation of insurance/takaful liabilities is appropriate, credible, accurate and complete.

S 25.2 A licensed person must ensure that adequate checks are carried out to assess the appropriateness, credibility, accuracy and completeness of the data.

S 25.3 In assessing the appropriateness of the data used for the valuation of insurance/takaful liabilities, a licensed person must ensure that, at minimum–
(a) the data is adequate to support the application of valuation methodologies and the determination of assumptions;
(b) the data provides a sufficient level of granularity to enable an assessment of the underlying risks of the insurance/takaful contracts; and
(c) the data from different time periods are used consistently.

[48] As determined in paragraph 27.

S 25.4 In the event that there is any reason to believe that the data may not be appropriate, credible, accurate and/or complete, a licensed person must ascertain whether the use of such data may produce material biases in the valuation results. In such circumstances, the appointed actuary must apply professional judgement and make adjustments or allowances in his/her estimations, where deemed necessary.

G 25.5 Adjustments to the data may also be made by a licensed person to account for abnormal items (e.g. large losses, catastrophe losses).

S 25.6 Where any adjustments or allowances as set out in paragraphs 25.4 and 25.5 are made, a licensed person must clearly document in the RBC report[49], at minimum, the following information:
(a) description of the data limitations;
(b) impact of the data limitations in carrying out the valuation;
(c) description of the adjustments or allowances made to address the data limitations; and
(d) rationale for the adjustments or allowances made.

S 25.7 Where external data such as industry data is used, a licensed person must be able to demonstrate knowledge of the source of the external data and the methodology and assumptions adopted to process the external data.

S 25.8 A licensed person must clearly document in the RBC report[50] the use of any external data and include, at minimum, the following information:
(a) source of the data;
(b) methodology and assumptions adopted to process the data; and
(c) rationale for the use of external data instead of the licensed person's own data.

S 25.9 In addition to quantitative data, a licensed person must also consider qualitative information that would have an impact on the appropriateness of the valuation results, including–
(a) underwriting policy and procedures;
(b) claims policy and procedures;
(c) reinsurance/retakaful arrangements;
(d) features of the insurance/takaful products;
(e) external factors including economic, legal and regulatory, social and demographic trends;
(f) operational issues, including changes to systems and personnel; and
(g) any other information relevant for the purpose of valuation of insurance/takaful liabilities.

26. Recognition and derecognition of insurance/takaful contracts

S 26.1 A licensed person must recognise an insurance/takaful contract in the valuation of insurance/takaful liabilities from the earliest of the following:

[49] Refer to the requirement under paragraph 37.4.
[50] Refer to the requirement under paragraph 37.4.

(a) the beginning of the coverage period of the insurance/takaful contract; and
(b) the date when the first premium/takaful contribution payment from the policy owner/takaful participant becomes due. If there is no contractual due date, the first premium/takaful contribution payment from the policy owner/takaful participant is deemed to be due when the premium/takaful contribution is received.

S 26.2 A licensed person must derecognise an insurance/takaful contract from the valuation of insurance/takaful liabilities when the obligations specified in the insurance/takaful contract expire, are discharged or cancelled.

27. Boundary of a recognised insurance/takaful contract

S 27.1 In determining the liabilities of a recognised insurance/takaful contract, a licensed person must ensure that the time horizon (hereinafter referred to as "contract boundary") and corresponding cash flows taken into account are reflective of the underlying obligations of the insurance/takaful contract. In doing so, the licensed person must determine the contract boundary such that it ends when–
(a) the licensed person can no longer compel the policy owner/takaful participant to pay the premiums/takaful contributions; or
(b) the licensed person no longer has a substantive obligation to provide the policy owner/takaful participant with services or coverage. The licensed person must assess when this substantive obligation ends according to paragraph 27.2.

S 27.2 A licensed person's substantive obligation to provide services or coverage ends when–
(a) the licensed person has the practical ability to reassess the insurance/takaful risks[51] of a particular policy owner/takaful participant and, as a result, is able to set a price or level of benefits that fully reflects the risks of that policy owner/takaful participant; or
(b) both of the following criteria are satisfied:
  (i) the licensed person has the practical ability to reassess the insurance/takaful risks of the portfolio of insurance/takaful contracts that contains the insurance/takaful contract and, as a result, is able to set a price or level of benefits that fully reflects the risks of that portfolio; and
  (ii) the pricing of the premiums/takaful contributions up to the date when the insurance/takaful risks are reassessed does not take into account the risks that relate to future periods after the reassessment date.

S 27.3 In relation to paragraph 27.2(a), a licensed person has the practical ability to set a price at a future date that fully reflects the risks of the insurance/takaful contract from that date if there are no constraints that prevent the licensed person from–

[51] Excluding lapse, expense and investment risks.

(a) setting the same price it would for a new insurance/takaful contract, with the same characteristics as the existing insurance/takaful contract, issued on that future date; or

(b) amending the benefits to be consistent with the new price it will charge.

S 27.4 In relation to paragraph 27.2(b)(i), a licensed person has the practical ability to set a price that fully reflects the risks of the portfolio if it is able to re-price the insurance/takaful contract such that the price reflects the overall changes in the risks of the portfolio, even if the price set for the insurance/takaful contract does not reflect the risks specific to the insurance/takaful contract.

G 27.5 Further guidance on the assessment of the contract boundary for common insurance/takaful contracts are set out in **Appendix 8**.

Contract boundary for MHIT contracts

Based on the feedback to the Exposure Draft on Valuation of Insurance and Takaful Liabilities (BNM/RH/ED 029-15) (hereinafter referred to as “Valuation ED”), the industry had highlighted challenges in valuing the insurance/takaful liabilities for MHIT contracts based on the specified contract boundary that covers the entire duration for which the coverage is contractually guaranteed. As such, the Bank is proposing for the contract boundary for MHIT contracts to be determined based on the requirements set out in paragraphs 27.1 to 27.4, similar to other insurance/takaful contracts.

28. Central estimate liabilities

Principles for determining the central estimate liabilities

S 28.1 A licensed person must determine the central estimate liabilities as the probability-weighted average of the present value of future cash flows that will arise as the licensed person fulfils the obligations under the insurance/takaful contracts, discounted to allow for the time value of money.

S 28.2 In determining the central estimate liabilities, a licensed person must adequately consider the variability and uncertainty of the cash flows in order to ensure that they represent the mean of the possible values of the cash flows.

G 28.3 In relation to paragraph 28.2, it may not be necessary or possible to account for all scenarios, or develop probability distributions for all scenarios, to reflect the variability and uncertainty of the cash flows. As such, the licensed person may use other methodologies such as generally accepted closed-form solutions to proxy all scenarios.

S 28.4 A licensed person must determine the central estimate liabilities gross of reinsurance/retakaful. The recoveries from reinsurance/retakaful arrangements, net of any payments to the reinsurers/retakaful operators, must be determined separately.

Cash flow projections

S 28.5 In determining the central estimate liabilities, a licensed person must include–
(a) cash flows arising from the expired portion of risk as specified in paragraph 24.3(a); and
(b) cash flows arising from the unexpired portion of risk as specified in paragraph 24.3(b).

S 28.6 A licensed person must not include any amount relating to expected premiums/takaful contributions or expected claims outside the contract boundary in the valuation of insurance/takaful liabilities. In this regard, cash flows that may arise from future new business must not be taken into account in the valuation of insurance/takaful liabilities.

S 28.7 In estimating the future cash flows, a licensed person must–
(a) incorporate, in an unbiased way, all reasonable and supportable information available about the amount, timing and uncertainty of those future cash flows;
(b) take into account relationships between inter-dependent cash flows, including those arising from separate but related insurance/takaful contracts; and
(c) ensure that the estimates reflect conditions existing at the valuation date, including assumptions at that date about the future.

S 28.8 In relation to paragraph 28.7(b), relationships between inter-dependent cash flows that a licensed person must consider, include, but are not limited to, those between–
(a) basic policies/takaful certificates and riders or add-ons; and
(b) cash flows in different funds, such as the investment-linked operating fund and the investment-linked unit funds for investment-linked contracts.

S 28.9 A licensed person must include the following as cash inflows within the contract boundary:
(a) future premiums/takaful contributions;
(b) potential recoveries on incurred claims and on future claims, including recoveries from pre-payment of benefits, salvage and subrogation; and
(c) for takaful contracts, remuneration to the shareholders' fund, including *wakalah* fees and remuneration from the PIFs.

S 28.10 A licensed person must include the following as cash outflows within the contract boundary:
(a) future benefit payments to (or on behalf of) policy owners/takaful participants, including those in relation to claims that have already been incurred as well as claims expected to be incurred after the valuation date; and
(b) direct and indirect expenses that will be incurred in fulfilling the insurance/takaful contracts, including but not limited to, administrative, investment management, claims management, acquisition and overhead expenses. For takaful contracts, expenses are those incurred by both the PRFs and the shareholders' fund.

S 28.11 In relation to paragraph 28.10(a), for participating life contracts, a licensed person must include future discretionary bonus payments to policy owners as cash outflows.

G 28.12 The licensed person may take into account the impact of the following management actions in determining the central estimate liabilities:

(a) bonus revision for participating life contracts; and

(b) re-pricing of MHIT contracts that provide medical reimbursement benefits and are valued using the methodology typically used to value the insurance/takaful liabilities of life insurance/family takaful contracts as specified in paragraph 28.19(a).

S 28.13 Where a licensed person takes into account the impact of the management actions in determining the central estimate liabilities as set out in paragraph 28.12, the licensed person must demonstrate that the management actions recognised in the calculation of the central estimate liabilities fulfill the following criteria:

(a) the management actions are objective and realistic;

(b) the management actions are not contrary to the licensed person's obligations to policy owners/takaful participants or to the legal provisions[52] applicable to the licensed person;

(c) the management actions are consistent with the licensed person's internal policies as well as actual practices and business strategies;

(d) the management actions are reasonably expected to be carried out under the specific circumstances to which they apply;

(e) the assumed impact of the management actions takes into account any time lag in the implementation of the management actions; and

(f) the assumed impact of the management actions takes into account any resulting cost of implementing the management actions. Other second-order effects, such as changes in policy owners/takaful participants' behaviour, must not be taken into account.

S 28.14 In fulfilling the criterion set out in paragraph 28.13(a), a licensed person must demonstrate that the assumptions underlying the recognition of the management actions are objective and realistic based on comparisons with relevant past management actions implemented by the licensed person.

S 28.15 Where a licensed person takes into account the impact of re-pricing of MHIT contracts in determining the central estimate liabilities as set out in paragraph 28.12(b), the licensed person must determine the impact of re-pricing for MHIT unit deducting riders attached to investment-linked policies/takaful certificates by only assuming an increase in the cost of insurance/*tabarru'*, but not an equivalent increase in the premiums/takaful contributions of the basic policies/takaful certificates.

[52] Including requirements on bonus revision specified in the Policy Document on Management of Participating Life Business (BNM/RH/PD 032-1) and requirements on MHIT re-pricing specified in the Policy Document on Medical and Health Insurance/Takaful Business (BNM/RH/PD 029-66).

S 28.16 A licensed person must clearly document in the RBC report[53] the methodology and assumptions underlying the recognition of management actions, including how the recognition of management actions adheres to the criteria set out in paragraphs 28.13 and 28.14.

S 28.17 A licensed person must identify and take into account all options and guarantees embedded in the insurance/takaful contracts in determining the insurance/takaful liabilities. The licensed person must value these options and guarantees using a stochastic method, unless the options and guarantees do not form a significant portion of the licensed person's business and the results of using a deterministic method would not materially depart from the results of using a stochastic method.

Methodologies for determining the central estimate liabilities

S 28.18 A licensed person must ensure that the methodology used to determine the central estimate liabilities is appropriate to the nature of the liabilities in order to achieve the outcome required under paragraph 28.1.

G 28.19 A licensed person may use the following valuation methodologies to determine the central estimate liabilities:

(a) for life insurance/family takaful contracts, the central estimate liabilities are typically determined using a discounted cash flow approach[54], applied on a contract-by-contract basis, which explicitly takes into account the probabilities of the risk factors (e.g. death, survival, morbidity/disability) materialising[55]. This methodology may also be suitable for general insurance/general takaful contracts, particularly those with contract boundary of more than one year; and

(b) for general insurance/general takaful contracts, the central estimate liabilities are typically determined using aggregate claims projections based on run-off triangles, frequency-severity models, estimations based on expected loss ratios, or a combination of these methodologies[56]. These methodologies may also be suitable for life insurance/family takaful contracts, particularly those with contract boundary of one year or less.

Homogenous risk groups

S 28.20 In determining the central estimate liabilities, a licensed person must group the insurance/takaful contracts based on homogeneity of risks (hereinafter referred to as "homogeneous risk groups").

S 28.21 In assessing whether the risks are homogeneous, a licensed person must consider, at minimum, the following areas:

[53] Refer to the requirement under paragraph 37.4.

[54] Based on the present value of expected future cash outflows less the present value of expected future cash inflows.

[55] Specific requirements on the valuation of life insurance/family takaful contracts are set out in paragraph 32.

[56] Specific requirements on the valuation of general insurance/general takaful contracts are set out in paragraph 33.

(a) the risk drivers of the insurance/takaful contracts, taking into account the features of the product and the risk profiles of the policy owners/takaful participants;
(b) the nature and duration of exposure to the risks; and
(c) how the risks are shared between the insurance/takaful contracts, including in relation to any internal policies on surplus participation or sharing and/or cross-subsidy.

G 28.22 In assessing the areas set out in paragraph 28.21, a licensed person may consider the following factors:
(a) for risk drivers, the coverage provided by the insurance/takaful contracts, underwriting standards, inception year, any underlying options and guarantees, and the stability of experience and risk characteristics over time; and
(b) for the nature and duration of exposure to the risks, not just the length of the contractual obligations, but also the nature of the tail of the risks.

S 28.23 In addition to the homogeneity of risks, a licensed person must take into account the following when determining the grouping of insurance/takaful contracts:
(a) the methodology that will be applied to determine the central estimate liabilities of the insurance/takaful contracts within the group; and
(b) the level of information needed to facilitate the necessary analysis to determine the assumptions underlying the central estimate liabilities. In this regard, the licensed person must balance between the credibility of data available and the homogeneity of risks within the group.

G 28.24 The appropriate level of homogeneity generally differs between life insurance/family takaful contracts and general insurance/general takaful contracts. For example–
(a) for life insurance/family takaful contracts, the homogeneity of risks is typically considered in terms of the type of product, the expected experience of the risk factors (e.g. mortality, morbidity/disability) and the way in which the risks are shared between different insurance/takaful contracts; and
(b) for general insurance/general takaful contracts, the homogeneity of risks is typically considered in terms of the class of business, the length of the contractual obligations and/or the nature of the tail of the risks.

Assumptions underlying the central estimate liabilities

S 28.25 In determining the appropriate assumptions for a homogeneous risk group, a licensed person must take into account–
(a) the licensed person's actual experience and, where relevant, external data such as industry data or benchmarks; and
(b) expectations on future changes that may affect the cash flows of the insurance/takaful contracts.

S 28.26 A licensed person must consider the following assumptions, where relevant, in determining the central estimate liabilities:
(a) demographic assumptions, including mortality and morbidity/disability;

(b) policy owners/takaful participants' behaviour, including persistency and the exercise of other contractual options;
(c) expenses;
(d) economic inflation;
(e) claims behaviour; and
(f) counterparty default on recoveries, including from reinsurance/retakaful arrangements, pre-payment of benefits, salvage, subrogation and structured products.

G 28.27 Further guidance on the setting of assumptions are set out in **Appendix 9**.

S 28.28 A licensed person must periodically review and update the assumptions to ensure that they remain relevant. At minimum, the licensed person must carry out a comparative study between actual and expected experience annually and use the outcome of the study to support the setting of the assumptions.

S 28.29 A licensed person must ensure that the comparative study between actual and expected experience is carried out–
(a) at a sufficient level of granularity; and
(b) using an approach and basis that are appropriate to the nature of the risks underlying the insurance/takaful contracts.

G 28.30 In relation to paragraph 28.29(b), a licensed person may consider the following approaches and bases:
(a) for life insurance/family takaful contracts, an analysis may be carried out on the actual and expected experience for individual key risk factors such as mortality, morbidity/disability, persistency, expense and investment, and based on policy/takaful certificate count and/or sum insured/covered; and
(b) for general insurance/general takaful contracts, an analysis may be carried out on the actual and expected claims experience of the entire homogeneous risk group. In addition, further analysis may be carried out based on claims frequency and average claims cost.

29. Reinsurance/retakaful recoveries

S 29.1 A licensed person must determine the expected net recoveries from reinsurance/retakaful arrangements (hereinafter referred to as "reinsurance/retakaful recoveries") for each underlying direct insurance/takaful contract by projecting the future cash flows arising from the reinsurance/retakaful arrangements.

S 29.2 In determining the reinsurance/retakaful recoveries, a licensed person must–
(a) assess the substance of the reinsurance/retakaful arrangements in place by considering the reinsurers/retakaful operators' contractual obligations to the licensed person in relation to the particular underlying direct insurance/takaful contract. This must include an assessment on the renewability of the reinsurance/retakaful contracts and the reviewability of the reinsurance premiums/retakaful contributions; and

(b) incorporate all relevant expected future cash flows arising from the reinsurance/retakaful arrangements in relation to the particular underlying direct insurance/takaful contract, based on the assessment carried out under paragraph 29.2(a), including future payments to and from the reinsurers/retakaful operators.

S 29.3 In estimating the future cash flows arising from the reinsurance/retakaful arrangements, a licensed person must–

(a) use assumptions that are consistent with those used to estimate the future cash flows arising from the underlying direct insurance/takaful contract; and

(b) take into account the risk of default by the reinsurers/retakaful operators as required by paragraph 28.26(f).

G 29.4 Where it is not practical for a licensed person to explicitly determine the reinsurance/retakaful recoveries for each underlying direct insurance/takaful contract according to paragraph 29.1, the licensed person may use a simplified methodology to derive the reinsurance/retakaful recoveries.

G 29.5 In relation to paragraph 29.4, examples of simplified methodologies that a licensed person may use include–

(a) taking the difference between gross and net central estimate liabilities. This methodology may be suitable for determining the recoveries from non-proportional reinsurance/retakaful arrangements; or

(b) notionally reallocating the recoveries from a reinsurance/retakaful arrangement to each underlying direct insurance/takaful contract covered by the reinsurance/retakaful arrangement.

S 29.6 A licensed person must clearly document in the RBC report[57] the methodology and assumptions underlying the determination of reinsurance/retakaful recoveries.

30. Discount rates

S 30.1 A licensed person must use a risk-free yield curve to discount all future cash flows when determining the central estimate liabilities of the insurance/takaful contracts.

S 30.2 In relation to paragraph 30.1, a licensed person must derive the risk-free yield curve by–

(a) using the template provided in **Attachment 1** and **Attachment 2** for cash flows denominated in Malaysian Ringgit (MYR) and cash flows denominated in currencies other than MYR respectively, where the underlying methodology is described in paragraphs 1 and 2 of **Appendix 10**; and

(b) inputting the parameters specified in paragraphs 3 and 4 of **Appendix 10** into the template for cash flows denominated in MYR and cash flows

[57] Refer to the requirement under paragraph 37.4.

denominated in currencies other than MYR respectively, in accordance with the instructions set out in the template.

S 30.3 A licensed person must set the assumptions for investment returns that are consistent with the discount rates under paragraph 30.1.

Question 21
Adjustments to risk-free yield curve

Based on the feedback to the Valuation ED, the industry highlighted operational complexities in applying the volatility and matching adjustments to the risk-free yield curve to determine the discount rates as they are disproportionate to the impact on the insurance/takaful liabilities which is expected to be immaterial. As such, the Bank is proposing for the discount rates to be determined based on the risk-free yield curve without any adjustments.

Please state whether your company agrees with the use of risk-free yield curve without any adjustments to determine the discount rates. If your company would still want to consider adopting the volatility and/or matching adjustments based on the applicability criteria as well as the design and parameters for these adjustments as proposed in the Valuation ED, please elaborate on the rationale for this, including details of the products for which these adjustments would be applied.

31. Provision of risk margin for adverse deviation

S 31.1 In order to reflect the uncertainty in the amount and timing of future cash flows, a licensed person must apply a PRAD such that the valuation of cash flows relating to guaranteed/protected benefits, i.e. excluding discretionary payments, secures a 75% level of sufficiency.

S 31.2 In determining the PRAD, a licensed person must account for the relationships between inter-dependent cash flows, in a manner that is consistent with that used to determine the central estimate liabilities as per paragraph 28.7(b).

S 31.3 A licensed person must not apply PRAD to the discount rates or the projected investment returns.

S 31.4 In relation to the PRAD applied to reinsurance/retakaful recoveries, a licensed person must determine this as the amount of risk transferred by the licensed person to the reinsurers/retakaful operators.

32. Specific requirements for life insurance/family takaful contracts

S 32.1 In determining the insurance/takaful liabilities, a licensed person must carry out the cash flow projections separately for each insurance/takaful contract.

S 32.2 Where separate cash flow projections for each insurance/takaful contract is not possible and a licensed person carries out the cash flow projections by grouping the insurance/takaful contracts, the licensed person must ensure that–

(a) there are no significant differences in the nature and complexity of the risks underlying the insurance/takaful contracts within the same group;

(b) the grouping of insurance/takaful contracts does not misrepresent the risks inherent in the insurance/takaful contracts and does not misstate their expenses; and

(c) the cash flows projections based on grouping of insurance/takaful contracts is likely to give approximately the same results as the separate cash flow projections for each insurance/takaful contract.

S 32.3 Where the cash flow projections based on grouping of insurance/takaful contracts is adopted, the licensed person must clearly document this in the RBC report[58] together with the justifications for adopting this approach.

S 32.4 A licensed person must include any policy loans and funds held on deposit in determining the central estimate liabilities.

S 32.5 In determining the central estimate liabilities for participating life contracts, a licensed life insurer must–

(a) reflect the impact of managing the participating life contracts according to cohorts which have been determined in line with paragraph 9.3 of the Policy Document on Management of Participating Life Business (BNM/RH/PD 032-1). This includes taking into account the restrictions on cross-subsidy between cohorts; and

(b) include the expected future surplus distributions to shareholders as cash outflows.

G 32.6 In determining the central estimate liabilities for participating life contracts using the discount rates specified under paragraph 30.1, a licensed life insurer may recalculate the expected future bonuses to policy owners assuming that the gross premium valuation (GPV) reserves are discounted using the risk-free yield curve[59].

33. Specific requirements for general insurance/general takaful contracts

S 33.1 A licensed person must determine the insurance/takaful liabilities for each homogeneous risk group separately for–

(a) the expired portion of risk (hereinafter referred to as “claims liabilities”); and

(b) the unexpired portion of risk (hereinafter referred to as “premium/contribution liabilities” and “expense liabilities[60]”).

[58] Refer to the requirement under paragraph 37.4.

[59] For the avoidance of doubt, for the purpose of the bonus supportability study set out in paragraph 11 of the Policy Document on Management of Participating Life Business (BNM/RH/PD 032-1), the GPV reserves must continue to be discounted using the fund-based yield.

[60] For takaful business only.

S 33.2 In relation to paragraph 33.1, a licensed person must determine the central estimate liabilities as the discounted value of the expected cash inflows and outflows within the boundary of the insurance/takaful contracts in the homogeneous risk group.

S 33.3 In relation to paragraph 33.2, a licensed person must explicitly account for claims inflation in determining the central estimate liabilities.

S 33.4 In relation to paragraph 33.1(a), in determining the claims liabilities, a licensed person must ensure that more than one method is used, and comparisons are made between the results of the different methods. Where the results differ significantly, the licensed person must clearly document in the RBC report[61] the ultimate choice, with justifications.

S 33.5 In relation to paragraph 33.1(b), a licensed person must determine the premium/contribution liabilities at the fund level as the higher of the following:
(a) unexpired risk reserves (URR) including PRAD; and
(b) unearned premium/contribution reserves (UPR/UCR).

S 33.6 In relation to paragraph 33.1(b), a licensed takaful operator must determine the expense liabilities[62] of the shareholders' fund as the higher of the following:
(a) unexpired expense reserves (UER) including PRAD; and
(b) unearned *wakalah* fees (UWF).

G 33.7 In relation to paragraph 33.4, the examples of methods that may be used to determine the claims liabilities include the Chain Ladder, Bornhuetter-Ferguson and Frequency-Severity methods.

S 33.8 A licensed person must set up appropriate case reserves in a timely manner for claims that have been reported.

S 33.9 In determining the case reserves, a licensed person must–
(a) carry out the necessary investigations and assessments to estimate the potential quantum of the reported claims, including expenses associated with the reported claims such as legal fees. The estimation must be made based on the particulars of the claims, where available, and other sources such as statistics on historical claims settlement and opinions of claims assessors or lawyers; and
(b) account for expected claims behaviour until such time the claims are barred by the statute of limitations.

S 33.10 In relation to paragraph 33.5(a), in determining the central estimate of the URR, a licensed person must consider expected future cash inflows and cash outflows arising from the unexpired portion of risk, including future claims payments and future expenses[63] incurred in administering the policies/takaful certificates and in settling the claims.

[61] Refer to the requirement under paragraph 37.4.
[62] Expense liabilities refer to takaful liabilities relating to the shareholders' fund.
[63] For takaful business, this relates to expenses payable from the PRFs only.

G 33.11 For a reasonably stable homogeneous risk group with contract boundary of one year or less, a licensed person may estimate the URR by adjusting the UPR/UCR using the results of the valuation of claims liabilities on the basis of claims frequencies, average claims costs and/or ultimate loss ratios. In this case, adjustments may be made to the assumptions to reflect the impact of discounting future claims as well as changes in risk exposures, underwriting standards, premium/takaful contribution rate levels and other relevant factors that may affect the expected future claims experience.

S 33.12 In relation to paragraph 33.6(a), in determining the central estimate of the UER, a licensed takaful operator must consider expected future cash inflows and cash outflows arising from the unexpired portion of risk in relation to the shareholders' fund, including future expenses payable from the shareholders' fund and future remuneration to the shareholders' fund such as *wakalah* fees.

S 33.13 In relation to paragraphs 33.5(b) and 33.6(b), a licensed person must calculate the UPR/UCR and the UWF on a basis that is not less accurate than the 1/24th method[64].

S 33.14 A licensed insurer must determine the UPR using the amount of premiums written less the amount of actual commissions payable.

S 33.15 A licensed takaful operator must determine the UCR and the UWF using the amount of takaful contributions written less the amount of actual *wakalah* fees payable, and the amount of actual *wakalah* fees payable less the amount of actual commissions payable respectively.

Diversification for general insurance/general takaful business

G 33.16 A licensed person may take into account the diversification benefit arising from correlations between the homogenous risk groups, by reducing the level of PRAD for each homogenous risk group (hereinafter referred to as "Fund PRAD (FPRAD)").

S 33.17 Where a licensed person takes into account the diversification benefit set out in paragraph 33.16, a licensed person must ensure that–

(a) the valuation of insurance/takaful liabilities secures a 75% level of sufficiency at the entity level;

(b) the amount of diversification benefit is determined using an appropriate methodology; and

(c) the amount of diversification benefit is not more than 50% of the aggregate of the PRADs of all homogeneous risk groups.

S 33.18 In relation to paragraph 33.17(a), where a licensed person uses a triangle of combined data to determine the amount of diversification benefit, the licensed person must give due regard to the extent that underlying volatilities may be obscured.

[64] The 1/24th method refers to the time apportionment method assuming that premiums/takaful contributions and *wakalah* fees are uniformly spread over each month.

S 33.19 A licensed person must clearly document in the RBC report[65] the methodology used to determine the amount of diversification benefit, with the rationale for the chosen methodology and any limitations.

34. Specific requirements for takaful contracts

S 34.1 A licensed takaful operator must ensure that the takaful liabilities consist of–
(a) liabilities relating to the PRFs; and
(b) liabilities relating to the shareholders' fund.

S 34.2 A licensed takaful operator must ensure that the methodology used to value the liabilities relating to the shareholders' fund is consistent with the methodology used to value the liabilities relating to the PRFs.

S 34.3 Where a licensed takaful operator incorporates future surplus distributions from the PRFs to the shareholders' fund as cash inflows in valuing the liabilities relating to the shareholders' fund, the licensed takaful operator must clearly document this in the RBC report[66].

35. Specific requirements for inward reinsurance/retakaful contracts

S 35.1 In determining the central estimate liabilities of inward reinsurance/retakaful contracts, a licensed person must consider the unique characteristics of the specific facultative or treaty reinsurance/retakaful contracts, including but not limited to–
(a) whether the treaties are on a clean-cut basis or on a run-off basis;
(b) inward reinsurance/retakaful business written in countries with high litigation; and
(c) inward reinsurance/retakaful business where there is a possibility of latent claims exposure.

G 35.2 Further guidance on the valuation of insurance/takaful liabilities for inward reinsurance/retakaful contracts are set out in **Appendix 11**.

[65] Refer to the requirement under paragraph 37.4.
[66] Refer to the requirement under paragraph 37.4.

PART F SUPERVISORY SOLVENCY INTERVENTION LEVELS

36. Supervisory solvency intervention levels

Setting of supervisory solvency intervention levels and Internal Target Capital Level (ITCL)

The Bank will be revising the supervisory solvency intervention levels taking into account the proposed enhancements to the capital adequacy requirements in this exposure draft. The Bank will set the solvency intervention level at 100% of the TCR, which broadly corresponds to the target risk level specified in paragraph 16.1, i.e. VaR at 99.5% confidence level over a one-year period. This refers to the solvency intervention level below which the Bank would intervene on capital adequacy grounds. This, however, does not preclude the Bank from setting another solvency intervention level, where appropriate.

In addition, as part of the Internal Capital Adequacy Assessment Process (ICAAP), a licensed person is expected to set an ITCL that reflects a capital level commensurate with its own risk and solvency position. The Bank will be reviewing the requirements under the existing policy documents i.e. Guidelines on Internal Capital Adequacy Assessment Process (ICAAP) for Insurers (BNM/RH/GL/003-29) and Internal Capital Adequacy Assessment Process for Takaful Operators (BNM/RH/PD 033-2) to reflect the revised capital adequacy requirements.

PART G REPORTING

37. Reporting to the Bank

S 37.1 A licensed person must submit its CAR computation to the Bank based on the financial year end position within three months after the end of each financial year. The licensed person must ensure that the financial year end CAR computation is certified by its appointed actuary, chief executive officer and external auditor.

S 37.2 In addition, a licensed person must submit its quarterly CAR computation to the Bank within 21 calendar days after the end of each quarter. The licensed person must ensure that the quarterly CAR computation is certified by its appointed actuary and chief executive officer.

S 37.3 In relation to paragraphs 37.1 and 37.2, a licensed person must submit its CAR computation, including the value of insurance/takaful liabilities and the components of TCA and TCR, in accordance with the RBC forms[67].

S 37.4 Together with the RBC forms, a licensed person must submit its RBC report to the Bank, which includes, at minimum, the information set out in **Appendix 12**. The licensed person must ensure that the RBC report is certified by its appointed actuary and chief executive officer.

G 37.5 Notwithstanding the requirements under paragraphs 37.1 and 37.2, the Bank may require a licensed person to compute and report its CAR to the Bank on a more frequent basis.

Question 22
General comments

Please provide any other comments you may have on the proposed requirements in the exposure draft, including suggestions for particular issues or areas to be clarified or elaborated further. To facilitate the Bank's assessment, please clearly notate to which area or paragraph in this exposure draft each comment is related to.

[67] The revised RBC forms will be finalised after the completion of QIS 2.

APPENDICES

Appendix 1 Life insurance/family takaful risk capital charges

Mortality risk

S 1. A licensed person must apply the mortality risk capital charge only to insurance/takaful contracts where an increase in mortality rates results in a reduction in NAV.

S 2. A licensed person must calculate the mortality risk capital charge as the reduction in NAV after applying the stress for mortality risk specified in **Table 1** of this appendix.

Longevity risk

S 3. A licensed person must apply the longevity risk capital charge only to insurance/takaful contracts where a decrease in mortality rates results in a reduction in NAV.

S 4. A licensed person must calculate the longevity risk capital charge as the reduction in NAV after applying the stress for longevity risk specified in **Table 1** of this appendix.

Morbidity/disability risk

S 5. A licensed person must apply the morbidity/disability risk capital charge only to insurance/takaful contracts that provide fixed benefit payouts for events caused by accident and sickness, including critical illness (e.g. lump sum benefits for incidence of critical illness or total and permanent disability, hospital income benefits).

S 6. A licensed person must calculate the morbidity/disability risk capital charge as the reduction in NAV after applying the stress for morbidity/disability risk specified in **Table 1** of this appendix.

Medical payments risk

S 7. A licensed person must apply the medical payments risk capital charge only to MHIT contracts that provide medical reimbursement benefits[68].

S 8. A licensed person must calculate the medical payments risk capital charge as the reduction in NAV after applying the stress for medical payments risk specified in **Table 1** of this appendix.

[68] For MHIT contracts that provide both medical reimbursement benefits and fixed benefits (e.g. hospital income), the stress for medical payments risk must only be applied on the portion of coverage relating to the medical reimbursement benefits, while the stress for morbidity/disability risk must be applied on the remaining portion of coverage relating to the fixed benefits.

<u>Lapse risk</u>

S 9. A licensed person must calculate the lapse risk capital charge as the higher of the following:
(a) capital charge for the normal lapse component; and
(b) capital charge for the mass lapse component.

Normal lapse component

S 10. A licensed person must calculate the capital charge for the normal lapse component as the reduction in NAV after applying the stresses for the normal lapse component specified in **Table 1** of this appendix.

S 11. A licensed person must first determine the capital charge for the normal lapse component for each homogeneous risk group, and then aggregate across all homogeneous risk groups.

Mass lapse component

S 12. A licensed person must calculate the capital charge for the mass lapse component as the reduction in NAV after applying the stresses for the mass lapse component specified in **Table 1** of this appendix.

S 13. A licensed person must first determine the capital charge for the mass lapse component for each homogeneous risk group, subject to a floor of zero, and then aggregate across all homogeneous risk groups.

<u>Expense risk</u>

S 14. A licensed person must calculate the expense risk capital charge as the reduction in NAV after applying the stresses for expense risk specified in **Table 1** of this appendix .

Table 1: Stresses for LIFT risk capital charges

Sub-risk	**Stress**
Mortality	An increase of 25% in central estimate mortality rates at all ages for all insurance/takaful contracts specified in paragraph 1 of this appendix.
Longevity	A decrease of 17.5% in central estimate mortality rates at all ages for all insurance/takaful contracts specified in paragraph 3 of this appendix.
Morbidity/disability	An increase of 40% in central estimate morbidity/disability rates at all ages for all insurance/takaful contracts specified in paragraph 5 of this appendix.
Medical payments	An increase of 25% in central estimate level of medical payments at all ages for all insurance/takaful contracts specified in paragraph 7 of this appendix.

Lapse – Normal lapse component	(a) An increase of 45% in central estimate lapse rates[69], subject to a maximum stressed lapse rate of 100%, in all future years for all homogeneous risk groups where an increase in lapse rates results in a reduction in NAV; and (b) A decrease of 45% in central estimate lapse rates, subject to a minimum stressed lapse rate of 0%, in all future years for all homogeneous risk groups where a decrease in lapse rates results in a reduction in NAV.
Lapse – Mass lapse component	(a) An immediate surrender of 30% of individual policies/takaful certificates; and (b) An immediate surrender of 50% of group policies/takaful certificates.
Expense	(a) A relative increase of 20% in central estimate level of expenses (i.e. unit expense); and (b) An absolute increase of 1% per annum in central estimate expense inflation rate.

Catastrophe risk

S 15. A licensed life insurer/family takaful operator must apply the catastrophe risk capital charge to life insurance/family takaful contracts, including MHIT and PA contracts.

S 16. In relation to paragraph 15 of this appendix, a licensed life insurer/family takaful operator must calculate the catastrophe risk capital charge as the reduction in NAV after simultaneously applying the following stresses:
(a) an instantaneous increase of 1.5 deaths per 1,000 lives insured/covered for insurance/takaful contracts specified in paragraph 1 of this appendix; and
(b) an increase of 20% in expected medical payments over the next 12 months for MHIT contracts that provide medical reimbursement benefits, unless these contracts exclude coverage under a pandemic event.

[69] Lapse rates refer to the exercise rates of policy/takaful certificate options, including but not limited to, lapses, forfeitures, surrenders, renewals, terminations, partial withdrawals and premium/takaful contribution holidays.

Appendix 2 General insurance/general takaful risk capital charges

Claims risk

S 1. A licensed person must calculate the claims risk capital charge for each class of business by multiplying the net central estimate liabilities[70] for expired portion of risk, i.e. the central estimate of net claims liabilities, with the factor for claims risk specified in **Table 1** of this appendix.

S 2. A licensed person must ensure that the claims risk capital charge for each class of business is subject to a floor of zero.

Premium/contribution risk

S 3. For insurance/takaful contracts other than long-term fire and long-term MHIT contracts, a licensed person must calculate the premium/contribution risk capital charge for each class of business by multiplying the factor for premium/contribution risk specified in **Table 1** of this appendix with the higher of the following:
(a) net earned premiums/*tabarru'* charges over the last 12 months; and
(b) expected net earned premiums/*tabarru'* charges over the next 12 months, based on the licensed person's business plan.

S 4. For long-term fire and long-term MHIT contracts, a licensed person must calculate the premium/contribution risk capital charge for each class of business by multiplying the factor for premium/contribution risk specified in **Table 1** of this appendix with the sum of the following:
(a) the higher of–
(i) net earned premiums/*tabarru'* charges over the last 12 months; and
(ii) expected net earned premiums/*tabarru'* charges over the next 12 months, based on the licensed person's business plan; and
(b) the present value of expected net earned premiums/*tabarru'* charges after the next 12 months for existing in-force contracts, based on the licensed person's business plan, multiplied by an adjustment factor.

S 5. In relation to paragraph 4(b) of this appendix, the licensed person must use the following adjustment factor and period of projection:
(a) for long-term fire contracts, the adjustment factor is 70%, and the period of projection is up to the end of the policy/takaful certificate term; and
(b) for long-term MHIT contracts, the adjustment factor is 25%, and the period of projection is up to the end of the next re-pricing cycle.

S 6. A licensed person must ensure that the premium/contribution risk capital charge for each class of business is subject to a floor of zero.

[70] For the avoidance of doubt, the net central estimate liabilities are determined after deducting reinsurance/retakaful recoveries but before zeroisation of any negative value.

Expense risk

S 7. For takaful contracts other than long-term fire and long-term MHIT contracts, a licensed takaful operator must calculate the expense risk capital charge for each class of business by multiplying the factor for expense risk specified in **Table 1** of this appendix with the higher of the following:

(a) net earned *wakalah* fees over the last 12 months; and

(b) expected net earned *wakalah* fees over the next 12 months, based on the licensed takaful operator's business plan.

S 8. For long-term fire and long-term MHIT contracts, a licensed takaful operator must calculate the expense risk capital charge for each class of business by multiplying the factor for expense risk specified in **Table 1** of this appendix with the sum of the following:

(a) the higher of–

(i) net earned *wakalah* fees over the last 12 months; and

(ii) expected net earned *wakalah* fees over the next 12 months, based on the licensed takaful operator's business plan; and

(b) the present value of expected net earned *wakalah* fees after the next 12 months for existing in-force contracts, based on the licensed takaful operator's business plan, multiplied by an adjustment factor.

S 9. In relation to paragraph 8(b) of this appendix, a licensed takaful operator must use the adjustment factor and period of projection as specified in paragraphs 5(a) and 5(b) of this appendix for long-term fire and long-term MHIT contracts respectively.

S 10. A licensed takaful operator must ensure that the expense risk capital charge for each class of business is subject to a floor of zero.

Table 1: Factors for GIGT risk capital charges

<table>
<tr><th rowspan="2">Class of business</th><th colspan="3">Factor</th></tr>
<tr><th>Claims risk</th><th>Premium/ contribution risk</th><th>Expense risk[71]</th></tr>
<tr><td colspan="4">Direct insurance/takaful[72] and proportional reinsurance/retakaful[73] businesses</td></tr>
<tr><td>Aviation</td><td>30%</td><td>35%</td><td rowspan="6">20%</td></tr>
<tr><td>Cargo</td><td>30%</td><td>35%</td></tr>
<tr><td>Contractors' All Risks and Engineering</td><td>30%</td><td>37.5%</td></tr>
<tr><td>Long-Term Fire</td><td>27.5%</td><td>32.5%</td></tr>
<tr><td>Short-Term Fire</td><td>27.5%</td><td>32.5%</td></tr>
<tr><td>Liabilities</td><td>30%</td><td>37.5%</td></tr>
</table>

[71] Applicable to takaful business only.
[72] Applicable to licensed direct insurers/takaful operators only, including any inward reinsurance/ retakaful business of the licensed direct insurers/takaful operators.
[73] Applicable to professional reinsurers/retakaful operators only.

Marine Hull	30%	35%	
Long-Term Medical and Health	22.5%	27.5%	
Short-Term Medical and Health	22.5%	27.5%	
Motor Liability	30%	37.5%	
Motor Others	25%	30%	
Onshore and Offshore Oil-Related	30%	35%	
Personal Accident	27.5%	32.5%	
Workmen's Compensation and Employer's Liability	30%	37.5%	
Others	30%	37.5%	
Non-proportional reinsurance/retakaful[74] business			
All classes of business	45%	50%	20%

Catastrophe risk

S 11. A licensed general insurer/general takaful operator must apply the catastrophe risk capital charge to general insurance/general takaful contracts, including MHIT and PA contracts.

S 12. In relation to paragraph 11 of this appendix, a licensed general insurer/general takaful operator must determine the catastrophe risk capital charge as the sum of the catastrophe risk capital charges for all material perils.

S 13. In relation to paragraph 12 of this appendix, for business within Malaysia, a licensed general insurer/general takaful operator must ensure that the catastrophe risk capital charge, at minimum, covers flood peril.

S 14. For flood peril in relation to business within Malaysia, a licensed general insurer/general takaful operator must use one of the following methods to determine the catastrophe risk capital charge:
(a) catastrophe model, by taking the difference between the 99.5th percentile and the mean of the total annual net[75] losses derived from the catastrophe model; or
(b) factor-based approach, by multiplying a factor of 0.05% with the sum insured/covered for classes of business that are exposed to flood peril.

S 15. For other material perils, a licensed general insurer/general takaful operator must determine the catastrophe risk capital charge using a factor-based approach, by multiplying the gross aggregate limit for insurance/takaful

[74] Applicable to professional reinsurers/retakaful operators only.
[75] Net of reinsurance/retakaful recoveries.

contracts that are exposed to the peril[76] with the factor specified in **Table 2** of this appendix.

Table 2: Factors for catastrophe risk capital charges for other material perils

Peril	Factor
Earthquake	5%
Windstorm	2%
Other perils (including flood peril in relation to business outside Malaysia)	1%

S 16. Where a licensed general insurer/general takaful operator uses a catastrophe model as set out in paragraph 14(a) of this appendix, the licensed general insurer/general takaful operator must demonstrate that the following safeguards are met:

(a) Validation – The licensed general insurer/general takaful operator has put in place a rigorous independent review process to establish that the catastrophe model is sound and to identify any limitations of the catastrophe model as well as any improvements required to the catastrophe model;

(b) Statistical quality test – The licensed general insurer/general takaful operator assesses the following technical aspects of the catastrophe model to ensure their appropriateness:

(i) data, including any reliance on external data;

(ii) methodology and assumptions, including any reliance on expert judgement and consistency with valuation of insurance/takaful liabilities;

(iii) allowance for diversification effects; and

(iv) allowance for reinsurance/retakaful recoveries;

(c) Use test – The licensed general insurer/general takaful operator ensures that the catastrophe model reflects its risk profile and is used more widely within its business operations such as business planning, risk management and decision making;

(d) Governance – The licensed general insurer/general takaful operator has put in place clear governance structure and effective internal controls to ensure the ongoing reliability of the catastrophe model, including engagements with its senior management and board to ensure that they have sufficient understanding of the catastrophe model; and

(e) Documentation – The licensed general insurer/general takaful operator maintains proper documentation of the catastrophe model which clearly explains the following:

(i) design of the catastrophe model, including detailed description and justifications of the technical aspects of the catastrophe model as listed under paragraph 16(b) of this appendix, any limitations of the catastrophe model, and any subsequent changes to the catastrophe model; and

[76] Gross aggregate limit for insurance/takaful contracts that are exposed to the peril refers to the maximum amount of gross loss covered by a licensed person over a one-year period (before deducting reinsurance/retakaful recoveries), aggregated across all insurance/takaful contracts that are exposed to the peril.

(ii) results of the validation, statistical quality test and use test that have been conducted.

S 17. A licensed general insurer/general takaful operator must clearly document in the RBC report[77] the methodology used to determine the catastrophe risk capital charge for flood peril in relation to business within Malaysia. Where a catastrophe model is used, a licensed general insurer/general takaful operator must clearly document how the safeguards set out in paragraph 16 of this appendix have been met.

G 18. The use of catastrophe model by a licensed general insurer/general takaful operator pursuant to paragraph 14(a) of this appendix is subject to a three-year period of monitoring by the Bank (hereinafter referred to as “monitoring period”) which commences from the effective date of this policy document.

S 19. After the monitoring period, if the Bank assesses that the safeguards set out in paragraph 16 of this appendix have not been met, the licensed general insurer/general takaful operator must determine the catastrophe risk capital charge using the factor-based approach set out in paragraph 14(b) of this appendix until the licensed general insurer/general takaful operator is able to demonstrate and the Bank assesses that the safeguards have been met.

[77] Refer to the requirement under paragraph 37.4 of this policy document.

Appendix 3 Classes of business for general insurance/general takaful risk

Class of business	Definition
Aviation	Insurance/takaful coverage geared specifically to the operation of aircraft and the risks involved in aviation, including Aviation Hull and Liabilities, Satellites, Airport Operator's Liabilities, Aircraft Refuelling Liabilities and Pilot's Loss of Licence.
Cargo	Insurance/takaful coverage that protects a buyer or seller of goods being transported through land, water and air, including Marine Cargo, Air Cargo, Land Transit, Marine Cargo Loss of Profits, Cargo Throughput Policies, Port Operator's Liability, Freight Forwarder's Liability, Freight Cover, etc.
Contractors' All Risks and Engineering	Insurance/takaful coverage that provides economic safeguard against the risks faced by ongoing construction project, installation project and machines and equipment in project operations, including Contractor's All Risks, Erection All Risks, Advance Loss of Profits, Machinery Breakdown, Boiler Explosion, Related Loss of Profits, Computer All Risks and Storage Vessels, but excluding contract bonds.
Long-Term Fire	Fire insurance/takaful cover with policy/takaful certificate term of more than one year[78]. Fire insurance/takaful refers to insurance/takaful coverage provided against damages to a property caused by fire, including Industrial All Risks, Fire and Allied Perils Material Damage, Loss of Profits and Houseowners or Householders.
Short-Term Fire	Fire insurance/takaful cover with policy/takaful certificate term of one year or less.
Liabilities	Insurance/takaful coverage for liabilities such as Public Liability or General Third Party Liability, Products Liability, Professional Indemnity, Errors and Omissions Cover, Directors' and Officers' Liability and other forms of liability.
Marine Hull	Insurance/takaful coverage that covers loss or damage to hull and machinery, including Marine Hull Loss of Profits, Loss of Hire, Builder's Risk and Marine Liability.
Long-Term Medical and Health	Medical and health insurance/takaful cover with policy/takaful certificate term of more than one year, including guaranteed yearly renewable medical and health insurance/takaful cover.
Short-Term Medical and Health	Medical and health insurance/takaful cover with policy/takaful certificate term of one year or less, including non-guaranteed yearly renewable medical and health insurance/takaful cover, but excluding guaranteed yearly renewable medical and health insurance/takaful cover which is captured under Long-Term Medical and Health.

[78] Excluding annual fire policies/takaful certificates where the duration of cover is extended by more than 12 months under conditions specified in section 1.20 of the Revised Fire Tariff issued by Persatuan Insurans Am Malaysia (PIAM), provided that the duration of cover does not exceed 24 months. These fire policies/takaful certificates are captured under Short-Term Fire.

Motor Liability	The following motor insurance/takaful cover and claims made in respect of such cover: (a) Liabilities to third parties corresponding to the requirements under the Road Transport Act 1987; (b) Legal liabilities to passengers in the vehicle; and (c) Legal liabilities of passengers for negligent acts. Motor refers to insurance/takaful coverage on a motor vehicle, including liabilities arising and other specified benefits against risks from the use of the motor vehicle.
Motor Others	Any motor insurance/takaful cover, other than Motor Liability, and claims made in respect of such cover.
Onshore and Offshore Oil-Related	Insurance/takaful coverage for oil and gas exploration, development (including construction) and production risks, offshore or onshore, for account of owners or operators of such risks, or offshore oil and gas contractors.
Personal Accident	Insurance/takaful coverage providing fixed pecuniary benefits or benefits in the nature of indemnity, or both, against risks of the person insured/covered sustaining injury or dying as a result of an accident or becoming incapacitated in consequence of a disease, including individual personal accident, group personal accident and travel insurance/takaful with a significant personal accident element.
Workmen's Compensation and Employer's Liability	All insurance/takaful coverage indemnifying employers in respect of their liabilities to workmen either under Workmen's Compensation Act or under common law.
Others	All other types of miscellaneous insurance/takaful coverage not falling within any of the above classifications.

Appendix 4 Market risk capital charges

Interest/profit rate risk

S 1. A licensed person must calculate the interest/profit rate risk capital charge as the higher of the reduction in NAV under the increasing interest/profit rate scenario and the decreasing interest/profit rate scenario, subject to a floor of zero.

S 2. In determining the reduction in NAV under paragraph 1 of this appendix, a licensed person must recalculate the value of all assets[79] and liabilities that are sensitive to changes in interest/profit rates, as follows:

(a) under the base scenario, the licensed person must determine the value of the interest/profit rate sensitive assets and the net central estimate insurance/takaful liabilities by discounting the cash flows of the assets and liabilities using the base risk-free yield curve as derived in paragraph 30.2 of this policy document; and

(b) under the increasing and decreasing interest/profit rate scenarios, the licensed person must determine the value of the interest/profit rate sensitive assets and the net central estimate insurance/takaful liabilities by discounting the cash flows of the assets and liabilities using the stressed risk-free yield curves as derived in paragraph 5 of this appendix.

S 3. In the case of interest/profit rate derivatives, a licensed person must convert each derivative into notional positions in the relevant underlying instruments of the derivative. In particular–

(a) for futures and forwards, including forward rate agreements–

(i) the licensed person must treat positions in interest/profit rate futures or forwards as a combination of a notional short position and a notional long position in a zero-coupon government security with maturity equal to the period until the delivery or exercise of the derivative contract plus, where applicable, the residual maturity of the underlying instrument[80];

(ii) the licensed person must treat positions in futures or forwards on debt securities (or debt indices) as a combination of a notional long (or short) position in the underlying debt security (or debt portfolio) and a notional short (or long) position in a zero-coupon government security with maturity equal to the period until the expiry of the futures or forward contract; and

[79] Including but not limited to, debt securities, debentures, commercial papers, short-term notes, asset-backed securities, loans/financing, deposits, hybrid securities (e.g. convertible bonds/sukuk, preference shares, subordinated debt, perpetual bonds/sukuk) that behave like debt securities, and interest/profit rate derivatives (e.g. futures, forwards, swaps, options). Where the interest/profit rate sensitive assets have embedded options such as call or put provisions or prepayment or refinancing rights, a licensed person must take into account the likelihood and effect of these options being exercised in recalculating the value of these assets.

[80] For example, a long position in a June three-month interest/profit rate future shall, in April, be treated as a notional short position in a zero-coupon government security with maturity of two months and a notional long position in a zero-coupon government security with maturity of five months.

(iii) the licensed person must determine the relevant notional long and short positions for currency futures or forwards with interest/profit rate element based on each underlying currency leg;

(b) for swaps–

(i) the licensed person must treat positions in swaps as a combination of a notional long position and a notional short position in a government security. For example, a plain vanilla interest/profit rate swap under which the licensed person receives fixed rate and pays floating rate shall be treated as a notional long position with coupon equal to the fixed rate and maturity equal to the remaining maturity of the swap, and a notional short position with coupon equal to the floating rate and maturity equal to the period until the next reset date; and

(ii) where one of the legs of the swap involves cash flows that are not related to interest/profit rates, the licensed person must include the leg as an exposure in the relevant market sub-risks. For example, an equity swap under which the licensed person receives an amount based on the change in value of an individual equity or equity index and pays fixed rate shall be treated as a notional long position in an equity instrument, and a notional short position in a government security with coupon equal to the fixed rate; and

(c) for options–

(i) the licensed person must treat positions in options as a combination of a notional long position and a notional short position, similar to other derivatives. However, the licensed person must determine the notional positions using the delta equivalent approach described in paragraph 24 of this appendix[81].

G 4. Where a direct position in interest/profit rate sensitive assets is matched by opposite positions in interest/profit rate derivatives, a licensed person may offset the positions in interest/profit rate derivatives against the direct position in interest/profit rate sensitive assets.

S 5. A licensed person must derive the upward and downward stressed risk-free yield curves for the increasing and decreasing interest/profit rate scenarios respectively using the approach set out in paragraph 30.2 of this policy document, but applying the upward and downward stresses specified in paragraph 6 of this appendix to the parameters used to derive the risk-free yield curve as specified in paragraphs 3 and 4 of **Appendix 10**.

S 6. In determining the upward and downward stressed risk-free yield curves, a licensed person must apply the upward and downward stresses set out in the following tables, which represent a relative increase and decrease in the rates respectively:

(a) **Table 1** of this appendix for cash flows denominated in MYR; and

(b) **Table 2** of this appendix for cash flows denominated in currencies other than MYR.

[81] For example, a call option purchased by the licensed person on a June three-month interest/profit rate future shall, in April, be treated as a notional short position with maturity of two months and a notional long position with maturity of five months, based on the delta equivalent value of the option.

Table 1: Stresses for MYR-denominated cash flows

Parameters	Duration (in years)	Insurance business		Takaful business	
		Upward stress	Downward stress	Upward stress	Downward stress
Market information	1	75%	60%	70%	50%
	2	70%	57.5%	65%	47.5%
	3	65%	55%	60%	45%
	5	35%	50%	35%	37.5%
	7	25%	45%	25%	35%
	10	20%	40%	20%	32.5%
	15	15%	35%	15%	30%
Long-term forward rate (LTFR)		10%	10%	10%	10%

Table 2: Stresses for non-MYR denominated cash flows

Parameters	Duration (in years)	Upward stress	Downward stress
Market information	1	125%	65%
	2	125%	65%
	3	120%	65%
	4	120%	65%
	5	120%	65%
	6	120%	65%
	7	120%	65%
	8	120%	60%
	9	115%	60%
	10	115%	60%
	11	115%	60%
	12	115%	60%
	13	110%	60%
	14	110%	55%
	15	105%	55%
	16	105%	55%
	17	100%	55%
	18	100%	50%
	19	95%	50%
	20 to last liquid point (LLP)	95%	50%
LTFR		10%	10%

S 7. Where the reduction in NAV for one fund is higher under the increasing interest/profit rate scenario and the reduction in NAV for another fund is higher under the decreasing interest/profit rate scenario, a licensed person must determine the scenario that produces the higher reduction in NAV at the entity level (i.e. dominant scenario). The licensed person must then calculate the interest/profit rate risk capital charge for each fund based on the dominant scenario, subject to a floor of zero.

Non-default spread risk

S 8. The licensed person must calculate the non-default spread risk capital charge as the reduction in NAV after applying the stress specified in paragraph 10 of this appendix, subject to a floor of zero.

S 9. In determining the reduction in NAV under paragraph 8 of this appendix, a licensed person must recalculate the value of all assets[82] that are sensitive to changes in spreads, by applying the specified stress on the spreads of these assets, where spreads refer to the difference between the spot yields of the assets and the risk-free rates derived under paragraph 30.2 of this policy document.

S 10. In determining the non-default spread risk capital charge, a licensed person must apply a relative increase of 75% in the spreads, where the absolute increase in the spreads is subject to a floor of zero basis points and a cap of 150 basis points.

Equity risk

S 11. A licensed person must calculate the equity risk capital charge as the reduction in NAV after applying the stresses specified in paragraph 13 of this appendix, subject to a floor of zero.

S 12. A licensed person must apply the equity risk capital charge to the following equity exposures:
(a) equity instruments, including but not limited to, ordinary shares, warrants, depository receipts and transferable subscription rights;
(b) equity derivatives, including but not limited to, futures, forwards, swaps and options on individual equities or equity indices; and
(c) any other instruments that exhibit market behaviour similar to equities[83].

S 13. In determining the equity risk capital charge, a licensed person must apply the stresses set out in **Table 3** of this appendix, which represent a decrease in the market value of the equity exposures.

[82] Including but not limited to, debt securities, debentures, commercial papers, short-term notes, asset-backed securities, loans/financing, deposits, and hybrid securities (e.g. convertible bonds/sukuk, preference shares, subordinated debt, perpetual bonds/sukuk) that behave like debt securities, but excluding instruments issued or guaranteed by the Federal Government of Malaysia and the Bank.
[83] Including hybrid securities (e.g. convertible bonds/sukuk, preference shares, subordinated debt, perpetual bonds/sukuk) that behave like equities. The treatment for investments in equities of unlisted single-purpose property holding companies is specified in paragraph 17(b) of this appendix.

Table 3: Stresses for equity risk

Type of equity exposure	Stress
(a) Equity exposures listed on stock exchanges in Malaysia[84]	30%
(b) Equity exposures listed on stock exchanges in developed markets[85]	35%
(c) Equity exposures listed on stock exchanges in emerging markets[86]	50%
(d) Other equity exposures[87]	50%

S 14. In the case of equity derivatives, a licensed person must ensure that–

(a) positions in futures and forwards relating to individual equities are based on the market value of the underlying individual equities;

(b) positions in futures and forwards relating to equity indices are based on either of the following:

(i) the index value multiplied by the monetary value of one index point as set by the futures exchange; or

(ii) the market value of the notional underlying equity portfolio;

(c) positions in options relating to individual equities or equity indices are determined using the delta equivalent approach described in paragraph 24 of this appendix; and

(d) positions in other equity derivatives are converted into notional positions in the relevant underlying equity instruments and then determined based on the market value of the underlying equity instruments.

G 15. Where a direct position in equity instruments is matched by opposite positions in equity derivatives, a licensed person may offset the positions in equity derivatives against the direct position in equity instruments.

<u>Property risk</u>

S 16. A licensed person must calculate the property risk capital charge as the reduction in NAV after applying the stress specified in paragraph 18 of this appendix, subject to a floor of zero.

S 17. A licensed person must apply the property risk capital charge to the following property exposures:

(a) immovable properties, including both self-occupied properties and investment properties;

(b) investments in equities of unlisted single-purpose property holding companies that meet the following criteria[88]:

[84] Stock exchanges in Malaysia refer to Bursa Malaysia and Labuan International Financial Exchange.
[85] Developed markets refer to countries constituting the Financial Times Stock Exchange (FTSE) Developed Index.
[86] Emerging markets refer to countries other than Malaysia and developed markets.
[87] Including unlisted or private equities (e.g. venture capital), and indirect investment exposures for which the licensed person adopts the fall-back approach as per paragraph 21.7 of this policy document.
[88] Investments that do not meet the criteria shall be classified as equity exposures.

(i) the company wholly owns the property, including all rights, interests and benefits relating to the ownership of the property; and

(ii) the company does not have significant liabilities other than in relation to loan facilities taken for the purchase of the property; and

(c) any other instruments that exhibit market behaviour similar to properties[89].

S 18. In determining the property risk capital charge, a licensed person must apply a decrease of 25% in the market value of the property exposures.

Currency risk

S 19. A licensed person must calculate the currency risk capital charge as the reduction in NAV after applying the stress specified in paragraph 23 of this appendix, subject to a floor of zero.

S 20. A licensed person must first determine the net open position for each currency other than MYR as the sum of the following:

(a) the aggregate of assets less liabilities denominated in the currency; and

(b) the aggregate of amounts denominated in the currency to be received by the licensed person less amounts denominated in the currency to be paid by the licensed person under foreign exchange derivatives including currency futures, forwards, swaps and options.

S 21. A licensed person must then convert the net open position into MYR at the spot exchange rate as at the reporting date.

S 22. A licensed person must calculate the foreign currency exposures as the higher of the absolute value of the following:

(a) the aggregate of net open positions for currencies with positive net open position (hereinafter referred to as “net long positions”); and

(b) the aggregate of net open positions for currencies with negative net open position (hereinafter referred to as “net short positions”).

S 23. In determining the currency risk capital charge, a licensed person must apply a decrease of 8% in the value of the foreign currency exposures.

Treatment of options

S 24. A licensed person must calculate the exposure amount for options by multiplying the market value of the instrument underlying the option with the delta[90] of the option.

[89] Including properties, plant and equipment (PPE) and RoU assets.

[90] Delta refers to the sensitivity of the price of the option relative to the price of the instrument underlying the option.

Asset concentration risk

S 25. A licensed person must calculate the asset concentration risk capital charge by multiplying the excess exposures determined in paragraphs 27 and 28 of this appendix with the factors specified in paragraph 31 of this appendix.

S 26. In determining the excess exposures for the purpose of calculating the asset concentration risk capital charge, a licensed person must include all assets[91], with the exception of–

(a) exposures to the Federal Government of Malaysia;
(b) exposures to the Bank;
(c) cash on deposit protected by the Malaysia Deposit Insurance Corporation, to the extent of the amount insured under the Malaysia Deposit Insurance Corporation Act 2011; and
(d) exposures in investment-linked unit funds and PIFs.

S 27. For immovable properties, a licensed person must calculate the excess exposure to a single immovable property, XP_i at the entity level as follows:

$$XP_i = \max [EP_i - CP \times Assets_{xl} , 0]$$

where,

EP_i refers to the sum of exposures to single immovable property *i*, excluding exposures specified in paragraphs 26(a) to 26(d) of this appendix. Properties that are located in the same building must be treated as a single immovable property;

CP refers to the relative excess exposure threshold for single immovable property, which is equal to 10%; and

$Assets_{xl}$ refers to the total assets of all funds excluding investment-linked unit funds and PIFs.

S 28. For assets other than immovable properties, a licensed person must calculate the excess exposure to a single name exposure, XS_i at the entity level as follows:

$$XS_i = \max [E_i - CT_i \times Assets_{xl} , 0]$$

where,

E_i refers to the sum of exposures to all counterparties that belong to single name exposure *i*, excluding exposures specified in paragraphs 26(a) to 26(d) of this appendix. Counterparties that belong to the same corporate group must be treated as a single name exposure; and

[91] Including but not limited to, debt securities, equities, and indirect investment exposures determined using the look-through approach specified in paragraph 21 of this policy document.

CT_i refers to the relative excess exposure threshold based on the rating category of single name exposure *i*, as set out in **Table 4** of this appendix.

Table 4: Thresholds for single name exposure

Rating category	Relative excess exposure threshold (CT)
1	3%
2	3%
3	3%
4	1.5%
5	1.5%
6	1.5%
7	1.5%
Unrated	1.5%

S 29. A licensed person must determine the rating category of the single name exposure based on the weighted average of the rating categories[92] of all exposures, using the value of each exposure as the weight, rounded up to the nearest digit.

S 30. In determining the asset concentration risk capital charge for each fund, a licensed person must apportion the excess exposures at the entity level to the fund based on the exposures in the fund.

S 31. In determining the asset concentration risk capital charge, a licensed person must apply the factors set out in **Table 5** of this appendix.

Table 5: Factors for asset concentration risk

Type of asset	Rating category	Factor
Immovable properties		12%
Assets other than immovable properties	1	12%
	2	12%
	3	21%
	4	27%
	5	73%
	6	73%
	7	73%
	Unrated	73%

[92] The rating categories must be determined in accordance with paragraphs 15 to 20 of **Appendix 5**.

Appendix 5 Credit risk capital charges

S 1. A licensed person must apply the credit risk capital charges to the following credit exposures[93]:
(a) credit exposures to public sector entities;
(b) credit exposures to corporates;
(c) credit exposures to (re)insurers/(re)takaful operators;
(d) credit exposures secured by immovable properties;
(e) credit exposures to over-the-counter (OTC) derivatives; and
(f) other credit exposures.

S 2. A licensed person must not apply the credit risk capital charges to the following exposures:
(a) credit exposures issued or guaranteed by the Federal Government of Malaysia;
(b) credit exposures issued or guaranteed by the Bank[94];
(c) credit exposures to recognised multilateral development banks; and
(d) cash in hand and cash on deposit[95] with licensed banks, licensed investment banks, licensed Islamic banks and prescribed development financial institutions.

S 3. In relation to paragraph 2(c) of this appendix, a licensed person must only consider the following multilateral development banks as recognised multilateral development banks:
(a) World Bank Group which comprises the International Bank for Reconstruction and Development, the International Finance Corporation, the Multilateral Investment Guarantee Agency and the International Development Association;
(b) Asian Development Bank;
(c) African Development Bank;
(d) European Bank for Reconstruction and Development;
(e) Inter-American Development Bank;
(f) European Investment Bank;
(g) European Investment Fund;
(h) Nordic Investment Bank;
(i) Caribbean Development Bank;
(j) Islamic Development Bank;
(k) Council of Europe Development Bank;
(l) International Finance Facility for Immunisation; and
(m) Asian Infrastructure Investment Bank.

[93] Including but not limited to, debt securities, debentures, commercial papers, short-term notes, asset-backed securities, loans/financing, and hybrid securities (e.g. convertible bonds/sukuk, preference shares, subordinated debt, perpetual bonds/sukuk) that behave like debt securities.
[94] Including special purpose vehicles established by the Bank to facilitate the issuance of securities e.g. Bank Negara Malaysia Sukuk Ijarah and BNMi-Murabahah issued through BNM Sukuk Berhad.
[95] Excluding structured deposits and restricted investment accounts.

Credit exposures to public sector entities

S 4. A licensed person must compute the credit risk capital charges in respect of credit exposures to public sector entities which refer to national governments, central banks, state governments, regional governments, municipal authorities and other government entities other than the Federal Government of Malaysia and the Bank.

S 5. A licensed person must split the credit exposures to public sector entities according to the rating category[96] of the counterparty and the maturity[97] of the credit exposure.

S 6. A licensed person must calculate the credit risk capital charge for credit exposures to public sector entities as the reduction in NAV after applying the stresses specified in paragraph 45 of this appendix to the market value of the credit exposures, subject to a floor of zero.

Credit exposures to corporates

S 7. A licensed person must compute the credit risk capital charges in respect of credit exposures to corporates which refer to banks[98], securities dealers, commercial undertakings that are owned but not guaranteed by governments or municipal authorities, and other corporate entities, excluding (re)insurers/(re)takaful operators.

S 8. A licensed person must split the credit exposures to corporates according to the rating category[99] of the counterparty and the maturity[100] of the credit exposure.

S 9. A licensed person must calculate the credit risk capital charge for credit exposures to corporates as the reduction in NAV after applying the stresses specified in paragraph 46 of this appendix to the market value of the credit exposures, subject to a floor of zero.

Credit exposures to (re)insurers/(re)takaful operators

S 10. A licensed person must determine the credit exposures to (re)insurers/(re)takaful operators as the sum of the following:

(a) all positive on-balance sheet reinsurance/retakaful assets and receivables, including–

(i) reinsurance/retakaful recoveries in respect of incurred claims, including those in respect of paid claims and those recognised in the net central estimate liabilities for expired portion of risk[101];

[96] The rating category must be determined in accordance with paragraphs 15 to 20 of this appendix.
[97] The maturity must be determined in accordance with paragraphs 21 to 23 of this appendix.
[98] Excluding exposures in paragraphs 2(c) and 2(d) of this appendix.
[99] The rating category must be determined in accordance with paragraphs 15 to 20 of this appendix.
[100] The maturity must be determined in accordance with paragraphs 21 to 23 of this appendix.
[101] This must include expected reinsurance/retakaful recoveries recognised in IBNR reserves.

(ii) reinsurance/retakaful deposits in respect of reinsurance/retakaful accepted; and
(iii) other amounts due from (re)insurers/(re)takaful operators;

(b) expected reinsurance/retakaful recoveries recognised in the net central estimate liabilities for unexpired portion of risk, which is determined as the difference between gross and net central estimate liabilities for unexpired portion of risk; and

(c) expected reinsurance/retakaful recoveries recognised in the insurance/takaful risk capital charges, which is determined as the difference between the insurance/takaful risk capital charges[102], before taking into account the impact of management actions[103] but after taking into account the diversification benefit within insurance/takaful risk[104], on gross and net of reinsurance/retakaful basis.

S 11. A licensed person must split the credit exposures to (re)insurers/(re)takaful operators into–

(a) credit exposures to licensed insurers, licensed takaful operators, professional reinsurers and professional retakaful operators, which must be further split according to the maturity[105] of the credit exposure;

(b) credit exposures to qualifying (re)insurers and qualifying (re)takaful operators, which must be further split according to the maturity[106] of the credit exposure; and

(c) credit exposures to other (re)insurers and (re)takaful operators, which must be further split according to the rating category[107] of the counterparty and the maturity[108] of the credit exposure.

S 12. In relation to paragraph 11(b) of this appendix, a licensed person must only consider a (re)insurer/(re)takaful operator licensed under the Labuan Financial Services and Securities Act 2010/Labuan Islamic Financial Services and Securities Act 2010[109] that satisfies the following conditions as a qualifying (re)insurer/(re)takaful operator:

(a) the (re)insurer/(re)takaful operator carries a financial strength rating of category 3 or higher[110]; or

(b) the (re)insurer/(re)takaful operator has obtained an explicit and irrevocable guarantee from its parent company (or head office[111]) to fully support the (re)insurer/(re)takaful operator in the event of financial

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[102] Except for catastrophe risk capital charge for general insurance/general takaful business that is calculated using the factor-based approach as per paragraphs 14(b) and 15 of **Appendix 2**.
[103] As specified in paragraph 17 of this policy document.
[104] As specified in paragraphs 23.2 and 23.3 of this policy document.
[105] The maturity must be determined in accordance with paragraphs 21 to 23 of this appendix.
[106] The maturity must be determined in accordance with paragraphs 21 to 23 of this appendix.
[107] The rating category must be determined in accordance with paragraphs 15 to 20 of this appendix.
[108] The maturity must be determined in accordance with paragraphs 21 to 23 of this appendix.
[109] Administered by the Labuan Financial Services Authority.
[110] As specified in paragraph 20 of this appendix.
[111] Where the (re)insurer/(re)takaful operator is a branch, the head office must provide an explicit and irrevocable undertaking to immediately transfer funds in the event of (expected) depletion of working capital or a large loss being intimated.

difficulties, and its parent company (or head office) is licensed under the FSA/IFSA or carries a financial strength rating of category 3 or higher[112].

S 13. In relation to paragraph 12(b) of this appendix, the guarantee from the parent company of the (re)insurer/(re)takaful operator must fulfil at least the following conditions:

(a) the guarantee covers all reinsurance/retakaful arrangements between the (re)insurer/(re)takaful operator and the licensed person;

(b) the guarantee covers the entire amount of the (re)insurer/(re)takaful operator's liabilities to the licensed person arising from the reinsurance/retakaful arrangements, including reinsurance/retakaful recoveries and other liabilities as agreed upon in the reinsurance/retakaful arrangements;

(c) the guarantee is in effect for the entire duration that the (re)insurer/(re)takaful operator is exposed to the risk of claims under the reinsurance/retakaful arrangements; and

(d) the guarantee is irrevocable subject to the validity of the reinsurance/retakaful claims. The (re)insurer/(re)takaful operator must not unilaterally cancel the guarantee under any circumstances, as long as the reinsurance/retakaful arrangements still expose the (re)insurer/(re)takaful operator to the risk of claims.

S 14. A licensed person must calculate the credit risk capital charge for credit exposures to (re)insurers/(re)takaful operators as the reduction in NAV after applying the stresses specified in paragraph 47 of this appendix to the credit exposures as per paragraph 10 of this appendix, subject to a floor of zero.

<u>Rating category of counterparty</u>

S 15. A licensed person must use the rating accorded by either a recognised rating agency established in Malaysia or an internationally recognised rating agency.

S 16. Where an exposure is rated by more than one rating agency, a licensed person must apply the following principles:

(a) where two ratings are available, the licensed person must use the lower of the two ratings; and

(b) where three or more ratings are available, the licensed person must use the lower of the two highest ratings.

S 17. For credit exposures to national governments and central banks, a licensed person must use the sovereign rating.

S 18. For credit exposures other than to national governments and central banks, a licensed person must use an issue-specific rating, where available. However, where an issue-specific rating is not available, the licensed person must apply the following principles:

[112] As specified in paragraph 20 of this appendix. Where the financial strength rating of the parent company (or head office) is not available, the rating of subordinated debt issued by the parent company (or head office) may be used.

(a) where the counterparty does not have an issuer-specific rating but has an issue-specific rating on other debt obligations which the licensed person is not exposed to, the licensed person may use the issue-specific rating for exposures to the counterparty if the exposures rank *pari passu* or senior to the rated debt obligations in all respects. Otherwise, the licensed person must treat the exposures as unrated; and

(b) where the counterparty has an issuer-specific rating, the licensed person may use the issuer-specific rating only for senior unsecured exposures to the counterparty. The licensed person must treat other exposures to the counterparty as unrated.

S 19. Since short-term ratings are issue-specific, a licensed person must only use these ratings for exposures with maturity of one year or less and to which the ratings apply.

S 20. A licensed person must map the ratings accorded by rating agencies to the rating categories set out in **Table 1** of this appendix.

Table 1: Mapping of rating categories[113]

Rating category	Standard & Poor's Rating Services (S&P)	Moody's Investors Service, Inc. (Moody's)	Fitch Ratings, Inc. (Fitch)	Rating and Investment Information, Inc. (R&I)	A.M. Best Company, Inc (AM Best)	RAM Rating Services Berhad (RAM)	Malaysian Rating Corporation Berhad (MARC)
1	AAA	Aaa	AAA	AAA	AAA	AAA	AAA
2	AA / A-1	Aa / P-1	AA / F1	AA / a-1	AA / AMB-1	AA / P-1	AA / MARC-1
3	A / A-2	A / P-2	A / F2	A / a-2	A / AMB-2	A / P-2	A / MARC-2
4	BBB / A-3	Baa / P-3	BBB / F3	BBB / a-3	BBB / AMB-3	BBB / P-3	BBB / MARC-3
5	BB	Ba	BB	BB	BB	BB	BB
6	B / B	B / NP	B / B	B / b	B / AMB-4	B / NP	B / MARC-4
7	CCC / C and lower	Caa and lower	CCC / C and lower	CCC / c and lower	CCC and lower	CCC and lower	CCC and lower

<u>Maturity of credit exposure</u>

S 21. A licensed person must determine the maturity of each credit exposure using effective maturity which shall be calculated as:

$$\text{Effective Maturity} = \frac{\Sigma_t \, (t \times CF_t)}{\Sigma_t \, CF_t}$$

[113] Modifiers such as + or - are captured within the same rating category. Where two ratings are listed in a cell, the first rating represents the long-term rating and the second rating represents the short-term rating.

where,

CF_t refers to the cash flows contractually payable by the counterparty (e.g. principal, interest/profit payments, fees) in time period *t.*

S 22. Where it is not possible to calculate the effective maturity of a credit exposure using the formula in paragraph 21 of this appendix, a licensed person must determine the maturity of the credit exposure as the maximum remaining time that the counterparty is permitted to take to fully discharge its contractual cash flow obligations under the terms of the credit exposure.

S 23. Where an eligible collateral or guarantee is reflected in the issue-specific rating used to determine the rating category of the counterparty, a licensed person must calculate the effective maturity based on the term of the underlying exposure, and not the term of the collateral or guarantee.

Credit risk mitigation using collaterals and guarantees

G 24. A licensed person may recognise an eligible collateral or guarantee as a credit risk mitigant (CRM) to reduce the credit risk capital charges for credit exposures to public sector entities and corporates.

S 25. A licensed person must not recognise a collateral or guarantee as a CRM to reduce the credit risk capital charges if the collateral or guarantee has already been reflected in the issue-specific rating used to determine the rating category of the counterparty.

S 26. In order for a collateral or guarantee to be eligible to be recognised as a CRM in determining the credit risk capital charges, a licensed person must ensure that the collateral or guarantee fulfils the following minimum conditions:

(a) the collateral or guarantee must have been posted and provided under a legally enforceable agreement. A commitment to provide the collateral or guarantee must not be recognised until it is fulfilled;

(b) all documentation used in the transactions relating to the collateral or guarantee must be binding on all parties and legally enforceable in all relevant jurisdictions;

(c) sufficient assurance from the licensed person's legal counsel must be obtained to ensure the legal enforceability of the documentation used in the transactions relating to the collateral or guarantee;

(d) periodic reviews must be undertaken to confirm the ongoing legal enforceability of the documentation used in the transactions relating to the collateral or guarantee; and

(e) for takaful business, the collateral or guarantee must be fully Shariah-compliant.

S 27. A licensed person must ensure that any residual risks from the use of CRMs, including legal, operational and liquidity risks, are controlled using robust risk management policies, processes and procedures.

Collateral

S 28. In addition to the minimum conditions specified in paragraph 26 of this appendix, a licensed person must fulfil the following conditions in order for a collateral to be eligible to be recognised as a CRM in determining the credit risk capital charges:

(a) in the event of default, insolvency or bankruptcy of the counterparty, the licensed person must have the legal right to liquidate or take legal possession of the collateral in a timely manner;
(b) the licensed person must take all steps necessary to fulfil the legal requirements to obtain and maintain an enforceable interest over the collateral;
(c) the licensed person must have clear and robust procedures for timely liquidation of the collateral to ensure that any legal conditions required for declaring the default of the counterparty and liquidating the collateral are observed;
(d) the licensed person must ensure that the collateral is regularly marked-to-market and pledged for a duration of at least the life of the credit exposure;
(e) the licensed person must ensure that the credit quality of the counterparty does not have a material positive correlation with the value of the collateral. In this regard, the licensed person must not recognise a collateral issued by the counterparty or a party related to the counterparty as eligible collateral; and
(f) where the collateral is held by a custodian, the licensed person must take reasonable steps to ensure that the custodian segregates the collateral from the custodian's own assets.

S 29. Where a licensed person recognises an eligible collateral as a CRM as specified in paragraph 24 of this appendix, the licensed person must adjust the market value of the credit exposure used to determine the credit risk capital charges as follows:

$$E^* = \max [E - C \times (1 - H_c - H_{fx}) , 15\% \times E]$$

where,

E^* refers to the market value of the credit exposure after adjustment for eligible collateral;

E refers to the market value of the credit exposure before adjustment for eligible collateral;

C refers to the market value of the collateral;

H_c refers to the haircut for the collateral, as specified in paragraph 30 of this appendix; and

H_{fx} refers to the haircut for currency mismatch between the collateral and the credit exposure, as specified in paragraph 31 of this appendix.

S 30. A licensed person must apply the haircut for an eligible collateral, H_c as follows:
(a) for collaterals that are not subject to credit risk capital charges as set out in paragraph 2 of this appendix, H_c is 0%;
(b) for collaterals that are debt securities issued by public sector entities and corporates with rating category of 2 or higher[114], H_c is equal to the specified stress under paragraphs 45 and 46 of this appendix according to the issuer of the collateral (whether public sector entity or corporate), the rating category[115] of the issuer and the maturity[116] of the collateral; and
(c) for collaterals that are listed equities, H_c is equal to the specified stress under paragraph 13 of **Appendix 4**, according to the type of equity.

S 31. Where an eligible collateral is denominated in a currency that is different from that of the credit exposures, a licensed person must apply a haircut for currency mismatch between the collateral and the credit exposure, H_{fx} of 8%.

S 32. In relation to paragraph 30 of this appendix, where the collateral is a basket of assets, the licensed person must determine the haircut for the collateral as the highest haircut that would be applicable to any of the assets in the basket.

Guarantee

S 33. In addition to the minimum conditions specified in paragraph 26 of this appendix, a licensed person must ensure that a guarantee fulfils the following conditions in order for the guarantee to be eligible to be recognised as a CRM in determining the credit risk capital charges:
(a) the guarantee must be provided by a recognised guarantor;
(b) the guarantee must represent a direct claim on the guarantor;
(c) the extent of the guarantee must be clearly defined and incontrovertible, with explicit reference to specific credit exposures or a pool of credit exposures;
(d) the guarantee must be irrevocable except where there is non-payment by the underlying counterparty covered by the guarantee;
(e) the guarantor must not have the right to unilaterally cancel the guarantee or increase the effective cost of the guarantee as a result of deteriorating credit quality of the guaranteed exposure;
(f) the guarantee must be unconditional such that there is no clause in the guarantee contract that could prevent the guarantor from being obliged to fulfil its obligations in a timely manner in the event of a default by the underlying counterparty;
(g) the guarantee must cover all types of payments that are due under the legal documentation governing the transaction, such as notional amount, margin payments, etc.;

[114] As specified in paragraph 20 of this appendix.
[115] The rating category must be determined in accordance with paragraphs 15 to 20 of this appendix.
[116] The maturity must be determined in accordance with paragraphs 21 to 23 of this appendix.

(h) the period of the guarantee must cover the full term of the credit exposures; and
(i) upon default or non-payment of the underlying counterparty, the licensed person must have the right to pursue the guarantor for any monies outstanding under the legal documentation governing the transaction in a timely manner, where the guarantor may make one lump sum payment of all monies to the licensed person, or the guarantor may assume the future payment obligations of the underlying counterparty.

S 34. In relation to paragraph 33(a) of this appendix, a licensed person must only consider the following entities as recognised guarantors, provided that the guarantor has a higher rating category than the underlying counterparty:
(a) the Federal Government of Malaysia or the Bank[117];
(b) recognised multilateral development banks[118];
(c) public sector entities or corporates (including financial guarantee insurers) with rating of category 2 or higher[119]; and
(d) licensed banks, licensed investment banks, licensed Islamic banks and prescribed development financial institutions.

S 35. Where a licensed person recognises an eligible guarantee as a CRM as specified in paragraph 24 of this appendix, the licensed person must apply the following specified stresses in determining the credit risk capital charges:
(a) for the guaranteed portion of the credit exposure, the specified stresses applicable to the guarantor; and
(b) for the non-guaranteed portion of the credit exposure, the specified stresses applicable to the underlying counterparty.

<u>Credit exposures secured by immovable properties</u>

S 36. In order for an immovable property to be recognised as security for a credit exposure in determining the credit risk capital charges, a licensed person must ensure that the following conditions are fulfilled:
(a) the immovable property must be a freehold property or leasehold property with unexpired lease period of at least 21 years;
(b) the financing-to-value (FTV) ratio[120] for the debt facility granted by the licensed person for the purchase of an immovable property must not exceed the following thresholds:
  (i) 90% for residential properties; and
  (ii) 70% for other properties;
(c) the licensed person must enter into a written agreement with the counterparty;
(d) the licensed person must require the counterparty to execute a deed of assignment where the rights and interests of the counterparty in the

[117] Including special purpose vehicles established by the Bank to facilitate the issuance of securities e.g. Bank Negara Malaysia Sukuk Ijarah and BNMi-Murabahah issued through BNM Sukuk Berhad.
[118] As specified in paragraph 3 of this appendix.
[119] As specified in paragraph 20 of this appendix.
[120] FTV ratio refers to the ratio of the amount of the debt facility granted by the licensed person over the market value of the immovable property on the date of the granting of the debt facility.

immovable property are assigned to the licensed person, and to register the deed of assignment under the National Land Code, Land Ordinance of Sabah or Land Code of Sarawak;

(e) the licensed person must require the counterparty to execute a power of attorney in favour of the licensed person which authorises the licensed person to execute a charge on the immovable property subject to the sale and purchase agreement with the counterparty;

(f) the licensed person must ensure that the sale and purchase agreement does not prohibit the lodgement of a private caveat by the licensed person, or prohibit the licensed person from being the financier for the purchase of the immovable property;

(g) the licensed person must obtain a confirmation from the developer or registered proprietor of the immovable property that there is no prior subsisting assignment of the rights and interests in the immovable property which would vitiate the deed of assignment;

(h) where the immovable property is subject to restriction in interest such that the immovable property cannot be transferred, assigned, charged, or otherwise dealt with, without the consent of the State Authority, the licensed person must ensure that the consent of the State Authority has been obtained for the sale or assignment of the immovable property to the person in whose name the immovable property is to be registered, and for the licensed person to acquire the immovable property in the event of a default in the repayment of the debt facility; and

(i) for a debt facility granted in Malaysia, the immovable property must be situated in Malaysia.

S 37. For credit exposures secured by immovable properties that meet the conditions set out in paragraph 36 of this appendix, a licensed person must calculate the credit risk capital charge as the reduction in NAV after applying the stresses specified in paragraph 48 of this appendix according to the type of property and the FTV ratio, to the market value of the credit exposures, subject to a floor of zero.

S 38. For credit exposures secured by immovable properties that do not meet the conditions set out in paragraph 36 of this appendix, a licensed person must determine the credit risk capital charge using the approach applied to credit exposures to public sector entities and corporates as set out in paragraphs 6 and 9 of this appendix respectively.

<u>Credit exposures to OTC derivatives</u>

S 39. A licensed person must determine the credit exposure to each OTC derivative contract based on its ‘credit equivalent value’ which is the sum of the following:

(a) replacement cost of the derivative contract, subject to a floor of zero; and

(b) an amount for potential future credit exposure to the derivative contract, which is determined by multiplying the notional principal amount[121] of the derivative contract with the add-on factor specified in **Table 2** of this appendix according to the type and residual maturity of the derivative contract.

Table 2: Add-on factors applicable to OTC derivatives

Residual maturity (X) (in years)	Type of derivative contract		
	Interest/profit rate	Equity	Foreign exchange[122]
X ≤ 1	0%	6%	1%
1 < X ≤ 5	0.5%	8%	5%
X > 5	1.5%	10%	7.5%

S 40. A licensed person must calculate the credit risk capital charge for each OTC derivative contract by applying the stresses specified in paragraphs 45 and 46 of this appendix according to the counterparty to the derivative contract (whether public sector entity or corporate), the rating category[123] of the counterparty and the maturity[124] of the derivative contract, to the credit exposure as per paragraph 39 of this appendix.

G 41. A licensed person may net the OTC derivative contracts where there is a legally enforceable contractual agreement between the licensed person and the counterparty under which any obligation to each other to deliver a given currency on a given value date is automatically amalgamated with all other obligations for the same currency and value date, legally substituting one single net amount for the previous gross obligations.

S 42. In relation to paragraph 41 of this appendix, where a licensed person opts to net the OTC derivative contacts, the licensed person must calculate the maturity of the OTC derivative contracts that are subject to netting as the weighted average of the maturities of the obligations that are subject to netting, using the notional amounts of the obligations as the weights.

<u>Other credit exposures</u>

S 43. A licensed person must calculate the credit risk capital charge for other credit exposures as the reduction in NAV after applying the stresses specified in paragraph 49 of this appendix to the market value of the credit exposures, subject to a floor of zero.

[121] A licensed person must determine the potential future credit exposure based on effective rather than stated notional amount. Where the stated notional amount is leveraged or enhanced by the structure of the transaction, the licensed person must use the actual or effective notional amount in determining the potential future credit exposure.
[122] Excluding foreign exchange contracts with original maturity of 14 days or less, for which the credit equivalent value is zero.
[123] The rating category must be determined in accordance with paragraphs 15 to 20 of this appendix.
[124] The maturity must be determined in accordance with paragraphs 21 to 23 of this appendix.

<u>Specified stresses for credit risk capital charges</u>

S 44. In determining the credit risk capital charges, a licensed person must apply the stresses specified in paragraphs 45 to 49 of this appendix, which represent a decrease in the value of the credit exposures.

S 45. For credit exposures to public sector entities, a licensed person must apply the stresses set out in **Table 3** of this appendix.

S 46. For credit exposures to corporates, a licensed person must apply the stresses set out in **Table 4** of this appendix.

S 47. For credit exposures to (re)insurers/(re)takaful operators, a licensed person must apply the stresses set out in–

(a) **Table 5** of this appendix for credit exposures to licensed[125] and qualifying[126] (re)insurers/(re)takaful operators; and

(b) **Table 6** of this appendix for credit exposures to other (re)insurers/(re)takaful operators[127].

S 48. For credit exposures secured by immovable properties, a licensed person must apply the stresses set out in **Table 7** of this appendix.

S 49. For other credit exposures, a licensed person must apply the following stresses:

(a) 6.3% for receivables[128] from intermediaries and other licensees under the FSA and IFSA; and

(b) 8% for other assets[129].

[125] As per paragraph 11(a) of this appendix.
[126] As per paragraph 11(b) of this appendix.
[127] As per paragraph 11(c) of this appendix.
[128] Including outstanding premiums/takaful contributions that have not been captured in the insurance/takaful liabilities.
[129] Including staff loans/financing (i.e. loans/financing granted by the licensed person to its staff under employment service contracts) and PPE which are exposed to credit risk (i.e. excluding self-occupied properties).

Table 3: Stresses for credit exposures to public sector entities

Rating category	Maturity (X) (in years)														
	X ≤ 1	1 < X ≤ 2	2 < X ≤ 3	3 < X ≤ 4	4 < X ≤ 5	5 < X ≤ 6	6 < X ≤ 7	7 < X ≤ 8	8 < X ≤ 9	9 < X ≤ 10	10 < X ≤ 11	11 < X ≤ 12	12 < X ≤ 13	13 < X ≤ 14	X > 14
1	0.1%	0.4%	0.5%	0.6%	0.7%	0.8%	0.9%	1.0%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%	1.3%
2	0.1%	0.4%	0.5%	0.6%	0.7%	0.8%	0.9%	1.0%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%	1.3%
3	0.4%	1.0%	1.3%	1.5%	1.8%	2.0%	2.2%	2.4%	2.5%	2.7%	2.8%	2.9%	3.0%	3.0%	3.1%
4	1.0%	2.2%	2.6%	3.0%	3.3%	3.6%	3.9%	4.1%	4.2%	4.4%	4.5%	4.6%	4.7%	4.8%	4.9%
5	2.5%	5.1%	6.0%	6.6%	7.0%	7.3%	7.5%	7.6%	7.6%	7.7%	7.8%	7.8%	7.9%	7.9%	7.9%
6	6.3%	10.8%	11.8%	12.3%	12.5%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%
7	22.0%	24.7%	25.2%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%
Unrated	2.5%	5.1%	6.0%	6.6%	7.0%	7.3%	7.5%	7.6%	7.6%	7.7%	7.8%	7.8%	7.9%	7.9%	7.9%
In default	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%

Table 4: Stresses for credit exposures to corporates

Rating category	Maturity (X) (in years)														
	X ≤ 1	1 < X ≤ 2	2 < X ≤ 3	3 < X ≤ 4	4 < X ≤ 5	5 < X ≤ 6	6 < X ≤ 7	7 < X ≤ 8	8 < X ≤ 9	9 < X ≤ 10	10 < X ≤ 11	11 < X ≤ 12	12 < X ≤ 13	13 < X ≤ 14	X > 14
1	0.2%	0.7%	0.9%	1.2%	1.4%	1.6%	1.7%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%	2.5%
2	0.2%	0.7%	0.9%	1.2%	1.4%	1.6%	1.7%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%	2.5%
3	0.6%	1.3%	1.6%	1.8%	2.1%	2.3%	2.6%	2.8%	3.0%	3.2%	3.3%	3.4%	3.5%	3.6%	3.7%
4	1.4%	3.0%	3.6%	4.1%	4.5%	4.9%	5.1%	5.3%	5.4%	5.6%	5.7%	5.8%	5.9%	6.0%	6.0%
5	3.6%	7.1%	8.3%	9.0%	9.4%	9.7%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
6	8.9%	14.4%	15.3%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%
7	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%
Unrated	6.3%	10.7%	11.8%	12.3%	12.5%	12.6%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%
In default	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%

Table 5: Stresses for credit exposures to licensed and qualifying (re)insurers/(re)takaful operators

Maturity (X) (in years)	X ≤ 1	1 < X ≤ 2	2 < X ≤ 3	3 < X ≤ 4	4 < X ≤ 5	5 < X ≤ 6	6 < X ≤ 7	7 < X ≤ 8	8 < X ≤ 9	9 < X ≤ 10	10 < X ≤ 11	11 < X ≤ 12	12 < X ≤ 13	13 < X ≤ 14	X > 14
Stress	0.2%	0.7%	0.9%	1.2%	1.4%	1.6%	1.7%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%	2.5%

Table 6: Stresses for credit exposures to other (re)insurers/(re)takaful operators

Rating category	Maturity (X) (in years)														
	X ≤ 1	1 < X ≤ 2	2 < X ≤ 3	3 < X ≤ 4	4 < X ≤ 5	5 < X ≤ 6	6 < X ≤ 7	7 < X ≤ 8	8 < X ≤ 9	9 < X ≤ 10	10 < X ≤ 11	11 < X ≤ 12	12 < X ≤ 13	13 < X ≤ 14	X > 14
1	0.2%	0.7%	0.9%	1.2%	1.4%	1.6%	1.7%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%	2.5%
2	0.2%	0.7%	0.9%	1.2%	1.4%	1.6%	1.7%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%	2.5%
3	0.6%	1.3%	1.6%	1.8%	2.1%	2.3%	2.6%	2.8%	3.0%	3.2%	3.3%	3.4%	3.5%	3.6%	3.7%
4	1.4%	3.0%	3.6%	4.1%	4.5%	4.9%	5.1%	5.3%	5.4%	5.6%	5.7%	5.8%	5.9%	6.0%	6.0%
5	3.6%	7.1%	8.3%	9.0%	9.4%	9.7%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
6	8.9%	14.4%	15.3%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%
7	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%
Unrated	6.3%	10.7%	11.8%	12.3%	12.5%	12.6%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%
In default	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%

Table 7: Stresses for credit exposures secured by immovable properties

Type of property	FTV ratio	Stress
Residential properties	FTV < 80%	2.8%
	80% ≤ FTV ≤ 90%	4.0%
Other properties	FTV ≤ 70%	5.6%
Abandoned properties		12%

Appendix 6 Operational risk capital charges

S 1. For life insurance/family takaful business, a licensed person must calculate the operational risk capital charge (ORCC) as follows:

$$ORCC = \max\left[4\% \times GP_{NAB}\ ,\ 0.45\% \times GCE_{NAB}\right] + 25\% \times ME_{AB}$$

where,

GP_{NAB} refers to gross weighted premiums/contributions for non-account-based products for the period of 12 months preceding the reporting date;

GCE_{NAB} refers to gross central estimate insurance/takaful liabilities for non-account-based products as at the reporting date; and

ME_{AB} refers to management expenses incurred for account-based products for the period of 12 months preceding the reporting date.

S 2. In computing the GP_{NAB}, a licensed person must determine the gross weighted premiums/contributions based on **Table 1** of this appendix.

Table 1: Gross weighted premiums/contributions

<table>
<tr><th>Type of contract</th><th>Gross weighted premiums/contributions</th></tr>
<tr><td>Single premium policies/single takaful contribution certificates with policy/takaful certificate term of more than one year</td><td>10% of gross written premiums/contributions[130] for the period of 12 months preceding the reporting date.</td></tr>
<tr><td>Limited-pay policies/takaful certificates with premium/takaful contribution payment term of less than 10 years</td><td>10% of gross written premiums/contributions[131] for the period of 12 months preceding the reporting date, multiplied by the number of years of premium/takaful contribution payment[132].</td></tr>
<tr><td>Limited-pay policies/takaful certificates with premium/takaful contribution payment term of 10 years or more</td><td rowspan="3">100% of gross written premiums/contributions[133] for the period of 12 months preceding the reporting date.</td></tr>
<tr><td>Regular premium policies/regular takaful contribution certificates</td></tr>
<tr><td>Yearly renewable policies/takaful certificates (including both guaranteed and non-guaranteed yearly renewable policies/takaful certificates)</td></tr>
</table>

[130] Before deducting reinsurance premiums/retakaful contributions ceded.
[131] Before deducting reinsurance premiums/retakaful contributions ceded.
[132] For example, for a limited pay policy/takaful certificate with a 7-year premium/takaful contribution payment term, the gross weighted premium/contribution is calculated as 70% of the gross written premium/contribution.
[133] Before deducting reinsurance premiums/retakaful contributions ceded.

S 3. In computing GCE_{NAB}, a licensed person must include the following in the amount of gross central estimate insurance/takaful liabilities[134]:
(a) the central estimate liabilities for unexpired portion of risk, including the present value of expected future surplus distributions to policy owners/takaful participants and shareholders (if any), and for a licensed takaful operator, the portion of the central estimate liabilities relating to the shareholders' fund arising from non-account-based products; and
(b) the central estimate liabilities for expired portion of risk.

S 4. In computing ME_{AB}, a licensed person must take into consideration actual expenses (other than claims, commissions, and intermediary-related expenses and additional compensation) incurred for account-based products.

S 5. For general insurance/general takaful business, a licensed person must calculate the ORCC as follows:

$$ORCC = \max[2.75\% \times GWP\ ,\ 2.75\% \times GCE]$$

where,

GWP refers to gross written premiums/contributions[135] for the period of 12 months preceding the reporting date; and

GCE refers to gross central estimate insurance/takaful liabilities as at the reporting date.

S 6. In computing GCE, a licensed person must include the following in the amount of gross central estimate insurance/takaful liabilities[136]:
(a) the central estimate liabilities for unexpired portion of risk, i.e. the central estimate of URR, including for a licensed takaful operator, the central estimate liabilities relating to the shareholders' fund, i.e. the central estimate of UER; and
(b) the central estimate liabilities for expired portion of risk, i.e. the central estimate of claims liabilities.

[134] For the avoidance of doubt, the gross central estimate liabilities are determined before deducting reinsurance/retakaful recoveries and before zeroisation of any negative value.
[135] Before deducting reinsurance premiums/retakaful contributions ceded.
[136] For the avoidance of doubt, the gross central estimate liabilities are determined before deducting reinsurance/retakaful recoveries and before zeroisation of any negative value.

Appendix 7 Correlation matrices

S 1. A licensed person must apply the correlation matrix for the aggregation of LIFT sub-risks, excluding catastrophe risk, set out in **Table 1** of this appendix.

Table 1: Correlation matrix for LIFT risk (excluding catastrophe risk)

Sub-risk *i* \ Sub-risk *j*	Mortality	Longevity	Morbidity/ disability plus Medical payments	Lapse	Expense
Mortality	1	-0.25	0.25	0	0.25
Longevity	-0.25	1	0	0.25	0.25
Morbidity/ disability plus Medical payments	0.25	0	1	0	0.5
Lapse	0	0.25	0	1	0.5
Expense	0.25	0.25	0.5	0.5	1

S 2. A licensed person must apply the correlation matrix for the aggregation of GIGT sub-risks, excluding catastrophe risk, set out in **Table 2** of this appendix.

Table 2: Correlation matrix for GIGT risk (excluding catastrophe risk)

Sub-risk *i* \ Sub-risk *j*	Claims	Premium/ contribution	Expense[137]
Claims	1	0.25	0
Premium/ contribution	0.25	1	0
Expense[138]	0	0	1

[137] Applicable to takaful business only.
[138] Applicable to takaful business only.

S 3. A licensed person must apply the correlation matrix for the aggregation of market sub-risks set out in **Table 3** of this appendix.

Table 3: Correlation matrix for market risk

Sub-risk *j* / Sub-risk *i*	Interest/ profit rate	Non-default spread	Equity	Property	Currency	Asset concentration
Interest/profit rate	1	0.25	0.25	0.25	0.25	0
Non-default spread	0.25	1	0.75	0.5	0.25	0
Equity	0.25	0.75	1	0.75	0.25	0
Property	0.25	0.5	0.75	1	0.25	0
Currency	0.25	0.25	0.25	0.25	1	0
Asset concentration	0	0	0	0	0	1

S 4. A licensed person must apply the correlation matrix for the aggregation of risks, excluding operational risk, set out in **Table 4** of this appendix.

Table 4: Correlation matrix for capital required

Risk *j* / Risk *i*	LIFT (excluding catastrophe)	GIGT (excluding catastrophe)	Catastrophe	Market	Credit
LIFT (excluding catastrophe)	1	0	0.25	0.25	0.25
GIGT (excluding catastrophe)	0	1	0.25	0.25	0.25
Catastrophe	0.25	0.25	1	0.25	0.25
Market	0.25	0.25	0.25	1	0.5
Credit	0.25	0.25	0.25	0.5	1

Appendix 8 Guidance on assessment of contract boundary for common insurance/takaful contracts

G 1. For renewable insurance/takaful contracts–

(a) a licensed person may not have the practical ability to reassess the risks at the contract level if the renewability is guaranteed (i.e. the contract may be renewed by the policy owner/takaful participant without being subject to further underwriting by the licensed person). In such cases, the licensed person would then proceed to assess if it has the practical ability to reassess the risks at the portfolio level; and

(b) a licensed person may have the practical ability to reassess the risks at the contract level if the renewability is not guaranteed. In such cases, the licensed person would proceed to assess if it has the practical ability to set a price that fully reflects the risks of the contract, based on the criteria set out in paragraph 27.3 of this policy document. If there are constraints, the licensed person would then assess if it has the practical ability to reassess the risks at the portfolio level.

G 2. For insurance/takaful contracts with coverage period of more than one year but have reviewable premiums/takaful contributions, the assessment of the contract boundary is similar to guaranteed renewable contracts as per paragraph 1(a) of this appendix.

G 3. Examples of the assessment of the practical ability to reassess the risks at the portfolio level are provided in **Table 1** of this appendix.

Table 1: Examples of assessment of practical ability to reassess risks at portfolio level

Type of insurance/takaful contract	**At renewal date**	
	Are there known practical constraints to revise price or benefits to fully reflect risks at the portfolio level?	**Did the pricing of premiums/takaful contributions up to the reassessment date take into account risks that relate to future periods?**
Non-guaranteed renewable contracts with level premiums/takaful contributions	No	Yes The premiums/takaful contributions in earlier periods subsidise the premiums/takaful contributions in later periods
Non-guaranteed renewable contracts with step-rated premiums/takaful contributions (e.g. according to attained age)	No	No

Non-guaranteed renewable contracts with premiums/takaful contributions that are step-rated but level for specific periods of time (e.g. step-up every three years)	No	Yes The premiums/takaful contributions at the start of the step-up subsidise the premiums/takaful contributions until the next step-up
Contracts with coverage period of more than one year but reviewable premiums/takaful contributions (including guaranteed renewable contracts)	Assess based on paragraph 27.4 of this policy document, considering factors which affect the practical ability to set a price that fully reflects the risks such as policy owners/takaful participants' reasonable expectations, feasibility of re-pricing, etc.	Depending on whether premiums/takaful contributions are level or step-rated (refer to assessment for non-guaranteed renewable contracts above)
Consortium products where assessment of price is not carried out at the company level	Yes	Not applicable

G 4. For extension and conversion options, cash flows arising from such options are considered to be within the boundary of the original contract if–

(a) the options are guaranteed; or

(b) the pricing of premiums/takaful contributions up to the reassessment date takes into account the risks that relate to future periods arising from the options.

G 5. For annuities, cash flows for the entire annuitisation period are considered to be within the boundary of the contract if the annuitisation phase is guaranteed, irrespective of whether the annuitisation rate is guaranteed or not.

Appendix 9 Guidance on setting assumptions

G 1. *Mortality and morbidity/disability*

Mortality and morbidity/disability assumptions should be determined taking into consideration the licensed person's own historical claims experience for the homogeneous risk group. Where it is determined that the licensed person's own experience is inappropriate to be used in its entirety (for example, where the risk pool is not sufficiently large for data to be credible), industry data may be used.

G 2. *Policy owners/takaful participants' behaviour*

Assumptions on the likelihood that policy owners/takaful participants will exercise contractual options, including lapses, forfeitures, surrenders, renewals, terminations, partial withdrawals and premium/takaful contribution holidays, should be determined based on an analysis of past behaviour using the licensed person's own historical experience and a prospective assessment of expected behaviour taking into consideration the influence of future economic conditions.

G 3. *Expenses*

Expense assumptions should be determined based on–

(a) for distribution expenses (e.g. commissions), the actual costs incurred by the licensed person; and

(b) for management expenses, the analysis of past expenses incurred by the licensed person, with consideration for likely changes in the future including due to inflation. The allocation of indirect expenses should also be carried out with regard to this analysis.

G 4. *Economic inflation*

Examples of economic inflation factors are wage and price inflation. The licensed person should consider how these factors affect other assumptions (e.g. expenses, claims behaviour). These factors may be determined based on publicly available information on historical inflation and economists' forecasts.

G 5. *Claims behaviour*

The licensed person should leverage on its own historical claims experience as well as industry analysis in order to better understand claims behaviour. In assessing claims behaviour, the licensed person should consider the following:

(a) possible factors affecting claims behaviour including latency, legislative and environmental changes, trends in court awards, changes in consumer behaviour and technological improvements (including medical advances). These factors may impact not just the frequency and severity of claims, but also the nature of the tail of the risks; and

(b) likely outcomes for claims that can be made by a third party or where there is a possibility of dispute or repudiation.

G 6. *Counterparty default on recoveries*

The adjustment for counterparty default on recoveries should be determined based on an assessment of the probability of default of the counterparty, whether this arises from insolvency or dispute, and the average loss resulting from the default.

Appendix 10 Derivation of risk-free yield curve

Methodology used to derive the risk-free yield curve

S 1. A licensed person must determine the risk-free yield curve based on a three-segment approach as described in **Table 1** of this appendix.

Table 1: Three-segment approach for risk-free yield curve

Segment	Duration	Methodology for setting risk-free rates
1	Up to LLP	The rates are based on market information, where available. For durations where market information is not available, the rates are interpolated using the Smith-Wilson method.
2	From the LLP up to the convergence point (CP)	The rates are extrapolated between Segment 1 and Segment 3 using the Smith-Wilson method.
3	From the CP	The rates are determined based on the LTFR.

S 2. A licensed person must determine the alpha parameter used in the Smith-Wilson method, which measures the speed of convergence towards the LTFR, as the lowest value that would result in the difference between the extrapolated forward rate at the duration before the CP and the LTFR to be no more than 0.001%, rounded up to the nearest 0.05 and subject to a floor of 0.1.

Parameters required to derive the risk-free yield curve

S 3. For cash flows denominated in MYR, a licensed person must use the following parameters to derive the risk-free yield curve:

(a) the market information refers to the zero-coupon spot yields of Malaysian Government Securities (MGS) for insurance contracts, or Government Investment Issues (GII) for takaful contracts as at the valuation date;

(b) the LLP is 15 years;

(c) the CP is 60 years; and

(d) the LTFR is 5%.

S 4. For cash flows denominated in currencies other than MYR, a licensed person must use the currency-specific parameters set out in **Table 2** of this appendix to derive the risk-free yield curve for each currency.

Table 2: Parameters for non-MYR denominated cash flows

Currency	Market information	LLP (in years)	CP (in years)	LTFR
Australian Dollar (AUD)	Zero-coupon spot yields of government bonds	30	60	3.8%

Canadian Dollar (CAD)	Zero-coupon spot yields of government bonds	30	60	3.8%
Chinese Yuan Renminbi (CNY)	Zero-coupon spot yields of government bonds	10	60	6%
Euro (EUR)	Par yields of swaps	20	60	3.8%
Pound Sterling (GBP)	Par yields of swaps	50	80	3.8%
Hong Kong Dollar (HKD)	Par yields of swaps	15	60	4.4%
Indonesian Rupiah (IDR)	Par yields of swaps	10	60	8%
Indian Rupee (INR)	Par yields of swaps	10	60	7%
Japanese Yen (JPY)	Zero-coupon spot yields of government bonds	30	60	3.8%
South Korean Won (KRW)	Zero-coupon spot yields of government bonds	20	60	4.4%
New Zealand Dollar (NZD)	Par yields of swaps	20	60	4.8%
Philippine Peso (PHP)	Par yields of swaps	10	60	7%
Saudi Riyal (SAR)	Par yields of swaps	15	60	6%
Singapore Dollar (SGD)	Zero-coupon spot yields of government bonds	20	60	3.8%
Thai Baht (THB)	Zero-coupon spot yields of government bonds	10	60	5.0%
Turkish Lira (TRY)	Zero-coupon spot yields of government bonds	10	60	7.0%
New Taiwan Dollar (TWD)	Zero-coupon spot yields of government bonds	10	60	4.4%
US Dollar (USD)	Zero-coupon spot yields of government bonds	30	60	3.8%

G 5. The Bank will review the parameters specified for MYR and non-MYR denominated cash flows annually. Where the Bank views that the parameters need to be updated, the Bank will communicate any changes to the parameters at least three months prior to the effective date of the new parameters.

Appendix 11 Guidance on inward reinsurance/retakaful

G 1. Due to the more volatile nature of claims experience and the lesser amount of data available to reinsurers/retakaful operators as compared to direct insurers/takaful operators, the licensed person's own data may not be sufficient to reliably determine the central estimate liabilities for inward reinsurance/retakaful contracts. As such, the licensed person may need to utilise additional information obtained from external sources and exercise more judgement.

G 2. Data limitations may also have a significant impact on the licensed person's approach in calculating the PRAD for inward reinsurance/retakaful contracts. The licensed person may not be able to formulate the assumptions for determining PRAD solely based on its own data and hence, may need to consider how the levels of PRAD obtained for direct insurance/takaful contracts could be adjusted to be applicable to inward reinsurance/retakaful contracts.

G 3. The licensed person should also consider qualitative information to facilitate the determination of appropriate allowances to be made in the central estimate liabilities and PRAD for inward reinsurance/retakaful contracts. For example, the licensed person should seek to better understand the nature of the business written currently and in the past, the trends in reinsurance premium/retakaful contribution rates and reinsurance/retakaful commission rates, and the type of reinsurance/retakaful programme, limits and deductibles.

G 4. In determining the homogeneous risk groups, the licensed person should take into account the extent and reliability of the data available. In addition, the licensed person may consider the following factors in assessing the homogeneity of risks:

(a) type of reinsurance/retakaful programme (e.g. treaty or facultative, proportional or non-proportional);
(b) geographical location of the risks; and
(c) class of business (e.g. property, marine, liability).

G 5. The licensed person should ensure that the valuation methodologies are appropriate based on the nature of the claims and the data available. For example, methodologies based on paid claims data may not be reliable due to the volatility of this data.

G 6. As the reinsurance/retakaful data is typically presented based on underwriting year, the licensed person may find it more appropriate to carry out the valuation on an underwriting year basis rather than on an accident year basis. In this regard, an approach that the licensed person may consider is as follows:

(a) In determining the central estimate liabilities for expired portion of risk–
  (i) the licensed person may conduct the claims analysis by underwriting year and project the latest underwriting year's claims in full (ultimate claims cost), allowing for the estimated total written premiums/contributions for each underwriting year (i.e. produce

triangles of claims and written premiums/contributions by underwriting year and develop these to the ultimate); and

(ii) as the liabilities derived from such underwriting year analysis will include liabilities relating to both the expired portion of risk and the unexpired portion of risk (particularly for the most recent underwriting year where most of the premiums/takaful contributions are unearned), the licensed person should apportion the liabilities for recent underwriting years into earned and unearned components. The earned component may be determined by deducting the expected claims cost in respect of the unexpired portion of risk from the ultimate claims cost; and

(b) In determining the central estimate liabilities for unexpired portion of risk–

(i) the liabilities should be derived based on the expected claims cost in respect of the unexpired portion of risk plus allowance for expenses expected to be incurred in administering the policies/takaful certificates and in settling the claims; and

(ii) the licensed person should consider the impact of any pipeline premiums/takaful contributions[139] that are within the boundary of the inward reinsurance/retakaful contracts (particularly for the most recent underwriting year where pipeline premiums/takaful contributions are most significant) in determining the liabilities.

[139] Pipeline premiums/takaful contributions refer to outstanding premiums/takaful contributions receivable by the licensed person for insurance/takaful contracts that have already incepted.

Appendix 12 Minimum information required to be included in the Risk-Based Capital report

S 1. A licensed person must include, at minimum, the information set out in paragraphs 2 to 15 of this appendix in its RBC report.

Valuation of insurance/takaful liabilities

S 2. Business profile of the licensed person, including–
- (a) business mix;
- (b) underwriting policy and procedures;
- (c) claims policy and procedures, including for general insurance/general takaful business, the setting of case reserves including initial case reserves;
- (d) reinsurance/retakaful arrangements;
- (e) for takaful business, the operational model adopted and the basis for the establishment of takaful funds;
- (f) any other internal or external factors affecting the valuation of insurance/takaful liabilities; and
- (g) any significant changes in any of the above factors as compared to the previous reporting period.

S 3. Data used for valuation, including–
- (a) basis and source of the data;
- (b) for any external data used, the methodology and assumptions used to process the data and the rationale for not using own data;
- (c) data checks performed to assess appropriateness, credibility, accuracy and completeness of the data;
- (d) any data limitations and their impact, including adjustments or allowances made to address the data limitations together with their rationale; and
- (e) basis of the homogeneous risk groups.

S 4. Valuation methodologies used to determine central estimate liabilities and PRAD as well as reinsurance/retakaful recoveries, including any simplifications or approximations applied, any significant changes as compared to the previous reporting period together with reasons for and impact of these changes.

S 5. Valuation assumptions used to determine central estimate liabilities and PRAD as well as reinsurance/retakaful recoveries, including–
- (a) basis of the assumptions, including outcomes of the comparative study between actual and expected experience which must include the appointed actuary’s assessment and opinion on–
  - (i) the appropriateness of the assumptions set for the previous reporting period;
  - (ii) any significant trends in experience over the past few years;
  - (iii) deviations in actual experience from the previous assumptions, including the underlying reasons for any material deviations; and

(iv) the rationale for the assumptions chosen for the current reporting period, together with supporting qualitative and/or quantitative justifications;

(b) methodology used to estimate future discretionary payments such as bonuses to participating life policy owners;

(c) for general insurance/general takaful business, the methodology used to derive the diversification benefit;

(d) for takaful business, any future surplus distributions from the PRFs to the shareholders' fund captured in the valuation of liabilities relating to the PRFs and the shareholders' fund; and

(e) any significant changes in valuation assumptions as compared to the previous reporting period, including reasons for and impact of these changes.

S 6. Recognition of management actions, including–

(a) methodology and assumptions used to determine the impact of management actions;

(b) adherence to the criteria specified in paragraphs 28.13 and 28.14 of this policy document; and

(c) amount of impact of management actions recognised in insurance/takaful liabilities, TCA and TCR.

S 7. Summary of valuation results, including central estimate liabilities and PRAD as well as reinsurance/retakaful recoveries for the expired and unexpired portions of risk, separately for the following–

(a) for life insurance business–

(i) ordinary life business or annuity business;

(ii) individual life business or group life business;

(iii) participating life business, non-participating life business, investment-linked business or universal life business; and

(iv) cohorts for participating life business, as set out in the licensed person's internal policy for the management of participating life business;

(b) for family takaful business–

(i) protection business or annuity business;

(ii) ordinary family business or investment-linked business; and

(iii) individual family business or group family business;

(c) for general insurance/general takaful business, the classes of business listed in **Appendix 3**; and

(d) for takaful business, liabilities relating to the PRFs and liabilities relating to the shareholders' fund.

<u>Computation of CAR</u>

S 8. Approach used to determine the market and credit risk capital charges for indirect investment exposures, including rationale for the chosen approach.

S 9. Approach used to determine the maturity of credit exposures in determining the credit risk capital charges.

S 10. For life insurance/family takaful business, the approach used to determine the underlying exposures of investment-linked unit funds and PIFs in determining the increase in net central estimate insurance/takaful liabilities of investment-linked operating fund and PRFs after applying the specified stresses for market and credit risks to the assets in investment-linked unit funds and PIFs (e.g. whether based on actual allocation or investment mandate).

S 11. For general insurance/general takaful business, the methodology used to determine the catastrophe risk capital charge for flood peril in relation to business within Malaysia (i.e. whether using catastrophe model or factor-based approach). Where a catastrophe model is used, to include the following:

(a) brief description of the catastrophe model, including whether it is an internal or external model, and where an external model is used, the name of the model and its provider; and

(b) adherence to the safeguards specified in paragraph 16 of **Appendix 2**.

S 12. Any simplifications or approximations applied in determining any of the capital charges.

<u>Supplementary information</u>

S 13. For life insurance/family takaful business, sources of surplus arising.

S 14. Recommendations by the appointed actuary in relation to the valuation of insurance/takaful liabilities as well as the computation of CAR and its components (i.e. TCA and TCR).

S 15. Certification by the licensed person's appointed actuary and chief executive officer.